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Northwest  
Region

1990



# Land and Resource Management Plan

Umatilla National Forest



# Chapter 1

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# CHAPTER 1. FOREST PLAN INTRODUCTION

## PURPOSE OF THE FOREST PLAN

The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Umatilla National Forest for the next 10 to 15 years. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

The Forest Plan is a broad, programmatic plan which is a key part the management system for the Forest. The planning process leads to certain decisions in the Forest Plan about management of the Forest including:

- Establishment of Forest-wide multiple-use goals and objectives and desired future condition;
- Establishment of Forest-wide Standards and Guidelines (management and other requirements) applying to activities;
- Establishment of management areas (goals, location, and desired future condition) and management area direction (prescriptions) applying to activities;
- Establishment of Forest-wide allowable timber sale quantity, and identification (location) of lands suitable or selected for timber harvest;
- Identification of nonwilderness allocations for roadless areas (where 36 CFR 219.17 applies);
- Establishment of Forest-wide outputs and proposed and probable activities for each management and roadless area, which are then confirmed through the implementation process (including a NEPA analysis);
- Establishment of monitoring and evaluation requirements;
- Incorporation of specific extant plans or projects; and
- Identification of recommended additions to the Research Natural Areas system.

The Forest Plan embodies the provisions of the National Forest Management Act of 1976, its implementing regulations, and other guiding documents. Goals, objectives, land use determinations, prescriptions, and standards and guidelines are statements of the Plan's management direction. However, the projected outputs, services, and rates of implementation are estimates and are dependent on the annual budgeting process.

Management direction established in the Forest Plan will normally be reviewed (and updated if necessary) at least every 5 years and will ordinarily be revised on a 10-year cycle or at most every 15 years. The Forest Plan may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have significantly changed. In addition, when changes in the RPA program significantly affect Forest programs, the Forest Plan may be revised.

## RELATIONSHIP OF FOREST PLAN TO OTHER DOCUMENTS

The Forest Plan sets forth the selected alternative for managing the resources of the Umatilla National Forest. The Plan results from extensive analysis and considerations addressed in the accompanying Environmental Impact Statement (EIS) and Record of Decision (ROD). The planning process and the analysis procedures used to develop this Plan are described or

referenced in the EIS. The EIS also describes other alternatives considered in the planning process.

**Environmental Impact Statement and Record of Decision Regional Guide and RPA Relationship to Other Plans**

Activities and projects will be planned and implemented to carry out the direction in this Plan. The Forest will perform environmental analyses on these projects and activities. Project level environmental analyses will use the data and evaluations in the Plan and EIS as its basis, but frequently will need additional or more specific information. Documentation of project level analysis will be tiered to the EIS accompanying this Forest Plan. Tiering, in this case, means that Environmental Assessments prepared for projects arising from the Forest Plan will refer to the Final Environmental Impact Statement (EIS) and associated documents rather than repeat information given there. The environmental documents for specific projects can thereby concentrate on issues unique to the projects.

**Regional Guide and RPA**

The Forest Plan is part of the overall three-level planning process as required in applicable laws and implementing regulations. At the national level, the RPA Program establishes long-range resource objectives based on the present and anticipated supply and demand for various resources. A portion of each national resource objective included in the RPA Program is distributed to each of the nine Forest Service regions in the Nation. A Regional Guide was developed for the Pacific Northwest Region (and amended December 8, 1988). The Regional Guide provides direction for national forest plans and develops standards and guidelines addressing major issues and management concerns considered at the regional level in order to facilitate forest planning. The Regional Guide also displays the Pacific Northwest Region's portion of the RPA program. At the national forest level, the Forest Plan is prepared based on economic and environmental analysis and documented in the EIS. Site or project specific plans are generally developed at the district level and are tiered to the Forest Plan. The planning process is a continuously repeating process in that the information from the Forest level (in the Forest Plan) flows up to the national level, is incorporated in the RPA program, and then flows back to the Forest level.

**Relationship to Other Plans**

The Forest Plan serves as the overall coordinating land and resource management plan for directing the Umatilla National Forest All previous land management unit plans are superseded by this Forest Plan as displayed in Table 1-1.

**TABLE 1-1. LAND OR RESOURCE MANAGEMENT PLANS STATUS FOREST PLAN**

UMATILLA NATIONAL FOREST

DECADE 1

Plans	Date	Superseded and Replaced
Oregon Butte Planning Unit Land Management Plan	04/22/77	*
Elgin Planning Unit Land Management Plan	07/20/79	*
Desolation Planning Unit Land Management Plan	12/26/79	*
Hepner Planning Unit Land Management Plan	12/26/79	*
Grande Ronde (Wallowa-Whitman NF) Planning Unit Land Management Plan (Umatilla National Forest portion)	04/07/78	*

Plans	Date	Superseded and Replaced
John Day (Malheur NF) Planning Unit Land Management Plan (Umatilla National Forest portion)	04/29/78	*
Timber Management Plan, as amended, Umatilla National Forest (as per timber inventory of 1981)	01/11/63	*

Pertinent, valid, existing resource management implementation or action plans are hereby incorporated into the Forest Plan as discussed in Chapter 4, Resource Summaries.

Implementation and action plans designed to give further guidance for management and development activities are or will be developed 'under the umbrella' of this Forest Plan. These, in effect, become part of the management direction and implementation for the Forest.

Examples of such plans are:

- Motorized Access and Travel Management Plans
- Range Allotment Management Plans
- Fire Management Action Plans
- Wilderness Activity Plans
- Wild and Scenic River Management Plans
- Corridor Viewshed Plans

### **Project Planning**

Resource management objectives are discussed in Chapter 4. Schedules of projected resource management activities are displayed in Appendix A.

The management direction provided by the Forest Plan makes up the framework within which project planning and activities take place. The Plan defines management area goals and management standards that guide project activities toward achieving a desired future condition for the given management area and, collectively, for the Forest. It specifies a schedule for project activities and management practices. It provides guidance concerning potential projects and project limitations, including assumptions about the appropriate vegetation management practices for timber sale projects and best management practices to protect water quality for all Forest management activities. On-the-ground project analysis then verifies the appropriateness of the assumptions.

Within this guidance, projects are developed which most efficiently and effectively accomplish management goals and objectives. All National Environmental Policy Act (NEPA) requirements will be complied with in all projects.

Project environmental analyses provide an essential source of information for Forest Plan implementation and monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to achieve management area goals is tested for its efficacy by the project analyses. Third, the site-specific data collected for project environmental analyses serve to check the correctness of the Forest Plan direction. Furthermore, information included in the project environmental analyses is used in the monitoring process to help determine where changes should be made in the Forest Plan.

## FOREST PLAN STRUCTURE

The Forest Plan document is composed of five chapters, a glossary, an index, and appendix material.

*Chapter 1* introduces the reader to the purpose of the Plan, its contents, its relationship to other documents, and it describes the Forest geographic location.

*Chapter 2* is a summary of the Analysis of the Management Situation. Included are summaries of the current management situations for each resource, potential supply and demand for various resource goods and services, and a brief socioeconomic overview of the Forest and related communities and counties.

*Chapter 3* summarizes the issues and concerns and briefly explains how each was dealt with in the Forest Plan.

*Chapter 4* is the heart of the Plan and contains the multiple-use resource objectives, Forest-wide Standards and Guidelines, and management area direction which the Forest has established for plan implementation. The Forest objectives include the projected resource outputs, activities, and budget necessary to achieve the goals. Standards and guidelines provide Forest-wide implementation direction which applies to everyday, on-the-ground projects. Management area directions and descriptions define the types and intensities of activities that can occur within a given area. Locations of the various management areas within the Forest are shown on the maps of Alternative F/M and in the separate maps book included with the Forest Plan.

*Chapter 5* contains the Forest Plan implementation direction and a plan for its monitoring and evaluation. The monitoring program, based on the identified issues, is used to determine if the objectives are being met, if the standards and guidelines are adequate and being applied, and if environmental effects are as predicted in the EIS. The process for Plan amendment and revision is described.

A reference section, glossary of terms used in the document, and index follow Chapter 5. Finally, three appendices are provided. Appendix A includes activity schedules for each resource, and proposed budgets, Appendix B contains wilderness and landownership plans; and Appendix C displays the procedures for calculating and monitoring an elk habitat effectiveness index.

## FOREST DESCRIPTION

### Location

The Umatilla National Forest is located in the northern portion of the Blue Mountains in northeastern Oregon and southeastern Washington. Within the Forest Boundary there are over 1.5 million acres, of which 1.4 million are national forest lands. Of the national forest acres within the boundary, 1.2 million are within the Oregon counties of Baker, Grant, Morrow, Umatilla, Union, Wallowa, and Wheeler; and 0.3 million are within Asotin, Columbia, Garfield, and Walla Walla counties in Washington (see Table 1-2).

The Forest is divided roughly into halves by Interstate Highway 84. The north half extends into Washington and is bordered partially on the west by the Umatilla Indian Reservation and on the southeast flank by the Wallowa-Whitman National Forest. The south half is bordered on the east by the Wallowa-Whitman National Forest and on the south by the Malheur National Forest.

The largest cities in the area are Pendleton (pop. 14,521) and Hermiston (pop. 9,408) in Oregon; Kennewick, Pasco, Richland (Tri-Cities [pop. 85,919]), and Walla Walla (pop. 25,618) in Washington; and Lewiston, Idaho (pop. 28,000). Heppner, La Grande, Milton-Freewater, and

Ukiah, Oregon: and Clarkston, Dayton, and Pomeroy, Washington, are other important, but smaller population centers. The Forest headquarters is located in Pendleton. Ranger district offices are located in Heppner and Ukiah, Oregon, and in Pomeroy and Walla Walla, Washington.

### **General**

The Umatilla National Forest is an area of diverse landforms and ecotypes. The Forest lies within the headwaters of four large drainage basins: Umatilla, John Day, Walla Walla, and Grande Ronde river basins. The north and south forks of the Umatilla, north and south forks of the Walla Walla, Touchet, Grande Ronde, Wenaha, Tucannon, and North Fork John Day are the local rivers. Waters of the latter are recognized for their high quality anadromous fisheries. There are also a few small lakes and reservoirs greater than 5 acres. The Forest provides significant timber and other wood products, water, and recreation. The Forest supports one of the largest Rocky Mountain elk herds in the Nation, making elk hunting a particularly popular activity here. It also provides substantial domestic livestock grazing. There are 9 wildernesses covering 304,400 acres, and 22 roadless areas totaling 281,000 acres.

Resource descriptions are provided in Chapter 2.



**TABLE 1-2 ACREAGE STATISTICS**

**UMATILLA NATIONAL FOREST**

December 31, 1989

OREGON COUNTIES	GROSS AC.	NATIONAL FOREST AC.	PRIVATE AC.	O.F.* AC.
Baker	88	3	85	0
Grant	339,176	309,884	29,292	0
Morrow	158,029	143,303	14,726	2.25
Umatilla	415,645	374,386	41,259	20.01
Union	107,515	99,829	7,686	0
Wallowa	125,502	123,510	1,992	0
Wheeler	45,782	40,349	5,433	0
Total Oregon	1,191,737	1,091,264	100,473	22.26

WASHINGTON COUNTIES	GROSS AC.	NATIONAL FOREST AC.	PRIVATE AC.	O.F.* AC.
Asotin	55,780	53,791	1,989	5.0
Columbia	163,841	159,513	4,328	0
Garfield	96,410	95,466	944	0.95
Walla Walla	3,324	2,433	891	0
Total Washington	319,355	311,203	8,152	5.95
GRAND TOTAL	1,511,092	1,402,467	108,625	28.21

ACREAGE STATISTICS BY DISTRICTS

DISTRICT	ACRES WITHIN PROCLAIMED BOUNDARY	ACRES OF NF WITHIN BOUNDARY	ACRES OF PRIVATE LAND WITHIN BOUNDARY	O.F.* AC.
Heppner	232,885	212,213	20,672	2.25
Pomeroy	373,471	365,901	7,570	5.95
North Fork John Day	518,529	465,822	52,707	16.21
Walla Walla	386,207	358,531	27,676	3.80
TOTAL	1,511,092	1,402,467	108,625	28.21

\* O.F. = Other Federal lands administered by the Forest Service outside the National Forest (NF) Boundary (i.e., administrative sites)

# Chapter 2



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# CHAPTER 2. SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION

## Introduction

Chapter 2 summarizes the resource conditions and the Forest ability to supply market and nonmarket goods and services in response to public demands. A discussion of resource supply conditions and projected demands can be found in the Analysis of the Management Situation (July 1985), and is updated in both the DEIS and FEIS (Chapters III and II).

The chapter is divided into two major sections. The first discusses existing conditions on the Forest, supply and demand conditions for the Resources Planning Act (RPA) periods, and production levels under current management direction (Alternative A in the FEIS) or the existing situation. The second section lists information, inventory, and research needs identified in the planning process-information that would be desirable to have for improving the present Forest Plan or aiding in preparation of the next Plan.

## RESOURCE CONDITIONS AND SUPPLY ESTIMATES

The major issues and concerns, which guided the development of the Forest Plan, revolved around the management of the recreation, roadless, wildlife, big game, fish, riparian, water, minerals, and timber resources. The ability of the Forest to provide goods and services in response to the issues is dependent on the current conditions and capability of forest resources. The ability to supply these resource outputs was generally estimated through 'benchmark' analysis (additional discussion about benchmarks can be found in the AMS, or FEIS Appendix 6). The benchmarks were designed to explore the maximum supply potentials for each issue related resource that the Forest produces, while satisfying all of the legal requirements for forest planning. Benchmarks help define the resource and economic potentials of the Forest and the range of outputs from which alternatives could be formulated in order to address the identified planning issues.

Table 2-1 shows the existing supply situations. Table 2-2 displays the potential output levels for each of the resource maximization benchmarks, and the maximum economic levels. Table 2-2 gives an idea of the magnitude of complementary and competitive relationships existing between the production of the key resources.

## RESOURCE DEMAND PROJECTIONS

The term 'demand' is used by the lay person to identify a certain level of consumption, and by the analyst or economist, to identify a schedule of consumption levels which vary depending on price. In the following discussions, 'demand' is used as a lay person would use the term. As such, demand estimates reflect an intersection at a particular point in time between a demand schedule (a list of willingness-to-pay values for various levels of offerings) and a supply schedule (a list of volumes the seller is willing to offer at various prices). Demand estimates reflect future outputs/effects levels anticipated by several public agencies, including the Forest Service. These projections are generally historical use patterns and/or regional and national trends applied to the local situation. The assumption is that at maximum supply levels, each of the resources produced by the Forest would be demanded (i.e., utilized).

Table 2-2 displays the intersection points over time for several Forest outputs for which estimates are meaningful. As such, they assume a continuation into the future of the relationships which would provide viability for the respective enterprises. In the case of livestock grazing, for instance, the figures assume continued population growth in the United States, a certain level of red meat consumption per capita, certain levels of imports and exports,



certain cost levels for the goods and services used in the production of red meat, and so on. The projections, like any projections, are therefore expected to be less accurate in the distant future than in the near future.

## EXISTING SUPPLY SITUATION

**TABLE 2-1. SUMMARY OF EXISTING SITUATION ON THE UMATILLA NATIONAL FOREST**

TOTAL NATIONAL FOREST AREA		1,511.1	(1 000 Acres)
OTHER OWNERSHIPS		108.6	(1000 Acres)
WILDERNESSES (Three Statutory Wildernesses)		304.4	(1000 Acres)
NON-FOREST, ROADS, FACILITIES, WATER, ETC		200.9	(1000 Acres)
LANDS SUITABLE FOR TIMBER PRODUCTION			
1963 Timber Plan as amended		897.2	(1000 Acres)
<hr/>			
RECREATION	Primitive & Semi-Primitive (Supplied)	503.9	(1000 Acres)
	Retention/Partial Retention	485.9	(1000 Acres)
ROADLESS AREAS	Area Remaining Unroaded	281.1	(1000 Acres)
	Areas Remaining Unroaded	22	(Number)
WILDLIFE	Old Growth (Total Including Wilderness)	190.7	(1000 Acres)
BIG GAME	Estimated Elk Population (1983)	21,135	(Number of Elk)
	State Management Objectives (Index)	21,056	(Number of Elk)
FISH	Smolt Habitat Capability Index (1980 Base)	1,480	(1000 Smolts)
RANGE	Permitted Grazing	54.5	(1000 AUM's/Yr.)
	Total Program Sale Quantity (Sell) (1979-88 Average)	164.5	(MMBF/Yr.)
	Total Sawtimber (Sold) (1979-88)	108.5	(MMBF/Yr.)
TIMBER	Other (Cull, Small Material, Salvage, and Fuelwood) (1979-88 Average)	56.0	(MMBF/Yr.)
	Actual Total Harvest (1979-88 Average)	148.5	(MMBF/Yr.)
	Allowable Sale Quantity (Green) as Per 1963 TM Plan as Amended	147.8	(MMBF/Yr.)
SOCIO-ECONOMIC	Present Net Value	922	(Million \$)
	Total Returns to U.S. Treasury*	6.2	(Million \$/Yr.)
	Payment to Counties*	2.6	(Million \$/Yr.)
	Jobs (directly related to UNF operations)	3,564	Total Jobs
	Income (directly related to UNF operations)	48.5	(Million \$/Yr.)

\* 1980-88 Average

Output/Effects	Units	DECADE 1		DECADE 2		DECADE 5	
		Potential Supply	Potential Demand	Potential Supply	Potential Demand	Potential Supply	Potential Demand
<b>RECREATION</b> Dispersed Recreation Dispersed Recreation, Primitive/Semi-primitive Developed Recreation	M RVD's/Yr. M Acres M RVD's/Yr.	3,830 585 640	1,127 331 264	3,880 585 700	1,190 363 320	4,030 585 840	1,345 464 547
<b>WILDLIFE</b> Potential Elk Population Big Game Hunting Opportunity Old Growth (including wilderness)	Index M WUD's/Yr. M Acres	22,600 580 191	20,500 524	21,900 559 264	20,600 525	23,500 602 925	20,800 531
<b>FISH</b> Anadromous Anadromous Fish Use (Sport Fishing)	M Smolts/Yr. M RVD's/Yr.	2,900 28.3	2,960 28.3	3,900 39.8	3,900 36.8	7,600 74.4	7,600 53.8
<b>RANGE</b> Permitted Grazing Use	M AUM's/Yr.	103	74	105	77	105	77
<b>TIMBER</b> Allowable Sale Quantity Firewood	MMBF/Yr. MMBF/Yr.	207 23	262 <sup>1</sup> 140 <sup>2</sup> 17	207 23	276 <sup>1</sup> 154 <sup>2</sup> 23	207 23	260 <sup>1</sup> 138 <sup>2</sup> 23
<b>WATER</b> Total Flow	M Acre Feet/Yr.	2,460	Unknown <sup>3</sup>	2,460	Unknown <sup>3</sup>	2,460	Unknown <sup>3</sup>
<b>MINERAL/ENERGY</b> Acres of Land Open to Development	M Acres	1,048	1,048	1,048	1,048	1,048	1,048

1 Projected high demand for Forest timber

2 Projected average demand for Forest timber.

3 Unknown—Demand substantially higher than supply.



# ECONOMIC AND SOCIAL ENVIRONMENT

## THE ECONOMY

The Forest most directly influences 10 counties: Asotin, Columbia, Garfield, and Walla Walla in Washington; and Grant, Morrow, Umatilla, Union, Wallowa, and Wheeler in Oregon. These counties utilize most of the Forest resources. The Forest is also indirectly linked with more distant neighbors via recreational opportunities, economics, and forest products.

### Economic Base and Population Dynamics

In other than the relatively small service and trade centers in the area, most local economies and lifestyles evolve around agriculture, ranching, government, and the timber industry. People living in the Washington counties follow a predominantly agricultural lifestyle; they produce mainly wheat and cattle. In Oregon, the newly industrialized portions of Umatilla and Morrow counties along the Columbia River are growing rapidly while other portions of these counties are agricultural and growing slowly. Mechanized, irrigated agriculture has been a major source of this growth. Although Union and Wallowa county residents live in predominantly agricultural communities, their economy is more timber-oriented than the other agricultural counties. Wheeler and Grant counties are ranching areas; they are too dry for dryland wheat farming and too far from water sources for cost-effective irrigation. However, Grant County is predominately timber-oriented and is relatively stable, but it suffered economically from the recent downtrend in the wood products market.

In the Umatilla National Forest area of influence, traditional economies have grown slowly. Forest products have been part of the core of the area's economy, but have not been the major stimulus for growth. Therefore, for the area of influence as a whole, economic growth is expected to be slow, steady, and stable. Areas that are growing or declining will continue the trends; urban areas are expected to expand in the service and trade sectors; and agriculture will continue to be a stabilizing influence on county economics.

A specific area may fluctuate, but variation is usually offset by change in the opposite direction in another area. An example is the region along the Columbia River which has grown rapidly as new industries and irrigated agriculture have brought newcomers, and has had its growth offset by declines in agricultural employment caused by increased mechanization. Changes in the lumber industry have also reduced employment and affected the ties of local populations and economies to the Forest industry.

### Ties to the Umatilla National Forest

The economic and social ties to the Forest are numerous and complex. The Forest provides a variety of resources, land uses, and values to the communities and people within the area of influence. Some people and communities are more dependent on the Forest than others.

Generally, county governments receive around 10 percent of their operating revenues from national forest receipts. Percentages (ranging from 0.1 percent in Walla Walla County to 14.4 percent in Umatilla County) depend on receipts from activities and related market values. In 1988, the Umatilla National Forest contributed about 22 percent of the county payment funds from national forest receipts to counties in the State of Washington, and approximately 78 percent of Oregon county funds.

## THE SOCIETY

Social linkages with the Forest are characterized in three broad areas as follows:

- People or communities with direct economic relationships with the Forest.

- People or communities with aesthetic and recreation-related ties to the Forest.
- Confederated Tribes of the Umatilla Indian Reservation and other Indian people.

The timber resource is important to towns with logging and milling industries. Towns like Elgin in Union County, Pilot Rock in Umatilla County, Heppner in Morrow County, and John Day in Grant County are oriented toward wood products. Many jobs are directly related to, and businesses dependent on, the timber supply from both private forest land and national forests, and on market demand.

Direct ties are also seen in agricultural communities which are linked to the Forest by their need for water, and ranching communities highly dependent on the Forest for forage for livestock grazing. Forest grazing policy has major impacts on survival and growth of individual ranching operations and on ranching communities. Recreation-related industries and services tied to the Forest also provide employment and economic contributions throughout the area.

People in communities throughout the area of influence have recreation and aesthetic ties to the Forest. Residents in communities both in and outside the area of influence utilize recreational opportunities year-round. Many are concerned about wilderness, wildlife, hunting, fishing, other recreation, roadless areas, and environmental values.

Ties between the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and the Forest are close and longstanding. For many members of the CTUIR, the Forest is more than simply a resource; it is a special place for traditional activities and holds religious and spiritual significance. The Forest is a site for traditional berry picking and root gathering; issues of site protection and privacy are sensitive and complex. The Forest also provides fish and game for subsistence fishing and hunting.

Predictions of social change are difficult to make, but some trends are evident. Communities are likely to become more aware of their dependence on government and federal funding as related government jobs are cut (Cockle 1981). Economic decline and reduced production in traditional industries during the early 1980's may have encouraged communities to diversify and recruit new businesses.

Part of the social character of a community is its values; which and what kinds of people, places, objects, feelings, and ways of living are important to community members. The local area encompasses people with a diversity of values, reflective of the nation as a whole. Many residents in these counties feel their pioneer heritage is important; they value hard work, rugged self-reliance, individualism, use of resources, and independence. For many local residents, family ties are important; relatives and neighbors are often major actors in day-to-day life. Others have more of a social, urban, or environmental orientation and are concerned about amenities, protection, or preservation of the Forest.

## RECREATION

The Forest provides a variety of recreation opportunities from highly developed downhill skiing facilities to remote wilderness. According to the 1984 Recreation Complexity Rating System, the Forest ranked 8th out of 19 in the Pacific Northwest Region (Region 6) and 52nd of all the 159 national forests.

The recreation resources on the Forest are described and managed in terms of recreation opportunities, using the Recreation Opportunity Spectrum (ROS). The ROS inventory identified five physical/social settings on the Forest. The settings are Primitive, Semi-primitive Nonmotorized, Semi-primitive Motorized, Roaded Natural, and Roaded Modified. Within the ROS settings, the Forest provides two principal types of recreation: recreation sites, in which the

activities are dependent on constructed facilities, i.e., RV camping, downhill skiing, recreation residences, etc.; and dispersed, in which the activities are not dependent on constructed facilities (hunting, fishing, off-highway vehicle use, etc.).

### Recreation Sites

The Forest has a variety of recreation facilities which provide numerous opportunities for the public. There are 20 developed campgrounds, 5 of which are administered as fee sites by the Forest. The five fee sites are: Jubilee Lake, Target Meadows, and Woodward on the Walla Walla Ranger District; Bull Prairie Lake on the Heppner Ranger District, and Tollbridge on the North Fork John Day Ranger District. In addition to the campgrounds, there are 2 downhill ski areas (Ski Bluewood and Spout Springs), 101 recreation residences, 7 picnic sites, 4 boating sites, and 1 organizational camp.

The developed sites on the Forest can accommodate 6,949 persons-at-one-time (PAOT). The practical capacity for the sites is 568,576 recreation-visitor-days (RVD's) annually. Currently, the annual use is approximately 220,000 RVDs. All of the developed sites occur within the Roaded Natural ROS class.

### Demand vs. Capacity

According to the 1988 Oregon State-wide Comprehensive Outdoor Recreation Plan (SCORP), the demand for camping and picnic facilities will more than double by the year 2000. Comparable information for northeastern Oregon indicates a 17 to 38 percent increase. The 1985 edition of the Washington SCORP predicts a small rate of increase for camping in the six southeastern counties. However, a severe supply shortage exists to meet current demands for that part of the state. The demand for other developed facilities, such as alpine skiing, also continues to grow.

Currently, the total practical capacity for campgrounds, picnic, and boating sites is 296,117 RVD's. The current use for these sites is 160,000 RVD's. Expanding the current use by the projected increases for northeastern Oregon would require a practical capacity of 330,000 RVD by the year 2000. Based on this evaluation, it appears that existing campground and picnic facilities will accommodate expected use during this planning period.

However, because sites constructed near water or with visually appealing settings are currently the most popular and are used near capacity, the demand for more developed recreation facilities is site-specific and is not a Forest-wide problem. In order to be responsive to public demand, a need exists to consider increasing the capacity at existing heavy-use sites. The following candidate sites by ranger district for increased capacity are:

Heppner	Pomeroy
Bull Prairie Lake Campground	Tucannon River area
Penland Lake Picnic/Campground	Teal Spring Campground
North Fork John Day	Walla Walla
Olive Lake Campground	Jubilee Lake Campground
Sites along the North Fork John Day	Umatilla Forks Campground
River	

Although there is a demand for additional alpine skiing facilities statewide, there does not appear to be a need for additional sites on the Forest. Presently, the area is served by Ski Bluewood and Spout Springs ski areas on the Umatilla National Forest (both have room for expansion), and by Anthony Lakes on the Wallowa-Whitman National Forest. Currently and for the near future, the demand for alpine skiing is being met. Increased demand can be met through expansion of existing sites.

## Dispersed Recreation

The Umatilla National Forest is known mostly for its dispersed recreation opportunities. In analyzing the existing opportunities, the Forest grouped use into the 12 activities identified in 1979 by the Pacific Northwest River Basins Commission (PNRBC). These were further aggregated by ROS class.

The 1982 ROS inventory classified the Forest into a spectrum of physical and social settings. Currently, 36 percent of the Forest is in an undeveloped condition (Primitive and Semi-primitive); 36 percent is Roaded Natural; and 28 percent is Roaded Modified. Of the total recreation use on the Forest (1986), 21 percent occurs in the Primitive and Semi-primitive settings; 44 percent in Roaded Natural; and 35 percent in Roaded Modified.

Hunting, primarily for Rocky Mountain elk and mule deer, is the most popular activity on the Forest. In 1986, hunting generated about 520,000 RVD's of use or 48 percent of the dispersed use on the Forest. Hunting use has stabilized in the last couple of years. Other high use activities are sightseeing (18 percent), snow activities (10 percent), and dispersed camping (9 percent).

There are 735 miles of managed trails on the Forest, 355 miles of which are within wildernesses. Off-highway vehicle (OHV) use (primarily trail bike and snowmobile use) is very popular on the Forest OHV users and clubs are looking for areas and opportunities to enjoy their pursuits. Currently, the Forest maintains over 361 miles of trails open to motorcycles and has 168 miles of groomed snowmobile trails. Nordic skiing has grown in popularity in the late 1970s and early 1980s. There are six Sno-Park areas, all on the north end of the Forest.

## Demand vs Capacity

Dispersed recreation use on the Forest is not limited by quotas or allowable numbers of visitors. Permits are issued for limiting the number of users only in the Mill Creek Watershed In light of the unrestricted access, current use should equate to current demand. Based on recreation participation projections found in the 1979 PNRBC report and adjusted based on factors found in the 1988 Oregon SCORP, recreation use on the Umatilla National Forest is expected to increase gradually as shown in Table 2-3. Total demand is estimated to increase from approximately 1.1 million RVD's to 1.3 million five decades from now. Current demand is distributed between unroaded (primitive and semi-primitive) and roaded areas in a 20:30 proportion. About one-fourth of the unroaded use is related to motorized transportation.

**TABLE 2-3. RECREATION ACTIVITY TRENDS (MRVD)**

Umatilla National Forest

Activity	Decade					% Increase
	1	2	3	4	5	(Decades 1-5)
1. Camping	86	92	99	106	113	31%
2. Picnicking	11	12	13	14	14	35%
3. Swimming	7	7	8	8	9	34%
4. Sightseeing	186	210	224	240	256	38%
5. Fishing	80	85	91	98	104	31%
6. Boating	11	13	14	15	16	43%
7. Walking	32	33	35	38	40	25%
8. Hunting	524	525	527	529	531	1%
9. Bicycle	1	1	1	1	1	34%

Activity	Decade					% Increase
	1	2	3	4	5	(Decades 1-5)
10. Horseback	28	29	31	33	36	27%
11. Snow Activity	94	109	117	125	134	42%
12. Other	67	74	80	85	91	35%
Total MRVD's	1,127	1,190	1,240	1,292	1,345	19%

As seen in Table 2-3, participation in recreation activities is predicted to increase by approximately 20 percent over the next 50 years. All activities, except big game hunting (also see Wildlife section), will increase significantly (274%). All future activity use levels, with the possible exception of elk hunting, can be readily accommodated on the Forest. The problem will be accommodating activities in the desired physical and social opportunity setting.

Table 2-4 displays the existing situation and current direction. Table 2-5 displays estimates of the acres needed in each ROS class, at current use densities, in order to meet future demand.

**TABLE 2-4. ACRES BY ROS CLASS**

Umatilla National Forest

ROS Class	Existing Situation	Current Direction
Primitive	36,000	36,000
Semi-primitive Nonmotorized	321,200	269,000
Semi-primitive Motorized	146,700	6,000
Roaded Natural	507,600	119,000
Roaded Modified	<u>390,500</u>	<u>972,000</u>
	1,402,000	1,402,000

**TABLE 2-5. ACRES NEEDED FOR RVD DEMAND BY DECADE**

DECADE	PRIMITIVE	SPNM	SPM	TOTAL PRIM/ SEMI-PRIM	RN	RM
1	77	158	96	331	140	169
2	88	171	104	363	149	173
3	98	183	113	394	156	174
4	111	196	122	429	164	175
5	123	210	131	464	171	176

As seen in Tables 2-4 and 2-5, given current direction, demand for roaded opportunities could be met. However, the Forest would have difficulty meeting future demand for primitive and semi-primitive opportunities. Under current direction, the Forest falls short in acres needed to meet first decade demand; by the fifth decade the situation will be worse. The Forest does have the capability to meet future (fifth decade) demand, depending on the disposition of the roadless areas. Maximum potential primitive and semi-primitive area, including wilderness, amounts to about 585,000 acres; fifth decade needs are estimated at 464,000 acres.

Frequency of contacts between individuals or groups is an important factor in determining the recreation setting. Except during the elk hunting season, Umatilla National Forest visitors are generally accustomed to a very low user density. However, as demand and use increases in the



future, user density and encounters with others will increase. A key assumption is that people seeking primitive and semi-primitive opportunities will experience and accept increased encounters with other parties in the future and continue to have satisfying experiences. Current demand results in an average of 0.66 RVD/acre/year. Future demand in 2030 will increase user density to 0.93 RVD/acre/year, a 41 percent increase.

## WILDLIFE

The Forest provides a broad diversity of forest and range ecosystems which support a wide range of game and nongame wildlife species. There are 324 species of vertebrate animals on the Forest, including 7 amphibians, 14 reptiles, 29 fish, 73 mammals, and 201 birds. A complete list of species is on file for the FEIS. More detailed descriptions of species and their habitat are found in Wildlife Habitats in Managed Forests: The Blue Mountains of Oregon and Washington (Thomas and others 1979).

The distribution, as well as abundance, of wildlife populations is largely determined by habitat type and conditions. Several habitats or habitat components, including riparian areas, meadows, dead/down trees and mature tree/old growth, are very important on the Forest. For elk and other big game, the amount and distribution of cover, forage, and human disturbance are important habitat considerations.

Active cooperation between the Forest, the Oregon Department of Fish and Wildlife (ODNV), and the Washington Department of Wildlife (WDW) is important to fish and wildlife programs on the Forest. While the Forest is responsible for providing and improving habitat, the states are responsible for managing wildlife populations.

Wildlife and its management hold strong public interest. However, the primary output for which supply and demand estimates are meaningful is big game hunting opportunity. There are indications that the amount of hunting is approximating the capacity of the existing resource. Hunting demand is expected to increase slightly through time. The Forest has some capacity to increase hunting opportunities (i.e., produce more big game).

### Indicator Species

Seven fish and wildlife indicator species were selected to represent animals associated with the major habitat types on the Forest. The habitat requirements of the selected indicator species are presumed to represent those of a larger group of wildlife species. Habitat conditions for management indicator species, as well as for all other wildlife species on the Forest, will be managed to maintain viable populations (36 CFR 219.19).

A list of the selected Forest management indicator species is shown in Table 2-6.

**TABLE 2-6. MANAGEMENT INDICATOR SPECIES AND THEIR ASSOCIATED HABITATS**

#### Umatilla National Forest

Species	Habitat Types
Steelhead (anadromous fish)	Streams/riparian habitats
Rainbow trout (resident)	Streams/riparian habitats
Rocky Mountain elk	General forest habitat and winter ranges
Pileated woodpecker	Dead/down tree habitat (mixed conifer) in mature and old growth stands
Northern three-toed woodpecker	Dead/down tree habitat (lodgepole pine) in mature and old growth stands
Pine marten	Mature and old growth stands at high elevations
Primary cavity excavators	Dead/down tree (snag) habitat

## Nongame Species

The Forest provides habitat for many nongame species of wildlife including furbearers, songbirds, predators, and reptiles. The interest in nonconsumptive uses of wildlife (wildlife photography, birdwatching, etc) is increasing and creating an interest and concern in the management of nongame species. The nongame species most likely to be affected by Forest management activities and practices include those wildlife species requiring stands of mature or old growth timber and large diameter dead or down tree habitat.

In the Blue Mountains, nearly 100 different wildlife species of birds and mammals utilize dead and down tree habitats for nesting, feeding, and perching (Thomas and others 1979). Nearly 60 species depend on suitable trees and associated cavities for their survival. Primary excavators, such as the pileated woodpecker, three-toed woodpecker, and downy woodpecker, create holes in dead or decaying trees that may be used later by secondary cavity users such as owls, bluebirds, wrens, and flying squirrels.

Timber harvest and fuelwood cutting in the past 10 years have reduced the amount of available dead tree habitat for wildlife species. Early indications are that tree mortality from insect and disease attacks, triggered by drought conditions of the last several years, will probably provide sufficient quantities of suitable habitat in snag deficient areas. Nevertheless, given present trends, the estimated or potential populations of wildlife species dependent on these habitats are anticipated to decline.

## Old Growth Tree Habitat

A variety of wildlife species on the Forest (25 bird and 13 mammal) appears to demonstrate a high level of use or dependence on mature and old growth tree habitat. Past timber harvest activities have removed much of the suitable old growth tree habitat once found on the Forest. The remaining acres are not uniformly or well distributed. Presently there are about 190,700 acres of inventoried old growth tree habitat on the Forest, including about 10,200 acres of mature and old growth lodgepole pines. Approximately 68,850 acres of old growth tree habitat type have been identified in existing wilderness

The abundance and distribution of available old growth and mature tree habitat has become an issue with many segments of the public. This habitat component is important to the timber industry as a source of high value (and needed) timber volume, and to others as essential for wildlife species, for diversity, and for aesthetic values. Continued current timber harvest activities will further diminish and fragment the forest inventory of old growth/mature tree habitat.

The Forest supports one of the largest Rocky Mountain elk herds in the country, and portions of the Forest provide some of the most productive elk habitat in Washington and Oregon. The combined two-state summer population management objective for the Forest is 21,056 Rocky Mountain elk and 22,760 mule deer. Present populations of elk are at or slightly below state management objectives, while deer numbers have been declining for several years and are substantially below the management objectives. Of great concern is the more recent reduction in calves and fawns production and survival, resulting in a range of about 18-36 per 100 adults. In addition, state wildlife agency tracking data indicates that more elk are staying yearlong on private lands.

Other game species found on the Forest include white-tailed deer, black bear, Rocky Mountain and California bighorn sheep, mountain lion, turkey, quail, grouse, and several species of waterfowl. Other important wildlife species include beaver, bobcat, and coyote. Although bighorn sheep are indigenous to the Forest, they were extirpated from the area during the early 1920's. California bighorn sheep were introduced to the area in the early 1960's and Rocky Mountain bighorn sheep in 1982. State wildlife agencies regulate the harvest of wildlife species on the Forest.

## BIG GAME

### Management Activities and Big Game Habitat

Timber, roads, and range management practices can alter big game and other wildlife habitat faster and more profoundly than other Forest management activities. Past timber harvest activities improved the ratio of forage to cover on summer ranges, which resulted in increased capacities for elk and deer and contributed to the high numbers of animals on the Forest through the early 1980s. In many areas, however, the level and patterns of timber harvest and road construction may have reached, or even exceeded, the level at which elk habitat is improved, and may be adversely affecting it. Road use and management (closures) are another critical practice affecting big game security.

### Winter Ranges

Twenty-one winter ranges, totaling 277,677 acres, have been identified on the Forest in cooperation with state wildlife agencies. An extensive survey of open grasslands and scabrock flats (half of these winter ranges) in 1981-82 indicated that 71 percent of the surveyed area is in fair to good condition while 29 percent remains in poor to very poor condition. The survey did not consider the condition of the timbered areas. Much of the poor condition can be attributed to heavy grazing by livestock, 40 to 80 years ago. There are still some localized problems in areas presently grazed by both big game and livestock, but the trend is generally stable or upward. Habitat improvement plans have also been developed to improve the areas. Habitat conditions of forest big game winter ranges are of particular concern because management activities that disturb wintering big game animals, or poor habitat conditions, may force animals onto adjacent private lands where they will likely cause agricultural damage.

### Hunting Demand and supply

The harvest of big game animals, as well as the total number of hunters on the Forest, reached a peak in about 1977, with subsequent reductions of about 10 to 20 percent. In 1986, an estimated total of 49,900 hunters (572,800 Wildlife/Fish User Days or WFUDs) harvested about 4,265 elk and 3,250 mule deer. Forest recreation projections estimate that the demand for big game hunting will remain high and increase slightly through the next decades (see Table 23).

The Forest has an opportunity to manage habitat to increase potential elk populations. As estimated in the AMS, maximum potential big game populations can be expanded by as much as 28 percent through habitat management in the first decade. The Forest model and data have since been updated for the FEIS. A maximum increase of 10 to 15 percent may be a more reasonable figure for the short term.

Since big game hunting is the most popular recreational activity on the Forest, it has an important impact on the social and economic structure of the area influenced by the Forest. The large number of hunters who arrive in the months of October and November is equal or close to the capacity of the Forest for that time period. To some people, the capacity has already been exceeded and they have moved to less popular areas or quit big game hunting. More capacity can be created by developing more access and skewing opportunities toward the Roaded Modified end of the ROS, but this would not meet the growing demand for recreation opportunities on the Primitive and Semi-primitive end of the spectrum.

## THREATENED, ENDANGERED AND SENSITIVE SPECIES

The Endangered Species Act of 1973 requires the Forest to protect and manage threatened and endangered species and their habitats. The American peregrine falcon is classified as endangered under the Federal Endangered Species Conservation Act of 1969. Although only one recent sighting of migrating peregrine has been reported, the Forest makes up part of the

Blue Mountain peregrine breeding management area which calls for establishment of four pairs of peregrines. The Forest will cooperate with the U S Fish and Wildlife Service by providing and managing suitable habitat needed to meet recovery objectives.

The bald eagle, federally classified as a threatened species in Oregon, occurs as a late fall and winter migrant in small numbers (40 to 50 birds scattered throughout and adjacent to the Forest). Eagles use the North Fork John Day River and Camas Creek, and the Grande Ronde and Umatilla rivers, although most of the use occurs off-Forest. Large snags along these rivers are left as roost or perching sites for these scattered migrants. The Forest will cooperate with the U.S. Fish and Wildlife Service by providing or managing habitat needed to meet the recovery objectives of two breeding pairs in the Grande Ronde drainage.

Eleven additional species are considered 'sensitive' in the Blue Mountain portion of the region and include the following (1) ferruginous hawk, (2) long-billed curlew, (3) Preble's shrew, (4) Townsend's big-eared bat, (5) California wolverine, (6) grey wolf, (7) North American lynx, (8) California bighorn sheep, (9) Blue Mountain cryptochian, (10) bull trout, and (11) redband trout. Sensitive species are those that could become endangered within the foreseeable future if no management action protects their habitats.

## RIPARIAN/FISH

The Forest fish populations and associated riparian habitat are significant resources. Based on the 1975-79 spawning escapement levels, the Forest produces an estimated 4 percent of the spring Chinook salmon and 7 percent of the steelhead trout runs returning to the Columbia River system. The importance of riparian vegetation to water quality and fish habitat is well known.

The riparian area on the Forest totals 70,743 acres of which 23,548 acres are adjacent to anadromous fish streams, 18,435 acres are designated resident trout areas, 24,162 acres are designated as non-fish-bearing intermittent areas, 157 acres provide domestic water supply, and 4,441 acres are in wet areas. Four stream classes (Class I through Class IV) are recognized on the Forest, and are defined by the extent of the perennial or fish-bearing portion of the stream. A stream is typically sectioned into several classes. The stream class definitions are found in the Glossary.

Riparian areas on the north half of the Forest are typically in good condition. Less favorable riparian condition is generally found on the south half of the Forest. In addition to maintaining fish habitat, water quality, and riparian vegetation in their present condition through the Forest compliance with the Clean Water Act, restoration and enhancement programs are improving current conditions.

### Species

There are 6 reservoirs and lakes, and 900 miles of fish-bearing streams and rivers on the Forest that support a variety of cold-water fish species, including rainbow trout, eastern brook trout, and bull trout, as well as Kokanee and mountain whitefish. Two species of anadromous fish, Chinook salmon and steelhead trout are found in 489 miles of Forest streams. Currently, there are no fish species in the Forest streams that have been identified as threatened or endangered. Redband and bull trout are identified as sensitive species.

Only a small percentage of the Forest is occupied by standing waters; however, the heaviest angler use and the highest future demand for resident fishing opportunities occur on the Forest lakes and reservoirs. These are Bull Prairie, Penland, and Jubilee lakes (constructed reservoirs); Olive Lake (a natural lake enlarged by dams); and Jumpoff Joe and Lost lakes (natural lakes).

Key trout fishing streams are the North Fork John Day, South Fork and main stem Umatilla, Grande Ronde, Tucannon, and North Fork Touchet rivers. Resident trout angling on the Forest provides 75,000 WFUDs annually.

### Supply

Chinook salmon are presently found in the larger tributaries of the John Day and Snake river systems. An estimated 4,300 spawning, spring Chinook salmon produce approximately 700,000 smolts annually in 158 miles of Forest streams. Approximately 8,600 adult steelhead produce 1 million smolts annually in 489 miles of the resident rainbow habitat.

Off-Forest activities such as hydroelectric generation, irrigation, and commercial fisheries harvest have depressed adult anadromous fish spawning populations to record low levels. On-Forest activities such as road building, gold mining, and livestock grazing have also contributed to low anadromous fish numbers.

Two state operated anadromous fish hatcheries (Oregon's Lookingglass Creek Salmon Hatchery and Washington's Tucannon River Steelhead Hatchery) rely on streams draining Forest lands for sources of cold, high quality water.

Chinook salmon historically occupied streams on Forest lands in the Umatilla and Walla Walla River basins and contributed toward the Native American harvest; however, the basins no longer contain natural salmon runs because of off-Forest conditions. The Confederated Tribes of the Umatilla Indian Reservation, Oregon Department of Fish and Wildlife, Bureau of Reclamation, Bonneville Power Administration, and the Forest are currently working to restore Chinook salmon runs in the Umatilla basin. The first adult salmon returned to Forest streams in 1986.

### Habitat Restoration And Improvement

The Forest has an opportunity to increase its share of anadromous and resident fish through riparian area recovery. Both riparian area improvement and instream habitat restoration are part of the Forest total restoration program. Increases in fish production are primarily attributable to riparian management and habitat improvements; some of the potential increases are due to 'correcting' downstream off-Forest problems. Under current direction, in the next decade, fish habitat restoration and enhancement are expected to increase present habitat capability for anadromous fish by an estimated 58 percent and resident trout by an estimated 37 percent. The emphasis has been, and is expected to continue to be, on restoration of spring Chinook salmon and summer steelhead trout habitat particularly in the North Fork John Day sub-basin. Maximum potential increases are over 400 percent by the year 2030.

Examples of recent and ongoing fisheries enhancement projects include: (1) Clear Creek-Granite Creek Anadromous Fish Rehabilitation Project (North Fork John Day District); (2) log weir and deflector construction in Thomas Creek (Walla Walla District) to prevent summer losses of rearing steelhead; (3) log weir construction in Charley Creek (Pomeroy District) to improve rearing habitat condition; and (4) rock weir construction in Wilson Creek (Heppner District) to increase survival of summer steelhead.

### Demand

Except for a limited harvest by Native Americans, most of the harvest of Forest-produced anadromous fish occurs downstream from the Forest or in the ocean. Demand for salmon products has been high for some time, with prices rising steadily, and at times dramatically, resulting in an almost fourfold increase between 1967 and 1976. Demand for anadromous fish will continue to exceed availability; all harvestable fish produced over escapement needs could be utilized by commercial, Native American, and sport fishermen. Strong pressure to expand

salmon stocks is expected to continue into the foreseeable future. The goal of the Northwest Power Planning Council is to double the fish runs by the year 2000.

Based primarily on license sales and participation rates, total demand for sport fishing in the Pacific Northwest Region for both resident and anadromous fish is expected to increase by about one-third between 1980 and 2000. By 2030, demand for sport fishing is expected to increase by at least 90 percent. The demand for resident trout sport fishing opportunities is expected to be met on the Forest. The projected increases in anadromous fish production will play a key role in meeting the demand for increased salmon production in the Columbia River Basin.

## RANGE

Grazing has been an important use of the area since before the Forest was officially established. Grazing use of the Forest is only a fraction of what it was 80 years ago. Causes for the reduction are adjustments made by the Forest to recognize the carrying capacity of the range, loss of forage areas, and aggressive fire prevention and suppression practices. Such practices helped convert open grazing areas to forested sites. Forage areas have been created by regeneration timber harvest over the past 20 years and have helped to re-create the forage supply for both livestock and game animals.

The Forest forage supply still plays an important role in the area's ranching economy. There are 51 Forest range areas allotted to 74 permittees. Currently, grazing allotments cover approximately 1,075,000 acres which include most of the Umatilla's forest land. Approximately 10,000 cattle and 8,000 sheep use Forest land for 3 to 4.5 months each summer. The amount of use is equivalent to 54,400 AUM's. Individual grazing permits specify the numbers of animals, seasons of use, and grazing allotment where use is authorized.

The grazing allotments on the Forest are presently classified as follows: 23 are rated as having Quality Intensive (QI) management; 10 are rated Quality Extensive (QE); 4 are vacant (PA); 12 are underdeveloped (PB); and 2 are classified (PD) with some resource allocation problems. All allotments have long-range Allotment Management Plans (AMP's) except for some on/off and transitory sheep allotments. About 10 AMP's need revision and/or updating to be fully viable. (See update schedule under Range in Appendix A; the same table displays the grazing system in use on each allotment.)

### Forage Supply

On the average, an estimated 525 million pounds of forage are produced annually on the Forest. Transitory range accounts for at least 60 percent of the forage production. Production per acre generally triples once timber harvest opens up the forest canopy. The increased production occurs within the first few years after tree removal and will gradually remain available for about 20 years. Production rapidly decreases over the next few years as the forest canopy closes in, and returns to original levels again by about 30 years following harvest. If the harvest area is reseeded to enhance forage production, the production per acre will usually be tripled above the natural-seeding levels. About 10 percent of the transitory range production stems from domestic species seeded as a result of some management activity. The major portion of forage production is provided by the native grass and forb species. Of the total palatable forage, about 36 percent (189 million pounds) can safely be removed by browsing or grazing animals on an average of all slope classes, but only 31 percent of the forage producing area is suitable for allocation to domestic livestock because of steepness of slope or other factors. Currently, about 44 million pounds of the available, palatable forage on suitable range are allocated to domestic livestock.

The Forest has the potential to increase current livestock use by more than 60 percent based on the available forage supply. The maximum potential forage production levels could support over 103,000 AUMs per year; an 87 percent increase over current permitted grazing levels. Increased forage production has been realized through utilization of transitory range created by timber harvest activities and seeding of forage species. Investments have been made in range improvements to prevent overuse, to distribute grazing to lightly used areas, or increase utilization of transitory range. Increased use has been made by big game as well as by livestock.

### Range Condition

Range condition is defined as the degree of departure of the present vegetation from the potential natural community (the cause of the departure is not considered). 'Excellent' range condition implies that the current situation is 81-100 percent of that found in an undisturbed or unused condition. 'Good' condition is 61-80 percent of potential, 'fair' is 41-60 percent, 'poor' is 21-40 percent, and 'very poor' is 1-20 percent.

About 49 percent of the total acres in Forest grazing allotments contain usable forage. Of the usable acreage, less than 1 percent is in 'excellent' condition, 8 percent is 'good', 64 percent is 'fair,' 27 percent is 'poor,' and less than 1 percent is "very poor". These range condition acreage totals are based on analyses conducted in the late 1950's and early 1960's. However, many of the established, long-term transect readings show that range condition across the Forest has increased by nearly one condition class (i.e , "fair" acres have moved up to "good") since original data collection.

### Demand

Nationally, the livestock industry is in a long-term decline as demand for red meat decreases. However, the local livestock industry production has increased, the trend has continued despite decline in livestock market prices. Locally, demand for grazing land for livestock is in excess of the current permitted use. In the judgment of Forest range managers, the local industry would utilize about 75 percent of the maximum forage production, given the opportunity.

Demand for grazing land has also increased as an indirect result of the rapid development of irrigated cropland in the Columbia River Basin. The residues from dryland wheat and pea crops provide a cheap supply of winter feed for livestock. The availability of cheap feed increases the potential for more animals which is constrained by the lack of available summer pastureland. A number of requests for grazing permits, primarily for cattle, are received each year even though permits are rarely available.

## TIMBER

The Forest is an important producer and supplier of sawtimber and other wood products. Trees cut by local companies are processed into lumber, plywood, wood chips, and furniture. The timber resource has a strong influence on economic well-being and lifestyles of communities and their residents; some communities are highly dependent on timber. The resource has important economic effects on employment, income, county budgets, and returns to the National Treasury.

Conifer forests cover about 75 percent of the Forest, but only about 58 percent (807,233 acres) is classified as tentatively suitable for timber production. Commercial conifer species dominate 17 of the 44 identified plant community types. The dominant species are Douglas-fir, Engelmann spruce, grand fir, lodgepole pine, ponderosa pine, subalpine fir, western larch, and white fir. There are no commercially important hardwood stands.

Ponderosa pine has been, and still is, the most desirable commercial species, followed by white fir, Douglas-fir, western larch, Engelmann spruce, and others in descending order. From 1979 through 1988, ponderosa pine constituted about 27 percent of the sawlog volume sold, averaging 29 MMBF/year. Timber sales not containing substantial amounts of ponderosa pine are more difficult to sell. Of the timber offered for sale during the 1979-1988 period, about 10 percent of the offered volume did not sell. In addition, recent inventories have shown a decline in available ponderosa pine volume on the Forest.

#### Current Timber Harvest Levels

Timber harvest levels are currently based on the Timber Management Plan developed for the Forest in 1963. The plan has been amended and updated to reflect major changes in policy direction, and to reflect a land base changed by the designation of wildernesses and significant land exchanges.

Levels of timber harvest have fluctuated widely over the past decade (1979-1988) leaving no clear trend (see Table 2-7). The average total volume of timber actually harvested over the past 10 years is about 148.5 million board feet. The average includes volume of green sawlogs, chips, cull, and other materials.

**TABLE 2-7. RECORD OF TIMBER HARVEST**

Umatilla National Forest (Cumulative Total)<sup>1</sup>

Year	Harvest Volume MMBF	Total <sup>1</sup> Harvest MMBF	Year	Harvest Volume MMBF	Total <sup>1</sup> Harvest MMBF	Year	Harvest Volume MMBF	Total <sup>1</sup> Harvest MMBF
1922	1.3	1.3	1945	24.9	239.4	1968	179.8	1871.1
1923	1.9	3.2	1946	16.4	255.8	1969	165.9	2037.0
1924	1.6	4.8	1947	21.3	277.1	1970	151.6	2188.6
1925	4.8	9.6	1948	33.2	310.3	1971	122.5	2311.1
1926	14.0	23.6	1949	30.5	340.8	1972	126.5	2437.6
1927	16.5	40.0	1950	33.7	374.5	1973	222.5	2660.1
1928	1.8	41.9	1951	22.7	397.2	1974	161.0	2821.1
1929	0.9	42.8	1952	29.0	426.2	1975	198.4	3019.5
1930	3.2	46.0	1953	16.7	442.9	1976	202.1	3221.6
1931	0.9	46.9	1954	37.1	480.0	CQ <sup>2</sup>	93.5	3315.1
1932	2.6	49.5	1955	32.0	512.0	1977	205.0	3520.1
1933	1.1	50.6	1956	43.6	555.6	1978	152.7	3672.8
1934	6.2	569.87	1957	55.2	610.8	1979	120.9	3793.7
1935	13.1	69.9	1958	61.9	672.7	1980	105.5	3899.2
1936	17.8	87.7	1959	89.0	761.7	1981	146.8	4046.0
1937	18.1	105.8	1960	104.7	866.4	1982	93.4	4139.4
1938	2.8	108.6	1961	85.9	952.3	1983	135.6	4278.0
1939	9.3	117.9	1962	109.4	1061.7	1984	181.9	4456.9
1940	17.9	135.8	1963	134.2	1195.9	1985	144.4	4601.3
1941	8.9	144.7	1964	127.0	1322.9	1986	165.1	4766.4
1942	11.0	155.7	1965	116.9	1439.8	1987	215.5	4981.9
1943	29.0	184.7	1966	132.5	1572.3	1988	175.8	5157.7
1944	29.8	214.5	1967	119.0	1691.3			

<sup>2</sup> Conversion Quarter (6/1-9/30P6)

Figures for 1922 through 1962 are on a calendar year basis. Figures for 1963 through 1988 we on a fiscal year basis.



Information for 1962 and 1963 was taken from the Timber Sale Action Plan and from the Annual Progress of Timber Management Report for 1950 through 1961. All other Information was taken from the Umatilla National Forest Quarterly Timber Cut and Sold Report.

### Forest Supply Potential

According to the AMS, the Forest has a potential to increase timber supplies. Based on the use of intensive silvicultural practices and genetically improved stock, the maximum harvest potential (TSPQ) for the Umatilla National Forest in the first decade is about 266 million board feet per year (adjusted in the FEIS) considering legal requirements and a policy of nondeclining flow. The estimate includes all volume such as fuelwood, chips, and green sawlogs. The biological potential amounts to 207 MMBF per year. The long-term sustained-yield level of the fully regulated forest is estimated at 257 million board feet per year (Benchmark 1A), a substantial increase over the existing situation.

### Regional Supply

Regional and national timber supply and demand will influence local timber supply and demand. A discussion of each follows. According to the RPA Assessment and 1985 update, total projected softwood roundwood harvests would rise 24 percent from 9.6 billion cubic feet in 1980 to 11.9 billion cubic feet in 2030. Though the outlook is for increased softwood harvests nationally, there are important differences among the major softwood timber producing regions.

In the Douglas-fir subregion, projected annual harvest from 1980 to 1990 was about 2.3 billion cubic feet. It then declines slightly to about 2 billion cubic feet per year. The level is roughly maintained through the rest of the 50-year projected period (RPA 1984, 1985). Currently, part of the timber formerly supplied by the Pacific Northwest is now being supplied by the South and Canada. However, the supply situation from other sources can be expected to change within 15 years. The projected change indicates a drop in supply capability of 30 to 50 percent from the current relatively high levels. At about the same time this drop in supply capability begins to occur for the other sources, the growth of wood fiber on private lands in the Pacific Northwest would again be reaching its capability. The private lands in the Pacific Northwest could then become a major source of supply for softwoods to meet national and international demand. During the period before the private lands in the region regain their full supply potential, the public forests would be looked upon as a major source for a relatively stable supply of wood fiber (Schallau 1985, 1986).

### Regional Demand

Over the next 10 years, timber demand from the Pacific Northwest geographic region will grow slowly. Although there is a backlog of unfulfilled housing demand, the future will depend primarily on the continuing strength in personal income and the availability of affordable housing and financing.

The long-term outlook for the solid wood products industries contains a number of challenges. Evaluation of recent data and information indicates that the demand for timber is increasing at a moderate rate in contrast to the slowdown that occurred in the early 1980's. The dominating factor is that supplies from private lands will be declining over the next 20 years, thereby increasing the demand for (and prices for) national forest timber supplies. At the same time, however, the timber industry must make its own accommodations to a changing marketplace irrespective of national forest timber supply. Canadian and southern region dominance in wood products markets will continue to offer a severe economic challenge to the Pacific Northwest Region (Schallau 1985, 1986). The long-term trend in housing demand, the growing popularity of construction methods that use less wood, availability of wood substitutes, and a shift in business management strategies and methods, all contribute to a potential shift in future demand, not just to price and supply changes (Adams and Haynes 1985).

## UMATILLA NF TIMBER SUPPLY AND DEMAND

All of the Forest area is located within the 10-county area of influence and most of the timber harvested on the Forest is processed by mills in these counties. However, no readily available compilation of data exists that isolates the Forest contribution to the local timber supply and demand. Available study information utilizes county boundaries which do not coincide with Forest boundaries or its area of influence. Also, it is well known that timber purchasers go back and forth from one forest and/or county to others to procure logs. Therefore, in order to study the supply and demand situation for the area, it was necessary to use the Oregon State system of regional analysis and the four southeast counties of Washington to define a 12-county study area. The process is described in Chapter III of the FEIS and in the process records.

In this area, there are slightly more than 4 million acres of commercial forest land and about 35 billion board feet of sawtimber growing stock. About three-quarters of the land and about 84 percent of the growing stock are found on the national forests. About one-quarter of the land and about 30 percent of the growing stock are found on the Forest (Norbury 1982).

The average annual harvest for the national forests in the 10-county area during the last 5 years (1984-88) has been nearly 650 million board feet. National forests contribute about 75 percent of the annual harvest in the area. To place the Forest supply potential in context of its relationship to northeast Oregon and southeast Washington, the supply potential of the area needs to be considered. Table 2-8 displays the supply sources in the area other than the Umatilla National Forest.

**TABLE 2-8. PROJECTED DEMAND FOR UMATILLA NATIONAL FOREST TIMBER**  
(MMBF ASQ PER DECADE)

	DECADE				
	1990-99	2000-09	2010-19	2020-29	2030-39
Estimated Total Demand					
Low	6,112	6,112	6,112	6,112	6,112
Average	7,334	7,334	7,334	7,334	7,334
High	8,555	8,555	8,555	8,555	8,555
Non-Umatilla Forest Supply <sup>2</sup>	5,936	5,792	5,599	5,727	5,958
Demand for Umatilla Timber <sup>3</sup>					
Low	176	320	513	385	154
Average	1,398	1,542	1,735	1,607	1,376
High	2,619	2,763	2,956	2,828	2,597
Umatilla Percent of Total Demand					
Low	2.9	5.2	8.4	6.3	2.5
Average	19.1	21.0	23.7	21.9	18.8
High	30.6	32.3	34.6	33.1	30.4

<sup>1</sup> Includes slate lands, industrial forests, other private lands, national forests, and other public lands  
Sources. State of Washington Timber Harvest Reports 1979.1988  
State of Oregon Timber Harvest Report 1979.1988

<sup>2</sup> Includes all land ownership classes except the Umatilla National Forest  
Sources. Forestry In Oregon' 1980 Oregon Timber Supply Assessment

<sup>3</sup> Demand for Umatilla National Forest timber is calculated by subtracting the non-Umatilla timber supply from estimated total demand

Milling capacity in the area has not changed substantially in recent years. Some closures have occurred, such as Kinzua, Hudspeth, and Harris Pine; and some new mills have been constructed, including Malheur Pine. Sawmill capacity will probably not be completely utilized, but all major mills in the area will be active.

Table 2-8 shows projected demand for Umatilla National Forest timber in millions of board feet per decade. Total demand is derived as a function of past harvest activity. Total demand is first estimated using harvest reports from all landownerships, including national forests, in the 12-county area. The high demand estimate is the actual harvest recorded in the 12-county area in the 5 highest years of the past decade, and is considered to be the maximum demand probable. The low demand estimate is the actual harvest recorded in the 12-county area in 1979-1983 (recession years) and is considered the lowest demand probable. The average demand estimate is simply the average actual harvest recorded in the 12-county area over the past decade (1979-1988). Demand increased steadily between 1981 and 1986. It leveled off in 1987, and declined in 1988, the last year for which data is available.

As seen in Table 2-8, the Forest has the potential of exceeding the projected average demand for all decades. The potential of each alternative to meet estimated demand is discussed in the Timber Supply section in Chapter II of the FEIS.

#### Fuelwood Supply and Demand

Prior to 1974, fuelwood was an incidental program on the Forest. Demand was primarily limited to local residents who had traditionally burned wood for home heating. The 1974 oil crisis caused many people to view wood as a more economical and reliable method of home heating. Coupled with the rising demand for fuelwood in the early 1970s was the growing supply of readily available dead lodgepole pine created as the result of the mountain pine beetle outbreak.

In 1983, a charge firewood program was initiated. The number of permits rose, peaking in 1985, and has decreased since then. The average volume for 1983 through 1988 is 22 MMBF/year; the most recent year is about half the average. Demand is expected to remain at a level near the 1986-88 average, or 16.7 MMBF/year.

#### Other Products

During the economic recession in the lumber market, starting in 1980, and as a result of the associated increase in the value of wood chips, a commercial market formed for dead lodgepole pine and cull material. For the 4-year period from 1980 to 1983, an average of 30 million board feet of dead lodgepole pine was sold annually. Because of the established markets in the area, the future demand for chippable material should remain constant but the availability of dead lodgepole pine will be reduced.

#### Harvest Management Practices

Timber harvest activity on the Forest has generally been in response to the demand for wood and wood products. Current timber harvest activities are based on resource objectives set forth in unit land management plans and the 1963 Timber Management Plan. Management is of moderate to high intensity for all coniferous timber species and landtypes on the Forest. The historic trend has been to manage those landtypes and timber species where the lowest logging cost would be incurred and/or the mix of high valued species is the highest.

Even-aged silvicultural practices are the most commonly used methods of managing forested timber types. Silvicultural practices include planting and natural regeneration precommercial thinning, commercial thinning, removal cuts, salvage harvest, and regeneration harvest by clearcut, seed tree, or shelterwood. Although not currently practiced, uneven-aged silvicultural management will become more common. Practices will be similar to those for even-aged management, with the exception being that single tree selection or group selection will be used as the regeneration method.

Tractor skidding was and is the least-cost logging system followed by cable and aerial (helicopter) logging methods in ascending order. Timber sale design may include one or more of the following logging methods. Horse, feller-buncher, whole tree chipping, crawler tractor, rubber-tired skidder, hi-lead, skyline, multi-span skyline, and helicopter. Prescribed logging systems vary according to landtype, resource management objectives, and economics of operation.

Several of reforestation practices are employed in establishing a new forest including site preparation, planting or natural regeneration, release, and protection. Currently, about 4,000 acres are planted annually, and another 2,000 acres regenerated naturally. The Forest has established a genetics program with the goal of increasing tree growth and yield, disease resistance, and other desirable characteristics.

Timber stand improvement (release thinning, and weeding and cleaning) is used to increase growth and yield, improve species composition, and control insects and diseases. Timber stand improvement work is accomplished on approximately 2,000 acres of the Forest annually. Protection of young trees from a variety of potentially damaging agents is also practiced.

## WATER

The 900+ miles of fish-bearing rivers and streams on the Forest are valuable resources in northeastern Oregon. The streams and rivers originate in, and flow through, productive forests whose wood products are vital to the local economy. They also provide excellent quality water for anadromous fish spawning and rearing areas, and habitat for resident trout and other native fish species both on and off the Forest. The streams and rivers provide high quality water that is used off the Forest by municipalities for domestic and industrial use, and by agriculture for irrigation of croplands and orchards. Several other uses such as riparian and wildlife habitat, range management, and outdoor recreation are dependent upon, or influenced by, the quality or quantity of water issuing from Forest watersheds.

### Water Production

The rivers and streams on the Forest are located in the upper reaches of four large drainage basins: The Umatilla, John Day, Walla Walla, and Grande Ronde river basins. The major rivers are the North Fork John Day, the north and south forks of the Umatilla and Walla Walla, and the Touchet, Grande Ronde, Wenaha, and Tucannon rivers. The headwaters of all but the Grande Ronde originate on the Forest. Across the Forest, 52 principal watersheds produce an average of 2,460,000 acre-feet of water per year. The amount of water produced on the Forest is a function of precipitation, and is governed by the physical characteristics of the watershed.

Although water is plentiful in Blue Mountain streams, the seasonal distribution of flow presents problems for many water users. The Forest is in a snow dominated region where most of the annual precipitation comes in that form. Snow accumulates in the higher elevations throughout the winter, and most of the total water yield from Forest watersheds occurs during the spring snowmelt season of May and June. In contrast, rainfall is generally very sparse during the latter part of the summer growing season from July through September. During this period, streamflow is dependent upon replenishment from water stored in the soil mantle and upland

aquifers. These contributions are limited due to the low water retention characteristics of Forest watersheds. As a result, summer base flows in the stream are very low relative to the winter/spring snowmelt period.

Timing of the snowmelt runoff is dependent primarily on elevation, aspect, and yearly weather characteristics. Snowmelt rates at the higher elevations are very important to local irrigators since runoff which occurs before the growing season has limited usefulness for them due to a general lack of upland storage facilities. Rain-on-snow events and brief periods of unusually warm weather (chinooks) during the winter months generate the highest peak flows. Summer thunderstorms can create locally heavy runoff for short periods.

#### Water Quality

The Forest has conducted an extensive program of water quality monitoring in streams in the Blue Mountains. Monitoring has included both ambient condition and impacts of specific projects on water quality and has focused on potential non-point sources of pollution typically associated with land management activities, including sediment, turbidity, and temperature. The overall indication given by monitoring is that water quality is excellent and exceeds applicable state water quality standards.

Stream temperatures above those desired for high quality fish habitat commonly are reached during the late summer months in many reaches on the south half of the Forest. Sediment levels in Forest streams vary significantly with flow, and are highest during periods of spring snowmelt. However, the sediment loading from Forest land is significantly lower than from downstream agricultural lands. Geologically, the watersheds on the Forest are generally in very stable condition.

#### Water Use

Water produced on the Forest is used for a variety of purposes off the Forest. Agricultural irrigation accounts for 88 percent of the total consumed; domestic use by municipalities, 11 percent; and industrial use, 1 percent. Nonconsumptive uses of water on the Forest are for maintenance of riparian areas and stream channels, fish and wildlife habitat, wetlands, floodplains, and lake levels, and for sluice mining. Consumptive use of water on the Forest is mainly for administrative purposes such as fire suppression, dust abatement and construction of roads, wildlife and livestock watering, administrative sites use, special use summer residences, and developed recreation sites.

#### Water Demand

Demand for water has increased from that necessary to sustain native populations of fish, wildlife, and people in the mid-1800's to the present high demand for a wide variety of uses. In many basins surrounding the Forest, demand for surface waters (and in some instances, ground water as well) exceeds supply during critical late summer low flow periods. An overall increase in water demand is projected for the region (Pacific Northwest River Basins Commission 1979).

Competition for off-Forest use of surface runoff during low flow periods is expected to intensify, particularly in the Umatilla, Walla Walla and John Day basins. Three notable factors contribute to this situation. First, ground water tables continue to decline in certain areas of the Umatilla Basin due primarily to irrigation withdrawals. A second factor is the major effort being undertaken on a regional basis to restore and improve the runs of anadromous fish in the Columbia River Basin. These efforts include not only the improvement of stream habitat and the removal of barriers to fish passage, but also the provision of sufficient instream flows to allow for fish migration, spawning, and rearing. A third factor contributing to surface water

demands in the John Day Basin is the provision of instream flows needed to meet the requirements of the state designated Scenic Waterways reaches.

These factors, and other water use concerns, have increased local public interest in the prerogatives available to Forest managers to maintain or improve annual water yield, and to increase late season flows. In reality, the Forest has only limited capacity to significantly influence these parameters through land management practices within the context of multiple-use objectives.

#### Potential Water Developments

Few feasible dam sites have been identified which fit into regional water development strategies and objectives, and no specific dam proposals for Forest lands have been submitted for consideration. Out-service proposals for water resource development projects on national forest lands are evaluated on a case-by-case basis using procedures mandated by the National Environmental Policy Act. Anticipated water developments for Forest management purposes are primarily related to livestock and wildlife water developments.

#### Water Rights

Currently, the Forest has applied to the States of Oregon and Washington for water rights for about 1,400 water developments used for recreation, livestock, and wildlife. The water developments consist of stockponds and developed wells and springs. The Forest is committed to protecting minimum instream flows needed for these purposes. Quantifications of minimum instream flows needed to protect 'reserved rights' and other instream flow needs are conducted on a case-by-case basis in response to out-service proposals which have the potential to adversely impact these water needs.

## MINERALS AND ENERGY

### LOCATABLE MINERALS

Locatable mineral deposits on public domain lands may be prospected for and extracted under the 1872 mining law, as amended and supplemented. Although administration of the general mining laws is the responsibility of the Bureau of Land Management (BLM), a 1957 Memorandum of Understanding between BLM and the Forest Service provides for joint administration of the mining laws on National Forest System lands. Regulations covering surface use of the national forests under the mining laws were promulgated in 1974 to provide for orderly development of locatable mineral resources and for subsequent reclamation of the land. The Forest Service minerals program objectives are to manage National Forest System lands to accommodate and facilitate the exploration, development, and production of mineral resources, while integrating these activities with the use and conservation of other resources to the fullest extent possible.

The mining history of the Forest is long (since 1862) and colorful. The southeastern portion of the Forest is in the heart of the most productive gold and silver region in the State of Oregon. Other metals including copper, lead, and chrome also have been produced in the Forest vicinity. Table 2-9 lists metals and minerals found on the Forest and indicates their potential for development.

**TABLE 2-9. MINERALS AND METALS FOUND ON THE UMATILIA NATIONAL FOREST**

Mineral Metal*	Status on Forest
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Chromium	Known occurrences, small potential
Platinum Group	Minor placer by-product
Mercury	Known occurrences, small potential
Zinc	Production by-product from precious metals mining
Tungsten	Known occurrences, small potential
Gold	Over 3.5 million ounces produced in NE Oregon, much from Umatilla
Silver	Over 5 million ounces produced in NE Oregon, much from Umatilla NF,
Antimony	Known occurrences, small potential
Vanadium	Minor occurrence in gold-quartz vein, insignificant
Copper	Nearly 10,000 tons produced in NE Oregon, little from potential
Lead	Production by-product from precious metals mining
Molybdenum	Several occurrences, significant future potential

\*All are listed as strategic and critical minerals by the US Bureau of Mines (Regional Forester 1920/2800 Memo to Forest Supervisor, January 25, 1983).

### Production and Trends

Metals produced from both lode and placer mines in northeastern Oregon and the general area of the Umatilla National Forest have been substantial. Current average annual production projected for the next decade is estimated at \$900,000.

Production is currently at a moderate level. Although, in the past, the Granite and Greenhorn areas at the far southeastern end of the Forest produced nearly 0.5 million ounces of gold and 1.4 million ounces of silver. With the increase in gold and silver prices, the area has reemerged as a focus of mining interests. Recent advances in previous mining technology are trending toward processing large tonnages of low value ore. However, the forest area lends itself more to low tonnage and high quality processing.

There are currently thousands of lode and placer claims in the mineral belt of northeast Oregon. Approximately 1,100 unpatented mining claims exist on the Forest. Most of this mineral activity is in the Granite-Greenhorn area, with other minor claim staking scattered elsewhere. Mining activities on the Forest, from prospecting through production, are expected to continue. Demand for minerals is variable. The minerals in highest demand are gold and silver. The remaining mineral commodities are in low demand.

### Withdrawals

All national forest lands are open to mining except those areas specifically withdrawn from mineral entry. The Forest has a responsibility to identify areas with resource values that could be affected by mining activities and recommend that the BLM remove the area from mineral entry. The Forest currently has 38 withdrawals covering 142 sites. There are four other-agency withdrawals within the boundaries of the Forest. The mineral withdrawals on the Forest have been reviewed and recommendations completed, the BLM will be reviewing the recommendations.

There are now 353,273 acres of the Forest withdrawn for wildernesses, Wild and Scenic Rivers, municipal watersheds, Research Natural Areas (RNA's), and administration and recreation sites. Mining claims which predate withdrawal, including those within wilderness, may continue to be worked under the mining laws if they contain a valid discovery of a valuable mineral.

## **LEASABLE MINERALS**

The Forest Service has no statutory responsibility to issue leases or permits on lands reserved from the public domain. In some cases on national forest land, the Secretary of Agriculture has consent authority for leasable minerals. For leasable minerals, the Forest Service provides advice on how to protect surface resource values and gives recommendations or consent to leasing. Where the Forest Service is permitted to sell certain mineral materials, the permit includes requirements for adequate protection of other resource values.

### **Oil and Gas**

Although current interest in leasing has waned, the Forest is considered to have significant potential for oil and gas development. According to regional leasable mineral assessment (Tennyson and Parrish 1987), between 20 and 25 percent of the Region's oil and gas leases are expected to occur on the Forest. Currently, only 20 oil and gas leases involve Forest land covering about 109,025 acres either on or contiguous to the Forest. To date, no drilling has occurred.

### **Coal**

A new coal field containing the most extensive lignite deposit in the State of Oregon has been found in northern Wallowa County, and extends into the State of Washington (Ferns 1985). Based on the currently available information, a resource of nearly 2 billion tons of lignite is estimated. Industry currently values only the upper, cleaner coal seam where it is under less than 150 feet of overburden. Under these restrictions, the estimated reserves are 240 million tons. Only a small portion of this tonnage is within the Forest Boundary.

In the past, coal was mined at Coalmine Hill, southwest of Heppner, Oregon. Four coal patents were issued between 1881 and 1904 and prospect pits are still in evidence along Willow Creek in the Coalmine Hill vicinity. Although lenses and thin beds of good bituminous coal are present, they are too thin, too intimately mixed with carbonaceous shale, and too structurally deformed to be of commercial interest.

### **Mineral Materials**

Sand, gravel, crushed rock, building stone, and some limestone occur within the Forest Boundary. These are all low value materials which must be near transportation routes, and usually the point of consumption, to be utilized. A continuing need for some quantities of these materials can be anticipated, with increased demand during periods of growth. The Forest Service may dispose of obviously common varieties of mineral materials, such as cinders, building stone, and rock or sand.

## **ENERGY**

During the late 1970's and early 1980's, interest in small hydroelectric developments was strong in the northwest. However, the Forest has limited potential for this type of development. Currently, the Forest has no Federal Energy Regulatory Commission (FERC) applications or permits.

### **Geothermal**

A few hot springs are known to occur in and near the Forest, and there is some potential for direct use of the geothermal resource. Currently, there are no geothermal leases or lease applications on the Forest. The U.S. Geological Survey considers some lands in the vicinity prospectively valuable for geothermal resources, some of which partially overlap the Forest Boundary.



## Cogeneration

Wood fiber is becoming more important as an alternate energy source as the costs for conventional energy sources (i.e., natural gas, oil, electricity) rise. Periodic interest has been shown for the use of wood and wood residue as a fuel for wood-fired electrical generation plants. One such electrical generation plant associated with sawmill operation has been constructed and is operational at Heppner, Oregon. As electrical rates increase, more demand will be made for wood and wood residue as hog fuel for electrical generation.

## INFORMATION, INVENTORY, AND RESEARCH NEEDS

This section identifies Forest needs for information and research to add to current knowledge. The list is not exclusive and may change as needed.

### RECREATION

- Appropriate recreation densities for calculating 'practical maximum capacity' for Umatilla NF Recreation Opportunity Spectrum (ROS) classes.
- An effective and economical recreation survey technique for measuring the amount of visitor use (including encounter levels) and user satisfaction for each ROS class
- Representative models of the estimated demand for various classes of recreation opportunities.
- The maximum amount of hunting which the Umatilla National Forest can sustain while maintaining hunter satisfaction. The type of hunting experience (setting, experience opportunities) desired by the hunting public.
- Complete inventory of capacities and conditions for the Forest's identified dispersed use sites.

### WILDERNESS

- Appropriate standards for selected indicators of Limits of Acceptable Change (LAC) in various recreation opportunity classes, especially in wildernesses.
- The effectiveness of the LAC planning and management concept as an indicator in monitoring ecosystem change and trends in wilderness use, and user satisfaction
- How small wildernesses, such as the North Fork Umatilla or Tower Unit of the North Fork John Day, can best provide 'opportunities for solitude or a primitive and unconfined type of recreation.'
- Baseline data levels of air quality related values and LAC for each of the wildernesses.
- Existing campsite conditions within the wildernesses and roadless areas so that appropriate indicators of visitor use can be selected and a baseline established to measure changes.
- Determination of 'natural' versus 'unnatural' buildups of fuels for planned ignition fire prescriptions.

### RESEARCH NATURAL AREAS

- Complete the inventory to identify the areas which represent the Forest contributions to the RNA system for the Ochoco, Blue, and Wallowa Mountains Province.

## **WILDLIFE**

- The value, importance, or need of old growth habitat for wildlife species indigenous to northeastern Oregon.
- Effective techniques for managing old growth stands and retaining desired characteristics for long periods of time.
- Need to establish indicator species for ponderosa pine old growth, and other Forest wildlife habitats. Validation of appropriateness of pileated woodpeckers as indicator species for old growth habitat on the Forest.
- Inventory of dead and down tree habitat, and a determination of the relationship between timber management and firewood cutting and future dead and down tree habitat.
- Evaluation of amount and type of habitat needed by cavity nesters, particularly wildlife tree clump requirements for cavity dependent species. Validation of the number of dead trees per potential population levels of cavity dependent species outlined in Wildlife Habitats in Managed Forests (USDA Forest Service Publication #553).
- Validity or soundness of management requirements (MR's) used in the plan for providing for wildlife species viability.
- Inventories to identify potential or existing bald eagle roost sites and territories and potential peregrine falcon nest sites and territories done in accordance with respective recover plans and in cooperation with state wildlife agencies.
- Inventories of all threatened, endangered, and sensitive wildlife species to identify location and distribution of existing and potential habitats.

## **BIG GAME**

- The correlation of elk hunter numbers with elk population fluctuation. (Is the amount of hunting directly proportional to the number of elk?)
- The recreational value of big game and fishing RVD's for northeastern Oregon using more recent data and methods. Assigned RPA values appear low; most recent Oregon studies are out of date.
- Effects of human disturbances (e.g., logging activities, vehicular traffic on roads, and trail use) on big game habitat effectiveness.
- Responses of big game species, particularly elk, to improved grazing systems (i.e., deferred and rest/rotational grazing). The effect of fall or late summer livestock grazing on big game winter ranges in terms of available winter forage.
- Correlation between habitat capability (effectiveness) and actual populations,
- The effect of low male to female ratios on the reproductive performance of elk herds.
- Effects of Forest prescribed burning program on wildlife habitat (forage, cover) and species, especially big game and ground dwelling species.
- Effects of uneven-aged management on big game habitat (cover), and big game response (use) of these forest conditions.

## **FISH**

- Complete inventory of anadromous and resident fish stream conditions in conjunction with stream rehabilitation work.

- Effectiveness of riparian conditions and fish habitat improvement projects on production of resident and anadromous fish.
- Bull trout population density and fish distribution study. Redband trout population distribution study.
- Inventory of riparian vegetative types and existing condition and baseline inventory of riparian ecological potential. Complete limiting factors assessment of the Forest fish habitat with attention on sediment, water temperatures, low flows, rearing habitat, and large wood. Determine methods for estimating in-channel future potential large woody debris.
- Effectiveness of Best Management Practices in protecting fish habitat
- Verification of Forest stream classes, especially for Class III streams.
- Level of instream flows needed to sustain aquatic organisms, proper functioning of stream channel, or existing beneficial uses of the stream. Relationship of sediment loading and transport to fish habitat parameters and ultimately to fish production.

### **RANGE**

- Comparison figures for range forage consumption for cattle, sheep, elk, and deer for both summer and winter periods.
- Evaluation of existing conditions on riparian areas in good condition, compared to the grazing management system in effect in the area, and possible changes for riparian areas in less than good condition. Also, comparisons to existing riparian area studies to determine why the existing areas are in good condition.
- An evaluation of productions, timing, and location of transitory range forage for the Forest.
- Evaluation of continually evolving information on grazing systems and grazing practices for use on the Forest.

### **BOTANICAL**

- Completion of the Forest inventory of threatened, endangered, and sensitive plants.

### **TIMBER**

- Response of plant communities to management activities and various prescriptions including harvest, slash disposal, and reforestation.
- Growth and yield studies for managed stands to verify and build data base for future Forest and project plans, assist in monitoring yields, and for site-specific information for project level planning
- The effects on growth and yield of stand management for wildlife, visual, etc., objectives, rather than stand management for timber objectives.
- Prospects for fertilization on the Forest for increasing tree and stand growth.
- Use of pruning to increase quality and value of ponderosa pine and other species.
- The prospects for using uneven-aged management to meet nontimber resource objectives.
- Methods for achieving desirable natural regeneration and reducing lag time for regeneration.
- Determine the most cost-effective method(s) for stocking level control in naturally regenerated lodgepole stands.

- The most cost-effective logging method(s) for meeting timber and other resource needs.

## **WATER AND SOIL**

- The magnitude and duration of soil and site productivity changes resulting from Forest management activities. Determine strategies that minimize soil disturbance and compaction during management activities.
- Effects of Forest management activities on the magnitude and duration of water yield, sediment production, peak flows, and stream stability.
- Improved models of sediment generation and transport from managed forested watersheds.
- System of rating watershed sensitivity to management activities to refine critical threshold levels.
- Evaluation and modeling of the concept 'watershed condition' as related to activities.
- Validity or soundness of management requirements (MR's) used in the Forest Plan in providing for water and soil protection.

## **MINERALS/ENERGY**

- Identification of valid claims (validity examinations) in the North Fork John Day Wilderness.
- An updated mineral resource inventory and evaluation for locatable minerals.

## **TRANSPORTATION**

- Effects of low standard roads on overall logging costs.

## **PROTECTION**

### **Pest Management**

- Confirmation of the effects of insects and disease on growth and yield assumptions in development of Forest yield tables.
- Further research into integrated forest pest management strategies to reduce or prevent losses caused by insects and disease.
- Consequences of uneven-aged management practices on the occurrence and severity of insect and disease problems in mixed conifer and white fir habitat types.

## **SOCIO-ECONOMIC**

- Timber sale preparation costs in wildlife areas vs. nonwildlife areas.
- Effects of timber sale variables on bidding.
- Effects of timber sale variables and resource constraints on logging costs.
- Determine the economic efficiency, including long-term effects, on Forest growth and yield of genetics program.
- Update role and effect of the three Forests (Umatilla, Malheur, and Wallowa-Whitman) on the economy, lifestyles, and social organizations of northeast Oregon and southeast Washington.
- Determine or quantify economic values for local nonmarket (or nonpriced) resources, including recreation and wildlife.

## GENERAL

- Develop a Forest Plan model (process) that includes efficient resource considerations in the optimization process and interacts with a mapping system.
- Effective use of integrated, remote sensing and GIS technology to utilize resource information and inventory data.
- Develop detailed integrated Forest inventories for responding to Forest management planning problems and project questions.

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# CHAPTER 3. RESPONSE TO ISSUES, CONCERNS, AND OPPORTUNITIES

## Introduction

This chapter summarizes the major Issues, Concerns, and Opportunities (ICOs), and shows how the Plan addresses and responds to them. The initial (and ongoing) Forest planning step was the identification of the ICO's related to management of the Forest. Issues are the 'problems' or conflicts to be resolved through the planning process. Concerns and Opportunities are other points of public interest considered in developing management direction. The reader is encouraged to read Chapter I of the FEIS for a more detailed description of the ICO's. The issue identification process is documented in FEIS Appendices A and N. Nine major public issues were identified for consideration in developing management direction. They are:

ROADLESS AREAS	SOCIOECONOMIC	RECREATION
BIG GAME	RIPARIAN AREAS	WATER
TIMBER	WILDLIFE	TRANSPORTATION ..

In addition, six identified concerns and opportunities are considered. These are:

CULTURAL RESOURCES	FISH	MINERALS AND ENERGY '
WILDERNESS	RANGE	PEST MANAGEMENT

Forest Issues, Concerns, and Opportunities are addressed primarily through the following means in the Forest Plan:

- Forest-wide Standards and Guidelines including Management Requirements (MR's) and Best Management Practices (BMP's)
- Management Strategies (areas with specific prescriptions and standards and guidelines)
- Alternative Design
- Forest Management Objectives (outputs and effects)
- Mitigating Measures
- Monitoring and Evaluation

## Forest-wide Standards and Guidelines

Forest-wide Standards and Guidelines were developed to respond to all the ICO's except wilderness and roadless areas, the two area-specific ICO's. See Chapter 4 of the Plan for details on the standards and guidelines. In addition to responding to the issues, Forest-wide Standards and Guidelines are designed to meet laws, regulations, and policy requirements, to direct management activities in protecting and enhancing resources, and to mitigate potentially adverse environmental effects. (See Table E-2 in Appendix E of the FEIS for further discussion on mitigation.)

## Management Requirements

The legal or management requirements (MR's) stem from the National Forest Management Act as interpreted by the implementing regulations (36 CFR 219.27). The MR's can be viewed as

national intent in responding to the issues. The National Forest Management Act (NFMA) contains the basic direction for the following management requirements:

Resource Protection	Riparian Areas
Vegetative Manipulation	Soil and Water
Silvicultural Practices	Diversity

The Forest interdisciplinary team (IDT) defined specific management requirements, based on national and regional direction applicable to the Forest. MR's represent a floor or base level for the Forest, at or above which resources would be maintained. The requirements are essential elements incorporated into the Forest-wide Standards and Guidelines. A detailed description of the MR's can be found in the FEIS Chapter II; Appendix B, Section VI; and Appendix M.

## Best Management Practices (BMP's)

Best Management Practices are included in Forest-wide Standards and Guidelines to protect and enhance water quality. All management activities having potential to impact water are governed by these practices, generally on a project level or site-specific basis.

## Management Strategies (Areas)

Management strategies (areas) were formulated to respond directly to nine of the ICO's (including wilderness) by specifying through goals and area-specific standards and guidelines how areas of land will be managed on the Forest (see Table 3-1 and Chapter 4). Five ICO's (minerals and energy, transportation, cultural resources, socioeconomic effects, and pest management) are not area-specific, and all effects, except socioeconomic, are addressed in each management strategy. Management strategies applied to specific geographic areas of the Forest are known as management areas.

## Alternative Design

Through the Analysis of the Management Situation (AMS) and other analyses in both the DEIS and FEIS (see Chapter 2), the ability of the Forest to respond to the issues was determined. In general, the Forest had a wide latitude to respond to most of the issues. The AMS set the framework for development of the alternatives. Each of the alternatives, displayed in Chapter II of the FEIS, was developed to respond to one or more of the issues and to address concerns and opportunities. The Forest Plan provides a mix of resources and associated outputs, with emphasis on responding to the timber, range, big game, fish, and recreation issues and concerns. In addition, the Plan provides for application of management area direction specifically designed to resolve issues of high public interest and management concern.

## Forest Management Objectives

The outputs and effects resulting from each alternative reflect another response to the ICO's. The Forest Plan represents the selected alternative which, in the opinion of the Regional Forester (and Forest), best maximizes net public benefits while responding effectively to all the issues and concerns.

## Mitigating Measures

Mitigation measures are applied to reduce or avoid adverse effects resulting from management activities. Mitigating measures were designed into each alternative (including the Plan) in order to respond to the potential adverse effects of management. Mitigation can also be found

throughout the Forest-wide Standards and Guidelines and management areas (Forest Plan, Chapter 4). Other measures will be applied when site-specific consequences are determined through project analysis (see Chapter IV, FEIS).

## Monitoring and Evaluation

Monitoring is designed to focus on the identified issues and concerns in measuring and evaluating the effectiveness of Forest Plan implementation. The process is described in Chapter 5.

The response to each issue is reflected in recommendations associated with Alternative F/M in the FEIS and in the Record of Decision. All of the above measures were used to help address the issues. Complete resolution of each issue simultaneously was not possible. Tradeoffs and compromises were made to maintain compliance with existing laws and regulations and to provide some issue resolution for competing values and resources. This chapter discusses how the Plan responds to the ICO's. Discussion is supplemented by data in Tables 3-1 and 3-2.

**TABLE 3-1. APPLICATION OF DIRECTION-RESPONSE TO ISSUES, CONCERNS, AND OPPORTUNITIES**

MAJOR ISSUES, CONCERNS, AND OPPORTUNITIES	FOREST-WIDE STANDARDS AND GUIDELINES	MANAGEMENT AREA		OTHER DIRECTION/ ANALYSIS
		NUMBER	STANDARDS AND GUIDELINES	
ROADLESS AREAS				FEIS Appendix C
BIG GAME	Wildlife Habitat Fire and Fuels	(C3,C3a) (C4,C5,C8)	Big Game Winter Range Wildlife Habitat	Forest Management Objectives Resource Summaries
TIMBER	Timber, Fire and Fuels	(E1) (E2)	Timber/Forage Timber/Big Game	Forest Management Objectives Resource Summaries
SOCIOECONOMIC	Community/ Human Resources			FEIS Appendix B Forest Management Objectives Resource Summaries
RIPARIAN	Fish Habitat/Riparian Water	(C5,C7)	Riparian/Fish	FEIS Appendices B, E, M Forest Management Objectives Resource Summaries
WILDLIFE	Wildlife Habitat; T/E/S Species Fire and Fuels	(C1,C2) (C4)	Old Growth Habitat Wildlife Habitat	FEIS Appendices B, M Forest Management Objectives Resource Summaries
RECREATION	Recreation	(A1,A2) (A3,A4,A5) (A6) (A8) (A7,A9) (A10)	Dispersed Recreation Visual Developed Recreation Scenic Area Special Areas Special Mgmt. Area	Forest Management Objectives Resource Summaries FEIS Appendix G
WATER AND SOIL	Soil and Water Fish Habitat/Riparian Range	(F2) (C5,C7) (F3) (F4)	Fish Habitat Municipal Watershed Barometer Watershed Special Mgmt. Area	FEIS Appendices B, E, M Forest Management Objectives Resource Summaries
TRANSPORTATION	Transportation System Facilities			Forest Management Objectives Resource Summaries
CULTURAL RESOURCE	Cultural			Forest Management Objectives Resource Summaries

MAJOR ISSUES, CONCERNS, AND OPPORTUNITIES	FOREST-WIDE STANDARDS AND GUIDELINES	MANAGEMENT AREA		OTHER DIRECTION/ ANALYSIS
		NUMBER	STANDARDS AND GUIDELINES	
WILDERNESS		(B1)	Wilderness	Forest Plan Appendix B Forest Management Objectives Resource Summaries
FISH	Fish Habitat/Riparian	(C5,C7)	Riparian/Fish	Forest Management Objectives Resource Summaries
RANGE	Range T/E/S Plant Species Fire and Fuels	(D2) (E1)	Special Areas Timber/Forage	FEIS Appendix H Forest Management Objectives Resource Summaries
MINERALS AND ENERGY	Minerals and Energy			Forest Management Objectives Resource Summaries
PEST MANAGEMENT	Ecosystem Management Pest Management			Forest Management Objectives Resource Summaries

**TABLE 3-2. INDICATORS OF RESPONSIVENESS OF ALTERNATIVES AND THE FOREST PLAN TO MAJOR ISSUES AND NATIONAL CONCERNS**

MAJOR ISSUES, CONCERNS, AND OPPORTUNITIES	UNITS	ALTERNATIVE OUTPUT		CURRENT DIRECTION ALT. A	FOREST PLAN
		MAXIMUM	MINIMUM		
<b>RECREATION</b>					
Primitive/Semi-Primitive Recreation Opportunity	M Acres	589	304	333	497
Percent of Estimated Demand					
Decade 1	Percent	78	-8	1	50
Decade 5	Percent	27	-34	-28	7
OHV Opportunity	M Acres	345	148	290	307
Visual Quality Level – Retention/Partial Retention					
Decade 1	M Acres	730	70	167	388
<b>ROADLESS AREAS</b>					
Areas Remaining Unroaded, Decade 1	M Acres	281	0	23	195
Percent of Potential	Percent	100	0	8	69
<b>WILDLIFE</b>					
Old Growth – Dedicated/Managed/Other (Outside Wilderness), Decade 1	M Acres	143.7	49.6	49.8	91.1
Percent of Potential	Percent	17	6	6	11
Primary cavity excavators	% Potential Pop	68	46	55	65
<b>BIG GAME</b>					
Decade 1	Index	22,500	19,900	20,500	21,200
Percent of State Management Objective No.	Percent	+7	-6	-4	+1
Decade 5	Index	23,200	19,600	20,000	21,500
Percent of State Management Objective No.	Percent	+10	-7	-5	+2
<b>RIPARIAN/FISH</b>					
Average Number Acres Harvested/Decade (5 Decades)	Ac./Decade	1,482	136	1,482	938
Smolt Habitat Capability Index, Decade 1	M Smolts	2,970	2,117	2,339	2,818
Percent Change from 1980 Base	Percent	+102	+44	+59	+92
Decade 5	M Smolts	7,404	4,479	5,218	7,020

MAJOR ISSUES, CONCERNS, AND OPPORTUNITIES	UNITS	ALTERNATIVE OUTPUT		CURRENT DIRECTION ALT. A	FOREST PLAN
		MAXIMUM	MINIMUM		
<b>TIMBER</b>					
Allowable Sale Quantity, Decade 1	MMBF/Year	168	69	161	124
Percent Change from 1963 TM Plan	Percent	+14	-53	+9	-16
Percent Change from Alternative A (Current Direction)	Percent	+4	-57	0	-23
Percent Change from 1979-88 Timber Offered Level	Percent	+40	-43	+34	+3
Ponderosa Pine ASQ, Decade 1	MMBF/Year	23.5	3.4	23.5	23.5
Total Uneven-aged Management	M Acres	88.3	34.7	56.1	88.3
Land Selected for Timber Production	M Acres	755.3	510.3	736.7	618.8
Percent of Potential	Percent	94	63	91	77
Long-term Sustained-yield	MMCF/Decade	421.6	151.6	333.8	328.2
Firewood Supply, Decade 1	MMBF	20	8	20	15
Percent of 1986-88 Average Amount	Percent	+22	-50	+17	-10
<b>WATER &amp; SOIL</b>					
Sediment Yield, Decade 1	Tons/Yrs.	21,300	18,200	21,300	19,700
<b>TRANSPORTATION</b>					
Total Road Construction, Decades 1-5	Miles	2,023	1,388	2,010	1,638
Open Road Density (Decade 1)	Mi./Sq. Mi.	2.8	1.1	2.5	2.0
<b>SOCIOECONOMIC</b>					
Present Net Value	Million \$'s	1,075.8	817.3	1,022.2	1,000.2
Payments to Counties, Decade 1	Millions of \$/Yr.	6.5	2.7	5.9	5.0
Change in Jobs, Decade 1	No. of Jobs	+766	-97	+683	+375
Change in Personal Income, Decade 1	Million \$'s	+13.8	-6.7	+12.1	+4.6
Net Cash Flow					
Decade 1	Million \$'s	7.8	-1.2	4.2	4.1
Decade 5	Million \$'s	17.7	7.3	14.1	14.9
Noncash Benefits					
Decade 1	Million \$'s	25.7	25.6	25.7	25.7
Decade 5	Million \$'s	34.5	34.3	34.5	34.4

## ISSUES

### ROADLESS AREAS

#### UNDEVELOPED AREA MANAGEMENT

##### Background

There are 281,100 acres in 22 areas of the Forest, outside of wilderness, identified as roadless. Roadless areas are a focal point for, and will influence the resolution of, a number of the Forest issues. As identified throughout the planning process and reaffirmed in comments on the DEIS, disposition and management of the roadless areas are the heart of the issue. A variety of individuals, groups, and organizations indicated they preferred to see roadless areas kept roadless (maintained in an unroaded or undeveloped state) for a number of values and protected from disturbance or development. On the other hand, strong interest was expressed by other individuals, groups, and organizations who preferred to see roadless areas developed and utilized for a number of multiple-use values including timber production, range use (livestock grazing), mineral production, roaded recreation experiences, and OHV use. Many people expressed concern about development or management of particular areas.

Preferences for different uses of these lands are in direct competition. Resolution favoring one type of land use or resource may preclude or reduce options for other land or resource uses. Therefore, resolution of the roadless question directly affects the ability of the Forest to provide benefits to competing uses. Conversely, roadless areas will be affected by resolution of the other Forest issues.

#### Response

The roadless area issue is primarily addressed through management area allocations. All or parts of 12 areas, totaling about 195,000 acres, will remain unroaded (for more detail on specific roadless areas, see FEIS Appendix C). The total roadless acres include Spangler and Lookingglass which together will have fewer than 5,000 acres. Resolution of the roadless area question is inherent in the outputs and effects displayed in the Forest Plan, Table 4-1. Under the Forest Plan, roadless areas will be managed as shown in Table 3-3.

**TABLE 3-3. ROADLESS AREA MANAGEMENT**

ROADLESS AREAS	PRINCIPAL MANAGEMENT AREA(S) <sup>2</sup>	PERCENT REMAINING UNDEVELOPED (%)
Upper Tucannon <sup>3 1</sup>	A1, A10, C8	62
Willow Springs	C3, E2, C8	21
Asotin Creek	C8, C4, C3a	70
Spangler	A2, A3	70
Meadow Creek	C4, C3	0
Wenatchee Creek	A1, A4	97
Mill Creek Watershed	F2, C4, D2	81
Walla Walla River	F4, C1, E2	96
Jaussaud Corral	C4, A4	0
Grande Ronde	A8, A7, C4	93
W-T Three	A7, C3	54
Lookingglass	A2, C4	69
Hellhole	C8, C4, C1, A4	78
Horseshoe Ridge	C8, C1	98
North Mt. Emily	A5	0
Texas Butte	C4, C1	34
Skookum	C8, C3, C1	77
Potamus	C8, C1	97
South Fork-Tower	C7, C1, A3	6
Squaw	C7, E1	6
Jumpoff Joe	A8	99
Greenhorn Mountain	A8, D2	100

1 All areas in C8, Grass-Tree Mosaic, may have unscheduled harvest for wildlife enhancement.

2 Management areas are listed in the order of acreage dominance.

3 Roadless areas identified as having high public interest.

As seen in Table 3-3, parts or all of 11 areas with high public interest are retained as roadless. Of these, only Upper Tucannon, W-T Three, Skookum, and South Fork-Tower have some area scheduled for timber harvest. Three areas (Upper Tucannon, Walla Walla River, and South Fork-Tower) are included in management areas designed to respond to specific public and management concerns (FEIS, Chapter I). All or parts of seven roadless areas encompass the grass-tree mosaic, another area of specific public and management concern.

## **BIG GAME DEER AND ELK HABITAT MANAGEMENT**

### Deer/Elk

#### Background

The Forest provides about 70-80 percent of the summer range and approximately 35 percent of the winter range for one of the largest populations of Rocky Mountain elk in the Nation.

Management of big game species, particularly elk, is one of the most controversial issues on the Forest. A diversity of opinion is apparent among the various interests over the appropriate techniques to use in big game management. Controversy surrounds key factors including: Roadless area development, timber harvest use and its impacts on cover and forage, road development and closures, and management of big game winter range and its habitat components.

In response to the DEIS, commenters expressed one or more of the following points about big game:

- Desire by most to maintain or increase deer and elk numbers. Some want reduced populations, to minimize private land and agricultural impacts.
- The importance of maintaining, protecting, and/or improving the quality of big game habitats on both summer and winter ranges. Strong emphasis was on enhancement of winter ranges. Strong differences of opinion were apparent on how this was to be done.
- A necessity for reducing the miles of open road (by closing roads), particularly on winter ranges, to reduce or minimize effects on deer and elk. Support for a more aggressive Forest road management program to enhance big game habitat values is heavy. Support for additional access is also strong. Temporary closures are supported to provide habitat security and 'quality' hunting opportunities.
- A wish by many to reduce (restrict) timber harvest levels and activities, including road construction, to minimize perceived adverse effects on big game. A desire by many others to allow standard timber management on summer and winter ranges (maintain or increase timber harvest) because of perceived compatibility with big game management.
- The need to protect migrational corridors, fawning and calving grounds, elk wallows, and riparian areas.

Elk are used as the indicator species for all big game populations. Both Oregon and Washington state wildlife agencies have established target elk population levels for the Forest. The two states' combined state management objective (SMO) on Forest lands totals 21,056 elk. The (1983) elk population on the Forest was estimated to be 21,135. Recent (November 1989) State of Oregon population trend information indicates that elk populations remain at or near the SMO, while mule deer numbers have declined significantly in recent years and are well below the management objective. A major concern is the more recent reduction in elk calf and fawn production and survival. State agency data also indicates that big game are staying yearlong on private lands.

#### Response

The Forest Plan incorporates a number of measures to maintain or improve big game habitat. The Forest-wide Standards and Guidelines provide processes and definitions for habitat management, management for special elk related areas, and winter range direction. As part of the Forest Plan design, about 36 percent of the Forest is allocated to management areas emphasizing big game (A10, C3, C3A, C4, C5, C8). Some use timber management as a habitat



management tool and others preclude harvest. All provide emphasis on management of cover, forage, and roads. Another 31 percent of the Forest, in wilderness, roadless areas, and others, provides high levels of cover and security. As part of the alternative design, prescribed burning and other habitat improvement techniques will be used to enhance habitat. Many roads will be closed to enhance habitat according to management area direction and district access management plans. Monitoring and evaluation will be used to assure that habitat objectives are being met.

Under the design of the Plan, big game habitats are expected to be capable of producing potential populations at or near the state management objective. During the next decade, the elk population index is expected to be about 21,200 animals, only slightly (0.7 percent) above the SMO. However, by the fifth decade, potential elk populations will increase to about 21,500 animals.

## **TIMBER**

### **WOOD FIBER PRODUCTION**

#### **Background**

Wood supplied by the Forest is an important part of the local and regional economy. The Forest has supplied about 30 percent of the average annual total timber harvest in its 10-county area of influence, during the past decade (1979-88), or an average total of 148.5 million board feet (MMBF) per year. The Forest analysis of resource potentials (USDA Forest Service 1985) indicated the Forest has an opportunity to increase the harvest above previous levels or projections. Estimates indicate that demand for timber from the Forest will be rising modestly. At the same time, demand is increasing for the variety of other often competing values, resources, and land uses. Perhaps more than any other issue, the timber issue affects and is affected by the resolution of other resource issues. Sometimes the relationship is complementary but often is competitive.

The timber management issue centers on three principal aspects:

- The appropriate timber harvest levels (total and ASQ) and amount of land suitable for timber production.
- The appropriate amount of ponderosa pine to harvest.
- The silvicultural system and associated practices to use (clearcutting, even-aged, or uneven-aged management).

Each of these areas is closely tied to strong concerns about the effects of timber harvest and management on the Forest and associated resources. The underlying issue appears to be a difference of opinion about what constitutes good land stewardship.

A related concern is the amount of firewood the Forest intends to supply in light of anticipated demand. The present primary sources of relatively easy, accessible fuelwood probably will be gone in less than 10 years. Competition for dead wood and slash is increasing as chips and energy (cogeneration) are being produced from these sources and dead and down trees are retained for dependent wildlife species.

#### **Response**

Based on the alternative design and management area allocations, about 618,800 acres (or 77 percent of tentatively suitable acres) were determined suitable for timber production for the Plan and will be managed for timber production (and related uses) on a regulated basis. The Forest provides sustained yields of timber and wood products as displayed in Table 3-4.

**TABLE 3-4. SUSTAINED YIELDS OF TIMBER AND WOOD PRODUCTS**

Umatilla National Forest

Allowable Sale Quantity (ASQ)	124 22.2	MMBF/Year MMCF/Year	1 <sup>st</sup> Decade
Ponderosa Pine (ASQ)	23.5 4.2	MMBF/Year MMCF/Year	1 <sup>st</sup> Decade
Firewood	15.0	MMBF/Year	1 <sup>st</sup> Decade
*Total Sale Program Quantity (TPSQ)	159 28.4	MMBF/Year MMCF/Year	1 <sup>st</sup> Decade
Long-term Sustained-yield Capacity	184 32.8	MMBF/Year MMCF/Year	Achieved in 10 <sup>th</sup> Decade

\*Includes cull, dead lodgepole, and firewood

Timber management is used as a tool in achieving a variety of resource objectives, including those of big game, visual, range forage, and pest management. Big game habitat is emphasized on lands where timber management techniques will be used on about 33 percent of the tentatively suitable acres, under Management Areas A10, C3, C4, and C5. Both timber and big game are emphasized on about 19 percent of the potential available acres under Management Area E2 and nearly 7 percent of the tentatively suitable lands are managed to emphasize wood fiber production in Management Area E1. Fish management is emphasized on another 11 percent of the tentatively suitable areas. At the same time, timber harvest and management are restricted on about 24 percent of the tentatively suitable acres, in order to meet big game, wildlife (old growth), fish, scenic and other special interest areas, and dispersed, semi-primitive recreation objectives.

A range of extensive to intensive timber management practices is planned. About 6,615 acres/year are designated for regeneration harvest by clearcut or shelterwood prescriptions during the first decade. Overwood removal cuts are planned on about 1,526 acres/year in decade 1. About 58 percent of the acres are planned to be planted with genetically-improved stock, and the remainder will be regenerated naturally. A variety of stand harvest techniques, including selection systems, sanitation, and salvage, may be used in riparian, viewshed, and other areas. About 905 acres/year in decade 1 will receive uneven-aged management treatments; and 2,850 acres/year of precommercial thinning and 80 acres/year of commercial thinning are planned.

## **SOCIAL AND ECONOMIC EFFECTS**

### **Background**

The economic well-being and lifestyles of people and communities in the Forest's 10-county area of influence can be affected by products and services from the Forest. The availability of wood fiber, forage, quality water, recreation, and aesthetic opportunities provided by the Forest will affect economic activity and lifestyles in local communities. Use of resources can assist in creating jobs and income which influence social stability and other aspects of social well-being.

Comments on the DEIS showed a general recognition and agreement that the Umatilla National Forest is a tremendous natural and public asset that should be managed for the use and benefit of the general public (the most good for the most people). Economic, social, and environmental stability appear to be the general public goals. Overall disagreement is apparent on how to achieve these goals. Disagreements deal primarily with management emphasis and what the

effects of Forest management ought to be. As noted by several respondents, everyone benefits from a well-rounded or balanced management program. However, the various interests don't agree on the specific components that should make up the balance.

Persons (and communities), whose standard of living are influenced positively by industries and services dependent on resources from the Forest, usually support the production or harvest of commodities and use of land at a level that will maintain or improve industries and community stability. Many groups and individuals with aesthetic, recreation, environmental, and other interests support judicious use of resources and management that maintains or enhances resources or land uses of their preference. Additionally, Forest production and other activities can affect local government financing. Local county governments in the 10-county area receive annual payments derived from receipts for Forest production and activities. Such payments constitute, on average, about 10 percent of general county revenues

#### Response

Social and economic effects result from application of all the planning tools (means) in responding to the issues Indicators are used to evaluate the effects of Forest management. Economic indicators include jobs, personal income, payment to counties, and PNV. Each is anticipated to increase by very small amounts. During the first decade of this Plan, forest related jobs will increase by an estimated 0.7 percent above recent total employment levels in the 10-county area. Personal income will increase by an estimated 0.6 percent. Additionally, payments to counties are estimated to increase. Most of the effects are related to timber production except for jobs which are strongly influenced by recreation. Furthermore, this Plan will produce a moderate increase in present net value of forest goods and services.

Social indicators of lifestyle, attitudes, beliefs and values, and social organizations are not expected to change in a substantial way as a result of Plan implementation.

## **RIPARIAN AREA MANAGEMENT**

### Background

Riparian areas amount to only about 5 percent of the Forest, but are the most productive lands for the full range of resources including recreation, fish, timber, forage, quality water, wildlife habitat, and minerals. Because of the number and interplay of resources, competition for resource use is focused on these areas, and involves most of the competing groups. As seen in comments on the DEIS, all interests generally agree on the need to protect riparian areas but do not agree on how this is to be done. Numerous groups and individuals advocate a high degree of riparian protection and most prefer little to no development. These people are particularly concerned about potential impacts from development and use on resources of their interest, including wildlife, fish, water, and recreation. Other interests have preferences that support use and development of riparian areas. Most of these groups feel that development can be successfully accomplished without adverse impacts to other riparian resources. Therefore, from the management perspective, the riparian issue revolves around utilization of the productive capabilities of riparian areas while minimizing resource conflicts and potential adverse impacts.

### Response

Along Class I, II, and III streams, the Forest Plan emphasizes management to maintain or enhance fisheries, big game, and other wildlife habitat and to protect riparian values. Forest-wide Standards and Guidelines provide detailed management direction to accomplish these goals on all Class I, II, and III stream riparian areas. The C5 management area direction is applied to a total of 27,200 acres of riparian areas with about 17,200 of these acres scheduled for timber harvest; the direction emphasizes selection harvest systems. Timber harvest in the remaining riparian areas is either prohibited or must meet more restrictive guidelines. Many

riparian areas will be grazed moderately but under standards and guidelines designed to protect or improve riparian condition. Upper tributaries of the North Fork John Day, Umatilla, Grande Ronde, and Walla Walla rivers are managed under Management Areas C7, C8, A7 (part), and F4, respectively. Parts of the North Fork John Day and Wenaha are also in Wilderness Area management to enhance anadromous fish under direction C7 is planned for 105,300 acres of the North Fork John Day River system.

On the remaining Forest riparian areas (Class IV streams and others), Forest-wide Standards and Guidelines, including Best Management Practices, are applied to protect and enhance riparian areas. In addition, enhancement of riparian areas will occur through fish habitat improvement projects, range management practices, correction of road problems and riparian improvement projects. The application of standards and guidelines, management area direction, and improvement techniques will assure continued productivity of riparian areas.

The anadromous fish production index (SHCI) is one indicator of response to the issue. The index is expected to nearly double in the next decade.

## **WILDLIFE**

### **OLD GROWTH AND DEAD TREE HABITAT MANAGEMENT**

#### **Background**

Management of old growth and snag habitat for dependent wildlife species and other values is an issue of controversy. Various public interests are divided on the amount of old growth and dead tree habitat to retain on the Forest. A number of individuals, groups, and organizations have expressed concern about reduction of old growth/mature tree forests and dead tree habitat. Their desire is to maintain existing habitat distribution and amounts for dependent species, forest diversity, and aesthetic values. Other groups, associations, and agencies support utilization of old growth/mature tree forests and dead trees and see these resources as important to timber production, firewood supply, and long-term forest productivity. Historically, harvest of old growth/mature tree forests has been the backbone of the local timber industry.

#### **Response**

Forest-wide Standards and Guidelines, alternative design, and management areas provide direction and allocation for old growth. Total old growth/mature tree habitat, outside wilderness, managed directly as dedicated or managed units (Management Areas C1, C2, or others) for dependent wildlife species amounts to about 52,600 acres or about 4 percent of the Forest. An additional 38,500 acres of old growth/mature tree habitat are estimated to occur in riparian and unroaded areas. An additional 83,000 acres of suitable old growth tree habitat has been identified outside of wilderness. During the planning period, however, these old growth acres will decline in the general forest as a result of timber harvest.

Snag levels for cavity dependent species vary depending on the level of timber management. Forty percent of the potential use level is the objective in intensely managed areas, 60 and 80 percent are the levels retained in viewsheds and identified wildlife emphasis areas, and 100 percent potential use snag levels are found in unroaded areas. In areas of vegetation management, the Forest average snag level, outside of wilderness, amounts to an estimated 65 percent of the potential population level for primary cavity excavators

Planned wildlife habitat, improvement projects are relatively numerous at 10,000 acres and 75 structures per year during the next decade. Other important habitats will be protected with the application of the Forest-wide Standards and Guidelines.

## RECREATION

### MIX OF RECREATION OPPORTUNITIES

#### Background

Recreation is a popular and widely supported use of the Forest. Many interests expressed an opinion that the final Forest Plan should place more emphasis on recreation. Specific comment about recreation confirmed the identified issue and its aspects: Roadless opportunities, OHV use, visual appearance, and access (trails and roads).

The future supply of primitive and semi-primitive dispersed recreation opportunities is one of the principal aspects in the roadless issue (see Roadless Areas for discussion). The Forest ability to meet projected demand for primitive and semi-primitive recreation (and other resources) will depend on how the roadless areas are allocated and managed. Concerns expressed about the need for additional trails and road access reflect an aspect of recreation opportunity that the forest should provide (see the Transportation issue).

OHV opportunities on the Forest have declined. OHV users and clubs want more opportunity to enjoy their pursuits. Past reduction of OHV areas has increased potential conflicts elsewhere with other recreation users who want restricted OHV use. Wildlife interests are also concerned about disturbance and harassment impacts of OHV use on big game and other wildlife.

Recreationists of all types are concerned about the scenic qualities of the Forest: many of these people want little noticeable change. Some are concerned about visual change in certain locations on the Forest. The timber industry and others interested in development do not oppose visual management, but are concerned that the amount of protection given scenic resources may hinder production and reduce future supplies. The problem is to determine the appropriate degree of change from the natural-appearing landscape.

The alternative design provides the primary means for meeting future demand and resolving the issue. A variety of dispersed recreation activities, settings, and experience opportunities is provided or available under the Forest Plan. Overall, a moderate level of recreation opportunities in natural to near natural settings (semi-primitive) will be available outside of wilderness. About 195,000 acres in 14 areas will remain undeveloped (69 percent of potential), and will be managed for, or could provide, semi-primitive recreation opportunities. The wildernesses (20 percent of the Forest) also provide many primitive and semi-primitive recreation opportunities. Projected fifth decade demand for primitive and semi-primitive recreation opportunities will be met. On other areas of the Forest, dispersed recreation opportunities will take place in a roaded and modified context only slightly reduced from current levels because of road closures.

A diversity of hunting settings will be available with about 33 percent of the Forest in an unroaded condition and the remainder in roaded environments. Road closures will be used to maintain high big game habitat effectiveness and provide a more remote hunting experience. Dispersed campsites, especially those used recurrently by hunters, will receive special consideration and protection.

OHV opportunities will increase above current levels with the development of loop trail and road systems, but may be limited to certain times or areas to minimize impacts on big game. An estimated 316,000 acres of more desirable area for OHV use will be available, including over 200 miles of trails for trail bike use, with 300 additional miles of potential locations. Numerous routes will be available for 4-wheel drive opportunities.

Visual quality management is emphasized on 23 viewsheds including state highways, key forest travel routes, and major water-related areas. About 26 percent of the Forest will be managed to

meet a retention or partial retention visual quality objective. The natural appearance of some landscapes will be moderately reduced under the Plan.

Many other recreation opportunities are addressed in the Forest Plan. Developed sites (Management Area A6) will remain at current numbers. However, expansion of key recreation sites will be accommodated, provided that demand warrants a change. Winter sports activities are also to be accommodated; for example, where big game winter range may be impacted, winter recreation activities may be modified or controlled. Trail construction and reconstruction will increase; existing trails will be retained or relocated.

A variety of special areas, including 3 Wild and Scenic Rivers (Grande Ronde, Wenaha, and North Fork John Day) (A?), 6 botanical areas (AS), 8 Research Natural Areas (D2), 2 historic sites (AS), 1 geologic area (AS), and 2 scenic areas (A8), will contribute toward the diversity of recreation opportunities.

## **WATER AND SOIL RESOURCE MANAGEMENT**

### **Background**

The Forest currently produces almost 2.5 million acre-feet of water runoff annually. Quality of water flowing from the Forest is currently well above minimum state standards. Analysis shows that the Forest has little opportunity to increase water yields or increase late season low flows through management activities.

### **Response**

The maintenance of adequate quantities of high quality water is an objective of numerous, diverse interests. Many developmental activities and uses are perceived by these groups as detrimental to water, because they can cause pollution and sedimentation. These interests support actions to limit, restrict, or prohibit developmental activities on a riparian or watershed basis. The timber, livestock, and mining industries feel that developmental activities can be successfully accomplished while protecting water supplies and quality. They see little conflict between timber harvest and other management activities and quality water supplies. In their view, limiting or prohibiting activities unduly restricts the industries' ability to maintain or increase supplies of timber, livestock, and minerals.

Most people felt that Mill Creek should receive maximum protection with little, if any, timber harvesting. However, strong differences appeared were management of Walla Walla River; many specifically advocated maximum protection (very limited timber harvest or none at all) and many others supported the level of development shown in the proposed Plan. A good number of people were concerned about having adequate water supplies for irrigation, particularly in the Walla Walla River area.

### **Response**

Water and soil protection and management receive emphasis in the Forest Plan primarily through Forest-wide Standards and Guidelines (including Best Management Practices [BMP's]) and application of certain management areas (also see Riparian issue). The following are ways the Forest Plan responds to the issues: (1) The Forest-wide Standards and Guidelines provide Objectives and direction for protection and management of water (based on BMPs), for riparian areas, and for all soil-disturbing activities to maintain soil productivity; (2) no scheduled timber harvest is permitted in the Mill Creek Municipal Watershed (Management Area F2), in the north and south forks of the Walla Walla River (Management Area F4), and in key tributaries of the North Fork John Day, Umatilla, and Grande Ronde river systems (under a variety of management area direction); (3) limited timber harvest is permitted on other major streams

(under C5); and (4) C7 is applied to parts of the North Fork John Day River system, limiting harvest activities in the watershed.

Overall, sediment production resulting from management of the Forest is expected to increase about 15 percent above background levels, but is predicted to be 8 percent below current direction levels. However, water quality is expected to remain in an excellent condition and not be changed significantly by management activities. Based on barometer watershed results, water quantity, including peak flows and low flows, is also not expected to change significantly due to management activities. Monitoring of water quality and quantity, and management impacts, is also emphasized.

## **TRANSPORTATION ROAD SYSTEM MANAGEMENT**

### **Background**

The transportation system is an aspect of the timber, big game, and recreation issues. Two elements were identified in the transportation issue: Road system development (including / associated impacts) and road management (closures). Both were areas of strong differences of opinion. Development interests and some recreationists support additional road development and open road management to meet their access and operational needs. A variety of other individuals and groups expressed desires to limit or minimize additional roads for a variety of reasons, primarily because of the perceived adverse impacts related to their areas of interest. These and other groups wanted roads closed to meet their objectives or minimize effects on other resources.

Generally, road development and management respond to overall resource objectives and programs; thus, the heart of the issue is the need to provide an appropriate road system that meets all resource objectives and achieves a balance of open and closed road densities.

### **Response**

Since the transportation system is integrally linked to other issues, the response to this issue falls under outputs and effects (objectives) of planned management. Both construction and reconstruction of the road system in this Plan respond to the planned timber management program. Over the next four decades, a total of about 1,638 miles of local roads will be constructed about 56 percent of the construction is planned for the first decade. Reconstruction is also planned for part of the arterial, collector, and local road systems. Forest-wide Standards and Guidelines and management area direction provide a framework for how road development will be accomplished.

Across the Forest, closures will be used principally to maintain suitable elk habitat, but will also occur in order to meet recreation, soil, water, and economic criteria. Average, Forest-wide open road density will be at about 2.0 miles/square mile in the first decade, a figure that will vary greatly between watersheds (allocation zones), depending on the resource objectives being achieved Forest-wide, arterial and collector roads will be open; local roads can fall into the open or closed category. All of the arterial and about half of the collector roads will be managed for passenger cars. The remainder of the collectors and other open, local roads will be managed for high-clearance vehicles. Access and travel management will be confirmed through a planning process involving the public. More specific direction for each road will be identified.

## **CONCERNS AND OPPORTUNITIES**

Six concern and opportunity areas identified by the public and Forest managers through the planning process, and the responses to these, are described as follows:

## **CULTURAL RESOURCES--CULTURAL RESOURCE MANAGEMENT**

### **Background**

An ongoing program exists on the Forest to identify and evaluate the historic and prehistoric cultural resources which exist on Forest lands. To date, about 750 cultural resource sites (archeological sites, historic structures, etc.) have been reported within or adjacent to the Forest. These sites represent a broad cross section of uses, spanning a period of several thousand years. Native American tribes, various other groups, and Forest managers are concerned about the protection and management of cultural resources on the Forest. A principal concern is that the full intent of the law be met.

As land-modifying activities and public use increase within the Forest, so does the possibility of loss or degradation of the cultural resources. The degree of potential impact will depend upon the location and extent of land alteration, the nature of the site, and the concentration of public use. A concern of management is to provide a balance between resource uses and the protection of cultural sites so as to provide adequately for their preservation.

### **Response**

Cultural resources will be protected and managed as directed under the Forest-wide Standards and Guidelines (see Chapter 4). Management direction for cultural resources on the Forest is one of avoidance and protection for all sites listed in, nominated to, eligible for, or potentially eligible for the National Register of Historic Places. The preferred management approach is to achieve a 'no effect' finding. In the absence of this possibility, the preferred strategy will be to cause 'no adverse effect.'

The activities under the Forest Plan have a moderate to high likelihood of both discovering and impacting cultural resources. As a result, some mitigation measures, as prescribed in the Forest-wide Standards and Guidelines and Chapter IV of the FEIS, may be needed to eliminate undesirable effects or recover values of the properties prior to their alteration. As additional sites are located, opportunities for enhancement and interpretation are available. Activities will be coordinated through a consultation memorandum of agreement with the affected Native American tribes.

## **WILDERNESS—WILDERNESS MANAGEMENT**

### **Background**

Since the creation of the three wildernesses, various interest groups and Forest managers have become concerned about meeting the intent of the wilderness acts in light of past impacts and continued heavy hunting pressure and mineral development. Differences of opinion exist on how wilderness should be managed, particularly in the type of wilderness recreation experiences to provide and the management of nonconforming uses and activities which diminish options to maintain and preserve wilderness values.

The existing wildernesses are traditional elk hunting areas in the Blue Mountains of Oregon and Washington, and very heavy use by hunters occurs during elk season. The hunter recreation use intensity and the many perennial hunting camps affect inherent wilderness values (as defined in the Wilderness Act of 1964) including solitude, untrammled and undisturbed natural conditions, and other primitive recreation opportunities. The only Forest sources for primitive recreation opportunities lie in the wildernesses. In the North Fork John Day Wilderness, the statutory mining rights and many mining activities limit the options for managing to maintain and preserve wilderness values.

### **Response**



Direction for wilderness is included in Management Area B1, in the alternative design, and in management plans for each wilderness, summarized in Appendix B of the Plan. Wilderness management will emphasize natural ecological systems and processes modified to accommodate some nonconforming uses. Wilderness management will shift to provide more primitive recreation opportunities, on about 128,000 acres. The remaining wilderness will be maintained in a semi-primitive setting. Road access restrictions, trail management, and other action will be applied to achieve the primitive opportunities. Congressional committee and conference reports will be considered when determining appropriateness of various uses, such as traditional hunting and fish habitat protection. Management actions will recognize valid rights for mining, grazing, water uses, and other nonconforming uses.

## **FISH—FISH HABITAT MANAGEMENT**

### **Background**

Forest streams are important spawning and rearing habitat for anadromous fish and resident fish production. A variety of groups, Native American tribes, and governmental agencies have general agreement on increasing anadromous fish runs through fish habitat enhancement and riparian management. Protecting and enhancing fish habitat and increasing fish production are highly supported (by nearly everyone commenting on the subject in the DEIS). Differences of opinion occur over methods for achieving improved habitat.

The Forest has an opportunity to assist in achieving increased anadromous and resident fisheries through (1) Maintenance and enhancement of key streams and associated riparian habitat for fish production; and (2) rehabilitation of degraded fish habitat. This concern is closely interrelated with the riparian, roadless areas, timber, water issues, and the minerals and energy concerns.

### **Response**

Planned enhancement of anadromous and resident fisheries follows a two-pronged approach. Riparian management is planned to enhance fisheries as described in the Riparian issue. Developmental activities in riparian areas will be managed through the variety of applied Forest-wide Standards and Guidelines, management area direction, primarily C5 and C7, and planned activities and mitigating measures.

In addition, a high level of cost-effective fish enhancement is planned as part of the alternative design. The North Fork John Day, Snake, Umatilla, and Walla Walla river systems all have planned enhancement work. (See Appendix A of the Forest Plan for the planned level of fish improvement work in each river system.) An estimated increase of about 92 percent in anadromous fish and 37 percent in resident fish production above the 1980 base is expected.

## **RANGE—FORAGE ALLOCATIONS**

### **Background**

Most comments on the range section of the DEIS were concerned with the level of grazing on the Forest. Many suggested that the level be increased and that perceived conflicts with other resources did not exist. Others indicated that grazing should be reduced for a variety of reasons, including minimizing conflicts with wildlife over forage.

Currently, competition for forage between users is not generally a problem. However, analysis indicates that the Forest cannot accommodate both types of users at the highest production or use level. Opportunities to increase forage are available through timber harvest and other vegetative management techniques.

As a result of the Plan's design, allocations, and planned activities, sufficient forage will be developed through timber harvest and other vegetative management activities to accommodate some increases in both big game and livestock. Total permitted use will increase to 58,000 AUM's (a 6 percent increase above current levels) in the first decade due to the increased available forage. Forage will be 'split' between livestock and big game on a 40-60 basis. Some livestock grazing capacity on big game winter ranges will be allocated where forage for big game can be enhanced.

#### Response

Intensive to extensive (strategy D and C) range management (see Glossary for explanation of strategies) will be practiced on about 75 percent of the Forest, and minimum management or no grazing on the remainder. A moderate to high level of cost-effective investments in range management, such as fencing and water developments, is planned. Potential conflicts in key areas will be minimized by applying Forest-wide Standards and Guidelines, management area direction, and followup monitoring.

### **MINERALS AND ENERGY—MINERAL AND ENERGY RESOURCE MANAGEMENT**

#### Background

As expressed by the industry and some state agencies, the principal mineral and energy concern is accessibility to the resource. Because of the increasing importance of energy minerals and other mineral resources, Forest Service management is concerned with and committed to maintaining access to the Forest for mineral exploration and development. Some people recognize that mineral exploration and development can produce conflicts with other Forest resources and activities. The Forest Service must respond to the proposals while protecting surface values.

#### Response

As part of the alternative design and allocations, the Forest Plan provides for reasonable access with resource protection stipulations on Forest lands open to mineral and energy exploration and development. On about 62 percent of the Forest, normal resource protection stipulations are applied, through permits and operating plans, to meet environmental standards. About 13 percent of the Forest will have additional restrictions imposed through resource protection stipulations within management areas including old growth, riparian and other fisheries habitat, and roadless/scenic designations. Generally, conflicts that may arise can be mitigated through appropriate, reasonable stipulations in the plan of operation or operating permits. Acres withdrawn from mineral entry, including congressionally mandated wildernesses and proposed areas, total about 25 percent of the Forest. Withdrawals and proposals are being reviewed by the BLM as specified in the Federal Land Policy and Management Act of 1976.

### **PEST MANAGEMENT—MANAGEMENT OF FOREST LAND AND RESOURCES SUSCEPTIBLE TO OR INFECTED WITH PESTS**

#### Background

The Forest has had, and is currently experiencing, large-scale insect infestations of forested areas. The attacks have created large stands of dead and dying trees. These large-scale pest epidemics have major impacts on wildlife habitats, recreation opportunities, timber growth and yield, visual resources, fire hazards, and other resources. Many groups, agencies, and individuals are concerned about the general health of the Forest and the amount of damage and loss occurring on northeastern Oregon forests. The concern revolves around the appropriate prevention and control activities and the amounts of these needed to reduce pest outbreaks and overall damage.

## Response

Under the Forest-wide Standards and Guidelines and other direction, cost-effective, integrated pest management (IPM) approaches are used to prevent and control forest pests. The principal approach in preventing the spread of pests is through vegetation management activities. In forested stands, activities include timber harvest, planting, thinning (tree stocking level control), species conversion, and underburning to maintain healthy tree conditions (See the timber sections of Chapters 3 and 4 for further program details).

When prevention fails, early detection and aggressive control action may assist in alleviating large pest outbreaks. Direct control methods, such as chemical application, may still be required. The appropriate control method for forest pests will continue to be determined through an analysis and reported in a separate environmental assessment.

# Chapter 4

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# CHAPTER 4. FOREST MANAGEMENT DIRECTION

## Introduction

Chapter 4 presents the management goals, objectives, Forest-wide Standards and Guidelines, and management area direction that constitute the overall direction for land and resource management covered by the Plan. The chapter includes the following sections:

**FOREST MANAGEMENT GOALS** - Multiple-use and other goals established in the planning process to develop the Plan and guide Forest management in the future.

**DESIRED FUTURE CONDITION OF THE FOREST** - A description of what the Forest should be like at the end of 10 years and at the end of 50 years, given full implementation of Forest Plan direction.

**FOREST MANAGEMENT OBJECTIVES** - The levels of goods, services, and effects that are anticipated to be produced as the Plan is fully implemented. The objectives are supplemented with narrative summaries of resource outputs and schedules.

**FOREST-WIDE STANDARDS AND GUIDELINES** - Identify Forest-wide requirements and conditions to be met while achieving the Plan's goals and objectives.

**MANAGEMENT AREAS** - A description of each selected management strategy (practices and prescriptions) for specified areas. The management areas list goals, descriptions, desired future conditions, standards and guidelines, and management practices by resource element for each area.

Additional supporting information is contained in the Appendices.

## FOREST MANAGEMENT GOALS

Forest management goals are statements providing direction for the future and describing the desired conditions to be achieved. The goals are expressed in broad terms and are timeless in that they have no specific date by which they are meant to be completed. The Umatilla National Forest management goals are to:

Provide land and resource management that achieves a more healthy and productive forest and assists in supplying lands, resources, uses, and values which meet local, regional, and national social and economic needs.

Provide for a broad spectrum of recreation opportunities and experiences and a variety of recreation settings on the National Forest for Forest recreationists.

Provide attractive natural to near-natural settings for Forest users along important highways, roads, trails, and in and around developed and primitive sites.

Preserve, protect, and improve the resources and values of the Forest's wildernesses.

Protect and enhance the outstandingly, remarkable values and free-flowing condition of the Wild and Scenic Rivers.

Protect and perpetuate special areas and related resources for their unique values

Provide for the protection and preservation of cultural resource values through a program which integrates inventory, evaluation, protection, and enhancement (including interpretation).

Provide, develop, and enhance effective and well-distributed habitats throughout the Forest for all existing native and desired nonnative vertebrate wildlife species.

Provide and manage big game (elk and deer) habitat and its components (cover, forage, and roads) to assist in meeting state wildlife agency population management objectives.

Provide and maintain a diverse, well-distributed pattern of fish habitats to assist in doubling anadromous runs in the Columbia River Basin (by the year 2000) in cooperation with Native American tribes, states, and other agencies. The goal applies to all areas dominated by riparian vegetation, including areas containing anadromous and resident fish habitat, perennial and intermittent stream courses, wetlands, and floodplains.

Maintain or improve habitats for all threatened or endangered plant and animal species on the Forest, and manage habitats for all sensitive species to prevent the species from becoming threatened or endangered.

Manage the forage resources for an improving vegetative trend in areas in less than 'fair' condition and for an upward or stable trend for areas in 'fair' or better condition. Provide for forage productivity and make suitable range available for livestock grazing. Increase the level of forage production where cost efficient and consistent with other resource goals.

Provide for diversity of plant and animal communities and species consistent with overall multiple-use objectives for the Forest. Maintain or enhance ecosystem functions to provide for the long-term integrity (stability) and productivity of biological communities.

Provide areas for research and education purposes which are typical of unique natural ecosystems and are in undisturbed or nearly undisturbed condition.

Provide for production and sustained yield of wood fiber and insofar as possible meet projected production levels consistent with various resource objectives, standards and guidelines, and cost efficiency.

Manage Forest lands to maintain or enhance soil and land productivity.

Manage Forest resources to protect all existing beneficial uses of water and to meet or exceed all applicable state and Federal water quality standards. Within the Forest capability, maintain or enhance water quantity, quality, and timing of streamflows to meet needs of downstream users and other resources. Maintain integrity and equilibrium of all stream systems, riparian areas, and wetlands on the Forest. Manage designated municipal supply watersheds to provide water which, with treatment, will result in a satisfactory and safe supply.

Maintain air quality at a level adequate for protection and use of Forest resources and which meets or exceeds applicable Federal and state standards and regulations.

Provide for exploration, development, and production of a variety of minerals on the Forest consistent with various resource objectives, environmental quality, and cost efficiency.

Promote human resources, civil rights, and community development within the zone of influence of the Forest. Promote cooperation and coordination with individuals, groups, landowners, Forest users, Native American tribes, and state and Federal agencies in forest management, and community and economic development.

Provide for the use and occupancy of the Forest by private individuals or Federal, state, and local governments when such use is consistent with Forest management objectives, is in the public interest, and cannot be reasonably served by development on private land.

Provide an optimum pattern of landownership within the Forest considering resource goals and efficiency of managing the Forest.

Provide and manage a safe and economical road and trail system and facilities needed to accomplish the land and resource management and protection objectives on the Forest.

Provide and manage administrative facilities sufficient to serve the public and accomplish land and resource management and protection objectives of the Forest.

Provide and execute a fire protection and fire use program that is cost efficient and responsive to land and resource management goals and objectives.

Protect forest and range resources and values from unacceptable losses due to destructive forest pests through the practice of integrated resource management.

## **DESIRED FUTURE CONDITION OF THE FOREST**

### Introduction

The future condition of the Forest will reflect the results achieved through implementation of the Forest Plan in meeting management goals and objectives. The desired future condition describes what the Forest should be like given implementation of management direction contained in the Plan.

Management of the Forest during the next decade will contribute toward the long-run picture, but more than four decades will probably pass before the effects of the Plan are evident over the entire Forest. The following remarks describe expected physical and biological setting of the Forest after 10 and 50 years, assuming the direction from this Plan remains constant. (The reader should remember that this Plan will be revised at least every 15 years.)

### **DESIRED FUTURE CONDITION IN 10 YEARS**

#### Overview

During the next 10 years, the Forest will continue its fundamental role in multiple-use management by providing a balanced variety of natural resource based goods and services to the public. The Forest will continue to fill a utilitarian, production-oriented role by providing resources including timber, livestock forage, water, and minerals. The Forest will also fill an expanding amenity stewardship role by valuing and managing aesthetic, recreation, and spiritual aspects of the Forest. Quality land stewardship and trusteeship will continue to be the fundamental underpinning for management of the Forest. The Forest will be recognized for quality programs in elk habitat management, high quality water, expanding fisheries, timber management (including uneven-aged management), and for maintaining the special environments existing in the Blue Mountains.

The Umatilla will continue to feature a mosaic of large grasslands and forested area, containing elements of both natural and human-influenced forest conditions. By the year 2000, parts of the Forest will show change as vegetation management and developmental activities continue. About 60 percent of the Forest will show areas having small to moderate (varying) amounts of noticeable harvest as criteria for big game habitat, visual quality, timber management, forage production, and others are applied. Recently regenerated and young forest stands will be evident in these areas. The incidence of large scale pest outbreaks will have declined and the overall 'health' of the Forest will show improvement. On the remainder of the Forest, including wilderness, unroaded areas, dedicated old growth units, and some riparian areas, natural or near natural conditions will continue. Large areas of grass-tree mosaic and 'stringers' will remain in a natural condition. In addition, natural-appearing areas will be featured along principal travel routes, in recreation use areas, and in riparian areas.

A diversity of recreation opportunities in a variety of forest settings will continue to be provided. Use of the well-maintained recreation sites will continue to occur at high levels. Hunting will continue to be a featured recreation activity and will occur in a variety of settings. Big game populations will be near desired numbers as species respond to favorable forest habitat. Other wildlife dependent on managed forest environments will be evident. Recovering and improving anadromous fish runs will be a feature, particularly on the south end of the Forest. Resident fishing opportunities will be expanding. Although the level of future road development is high, motor vehicle access will be somewhat limited because of the many road closures.

Economic activity will be focused on the timber and fisheries resources and, to a lesser degree, on livestock grazing. Economic activity centered on big game and recreation pursuits will also be important.

## RECREATION

Increasing demands for the variety of recreation activities, settings, and experiences will be met as the Forest provides a broad mix of such opportunities. Recreation opportunities will be provided in a variety of management areas, including wilderness, unroaded areas, scenic areas, Wild and Scenic Rivers, special interest areas, viewsheds, developed sites, and roaded areas. The Forest will continue to implement the national recreation strategy and will be involved with partnerships to accomplish a variety of recreation, wildlife, and fisheries projects.

Although potential semi-primitive opportunities will be reduced during the decade, through development of some of the roadless areas, available semi-primitive opportunities in the remaining unroaded areas and wildernesses (over 30 percent of the Forest) will accommodate demand. Some increases in user density will occur in these areas, but user conflicts will be minimal. Recreation opportunities in roaded and modified context will continue to be important and abundant on the Forest.

The Forest will maintain its reputation as one of the Blue Mountains' best places to hunt big game. Big game hunting will continue to be the single most important recreation activity on the Forest and will remain at high levels. A wide variety of settings for hunting will be available. Some decreases in road-related hunting will occur as additional road closures are used to improve big game habitat. The quality of hunting will be maintained as habitat management practices are emplaced. Fishing is also expected to rise in response to increases in resident fish populations and improved stream conditions.

The trail system will be expanded Existing trails will be retained and reconstructed, and new trails will be added. The expanded and upgraded trail system will contribute toward meeting long standing needs, distributing use, increasing capacity, and accommodating new uses. The Blue Mountain Trail System will be completed.

Off-highway vehicle use will be accommodated through development of loop trails, closed road systems, and staging areas. Conflicts between OHV use and big game will require some adjustments in OHV seasons of use and locations. Winter sports, growing in popularity, also will be accommodated, with the Tollgate area remaining a major winter activities focal area. Other all season roads will provide for an expanded sno-park system.

### Special Areas

A variety of special management areas will be featured attractions as part of the diversity of recreation opportunities. Parts of the Grande Ronde, Wenaha, and North Fork John Day rivers, presently classified Wild and Scenic Rivers, will accommodate increased use; the two scenic areas (Grande Ronde and Vinegar Hill-Indian Rock) are major attractions which will also receive increased use. The variety of special interest areas on the Forest (historical, botanical, geological, and cultural sites) is being developed as planned, and will contribute toward educational and other recreational experiences. The Forest Scenic Byway will also be a featured attraction.

The many 'special places' including hunter camps and certain roadless areas such as Spangler, Walla Walla River, and Hells Half Acre will also receive protection and management for recreation, visual, and aesthetic values.

### Developed Recreation

The Forest developed sites, including campgrounds, picnic areas, boating sites, ski areas, and others, shall continue to provide a variety of recreation facilities. The sites will be maintained in clean, neat, safe, and useable condition. However, increasing use at developed sites near

water will occur, and capacities will be reached or exceeded for several sites. Some additions to facilities have been provided, plans completed, and action initiated to respond to the growing future demand.

#### Visual Resources

Visual resource quality will continue to be emphasized across the Forest through application of visual management practices. During the next decade, the Forest will continue to maintain, enhance, rehabilitate, and perpetuate scenic and aesthetic qualities in key areas throughout the Forest. The wildernesses (about 20 percent of the Forest) will be managed to preservation standard, allowing only natural ecological changes to occur. Nearly 26 percent of the Forest, or about 391,000 acres, will be managed to provide near natural settings emphasizing visual quality, including areas along state highways, key Forest travel routes, major water-related viewsheds, developed recreation sites, and unroaded areas.

Where visual quality is a concern and vegetation management is to be used, uneven-aged management will be the method practiced most often. Vegetation management will change forest conditions to incorporate more open stands; vegetation will be characterized by large trees interspersed with patches of smaller trees, other vegetation, and small openings. In the remaining area of the Forest, outside wildernesses, vegetation will appear as a managed forest with the mosaic and variety of harvest patterns varying in size, shape, and arrangement.

#### CULTURAL RESOURCES

During the next 10 years, the Forest will continue to identify, evaluate, preserve, protect, and enhance its cultural resources. A professionally-designed, systematic inventory will be conducted prior to initiation of Forest projects. The accumulated data from inventories will facilitate comparisons of cultural properties, provide a basis for evaluations of significance, and contribute to informed decisions when resource conflicts exist. The Forest will be working closely with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) through the consultation memorandum of agreement, affected Native American Indians, and other interested parties in the development of the program.

Most of the inventory will continue to be in support of the timber sale program. Of the tentatively suitable timberland on the Forest, an estimated 87 percent or 700,000 acres will have completed cultural resource inventories. Approximately 5 percent of these acres will require further investigations because of known site distributions or high cultural resource sensitivity. Where substantial inventory needs remain on the Forest, (such as in wildernesses) the areas will be inventoried, initially through special projects based on a sampling strategy. As the need for project related inventory declines, efforts to inventory nonproject acres will increase based on the available funding.

Site-specific management strategies will be developed over the next decade for properties determined eligible for the National Register of Historic Places. These management strategies will specify overall objectives and a program of work to accomplish objectives.

Data recovery operations will be carried out where conflicts occur between the onsite management of archeological resources and other resource needs. The purpose of data recovery is to document archeological information. Data recovery projects may contribute significantly to current archeological research by redefining research goals and by developing a regional context in which to evaluate and manage other similar or associated sites.

#### WILDERNESS

Wilderness Management Plans will be implemented for each wilderness. As defined in the plans, measures to substantially increase the amount of primitive recreation opportunity will be undertaken and completed. Indicators and standards tailored to each wilderness and baseline data will be established to determine limits of acceptable change (LAC). An effective education

program will result in most visitors becoming knowledgeable of wilderness ethics and practicing 'leave no trace' techniques. All hunting camps and temporary structures (tent frames) will be dismantled and campsites cleaned. Validity examinations will be made for all wilderness mining claims, and plans of operation will be put into effect for valid claims to minimize impact on the wilderness resource. All unnecessary Government-owned structures are to be removed. Fire will play a role in management of wilderness vegetation.

## WILDLIFE

The Forest will continue to provide and manage effective and well-distributed habitats for a wide variety of vertebrate wildlife species. Forest species dependent on younger stands, edges, and openings will do well. Populations of others, including Forest indicator species, will remain relatively high, although some decrease will occur as timber harvest reduces habitat. Wildlife management will be directed toward key habitats including mature and old growth tree stands, dead (snags) and down trees, riparian, and other unique habitats.

Habitat for species associated with mature tree and old growth stands will be provided through dedicated forested units, managed lodgepole stands, riparian areas, and unroaded areas distributed throughout the Forest. About 91,100 acres, (about 6 percent of the Forest outside of wilderness) will be managed directly to provide for old growth/mature tree habitat. Decreases in other old growth/mature tree habitat will occur through the life of the Plan due to timber harvest activities.

Habitat for species using dead (snags) and down trees will be provided throughout the Forest. Snags, plus trees for replacement snags, will be left in areas where timber harvest is occurring, either as individual snags or in small clusters. Amounts will vary by management area, ranging from 40 to 100 percent of potential populations of using wildlife species. On a Forest-wide basis, outside wilderness, snag levels will begin to approach the anticipated use level of about 65 percent of maximum potential population. Dead logs and slash will be left on the ground for species utilizing such habitat.

Riparian areas will continue to provide a diversity of habitat conditions. Unique habitats, such as cliffs, talus, and wet areas, will receive protection. Planned habitat improvement projects will result in about 10,000 acres and 75 structures of improvements annually. Most of the planned, nonstructural wildlife improvement work will involve prescribed burning on big game winter ranges to enhance forage and other vegetative conditions.

## BIG GAME

Since management of big game summer and winter ranges is emphasized throughout most of the forest, big game habitat potential will be maintained Forest-wide. Focus of management will be on habitat components of cover, forage, and roads, and on management of winter ranges, riparian areas, and other important big game areas. Changes should result as predicted: Satisfactory cover will decrease slightly, marginal cover will increase slightly, forage quantity and quality will improve, and about half the roads will be closed. In addition, winter ranges will be maintained and improved through cover management, improved security, and forage enhancement. As a result of management during the next decade, potential big game populations will be within 5 percent of the state management objective and winter range management will assist in keeping elk and deer on the Forest. Deer populations will be recovering from the low levels of the late 1980's. The Umatilla will continue to be known for its big game.

## THREATENED, ENDANGERED, AND SENSITIVE SPECIES

All management activities recognize and will be responsive to the requirements of the Endangered Species Act. Potential roost sites will be inventoried and protected adjacent to recognized feeding areas. Two potential bald eagle nesting sites are targeted for the Grande

Ronde River as part of the Recovery Plan objectives. Peregrine habitat will also be surveyed and/or protected in accordance with recovery plans.

Surveys for threatened, endangered, and sensitive plants will essentially be completed (within the next 15 years), lists will be revised, and management plans will protect and enhance identified plants. Federal and regional lists (T&E) will continue to change. Surveys will probably document large numbers of some plants and will result in those species being removed from the lists; other species will probably be located for the first time and will be added. The number of botanical areas on the Forest can be expected to increase slightly as new unique areas are found during sensitive plant surveys.

#### RESEARCH NATURAL AREAS

Ninety percent of the ecosystem representatives for the Research Natural Areas in the Blue Mountains will have been found. All proposed RNA candidates on the Forest will have been established and specific management direction provided. Management of each area will proceed according to direction.

#### RIPARIAN/FISH

Ten years from now, significant increases in the production of both anadromous and resident fish will have occurred on the Forest. Anadromous fish increases will be the highest and most noticeable, primarily as a result of actions taken through coordination between the Forest and the Northwest Power Planning Council (in its Fish and Wildlife Program), the Bonneville Power Administration, the U S. Bureau of Reclamation, the Confederated Tribes of the Umatilla Indian Reservation, Columbia River Inter-tribal Fish Commission, Oregon Department of Fish and Wildlife, and the Washington Department of Fisheries.

Inventories of most of the streams and lakes on the Forest will have been completed. This knowledge will allow the Forest managers to predict more accurately the effects of management of the various resources on fish and to minimize any negative impacts. Inventories also will be the basis for habitat rehabilitation and enhancement. By the end of the period, a sustained habitat improvement program, based on plans developed in coordination with other agencies (and upon stream and lake inventories) will be well along its way to completion. Fisheries habitat capability will improve Forest-wide as a result of management emphasis and activities. Stream temperatures will be maintained or improved, instream diversity increased, sediment production decreased, and stream channel stability maintained. Trends in improving vegetative, soil, and other conditions on Forest riparian areas will continue. Overall riparian condition will be better than the present riparian status and will play an important role in meeting long-term goals to increase anadromous fisheries.

The number of rainbow trout on the Forest (an indicator of the number of all other resident fish) will have increased as a result of habitat improvements. The opportunity to catch fish will have increased even more, based on the increased number of legal-sized fish, better access from roads, and more fishable areas in the form of larger, deeper, and more complex pools. As a result of riparian management and fish habitat improvement, anadromous fish production will increase dramatically, including native fishery, during this period. The Forest Service will have enhanced most of the higher priority and cost efficient on-Forest habitat. The Forest will be contributing to the Northwest Power Planning Council's goal of doubling the fish runs by the year 2000.

A share of the increase will be dependent on and tied to improvements in downstream survival (between the Forest and ocean) and effective harvest controls.

#### RANGE

Management



In the first 10 years, forage will continue to increase in quality and quantity as a result of timber harvest, wildlife and range improvement projects, and range management actions. An increase of 6 percent in permitted livestock use will be realized through timber harvest area transitory forage. Increased use of clearcuts by livestock will occur.

Revision of outdated range allotment management plans will be completed; all others will be kept current. Allotment plans will continue to implement improved management systems on about 76 percent of the Forest and continue the trends toward improved rangeland and riparian conditions that have come about in the last 25-30 years. The structural and nonstructural improvements needed to achieve improved conditions and planned use will be added. Key big game winter ranges will be re-analyzed to determine total forage production and to assure that the allocation of that forage between big game and livestock is correct.

#### Noxious Weeds and Poisonous Plants

Although not desired by Forest managers, noxious weed populations will continue to expand. Canada thistle population levels will probably remain constant with the level of timber harvest activity, and may not be treated except in isolated cases where severe infestations on National Forest System lands might infect adjacent private lands. Other species, once well established, will have become virtually impossible to eliminate. If the use of chemicals for control is not allowed early in this time period, infestations of several species (especially knapweed, yellow starthistle, and ragwort) could become extensive and severe.

### **TIMBER**

Timber and wood fiber production will continue to be a principal Forest activity. In the long run, management of the Forest trees and stands will be directed toward, and tied together with, accomplishment of multiple-use objectives, including production of wood fiber, and maintaining and enhancing visual quality, forage production, recreation opportunities, wildlife habitat, and fish production.

On areas emphasizing multiple-use values coordinated with timber resource management, forest development and growth will be directed toward meeting a variety of criteria, such as producing marginal and satisfactory cover for big game, protecting fishery values, maintaining near natural visual conditions, and reducing pest losses. Such areas (about 55 percent of the Forest) include Management Areas A3, A4, A5, A10, C2, C3, C4, C5, C7, E2, and F4. Forest yield will vary from low to relatively high levels in these areas. All principal forest management techniques will be available and used. Even-aged management systems will often be employed; uneven-aged management will be emphasized in viewsheds, riparian areas, and winter ranges, and used in many other site-specific situations. In these management areas, prompt forest regeneration and rapid tree growth at desired stocking levels will also be important to meeting other resource objectives.

Clearcuts, shelterwoods, selection, modified even-aged practices; other forest harvests, plantations, thinnings, and roads will be more evident. About 30 percent of the previously roadless areas will be developed through timber harvest. Harvest units will replace areas of unbroken forest canopy. Some reduction in large trees and increase in regeneration areas will also be evident where partial cutting has occurred during the past 10-30 years. Cleanup of dead lodgepole pine and Douglas-fir bark beetle killed stands will be completed, and regeneration of these forest stands started.

Where timber and wood fiber are of principal concern (about 6 percent of the Forest, under Management Area E1), forest development and growth performance will be keyed to producing relatively high levels of periodic (annual) yields. Emphasis will continue to be on conversion of existing mature and overmature stands to faster growing, more vigorous ones. Even-aged management will be the primary system employed, including clearcutting, shelterwood, and

modified methods. Emphasis will be placed on obtaining more rapid regeneration, more natural reproduction, and faster-growing stands approaching yield-table predictions.

A variety of management techniques will be used to achieve long-term desired conditions emphasizing forest growth, productivity, health, and diversity. Practices include: 1) Species composition and stocking level control emphasizing seral species; 2) animal, insect, and disease protection, 3) regeneration of stands which are not meeting growth expectations: and 4) utilization of genetically improved stock. Utilization of wood fiber will be high.

Competition for wood fiber provided by the Forest will continue to be high. During the decade, the allowable sale quantity (ASQ) of 124 MMBF, of which about 24 MMBF will be ponderosa pine, and a total sale quantity (sawlogs, chippable, and fuelwood) of 159 MMBF per year will be offered for sale annually. Species composition and log sizes of sale offerings will be similar to that available on the Forest currently. Although demand for ponderosa pine will remain high, white fir and other species will be increasingly used. Firewood will still be available and meet demand, but will be less accessible and consist of higher amounts of cull and slash material. Timber and wood fiber production will continue to be very important to the economy of the area.

## **WATER/SOIL**

Water provided by the Forest will be an increasingly important resource as demand and competition for it expands. The Forest will remain a key source of surface water for local stream systems. Ten years from now, the water arising on Forest watersheds will be undiminished in quantity and quality. In many stream reaches on the south end of the Forest, water temperature regimes will improve due to measures taken to promote recovery or enhancement of riparian vegetation. Water quality will also improve in the Clear Creek watershed due to treatment of acid drainage from abandoned mines. The Forest management objective to provide clean, clear, free flowing surface water will be met.

Timing of low and high flows and average annual water yields will remain about the same for the variety of users. Any significant changes in total streamflow or timing of high and low flow are expected to result primarily from naturally occurring events and conditions. Management activities through the decade will continue to provide high levels of protection to streams, streambanks, riparian areas, and wetlands. The Mill Creek and Walla Walla watersheds will receive high levels of protection through the decade.

About 40 percent or more of the Forest soils will remain in a natural, undisturbed condition. Another portion will be affected for the first time by ground disturbance, while the remainder will be affected through repeated activity. A small percentage of the Forest soil in roads, trails, rock pits, and other allocations will be in a nonproductive state. Another small percentage will undergo treatment to restore lost productivity due to past management activities. However, the majority of Forest soils will be in about the same productive condition as today. Forest-wide, goals and objectives related to soils will be met through continued efforts at utilizing soil damage prevention and mitigation techniques.

## **MINERALS AND ENERGY**

Interest in the locatable mineral potential of eastern Oregon remains high, and claiming activity will increase in favorable areas outside wilderness. The number of claims inside the wilderness will continue to decline. Mining for gold will continue to be active. Physical and biological impacts will be minimized but the short term effects on water quality will continue to be a concern.

An up-to-date mineral resource inventory and evaluation will be completed to supplement knowledge of locatable minerals. With this information, the Forest will be in a better position to manage proactively for locatable mineral resource activities.

Oil and gas leasing activity will fluctuate with energy prices, but interest in the Forest will remain relatively high. Interest in the lignite deposit in the Grande Ronde River Area for eventual development will increase. Geophysical surveys and exploration drilling for oil and gas in the Columbia Basin area will provide better information as to where oil and gas resources are likely to be found. Any significant discoveries will bring new leasing activity to the area. Consequently, continued exploration will better define potential targets, and poorly located speculative leases will be dropped. Based upon newly acquired data, the remaining leases will concentrate on areas with a high potential for the occurrence of energy minerals. The Forest will then be in a better position to plan for development of the resource.

The public's interest in common variety mineral commodities will continue at about the present level; the demand for Forest Service road construction and reconstruction for access to these minerals will remain at about current levels. The resource will continue to be inventoried to identify sources needed for specific projects.

#### Withdrawals

All existing withdrawals will have been reviewed as required by FLPMA, and unneeded withdrawals will have been revoked. Unpatented mining claims located within wilderness areas will either have been abandoned, or operating plans will have been submitted and valid existing rights will have been determined. As a result, more complete knowledge about mining activities can be anticipated within areas designated as wilderness.

### **LANDS**

About 88 percent of the Forest property lines will be surveyed, marked, and posted to Forest Service standards, and will be on a maintenance schedule.

Cost sharing on all major, jointly-shared roads will have been completed. New work sharing will be limited to reconstruction and occasional construction of short segments of spur roads. Termination easements on agreement roads will be necessary due to land exchange. Road access through private lands will also be adequate to provide public use of all major areas on the Forest

#### Land Exchange

All current land exchanges will have been completed. Other changes in ownership will occur as efforts continue to consolidate national forest ownership. Land exchange interest and opportunities will still exist with Forest major cost-share partners and other major industrial and agricultural landowners.

#### Utility Corridors Special Uses

Existing corridors are anticipated to meet regional needs through the next 10 years. The proposed corridor from Blalock Mountain to Troy, Oregon, will not be needed during this period. A rapid increase in electronic site activity is anticipated. Existing mountaintop sites will be sufficient to meet the 10-year demands. Most other special uses currently on the Forest will continue through the period.

#### Encroachment and Title Claims

Current cases requiring litigation will be resolved. The current backlog of cases, including mining claim occupancy, will not be resolved. New cases will be resolved promptly using a variety of methods, depending on the circumstances of each case. One Small Tract Act case per year is anticipated.

### **TRANSPORTATION**

#### Roads

During the first decade, planned local roads needed to support the timber management program will be constructed. The Forest road system will continue to be operated to meet Forest goals, a process which will include an active program of road closures to meet elk habitat requirements, dispersed recreation needs, and soil, water, and economic criteria, as described in District access management plans. Most local roads will be closed to motorized use. Even though additional roads are constructed, the density of open roads will decline below current levels to an average of about 2.0 miles per square mile, Forest-wide. The miles of roads suitable for passenger cars will increase slightly as roads reach their objective level of maintenance. All of the arterial and about half the collector roads will be managed for passenger cars: the remainder will be managed for high clearance vehicles. Desired conditions for trails are described under the Recreation section.

#### Other Facilities

All facilities will be maintained at their user level which includes consideration of user safety, continuity of service, function, operation costs, protection of investment, and appearance.

### PROTECTION

#### Fire

Overall, wildfire activity will remain at about current levels and intense, large fires will occur at about the same level as today. However, the continued use of fire suppression strategies will result in a more cost-effective fire management program.

Use of prescribed fire will expand in project activities of all types and in reduction of natural fuels. Fire will be allowed to play a more natural role in the wildernesses. The general fuel hazard level will slowly be reduced through the combination of management activities. The fuels management program will help reduce the risk of large, intense fires.

#### Pest Management

By the end of the decade, current large scale spruce budworm and Douglas-fir bark beetle infestations, will have 'run their course.' Integrated pest management strategies in all activities will be practiced. But, the Forest will remain susceptible to large-scale insect outbreaks due to such factors as the number of acres of mature and older forest, past fire suppression, past harvest practices, and younger immature stands. Silviculture techniques, prescribed burning, and other practices will be employed to help prevent such large-scale infestations and reduce diseases. The overall 'health' of the Forest will slowly improve.

### PACIFIC NORTHWEST STRATEGY

Opportunities for the Forest to help enhance the vitality of surrounding communities will occur through a Regional initiative called the Pacific Northwest Strategy. It is envisioned that the Pacific Northwest Strategy will be a new focus of operation for many people, one that empowers Forest Service people and local citizens to look and work beyond the traditional boundaries. At the same time, it reaffirms and emphasizes working with other government agencies, local businesses, and the communities themselves in a spirit of interdependency and cooperation that has always existed at the local ranger district level. As the strategy becomes an integral part of doing business, its central focus will be to foster and enhance communication, cooperation, and partnerships.

### DESIRED FUTURE CONDITION IN 50 YEARS

By 2040, actions initiated and carried out under the Forest Plan will become readily apparent. The following section describes the results of management and conditions of the Forest in 50 years, provided the demand for Forest resources and the management described in the Forest Plan continues.

Wilderness, scenic areas, dispersed recreation areas, old growth, research natural areas, and a few other forest areas undisturbed by timber management will remain substantially unaltered, except for subtle vegetational changes. Forest stands in these areas will be older, some showing signs of climax conditions, but many will exhibit more open, subclimax conditions due to 50 years of prescribed burning. Where recreation use is permitted, "wear areas" will be evident. The amount of recreation use will be near the upper limits of capacity, but efforts to teach a strong land ethic to visitors will keep impacts within limits of acceptable change. Direct methods of regulating behavior will become commonplace and accepted.

Lower elevation rangelands (big game winter range, nontimber areas, and 'stringers') will also be much the same as today. Areas of historic heavy use will have essentially recovered and will be productive. Forest stringers will show evidence of expansion. Use by big game and livestock will remain high.

On about one-third of the Forest, timber stands will have a noticeably managed appearance. Conversion of the older forest to younger, thriftier stands will have occurred on most of the suitable acres. The overall appearance will be a mosaic pattern of even-aged management areas with varying unit and tree sizes, uneven-aged management areas with small groups and clumps of trees of varying sizes, and interspersed tree stands of old growth, riparian, and unlogged natures. Production of wood products will have been continuous through time. Overall, 'green' material production will begin to increase at the planned level, and cull and dead material supplies will begin to decline. Smaller trees will contribute an increasing share of the total yields.

As a result of timber management activities, forage production will be abundant and will have reached an equilibrium level of high output. The road system will be essentially complete and under management; only minor reconstruction projects will occur except where construction is needed to accommodate mineral activities. Many roads will be closed to motorized use but will be available for recreational uses.

Where timber management occurs, the general forest appearance will reflect the multiple-use emphasis which include production and maintenance of wood fiber, wildlife habitat, visual resource, and other values. Differences will be characterized by unit size and spacing, tree sizes and stand densities, and vegetative composition. Across the Forest, diversity will remain high in forest vegetation species and stand and plant community conditions.

Where other values are emphasized, the Forest will present a diversity of conditions. Natural appearing stands featuring large trees intermixed with younger trees and other vegetation will be found in managed viewsheds, many riparian areas, winter ranges, and many other areas. Management areas emphasizing wildlife criteria will show contrasting unit size and shape, denser stands, layered canopies in older stands, and higher levels of dead and down trees. Where wood fiber production is emphasized, the Forest will approach a regulated, more uniform condition in terms of tree sizes on a given unit. Stand ages will vary from 0 to 250 years. In summary, forested areas under vegetation management will show the appearance of human activity, more so than at present.

Although the extent of area impacted by management activity will be expanded, in general, soil conditions will be similar to current conditions. Some additional areas will be adversely impacted despite prevention and mitigation measures. The Forest will continue to provide clear, cool water. Quality water will be even more precious than at present; demand will be high from all users. However, available supply from the Forest will remain essentially unchanged.

Riparian areas and stream habitat will be in excellent condition as a result of long-term protection and management, and fish enhancement work. The trends in riparian areas toward quality fish and wildlife habitat, and populations reaching potential levels will be realized. The years of riparian protection and fish habitat improvement will pay off by increasing anadromous fish production by five times over current levels (highest levels since the 1950's) and by bringing

resident fish to peak production levels. The Forest will be in the mode of rebuilding improvements initially constructed under direction of the Plan.

Various species of wildlife will continue to be important on the Forest. Old growth habitat in dedicated and managed units and other areas will remain at planned levels, sustained through time, and continue to meet needs for diversity, aesthetics, and wildlife. Dead and down tree habitat amounts will also continue to meet dependent wildlife needs. Forest-wide, some decline in indicator species populations dependent on old growth and dead/down trees will occur as forest management activities reduce the total amount of key habitat. However, moderate population levels of indicator species dependent on these habitats will be maintained. Annual habitat improvement work will assist in maintaining populations. The biological capacity for species dependent on young tree conditions will increase dramatically. High levels of wildlife populations related to younger, seral forest conditions will be produced.

The Umatilla will continue to be known for its big game. Populations of elk will remain high, although forest cover and forage will have been changing and evolving through time across the Forest. Management of timber (cover), forage, and roads will continue to produce quality big game habitat. Big game winter range habitat condition will be excellent, as satisfactory cover is managed and quality forage is produced through prescribed burning. The impact of elk and deer populations on private lands will have declined to low levels because of increased forage and habitat security on the Forest. Road closures will remain high to maintain the quality of habitat and provide security for elk and deer.

Livestock grazing will be maintained at moderate levels and will harvest part of the increased forage developed through timber harvest. Forage allocations will continue to provide for big game and livestock needs. Upgraded allotment plans will continue the process of implementing improved grazing systems; rangeland improvements identified in plans will be installed and maintained. Overall, rangeland conditions and riparian areas will be substantially improved. Noxious weeds will be present on the Forest, but the spread will be controlled.

Demand for mineral and energy sources will be increasing and the Forest will respond to this demand. Improved knowledge about the mineral potential will result from extensive Forest inventories. Marginal and newly discovered coal, geothermal, oil, and gas resources will receive attention. The Forest will be in a position for proactive management of mineral and energy resources, including use of improved management and reclamation techniques. Development of the Forest potential will have been initiated. Withdrawals will continue to be periodically reviewed for their need and potential for operation.

Much of the lands activity will be completed (or nearly so), including land lines, area boundaries, rights-of-way, and ownership adjustments. New communications systems will replace many ground based facilities, but existing and proposed electronic sites will be used to capacity. Existing and proposed utility corridors will be fully utilized. Access through private lands will provide public use of roads, trails, and areas on the Forest.

Changing forest conditions will continue to influence recreation activities, settings, and experience opportunities. At the same time, demand will increase significantly for most of the various recreation opportunities. The Forest will continue to provide a range and diversity of recreation opportunities similar to that provided today. The supply of roaded and modified environments will increase more than 20 percent, and at the same time, the level of natural to near natural settings will be retained. Most recreation use will occur in the amply supplied forest environments influenced by vegetation management and road development. The Forest will continue to meet demand for primitive and semi-primitive opportunities found in wilderness, unroaded, and other areas. However, frequency of encounters in these areas will be noticeably increased. The many special opportunities will continue to be feature attractions, available through wild rivers, scenic areas, botanical, geologic, and historic areas, scenic byways, and other interpreted cultural resource properties.

Hunting will continue to be a featured activity, and use will be about the same as it is currently despite changes in big game populations. Fish use will continue to increase substantially; sport fishing for salmon and steelhead will be another featured attraction. An expanded and well maintained trail system will provide increased opportunities for a variety of motorized and nonmotorized uses. An integrated trail network system tied to larger systems will traverse the Blue Mountains.

Developed recreation sites and facilities will meet needs, and will be fully utilized. Additional campsites will be added at water-related sites on the Forest, use of older sites will remain high and many facilities will be replaced and remodeled. Visual resources will continue to be emphasized across the Forest; the appearance of natural and near natural conditions will be created and maintained through vegetation management including uneven-aged timber management in sensitive viewsheds.

Wildernesses will be returning to a more pristine condition through use and management of fire. Some visitor impacts will be noticeable along heavily traveled routes and in popular hunting campsites, but will be within established standards for limits of acceptable change. Visitor use will be near the maximum level, but well informed visitors will have a high land ethic and will not unnecessarily degrade the area. Some specific campsites will be hardened to withstand the use. Direct controls to disperse the number of visitors and impacts during the hunting season will be necessary. Locatable minerals will be removed from valid mining claims and the sites restored to a natural-appearing condition. All land inholdings within the wildernesses will have been acquired and will be managed as a part of the wilderness system.

#### PACIFIC NORTHWEST STRATEGY

Each community will have capitalized on its uniqueness and involved its citizens in the development of a desired future. The activities associated with the Pacific Northwest Strategy will continue to support the goals and plans of resource-dependent communities.

#### FOREST MANAGEMENT OBJECTIVES

The projected annual levels of goods and services which will be available from the Forest, with full implementation of the Plan, are summarized in Table 4-1. Planned outputs and activities are the resource management objectives for the Forest. Table 4-1 also shows the annual funding levels necessary to meet the proposed outputs and activities. A narrative description of the planned resource programs and objectives follows the table.

The Forest objectives or planned average annual scheduled outputs and effects may not always be accomplished in any given year. Changes in budgets, data, assumptions, or other items used in the development of the Plan could affect accomplishment of outputs and activities. Should appropriated budgets or personnel vary significantly from the planned needs, final outputs of goods and services may vary according to the funding level. Adjustments in outputs and effects will be evaluated to determine whether adjustment of the Plan is necessary.

Appendix A identifies projects anticipated to occur on the Forest in the next 10 years.

**TABLE 4-1. PROJECTED RESOURCE OUTPUTS AND EFFECTS EXPRESSED AS AN AVERAGE ANNUAL YIELD/DECADE**

OUTPUTS/EFFECTS	UNIT	DECADES				
		1	2	3	4	5
<b>RECREATION</b>						
Developed Recreation Use	M RVD's <sup>1</sup>	280	340	370	395	415
Developed Recreation Capacity	M PAOT Days	702.4	718.9	748.4	753.9	765.9

**TABLE 4-1. PROJECTED RESOURCE OUTPUTS AND EFFECTS EXPRESSED AS AN AVERAGE ANNUAL YIELD/DECADE**

OUTPUTS/EFFECTS	UNIT	DECADES				
		1	2	3	4	5
Nonwilderness Dispersed Recreation Use Capacity						
-Roaded	M RVD's	2,832	2,967	2,933	2,906	2,884
-Unroaded	M RVD's	132	122	120	118	115
Dispersed Recreation Use	M RVD's	1,194	1,253	1,317	1,373	1,431
Wildlife Use (Big Game)	M WUD's <sup>2</sup>	540	525	534	528	550
Fish Use						
-Anadromous	M FUD's <sup>2</sup>	44.8	74.1	87.1	100.2	113.2
-Resident	M FUD's	11.75	135.5	148.8	162.2	175.5
Wilderness Use	M RVD's	115	119	139	159	180
Wilderness Capacity	M RVD's	180	180	180	180	180
Roads Suitable for Public Use						
-Passenger Car	Miles	900	925	950	950	950
-High Clearance Vehicles	Miles	2,530	2,677	2,823	2,823	2,823
Trail Construction/Reconstruction	Miles	30	35	40	45	50
Trail Maintenance Miles	Miles	400	550	650	750	800
Developed Site Construction/Reconstruction	Persons At One Time (PAOT)	255	290	240	120	120
Recreation Opportunity Spectrum (ROS)						
-Primitive	M Acres	128	128	128	128	128
-Semi-Primitive Nonmotorized	M Acres	254	254	254	254	254
-Semi-Primitive Motorized	M Acres	115	115	115	115	115
-Roaded Natural	M Acres	203	203	203	203	203
-Roaded Modified	M Acres	806	806	806	806	806
-Rural	M Acres	5	5	5	5	5
Visual Quality Objectives						
-Preservation	M Acres	304	304	304	304	304
-Retention/Partial Retention	M Acres	388	388	388	388	388
-Modification/Max. Mod.	M Acres	819	819	819	819	819
Wild and Scenic Rivers						
-Wild	Miles	60.4	60.4	60.4	60.4	60.4
-Scenic	Miles	10.5	10.5	10.5	10.5	10.5
-Recreation	Miles	3.9	3.9	3.9	3.9	3.9
<b>WILDLIFE</b>						
Wildlife Management Indicator Species						
-Pileated Woodpecker	Potential No.	810	740	680	680	680
-Northern Three-toed Woodpecker	Potential No.	240	215	215	210	190
-Pine Marten	Potential No.	360	330	300	270	250
-Primary Cavity Excavators	% of Potential Population	65	65	65	65	65
Wildlife Habitat Structural Improvement	No. Structures	75	100	100	100	100
Wildlife Habitat Nonstructural Improvement	M Acres	10.0	12.0	12.0	12.0	12.0
<b>BIG GAME</b>						
Rocky Mountain Elk	Potential No.	21,200	20,600	20,900	20,700	21,500
-Satisfactory Cover	M Acres	164.7	181.2	185.1	227.2	258.4
-Habitat Effectiveness Index	Percent	69	67	68	68	70
Mule Deer	Potential No.	18,300	17,700	18,200	17,800	18,700
Open Road Density <sup>3</sup>	Mi. per Sq. Mi.	2.0	2.1	2.2	2.2	2.2
<b>FISH</b>						
Fish Management Indicator Species						



**TABLE 4-1. PROJECTED RESOURCE OUTPUTS AND EFFECTS EXPRESSED AS AN AVERAGE ANNUAL YIELD/DECADE**

OUTPUTS/EFFECTS	UNIT	DECADES				
		1	2	3	4	5
-Steelhead	M Smolts	1,841	2,504	2,835	3,165	3,496
-Rainbow Trout	M Legal Trout	473	525	543	561	578
Fish Commercial Harvest	M Lbs.	70.4	113.6	132.7	151.9	171.0
Anadromous Fish Production	M Smolts	2,818	4,619	5,419	6,220	7,020
Anadromous Fish Habitat Improvement	M Lbs.	20.7	41.4	62.1	82.8	103.5
<b>RIPARIAN</b>						
Riparian Regeneration Harvest	Acres	50	76	199	41	103
<b>TIMBER</b>						
Lands Tentatively Suitable for Timber Production	M Acres	807.2	807.2	807.2	807.2	807.2
Lands Suitable for Timber Production	M Acres	618.8	618.8	618.8	618.8	618.8
Lands with Timber Yield Reduction	M Acres					
-Full Yield		413.3	441.3	441.3	441.3	441.3
-50-99% of Full Yield		177.5	177.5	177.5	177.5	177.5
-1-49% of Full Yield		0	0	0	0	0
-Unregulated		188.4	188.4	188.4	188.4	188.4
Long-term Sustained-yield	MMCF	32.8	32.8	32.8	32.8	32.8
Timber Sale Program Quantity	MMCF	28.4	28.4	30.3	30.3	30.3
Allowable Sale Quantity (ASQ)		22.2	22.2	23.7	23.7	23.7
Ponderosa pine included in ASQ		4.2	3.8	3.9	4.8	4.6
-Chip Material		3.6	3.6	3.8	3.8	3.8
-Firewood		2.6	2.6	2.98	2.8	2.8
Timber Sale Program quantity	MMBF	159	159			
Allowable Sale Quantity (ASQ)		124	124			
Ponderosa pine included in ASQ		24	21			
-Chip Material		20	20			
-Firewood		15	15			
Harvest Prescriptions	M Acres					
-Clearcut		4.0	3.3	2.8	3.1	2.3
-Shelterwood		2.6	3.2	3.3	2.8	3.0
-Overwood/Shelterwood Removal		1.5	1.2	2.4	2.5	2.1
-Commercial Thinning		0.1	0.0	1.6	0.0	1.6
-Uneven-aged Mgmt.		0.9	1.2	2.4	1.3	2.3
Reforestation Planting	M Acres	4.4	3.6	3.7	3.4	3.1
Natural Regeneration	M Acres	3.1	4.0	4.8	3.7	5.6
Timber Stand Improvement	M Acres	2.9	3.3	5.0	6.2	6.3
Pest Management Stands Acres Managed	M Acres	108	104	143	129	148
<b>FIRE</b>						
Fire Management Effectiveness Index	\$/M Protected Acres	779	779	779	779	779
Fuel Treatment	M Acres					
-Activity Fuel		5.8	6.3	7.4	6.4	6.8
-Natural Fuels		3.4	3.4	3.4	3.4	3.4
<b>TRANSPORTATION</b>						
Arterial/Collector Road Reconstruction	Miles	33	26	22	22	22
Local Roads Construction/Reconstruction	Miles	92/61	27/25	14/20	7/20	3.5/20
Road Maintenance	Miles	4,538	4,777	4,949	4,978	5,005
<b>RANGE</b>						
Permitted Grazing	1,000 AUM's	58.0	58.0	58.0	58.0	58.0
Potential Grazing	1,000 AUM's	62.8	73.5	75.5	70.8	67.9

**TABLE 4-1. PROJECTED RESOURCE OUTPUTS AND EFFECTS EXPRESSED AS AN AVERAGE ANNUAL YIELD/DECADE**

OUTPUTS/EFFECTS	UNIT	DECADES				
		1	2	3	4	5
Available Forage	Million Pounds	219.7	257.6	267.2	251.8	243.0
Vegetation Management	M Acres	1.7	1.7	1.7	1.7	1.7
<b>WATER AND SOIL</b>						
Water Yield Estimate	M Acre Feet	2,460	2,460	2,460	2,460	2,460
Sediment Yield Estimate	Tons (Index)	19,700	20,000	20,300	21,500	20,600
Improved Watershed Condition	Acres	454	815	843	729	680
<b>MINERALS AND ENERGY</b>						
Minerals Proposals, Leases, & Applications	Cases	240	264	290	329	351
Energy Minerals Production	Billion BTUs <sup>4</sup>					
-Lignite		0	0	0	0	0
-Oil and Gas		138	690	690	690	1,400
-Geothermal		0	0	0	0	0
Non-Energy Minerals Production	Million \$'s	0.9	13.8	13.8	13.8	31.8
Area Open for Development	M Acres	872	872	872	872	872
<b>LANDS</b>						
Land Exchange	Acres	500	350	250	100	50
Land Line Location	Miles	37.5	-	-	-	0
Maintenance	Miles	83	83	83	83	
<b>SOCIOECONOMIC</b>						
Present Net Value	Millions of \$'s	1,000.2	-	-	-	-
Returns to Treasury	Millions of \$'s	20.1	22.1	24.6	26.3	29.0
Payments to Counties	Millions of \$'s	5.0	5.6	6.1	6.6	7.2
Changes in Employment	Number of Jobs	+375	-	-	-	-
Changes in Income	Millions of \$'s	+4.6	-	-	-	-
Total Budget Costs	Millions of \$'s	20.5	18.1	19.4	18.7	18.1
Operational Cost	Millions of \$'s	11.4	11.4	11.8	11.7	11.7
Capital Investment Cost	Millions of \$'s	9.1	6.7	7.6	7.1	6.4

1 Recreation Visitor Days

2 Wildlife and/or Fish User Days

3 Forest-wide estimated mi./sq. mi. result based on Forest Plan intent and management objectives.

4 British Thermal Units

## RESOURCE SUMMARIES

### Introduction

The resource summaries section contains supplementary narrative information about management objectives and planned activities necessary to produce the outputs and effects displayed in Table 4-1. The planned activities will become the foundation for developing the annual program of work and the Forest budget. The section also provides some information and data necessary for people implementing resource projects on the ground.

## RECREATION

### RECREATION SITES

Demand for use of the water-related campgrounds will continue to be high; these facilities are expected to be used near capacity on most weekends. Therefore, priorities for managing camping facilities will be directed toward water-related sites. The other campgrounds will be managed to accommodate occasional use during the summer months. All open facilities are expected to be filled during the hunting season. Facilities will be maintained to be safe, sanitary, and pleasant in appearance.

Fee collection will be implemented on sites which meet basic criteria, and where it can be administered efficiently to recover a portion of the operational costs. Concessionaires will be allowed to operate campgrounds where economics and ability to serve the public are favorable. The Campground Host program will be continued to help improve service to the public and reduce costs

Recreation use will be closely monitored to assist in determining need for change. Capacity will be expanded at sites where monitoring shows that regional standards for occupancy rates are degraded and physical attributes of the area. Priority will be placed on upgrading facilities to appropriate standards before significant expansion is implemented. Potential recreation developments and the schedule of activities are displayed in Appendix A.

Many small developed sites will continue to exist, but as facilities deteriorate, only improvements to provide minimum health, safety, and resource protection will be made and maintained. Some of the minor sites may be converted to occupancy spots, to be used primarily during the hunting season.

Vegetative management plans will be made for recreation sites at Development Scale 3 and above, in order to maintain or improve the natural environment. Small timber sales may be used to accomplish the vegetative manipulation necessary to keep the trees thrifty and safe. Knutson-Vandenburg (K-V) funds may be used to accomplish resource treatment projects.

Recreation residences and the Buck Creek group camp will continue through the term specified in their use authorizations. The Slickear tract will terminate on December 31, 2003, all other recreation residences run through December 31, 2008. Future use determinations will be made prior to their termination dates to evaluate reissue of the permits.

The two downhill ski areas will continue to operate according to their master plans. Ski Bluewood has room for considerable expansion within its permitted area. Spout Springs expansion would require area enlargement. Both areas will receive an environmental analysis to evaluate any proposed expansions.

The Forest will rely heavily on state programs to provide facilities for snowmobile, OHV, and ATV activities. User groups will be involved in planning and operating the programs.

Trailhead facilities will be increased and improved to provide auxiliary facilities for semi-primitive opportunities. The facilities will accommodate the various transportation modes appropriate for

the setting; i.e., stock, OHV, snowmobile, backpacker, etc. Timber sale activities and Forest road and trail funds will be used where possible to benefit trail facilities

#### DISPERSED AREAS

Five primary recreation opportunity (ROS) classes have been identified for the Forest Plan Primitive, Semi-primitive Nonmotorized, Semi-primitive Motorized, Roaded Natural, and Roaded Modified. Management will be directed toward meeting the, desired standards for each of the identified ROS types described in management areas and prescriptions and ROS Users Guide. Monitoring will be used to assure that settings are being maintained and not degraded.

Primitive and Primitive and semi-primitive recreation opportunities will be provided in the Semi-Primitive wildernesses and remaining roadless areas. Primitive recreation opportunities will be Recreation expanded in the Wenaha-Tucannon and North Fork John Day wildernesses to a total of about 128,000 acres. Eleven roadless areas will remain essentially unroaded and will still qualify as roadless areas. Of these, 7 areas totaling about 55,000 acres will be managed with emphasis on semi-primitive dispersed recreation and scenic values, as shown in Table 4-2. Also included is the Hells Half Acre/Bald Mtn. area that qualifies for semi-primitive recreation, but was not analyzed as a roadless area due to its insufficient size.

**TABLE 4-2. MANAGEMENT AREA - SEMI-PRIMITIVE RECREATION EMPHASIS**

Umatilla National Forest

<u>Area</u>	<u>Management Area</u>	<u>Umatilla NF M Acres</u>	<u>Total M Acres</u>
UPPER TUCANNON	A1	4.9	4.9
WENATCHEE	A1	15.1	15.1
SPANGLER	A2	4.1	4.1
LOOKINGGLASS	A1	3.2	3.2
GRANDERONDE	A8, A7	11.2	16.5 <sup>1</sup>
HELLS HALF ACRES/BALD MTN. <sup>3</sup>	A1	2.8	2.8
VINEGAR HILL-INDIAN ROCK (GREENHORN MTN)	A8	8.1	24.9 <sup>2</sup>
JUMP-OFF JOE	A8	5.5	5.5

1 includes Wallowa-Whitman NF

2 includes Malheur NF and Wallowa-Whitman NF

3 Not a roadless area based on size requirement

Four other areas totaling about 142,000 acres are managed in an unroaded status for wildlife or water values, but will be available for and provide semi-primitive and roaded natural recreation opportunities. Table 4-3 shows the areas and management direction. Five of the areas will be managed under Management Area C8 (Grass-tree Mosaic) which permits existing roads. However, the expectation is that the roadless portion of the GTM areas will remain roadless. Most of the Walla Walla River Watershed will also be managed in an unroaded condition. The Mill Creek Municipal Watershed is the one excepted roadless area, because dispersed recreation use will be limited to protect water quality.

**TABLE 4-3. MANAGEMENT AREAS - SEMI-PRIMITIVE RECREATION OPPORTUNITIES**

Umatilla National Forest

<u>Area</u>	<u>Management Area</u>	<u>Total Roadless Acres</u>
ASOTIN	C8	11.9
WALLA WALLA RIVER	F4	33.1
HELLHOLE	C8	48.2
HORSESHOE	C8	6.2
SKOOKUM	C8	6.0
POTAMUS	C8	5.2

### Roaded Opportunities

Nearly 14 percent of the Forest, outside the wildernesses, will provide recreation in a roaded natural setting. The remaining portion of the Forest will feature roaded recreation in modified settings. Ample roads will be available to access all portions of the Forest, however, about half the roads will be closed to motorized use, thereby providing walk-in hunting and other nonmotorized opportunities.

### Off-Highway Vehicle Use

Opportunities for off-highway vehicle (including all-terrain vehicle) recreation will be increased. OHV routes for loop trips will be emphasized in roadless and roaded natural areas. An area of slightly over 300,000 acres will be managed to provide quality OHV opportunities. About 62 percent of the nonwilderness, unroaded lands will be available for semi-primitive motorized recreation. Base facilities will be provided at sites that have good access for support vehicles and that are convenient for the Forest to administer. Management prescriptions indicate whether or not OHV use will be allowed in the various management areas. Timber sale planning will incorporate post sale OHV and other trail use considerations in sale design and sale area improvement.

### Trails

The Forest motorized access and travel management plans (to be developed) will be used to determine the areas, roads, and trails where motorized use is appropriate, thus promoting user safety, preventing resource damage, and minimizing resource and user conflicts. The plans will also be designed to be helpful to the public so they can determine which areas, roads, and trails meet their general needs. Public involvement will be emphasized during review and revision of the motorized access and travel management plans. Areas, roads, and trails will be posted to give the public notice of the closure 1 year before the closure is to be in effect.

Trail system management will be directed toward meeting objectives of the ROS classes shown in the management areas in this chapter. A trail management activity plan will be developed to make decisions about standards for specific trails or trail systems, maintenance schedules, funding, management of trail use, and priorities for construction and reconstruction. The plan will provide a network of loop routes for OHV's, as well as identify opportunities for other types of users. The plan will be considered in the context of logical land units rather than single trails.

Trails may be constructed to distribute recreation use, accommodate new activities, improve the recreation opportunity, or provide additional capacity. Where resource management activities impact trail routes, the trail will be protected, rebuilt, relocated, or replaced in another setting. The proposed trail construction and reconstruction schedule is shown in Appendix A. Trail facilities will be maintained to standards appropriate for the recreation setting. Some trails will be considered for inclusion in the National Recreation Trail System (NRT). Emphasis will be given to completing the Blue Mountain Trail. Trails will have priority for NRT designation if they have

differing activities, are available for a long season of use, traverse through natural or near-natural appearing landscapes, and have good road access.

Dispersed campsites (occupancy spots), especially those used recurrently by hunters, will receive special consideration and protection. Project planning and implementation will provide for the protection and enhancement of hunter camps where compatible with other resource management objectives. Road construction and timber harvest project considerations for recreation use sites will include maintenance, improvement of site character, visual quality, and provision for future recreation use.

#### Operations

Management emphasis will be placed on providing 'Recreation Opportunity Guides' and other information services to disperse use and reduce resource impacts. Basic information goals will be to help the public receive a satisfying recreation experience, and to improve the land ethic of Forest users. User groups will be heavily involved in the planning and operating of facilities and activities for their respective interests.

Permits for outfitters and guides will be issued where public need and demand is apparent. Services for rafting and hunting will continue near present levels while opportunities for pack trips and nature studies could increase. Opportunities for outfitted winter treks are available.

#### Wild and Scenic Rivers

The Omnibus Oregon Wild and Scenic Rivers Act of 1988 designated the classification of the three rivers (Grande Ronde, North Fork John Day, and Wenaha), as shown in Table 4-4. Actual corridor boundaries and joint multiagency management plans are to be completed by October 1991 by an ad hoc task group representing the Umatilla and Wallowa-Whitman National Forests, the BLM, and others. Interim river management will follow direction in Management Area A7. The Forest Plan will be amended to incorporate each river management plan when completed.

**TABLE 4-4. WILD AND SCENIC RIVERS - MILES**

#### Umatilla National Forest

River/Segment	Classification			Total (Miles)
	Wild	Scenic	Recreational	
GRANDE RONDE				18.9
Wallowa River to Forest Boundary			1.5	
Forest Boundary to Forest Boundary	1.74			
NORTH FORK JOHN DAY				43.7
Forest Boundary to Trail Creek			0.6	
North Fork John Day Wilderness	24.3			
NJFD Wilderness to Texas Bar Creek		10.5	8.3 <sup>1</sup>	
Texas Bar Creek to Camas Creek				
WENAHA				21.4
S. Fork/N. Fork Jct. To Forest Boundary	18.7			
Forest Boundary to Grande Ronde	—	—	2.7	—
TOTALS	60.4	10.5	13.7	84.0

<sup>1</sup> Texas bar Creek to Forest Boundary is 3.9 miles; non-National Forest portion, Boundary to Camas Creek, is 4.4 miles.

## Special Areas

In addition, the Fremont Historic District, Greenhorn Townsite, Target Meadows, Big Sink, and 10 overlooks will be developed and managed as special interest areas. Six proposed botanical areas will also be available to provide educational opportunities. Management plans will be developed for these areas and 10 viewpoints shown in Table 4-2 (also see Appendix A)

## Visual Resource

In total, about 26 percent of the Forest, outside of wildernesses, will be managed to provide a natural to slightly altered visual appearance. This equates to a partial retention visual standard, as described in the Landscape Management Handbook. Lands managed to meet the standards include unroaded areas, old growth stands, and some riparian areas where timber harvest is restricted. Other areas are viewsheds and some riparian areas where timber management and harvest are designed to maintain or produce a large-tree appearance. All wildernesses will be managed to the visual quality standard of preservation.

The visual quality objectives of retention and partial retention are emphasized in viewshed, which include state highways, key Forest travel routes, and major water features. In the viewsheds, modification may be used on the background distance zones which have minimal variety. Viewsheds will be managed to the specifications of the A3 and A4 Management Areas as identified on the Forest Plan map. Table 4-5 displays visual management intent for each inventoried viewshed.

Viewshed corridor management plans for sensitivity level 1 and 2 viewsheds will be developed according to direction, and will specify vegetative manipulation guidelines to attain the desired forest character. The plans will indicate scheduling and amounts of timber harvest needed to maintain or enhance long-term visual characteristics.

Although about two-thirds of the Forest, outside the wildernesses, will eventually be modified, activities will be designed to borrow from naturally established form, line, color, and texture so that the affected areas may eventually resemble natural occurring ones. Modified silvicultural systems and techniques will also be used to help minimize impacts to visual quality. The Forest Landscape Management Plan will be updated, based on allocations and decisions in the Forest Plan.

The principles contained in Volumes 1 and 2 of the National Forest Landscape Management Handbook, and other published handbooks within the Visual Management System (Utilities, Range, Roads, Timber, Fire, and Ski Areas) will be used to manage the visual resource.

**TABLE 4-5. VIEWSHED MANAGEMENT\***

### Umatilla National Forest

<u>No.</u>	<u>Name of Viewshed</u>	<u>Acreage</u>	<u>Sensitivity Level</u>	<u>Visual Quality Objectives</u>	
				<u>Fg<sup>1</sup></u>	<u>Mg<sup>2</sup></u>
1	Desolation Creek Road #10	39,625	2	PR <sup>3</sup>	M <sup>4</sup>
2	Granite Creek Trail #3016	229	1	R	R
3	Highway #395	6,936	1	R <sup>5</sup>	PR
4	North Fork John Day River	3,649	1	R	PR
5	Winom Creek Trail #3153	791	1	P <sup>6</sup>	P
6	Big Creek Trail #3151	75	1	P	P
7	Ukiah-Granite Road #52	23,537	1	R	PR
8	Tower	3,728	2	M	M
9	Highway #244	9,073	1	R	PR
10	Pearson Creek Road #54	11,182	2	PR	M
11	Western Route Road #53	11,540	2	PR	M
12	Tupper Road #21	2,079	2	PR	M

<u>No.</u>	<u>Name of Viewshed</u>	<u>Acreage</u>	<u>Sensitivity Level</u>	<u>Visual Quality Objectives</u>	
				<u>Fg<sup>1</sup></u>	<u>Mg<sup>2</sup></u>
13	Highway #207	8,579	1	R	PR
14	Bull Prairie Road #2039	1,393	2	PR	M
15	Penland Lake Road #2084	2,084	2	PR	M
16	Meacham Creek	12,103	2	PR	M
17	Summit Road #31	34,982	2	PR	M
18	Umatilla River Road #32	8,728	2	PR	M
19	Highay #204	10,155	1	R	PR
20	Buck Creek Trail #3073	57	1	P	P
21	NF Umatilla River Trail #3083	53	2	PR	M
22	Jubilee Road #64	8,438	1	R	PR
23	Skyine Road #6403	8,074	2	PR	M
24	Jarboe Road #63 and #62	41,897	3	M	M
25	Grande Ronde Road Scenic Area	14,088	1	R	PR
26	Wenaha River Trail #3106	1,480	1	R	PR
27	S. Fork Walla Walla Trail #3225	13,7708	1	R	PR
28	Tiger Creek Road #65	8,333	2	PR	M
29	Touchet Road #64	8,874	1	R	PR
30	Godman Road #46	15,433	3	M	M
31	Grouse Flat Road #40	39,422	2	PR	M
32	Tucannon Road #47	8,654	1	R	PR
33	Target Meadow Road #6401	1,035	2	PR	M
	Total	360,014			
	Viewsheds with 1 or 2 Sensitivity (Number)			23	
	VQO Retention (1,000 Acre)		103		
	VQO Partial Retention (1,000 Acre)		167		
	Subtotal		270		
	Modification or Maximum Modification (1,000 acre)			89	

**Abbreviations:**

- |                                    |                    |
|------------------------------------|--------------------|
| 1 fg – Foreground Distance Zone    | 4 M – Modification |
| 2 mg – Middle Ground Distance Zone | 5 R – Retention    |
| 3 PR – Partial Retention           | 6 P – Preservation |

\* See glossary for definition of terms in the table.

## CULTURAL RESOURCES

The Forest-wide Standards and Guidelines incorporate appropriate historic preservation laws, regulations, and policies, and will direct future management decisions on cultural resources.

Cultural resource inventory and evaluation will be guided by the Cultural Resources Inventory Plan (June 1989). Under the direction of a cultural resource professional, inventory and evaluation will precede all ground-disturbing projects. During the next several years, about 50,000 acres will be surveyed each year, but in the following years between 25,000 and 30,000 acres will be surveyed and evaluated annually. The number of acres surveyed annually will depend, in large part, upon the location and total acres included within projected timber sale areas. Information collected during these inventories will be used to refine the cultural resource sampling strategy used on the Forest. Approximately 10 percent of the inventoried acres will require further investigation due to known site distributions or due to high cultural resource sensitivity. Emphasis will be placed on monitoring these areas.



Federal legislation requires, and some publics have identified, a need to inventory Forest acres not affected by project activities. Depending on the level of available funding, priorities for a nonproject related inventory will be:

- a. Statistical sample:
- b. areas experiencing degradation through natural processes or intensive public use;
- c. areas of reported, but unverified sites; and
- d. areas of high cultural resource sensitivity as identified in the Forest Cultural Resource Inventory Plan.

All sites located during a survey will be documented to Regional standards. As time and funding permit, records will also be prepared for the current backlog of unrecorded or insufficiently recorded sites.

An 'evaluation of significance' will precede implementation of any activity that may affect an identified site. Such an assessment is vital to the management of cultural resources, to the selection of resources for in-place preservation, and to the mitigation of adverse effects through data recovery projects. Sites will be treated as individual properties, thematic groups, or historic districts. Cultural resource management strategies will be developed for selected National Register sites and structures.

Significant sites will be nominated to the National Register at the rate of approximately two per year. In the next decade this may be limited to nomination of the already evaluated depression-era administrative sites, but in ensuing decades additional site types such as the ridge-top lithic scatters on the Pomeroy Ranger District, lookout towers and mining districts will be included.

Enhancement projects will be undertaken in conjunction with the inventory and evaluation programs. Initially, stabilization and public interpretation of the Fremont Powerhouse will be accomplished over the next few years. Other possible interpretation opportunities include Greenhorn Townsite, Target Meadows, and the Summit Guard Station. Scientific evaluation may be undertaken at specific sites on all ranger districts after consultation with the appropriate SHPO and interested Native American tribes. This evaluation will be encouraged in order to better understand information which is recorded during inventory and to advance our knowledge of past lifeways.

Protection of historic and prehistoric sites will continue to be vigorously pursued on the Forest. Sites subject to disturbance, either by project related activities or unauthorized excavation, will be monitored on a regular basis. Emphasis will be placed on apprehending and prosecuting looters.

## **WILDERNESS**

Wilderness direction for the three Forest wildernesses is provided in Management Area (Strategy) BI, and in the three wilderness activity plans (1986) which are summarized in Appendix B. No additional areas are considered for wilderness in this Forest Plan.

Increased emphasis will be placed on implementing and refining the wilderness activity plans. Public information and education will be instrumental in improving wilderness ethics and 'leave no trace' techniques.

The Limits of Acceptable Change (LAC) process, incorporating public participation, will be used to determine needs for limiting and distributing visitor use. The initial LAC indicators and standards will need to be verified and refined for each wilderness.

The amount of wilderness land which meets standards for the 'Primitive' wilderness resource spectrum will increase to about 128,000 acres as past impacts of use are reduced, trails are managed to wilderness standards, and the LAC process is fully implemented. Remaining

wilderness acres will be managed to the Semi-primitive recreation opportunity class. Attention to nonconforming uses will improve the overall wilderness resource, especially with regard to the North Fork John Day Wilderness mining impacts and the Wenaha-Tucannon Wilderness permanent hunting camp structures.

Permitted livestock grazing use in wilderness is as follows. These AUM figures may be adjusted upon completion of updated allotment plans.

**TABLE 4-6. LIVESTOCK GRAZING IN WILDERNESS**

Umatilla National Forest

<u>Wilderness</u>	<u>Domestic Grazing Permits</u>			<u>Recreation (Horse)</u>
	<u>Kind</u>	<u>No.</u>	<u>AUM's</u>	<u>AUM's</u>
Wenaha-Tucannon	Cattle & Horses	485	425	400
North Fork Umatilla	Sheep & Goats	1,000	450	1
North Fork John Day	Cattle & Horses	412	544	72
	Sheep & Goats	<u>850</u>	<u>172</u>	
Total		2,747	1,591	473

The area surrounding the wildernesses will be managed so as not to adversely effect the adjacent wilderness resource.

Implementation actions will be coordinated with adjacent forests and agencies. Coordination will assure consistency in wilderness management actions.

**WILDLIFE**

The implementation of wildlife direction and emphasis is achieved primarily through coordination with other resources, especially timber, road, recreation, fish, and range management, in order to maintain or improve habitat for wildlife. Specific direction is summarized in the Forest-wide Standards and Guidelines and in the management areas. In general, management areas emphasizing wildlife (C1, C2, C3, C3A, C4, C5, and C8) will provide high quality habitat conditions for wildlife indicator species and other represented wildlife. Other management area direction and the Forest-wide Standards and Guidelines will assure that at least minimum acceptable habitat conditions are provided. Proper implementation of all area direction and standards and guidelines is an important aspect to providing for the needs of wildlife.

The Forest Plan supersedes and replaces all previous wildlife management plans including: Umatilla Wildlife Management Unit Plan (February 1971), and Old Growth Wildlife Habitat on the Umatilla National Forest (August 1980). Two big game winter range management plans, Bridge Creek Biological Unit Management Plan (June 1978), and Lower Meacham Creek Winter Range Habitat Improvement Plan (November 1985), are incorporated by reference into the Forest Plan until superseded by a comprehensive big game winter range management plan (to be developed).

**Nongame Wildlife Species Habitat**

With the implementation of the Forest Plan, old growth and mature tree habitats will occur in dedicated units in the mixed conifer and ponderosa pine habitat types and in managed units in the lodgepole types. A total of 52,600 acres of habitat will be maintained outside of wilderness. The dedicated old growth/mature tree units in the mixed conifer habitats have been identified and mapped and are shown on the Forest Plan maps as Management Area C1. Feeding areas surrounding dedicated units will be considered and implemented in project activities. Table 4-7 summarizes the nonwilderness old growth areas by type and for each of the management indicator wildlife species.

**TABLE 4-7. SUMMARY OF MIXED CONIFER/PONDEROSA PINE OLD GROWTH**

## Umatilla National Forest

Management Indicator Species	Old Growth Habitat Condition <sup>1</sup>	Nonwilderness	
		Number of Units	Acres
Pileated woodpecker	Suitable	63	24,665
	Capable	63	11,610
Pine marten	Suitable	26	6,280
	Capable	2	370
Pileated woodpecker and Pine Marten	Suitable	16	5,640
	Capable		
Northern three-toed woodpecker	Suitable	26	2,255
	Capable	<u>18</u>	<u>1,780</u>
	Totals	184	52,600
Other Existing Inventoried Old Growth Habitat			83,040

1 Suitable - Existing old growth tree habitat now meeting the minimum Regional definition.

Capable - Acres or areas identified as being capable of becoming old growth in time, but not now meeting the Regional old growth tree habitat definition. These areas were selected to meet distribution requirements.

Lodgepole pine habitat units will be managed to meet the specifications listed in Management Area C2. The lodgepole units will change location with time; the initial existing units have been located on the ground. Based on acres of lodgepole pine, the following numbers of units and minimum acres by Ranger District (outside of wilderness) have been identified and will be managed on the ground.

**TABLE 4-8. SUMMARY OF LODGEPOLE PINE OLD GROWTH**

## Umatilla National Forest

Ranger District	Percent of Lodgepole Pine Acres	Number of 75-Acre Old Growth Units	Acres	
			0-40 Years	40-80 Years
Heppner	11.2	7	585	585
North Fork John Day	79.8	32	3,000	3,000
Pomeroy	4.7	2	150	150
Walla Walla	5.3	3	300	300
Total	100.0	44	4,035	4,035

An estimated 38,500 acres of existing old growth/mature tree habitat occur in roadless, riparian, and other suitable habitat areas, outside of wilderness. Old growth in each of these areas (Management Areas A1, A2, A7, A8, C3A, C7, C8, D2, F2, and F4) will be protected. Therefore, a combined total of about 91,100 acres of dedicated and other contributing old growth/mature tree habitat will be provided on the Forest, outside of wilderness. This important habitat component will be dedicated or managed for pileated woodpeckers, pine martens, northern three-toed woodpeckers, and other wildlife species heavily dependent on this habitat type.

Dead and down tree habitat under the Forest Plan also will be managed under Forest-wide Standards and Guidelines and management area direction. Populations of the wildlife indicator species will be maintained at about 65 percent of potential population level Forestwide. An average estimated snag density of about 1.5 snags per acre will be maintained. Replacement snags will be planned for and provided in project activities. Areas with restricted timber harvest are expected to contain natural levels of dead and down trees.

#### Big Game Wildlife Species Habitat

Quality big game habitat will be achieved through vegetation and road management techniques with emphasis on habitat components of cover, forage, and roads. Achieving big game habitat objectives will require meeting HEI and cover standards for Management Areas A10, C4, C5, C7, EI, E2, and F4 and the following:

- Maintaining, enhancing, or developing satisfactory and marginal cover where timber management is used.
- Enhancing forage, particularly on big game winter ranges, using a variety of techniques.
- Effectively closing roads according to district motorized access and travel management plans.
- Coordinating timber and road management project plans and implementation actions.
- Managing key big game habitats including riparian areas, migration corridors, and calving areas.

Big game winter range habitat conditions will also be maintained or improved by using specific directions summarized in the Forest-wide Standards and Guidelines and the Management Areas (Strategies) C3, C3A, C8, F4, and others. On winter ranges, directions provide for high levels of habitat effectiveness through maintenance and growth of satisfactory cover (the existing satisfactory cover or 10 percent, whichever is lower), marginal cover, improving forage, and providing fewer open roads. Uneven-aged management is emphasized. Prescribed burning is a principal program and technique used for winter range habitat maintenance, for forage enhancement, and to assist in keeping big game animals on the Forest during the winter.

As a result of the various big game management activities, elk populations are expected to be maintained and deer number will recover through the decade. Projects to enhance big game and other wildlife habitat conditions are scheduled and listed in Appendix A.

#### **THREATENED/ ENDANGERED/ SENSITIVE PLANT AND ANIMAL SPECIES**

There are no known federally-listed threatened or endangered plant species on the Forest. Twenty-two plant species found on the Forest have been listed on the Region 6 Sensitive Plant list (see Table 4-91). However, other species may be listed when they are located (or are suspected to be present) on adjacent areas (refer to Appendix L of the FEIS for a listing).

Before a project is initiated, inventories for population and distribution of threatened, endangered, and sensitive species will be conducted on a priority basis. Biological evaluations will be prepared. Each inventory will list all plant species found in the survey area. Previously surveyed areas can be checked for species occurrence when the Federal and regional plant list change. Currently, about 25 percent of the Forest acres have been surveyed for threatened, endangered, and sensitive plant species.

**TABLE 4-9. SENSITIVE PLANT SPECIES DOCUMENTED ON THE FOREST**

Umatilla National Forest

(AS OF DECEMBER 1988)

<u>Scientific Name</u>	<u>Common Name</u>
Allium campanulatum	Sierra Onion
Allium dictyon	Blue Mountain Onion
Allium madjdum	Swamp Onion
Allium tolmiei var. platyphyllum	Flat-leaved Onion
Aster sibiricus var. meritus	Arctic Aster
Astragalus anhuri	Arthur's Milkvetch
Astragalus diaphanus var. diaphanous	Transparent Milkvetch
Botrychium lunaria	Moonwort Grape-Fern
Carex limnophila	Pond Sedge
Cirsium utahense	Utah Thistle
Dryopteris hlix-mas	Male Fern
Lupinus sabinii	Sabin's Lupine
Lycopodium annotinum	Stiff Clubmoss
Mimulus clivicola	Bank Monkey-flower
Mimulus washingtonensis	Washington Monkey-flower
Physaria didymocarpa var. didymocarpa	Common Twinpod
Ranunculus oresterus	Blue Mountain Buttercup
Ribes cognatum	Umatilla Gooseberry
Ribes wolfii	Wenaha Currant
Silene scaposa var. scaposa	Scapose Catchfly
Spiraea densiflora var. splendens	Subalpine Spiraea

Eleven additional animal species are considered 'sensitive' in the Blue Mountain portion of the Region. Sensitive species are those that could become endangered within the state in the foreseeable future if no management action protects their habitats. These are also candidate species for Federal status. Table 4-10 summarizes the T/E/S and wildlife species occurring on the Forest.

**TABLE 4-10. THREATENED, ENDANGERED AND SENSITIVE WILDLIFE SPECIES**

Umatilla National Forest

<u>Common Name</u>	<u>Scientific Name</u>
<b>A. BIRDS</b>	
American peregrine falcon	Falco peregrinus anatum
Northern bald eagle	Haliaeetus leucocephalus
Ferruginus hawk	Buteo regalis
Long-billed curlew	Numenius americanus
<b>B. MAMMALS</b>	
Preble's shrew	Sorex preblei
Townsend's western big-eared bat	Plecotus townsendii townsendii
California wolverine	Gulo gulo luteus
Gray wolf	Canis lupus
North American lynx	Felis lynx Canadensis
California bighorn sheep	Ovis canadensis californiana
<b>C. INVERTEBRATES</b>	
Blue Mountain clyptochian	Cryptochia neosa
<b>D. FISH</b>	
Bull trout	Salvelinus confluentus
Redband trout	Oncorhynchus mykiss

Biological evaluation and any required surveys and inventories of all threatened, endangered, and sensitive species will be completed prior to all project activities to insure the protection and/or mitigation of all T/E/S species.

The Forest will coordinate closely with the U.S. Fish and Wildlife Service concerning all proposed management activities that have the potential to impact threatened or endangered species. The Forest will participate in the recovery objectives for both bald eagles and peregrine falcons outlined in Chapter III of the FEIS.

Monitoring will be used in the evaluation of estimated outputs in the FEIS and the anticipated habitat conditions described in the Forest-wide Standards and Guidelines, and in the management areas. The evaluation will determine if wildlife habitats and population trends occur as projected, and will form the basis for changing plan direction if necessary. Details of these monitoring actions are outlined in Chapter 5.

Six botanical areas that contain plants unique to the Blue Mountains are proposed in the Forest Plan. Topography and settings of each area are quite varied. The areas provide unique educational opportunities and scientific values. (See Table 4-11.)

**TABLE 4-11. PROPOSED BOTANICAL AREAS**

Umatilla National Forest

<u>Recommended Areas</u>		<u>Key Plant Species</u>
Charley Creek	50 acres	Wenaha Currant
Teal Spring	5 acres	Dusty Maiden Wenaha Currant
Woodward Campground	15 acres	Bracted Lousewort Early Coral-root
Ruckel Junction	5 acres	Sabine's Lupine
Sheep Creek Falls	500 acres	Male Fern Mountain Fern Maidenhair Fern Devil's Club
Shimmiehorn Canyon	140 acres	Oak Fern Maidenhair Fern Licorice Fern Lady Fern

**RESEARCH NATURAL AREAS**

Research Natural Areas (RNA's) are sites where some natural features are preserved for scientific and educational purposes and natural processes are allowed to dominate. Their main purposes are: (1) Preservation of examples of all significant natural ecosystems for comparison with those influenced by man; (2) provision of educational and research areas for ecological and environmental studies; and (3) preservation of gene pools for typical and rare and endangered plants and animals (USDA Forest Service 1975).

On the Forest, two RNA's are established and six others are proposed (see Table 4-10 and Appendix H of the FEIS for details). When suitable new areas are identified they will be considered for addition to the RNA inventory. Prior to establishment, a comprehensive formal

report will be made. For RNA's proposed on National Forest System lands, the report is submitted to the Chief of the Forest Service for approval. Upon establishment of each area, a Research Natural Area Management Plan will be prepared.

**TABLE 4-12. EXISTING AND RECOMMENDED RESEARCH NATURAL AREAS**

Umatilla National Forest

Name	Area (acres)	Location (District)	Plant Community Exemplified
<b>EXISTING</b>			
Pataha Bunchgrass	69	Pomeroy	Blue bunchgrass wheatgrass/ Sandberg's bluegrass
Rainbow Creek	576	Pomeroy <sup>1</sup>	Grand fir – white pine grand fir/thinleaf huckleberry, mixed conifer with larch dominance
<b>RECOMMENDED</b>			
Birch Creek Cove	410	North Fork John Day	Mid to high elevation Sedge and grass wetlands
Elk Flats Meadows	75	Walla Walla	Tufted hairgrass meadow aspen
Elk Flats-Wenaha Breaks	1,665	Pomeroy <sup>1</sup>	Grand fir – Pacific yew grand fir/twinflower lodgepole pine/thinleaf huckleberry, low elevation permanent pond
Kelly Creek Butte	80	Heppner	Stiff sagebrush/bunchgrass
Mill Creek Municipal Watershed	7,950	Walla Walla <sup>2</sup>	Douglas-fir, ponderosa pine/snowberry mid-elevation stream
Vinegar Hill	410	North Fork John Day, Long Creek <sup>3</sup>	Whitebark pine Subalpine sagebrush communities

1 Area located within the Wenaha-Tucannon Wilderness  
 2 Area located within the Mill Creek Municipal Watershed  
 3 Malheur National Forest

**RIPARIAN/FISH**

Projected increases in fish production (shown in Table 4-1) result from a combination of approaches including Forest riparian and other management practices, direct Forest improvement projects, and emphasis by a number of constituent groups working on downstream fish problems.

Coordinating implementation activities in and near streams will be emphasized. Timber harvest, related road building, livestock grazing, and mining are activities which have the potential to reduce fish habitat capability and impact riparian areas on the Forest. (See Chapter IV of the FEE for discussion.) Use of the Umatilla National Forest Best Management Practices (see Forest-wide Standards and Guidelines), Management Areas C5 and C7, and other management areas with no riparian harvest (A1, A2, A7, A8, B1, C1, C8, and F4) is expected to improve fish habitat capability across the Forest.

The primary method for achieving riparian area objectives will be the application of the Forest-wide Standards and Guidelines and management area direction, as they relate to riparian area activities, stream surface shading, potential large woody material placement, riparian forage utilization, and floodplain management. Early in the planning process, the Forest recognized the importance of these resources through the mapping of anadromous and resident fish habitat streams, wetlands, and their associated riparian areas. Moreover, our knowledge of critical parameters relating to these areas should improve significantly over the next 10 years as instream habitat and coordinated riparian resource inventories are completed for Forest streams and wetlands. During the next decade, a classification system for riparian vegetation types will be completed which will become an integral part of riparian management and inventory efforts.

The focus will also be on improving habitat conditions for parameters that limit fish population size on the Forest. These include protecting and improving riparian vegetation to provide shade, reducing stream temperatures and sediment, and improving stream geomorphology (maintaining and adding large wood, developing pools and stream complexity, and stabilizing streambanks) to improve rearing habitat. Riparian vegetation condition and trend should continue to improve rapidly. Streambank and instream component improvement will occur but more slowly. Monitoring will be used to test effectiveness of standards and guidelines and management area direction as related to riparian and fish management.

Forest-wide fish habitat enhancement accounts for the bulk of the Forest related increases in fish production. During the next decade, emphasis will be placed on enhancement work in the North Fork John Day River system which has the greatest potential for increased fish production and the fewest downstream problems. Improvement work is also scheduled in the other Forest river systems. See Appendix A for the schedule of fish habitat improvement work. A combination of Knutson-Vandenburg (K-V) and Bonneville Power Administration (BPA) appropriated funds will be used on improvement projects. A portion of the K-V funds will be utilized for resident fish enhancement.

Two key assumptions in the Forest Plan are that various groups and agencies interested in water and fish problems will continue working to remove barriers to increased fish production, and that their efforts will be successful. The Forest will continue coordination and cooperation in these improvement efforts.

## **RANGE**

### **Forage**

Most of the projected forage production increases in the next 30 years will be a result of transitory range created by timber harvest. Improving range condition and trend across the Forest will also result in some forage increases. The forage increase will result in an increased potential grazing capacity, even after meeting big game forage needs.

During the next decade, permitted use will increase to 58,000 AUM's, about 6 percent above current levels (see Table 4-1), due to the expanded transitory forage base. Intensive grazing of clearcuts, shelterwoods, and other timber harvest areas is planned. Increased grazing on transitory ranges will most often require only improved management techniques such as riding, salting, and improvement construction to make use of available forage within existing allotments. Range management coordination will be required on the harvest areas and on adjacent riparian areas. Some adjustment in allotment boundaries also may be required.

The increase in forage should accommodate some increases in use by livestock and big game. Available forage will be 'split' between livestock and big game on a 40-60 basis. Some livestock grazing capacity on big game winter ranges will be allocated where forage for big game can be enhanced.



Utilizing the full range potential will require that several conditions be met. The agricultural industry is assumed to be able to provide the livestock necessary to utilize the increased forage production. Allotment management plans must be kept current with existing resource capacities and conditions. As shown in Appendix A, each allotment is scheduled to be updated, to the extent necessary, once every 10 years.

Updated or reanalyzed allotment management plans will fully implement forage utilization standards and any increased livestock numbers. The plans will also address improved range conditions, and provide specific schedules of range improvements. In addition, the allotment management plans will provide for coordination with other resources and with the various permittees.

With a few exceptions (A6, D2, F2), livestock grazing is permitted across the Forest in all management areas. On about 76 percent of the Forest, intensive to extensive (Range Strategy C and D) management will be practiced, and a moderate to high level of cost-effective improvements (such as fencing and water developments) is planned. About 5 percent of the Forest will receive extensive use (Range Strategy B) with the aid of few or no improvements, and the remaining 19 percent will not be available for use by livestock.

#### Noxious Weeds and Poisonous Plants

Noxious weeds now infest an estimated 6,000 acres of the Forest. Areas of infestation are associated with activities such as timber harvest, road construction, livestock grazing, and recreation. With the planned level of activity, the potential exists for expanded infestations of weeds on the Forest.

Control efforts will be initiated on the Forest. The Forest Noxious Weed Control Plan (November 1989) is incorporated into the Forest Plan by reference and provides direction for inventory and treatment of target species, interagency and landowner coordination, and funding. The methods of treatment will also be in accordance with the direction in Managing Competing and Unwanted Vegetation, FEIS, November 1988. Essentially, the forests are directed to emphasize prevention and natural ecosystem processes, and reduce reliance on herbicides. However, all treatment methods are available. Cost of treatments will vary greatly. Hand methods are approximately four to six times as expensive as chemical treatment, and will not keep up with the current level of infestation under the present budgets. If effective biological controls are found or herbicides used, the problem will be contained or lessened. Otherwise, the problem will get progressively worse. Presently, progress is being lost in all areas in the control of noxious weeds.

Several plant species not classed as noxious weeds (but as poisonous plants) have caused economic loss to livestock. Generally, control efforts have not been initiated on the Forest because these species have not been abundant and forage conditions have been favorable. No control efforts have been carried out in recent years, and none are planned for the future. See Table 4-13 for a list of Forest problem plants.

**TABLE 4-13. PROBLEM PLANTS ON THE UMATILLA NATIONAL FOREST**

#### Umatilla National Forest

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PRIMARY NOXIOUS WEEDS OCCURRING ON THE FOREST

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Tansy ragwort	( <i>Senecio jacobaea</i> )
Yellowstar thistle	( <i>Centaurea solstitialis</i> )
Dalmation toadflax	( <i>Linaria dalmatica</i> )
Diffuse knapweed	( <i>Centaurea diffusa</i> )
Spotted knapweed	( <i>Centaurea maculosa</i> )
Canada thistle	( <i>Cirsium arvense</i> )
Scotch thistle	( <i>Onopordum acanthium</i> )
Common St Johnswort	( <i>Hypericum perforatum</i> )

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SOME SPECIES OF POISONOUS PLANTS COMMON TO THE  
UMATILLA NATIONAL FOREST

Deathcamas	(Zigadenus spp.)
Larkspur species	(Delphinium spp.)
Lupine species	(Lupinus spp.)*
Milkvetches or Locoweed species	(Astragalus spp.)**
Water hemlock	(Circuta douglasii)
Prunus (cherry) species	(Prunus spp.)
Wild red baneberry	(Actaea rubra)
Green false hellebore	(Veratrum viride)

\* *Lupinus sabinii* is a documented Sensitive plant species on the Forest, *Lupinus biddiet* and *Lupinus cusickii* are suspected to occur on or near the Forest.

\*\* *Astragalus arthuri* and *Astragalus diaphanus* are documented Sensitive plant species on the Forest, *Astragalus cusickii* is suspected to occur on or near the Forest

Under no circumstances would any proposed control efforts target documented or suspected Sensitive plant species.

On the Forest, 807,233 acres have been classified as tentatively suitable for timber production. Timber harvest is scheduled on 618,769 of these acres to facilitate wood fiber production and to achieve the following various multiple-use objectives:

<u>Management Emphasis</u>	<u>Management Area</u>
Visual	A3, A4, A5, A7 (part)
Wildlife	A10, C2, C3, C4, C5, E2, F4 (small part)
Fish	C5, C7
Timber/Forage	E1

## TIMBER

Timber management will not be used on a scheduled basis on 188,464 acres in order to meet the following direction:

Provide old growth to meet Management Requirements (MR's). Criteria have been provided in Regional direction and are shown in the Forest-wide Standards and Guidelines.

Provide winter range satisfactory and marginal cover to achieve, insofar as possible, 'optimum' cover conditions on winter range. (This is a discretionary constraint identified and discussed in the FEIS, Chapter II and Appendix 8.)

Provide for Management Area direction in A1, A2, A6, A7 (part), A8, A9, C1, C3A, C7 (riparian), C8, D2, F2, and F4 (most part).

Various others areas were withdrawn from consideration for timber production including all wildernesses, forests with regeneration difficulty, and lands not capable of producing a crop of wood. Table 4-14 summarizes the Forest land classes. Table 4-15 displays a breakdown of the suitable and unsuitable lands by management area. Table 4-17 shows the potential growth as related to suitable lands.

Forest Land Classification

### TABLE 4-14. FOREST LAND CLASSIFICATION SUMMARY

Umatilla National Forest

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<u>Classification</u>	<u>Acres</u>
Non-Forested land (includes water)	316,362
Forested land	1,086,113
Forested land withdrawn from timber production	236,431
Forested land not capable of producing crops of industrial wood	24,920
Forested land physically unsuitable:	
Irreversible damage likely to occur	0
Regeneration difficulty	17,529
Forested land--inadequate information	0
Tentatively Suitable Forest land	807,233
Forest land not allocated for timber production	188,464
Unsuitable Forest land	449,414
Total Suitable Forest land	618,769
Total National Forest land	1,402,467

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**TABLE 4-15. MANAGEMENT AREAS SUITABLE LANDS**

## Umatilla National Forest

	Management Areas	Suitable Lands	Unsuitable/ Nonselected Lands
A1	NONMOTORIZED DISPERSED RECREATION	0	27,319
A2	OHV RECREATION	0	7,523
A3	VIEWSHED1	19,772	23,942
A4	VIEWSHED2	15,007	13,673
A5	ROADED NATURAL	2,903	1,833
A6	DEVELOPED RECREATION	0	4,432
A7	WILD AND SCENIC RNER	3,344	4,261
A8	SCENIC AREAS	0	31,442
A9	SPECIAL INTEREST AREA	0	3,152
A10	WENHAHA-TUCANNON SPECIAL AREA	2,547	747
81	WILDERNESS	0	304,400
C1	DEDICATED OLD GROWTH	0	41,184
C2	MANAGED OLD GROWTH	3,455	167
C3	BIG GAME WINTER RANGE	50,037	102,719
C3A	SENSITIVE BIG GAME WINTER RANGE	0	8,161
C4	WILDLIFE HABITAT EMPHASIS	202,431	56,447
C5	RIPARIAN/WILDLIFE	17,158	10,050
C7	SPECIAL FISH MANAGEMENT AREA	87,477	17,860
C8	GRASSTREE MOSAIC	0	96,471
D2	RESEARCH NATURAL AREA	0	1,586
E1	TIMBER/FORAGE	55,406	36,015
E2	TIMBER AND BIG GAME	154,970	44,579
F2	MILL CREEK MUNICIPAL WATERSHED	0	20,815
F3	HIGH RIDGE EVALUATION AREA	880	0
F4	WALLA WALLA RIVER WATERSHED	<u>3,382</u>	<u>31,568</u>
	TOTALS	618,769	892,345

Present and Future Forest Conditions

**TABLE 4-16. PRESENT AND FUTURE FOREST CONDITIONS**

Umatilla National Forest

	<u>Unit Measure</u>	<u>Suitable Land</u>
PRESENT FOREST		
Growing Stock	MMCF	1,220
	MMBF	6,932
Live cull	MMCF	6.8
	MMBF	37.0
Salvable Dead	MMCF	166.0
	MMBF	287.8
Annual Net Growth	MMCF	12.0
	MMBF	67.2
Annual Mortality	MMCF	10.7
		30.8
FUTURE FOREST:		
Growing Stock	MMCF	1,147.9
Annual Net Growth	MMCF	34.7
Rotation Age	YEARS 80 <sup>1</sup> to 110	

AGE CLASS DISTRIBUTION	<u>Present Forest</u>		<u>Future Forest (150 Years)</u>	
	<u>Age Class</u>	<u>Suitable Forest Acres</u>	<u>Age Class</u>	<u>Suitable Forest Acres</u>
	0-10	54,117	0-10	
	11-20		11-20	
	21-30	26,086	21-30	
	31-40	16,352	31-40	58,081
	41-50		41-50	43,172
	51-60		51-60	51,969
	61-70		61-70	49,254
	71-80		71-80	55,840
	81-90		81-90	50,158
	91-100		91-100	37,327
	101-110	65,283	101-110	28,471
	111-120		111-120	21,068
	121-130	4,903	121-130	67,239
	131-140	48,203	131-140	31,178
	141-159	20,392	141-159	44,864
	151+	383,465	151-160	2,926
			161-170	2,133
			171-180	99
			181-190	75,027
			191+	

1 Average rotation age for regeneration stands on lands with timber emphasis by major forest types is 94.4 years (excludes areas with visual emphasis)

The distribution of age classes in Table 4-16 for the Present Forest are only a broad estimation based upon the 1981 Forest Inventory. The inventory did not provide estimates of age class distribution by acres, so an estimated age was assigned to the size classes in the inventory, and the distribution in Table 4-1 6 was derived. The figures for the Future Forest will more closely approximate the actual age class distributions found in year 150.

Only suitable lands are included in these age class distributions. Ages on nonsuitable forested lands will be considerably older than those for the suitable managed forest lands,

Timber Productivity

**TABLE 4-17. TIMBER PRODUCTIVITY CLASSIFICATION**

Umatilla National Forest

<u>Potential Growth</u> (Cubic Feet/Acre/Year)	<u>Suitable Lands</u> (Acres)	<u>Unsuitable Lands</u>
Less than 20	28,534	347,705
20-50	211,074	179,000
50-85	289,557	188,249
85-120	89,603	68,744
120+	<u>0</u>	<u>0</u>
SUBTOTAL	<u>618,769</u>	<u>783,398</u>
GRAND TOTAL	<u>1,402,467</u>	

Timber Sale Activities

During the next 10 years, the annual allowable sale quantity (ASQ) will average 124 million board feet (22 2 million cubic feet). The ASQ includes chargeable volume of green and recently dead timber meeting minimum utilization standards found in the Regional Guide. Figure 4-1 displays the ASQ (base sale schedule) and long-run sustained-yield capacity projected for the next 150 years. Additional nonchargeable volume which includes cull, chip material, firewood, and special products is at an annual total of 35 million board feet (6.2 million cubic feet).

**FIGURE 4-1. BASE SALES SCHEDULE**

## Allowable Sale Quantity

Tables 4-18 and 4-19 present a summary of projected volumes and acres by silvicultural harvest system, logging methods, and species for the next decade. A more detailed presentation of year by year tentative planned sales, harvest activities and chargeable volume by management areas can be found in the Forest Plan Appendix A. Actual sale volumes, locations, and other pertinent information will be confirmed upon completion of field work.

**TABLE 4-18. ALLOWABLE SALE QUANTITY AND TIMBER SALE PROGRAM QUANTITY<sup>1</sup>**  
(ANNUAL AVERAGE FOR FIRST DECADE)  
Umatilla National Forest

Harvest Method	Allowable Sale Quantity <sup>2</sup>	
	<u>Sawtimber</u> (MMCF)	<u>Other Products</u> (MMCF)
Regeneration harvest:		
Clearcut	9.92	0
Shelterwood and seed tree	5.85	
Uneven-aged Management		
Group Selection	1.39	0
Single Tree Selection	0.20	0
Overstory Removal	4.76	0
Intermediate harvest:		
Commercial harvest:	.08	0
Salvage/sanitation	<u>0</u>	<u>0</u>
Totals	22.2	0
	Additional Sales <sup>3</sup>	
	<u>Sawtimber</u> (MMCF)	<u>Other Products</u> (MMCF)
Total for all harvest methods	<u>0</u>	<u>6.2</u>
Allowable sale quantity 22.2 (MMCF), 124 (MMBF) <sup>4</sup>		
Timber Sale program quantity <sup>5</sup> 28.4 (MMCF); 159.2 (MMBF) <sup>4</sup>		

1 To be expressed to nearest .1 MM board and cubic feet

2 Only includes chargeable volumes from suitable lands

3 Only Includes nonchargeable volumes from suitable and/or unsuitable lands

4 Based on local unit of measure.

5 Total of allowable sale quantity and additional sales

**TABLE 4-19. TEN-YEAR TIMBER SALE ACTION PLAN SUMMARIES—TOTAL FOREST**Umatilla National Forest  
Summary of Volumes<sup>1</sup> by Species

Species	10 Year Goals FY '90-99			Balance to be Programmed FY '95-99			5-Year Program FY '90-94		
	<sup>2</sup>	MMCF	MMBF	<sup>2</sup>	MMCF	MMBF	<sup>2</sup>	MMCF	MMBF
PP		40	225		19	107		21	118
I, DF		89	496		46	256		43	240
WF, S, Other Species		93	519		48	267		45	252
SUBTOTAL		222	1,240		113	630		109	610
Chip and Other <sup>3</sup>		35	200		18	102		17	98
Firewood <sup>4</sup>		27	150		14	77		13	73
GRAND TOTAL		284	1,590		145	809		139	781

Summary of Acres and Volumes<sup>5</sup> by Silvicultural Method

Silvicultural Treatment	10 Year Goals FY '90-99			Balance to be Programmed FY '95-99			5-Year Program FY '90-94		
	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
Clearcut	47.36	99	555	24.06	50	282	23.30	49	273
Uneven-aged	3.86	16	88	1.96	8	45	1.90	8	43
Shelterwood	24.41	58	327	12.41	29	166	12.00	29	161
Final Shelter/Overwood	13.56	48	266	6.89	25	135	6.67	23	133
Commer. Thin, Salvage	.71	1	4	.36	1	2	.35	-	2
TOTALS	89.90	222	1,240	45.68	113	630	44.22	109	610

Summary of Acres and Volumes<sup>5</sup> by Logging System

Logging System	10 Year Goals FY '90-99			Balance to be Programmed FY '95-99			5-Year Program FY '90-94		
	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
Ground	55.45	130	726	28.45	68	379	27.00	62	347
Cable	30.10	84	468	16.53	48	238	13.57	41	230
Aerial	4.35	8	46	.70	2	13	3.65	6	33
TOTALS	89.90	222	1,240	45.68	113	630	44.22	109	610

1 Volumes are for material meeting sawlog merchantability standards, except the Chip and Other and the Firewood volumes listed under Species

2 Species overlaps preclude reliable estimates of acres by species.

3 Material other than personal use firewood which does not meet sawlog merchantability standards.

4 Personal use firewood

5 Volumes are for material meeting sawlog merchantability standards.

DEFINITIONS

PP – Ponderosa pine

L – Western Larch

DF – Douglas-fir

WF – White fir

S – Engelmann spruce

LP – Lodgepole pine

The full range of timber management activities and techniques will be used during the decade. Even-aged management, including clearcuts, shelterwoods, and modifications of these techniques, will be the principal system employed. Uneven-aged management practices (group and single tree selection) will also be used, primarily in riparian areas, viewsheds, winter ranges, ponderosa pine types, and other areas.

The determination of appropriate harvest methods is tentative and was based on criteria from the Regional Guide for the Pacific Northwest Region, the National Forest Management Act Regulations, and the professional judgment of Forest silviculturists. Site-specific conditions and considerations will be examined and analyzed prior to final determination of the appropriate harvest method used on the ground. Silvicultural practices will be designed and employed to



meet management objectives. For detailed discussion on determination of appropriate harvest methods for the Forest, see Appendix K of the FEIS.

Accomplishment of other timber management activities will be important in achieving all of the Forest multiple-use goals. Key activities include:

- Regeneration of forest stands,
- utilization of genetically improved stock,
- stocking level and species control, and
- animal, insect, and disease control.

**TABLE 4-20. PROJECTED ANNUAL TIMBER MANAGEMENT ACTIVITIES**

Umatilla National Forest

<u>Activity</u>	<u>Acres/year</u>
Planting	4,375
Natural Regeneration	3,145
Precommercial Thinning	2,620
Release	232

The Forest will continue to operate under direction of existing tree improvement plans. The June 1985 Umatilla Tree Improvement Plan is incorporated into the Forest Plan by reference.

Successful implementation of the Forest Plan requires and is dependent on a high level of internal resource coordination. The timber sale program provides the major vehicle through which coordination will be accomplished. The timber program affects, and is affected by, all the other Forest resources.

### **WATER/SOIL**

Water and soil programs are designed to fulfill the Forest watershed goals of providing an undiminished flow of quality water and maintaining or enhancing soil productivity in order that resource and user needs be met. These programs focus on several actions (1) Coordinating with other resource activities to ensure protection of watershed values through application of Best Management Practices (BMPs); (2) monitoring the effects of planned activities and long-term changes in water quality and soil productivity; (3) studying the response of water yield and timing to timber harvest activities; (4) rehabilitating damaged soil and water resources where they occur; (5) inventorying basic water and soil and their conditions; (6) managing national forest water rights; and (7) coordinating with various agencies and interested parties on soil and water related issues.

### **WATER**

Programs to protect and enhance water quality are a major aspect and emphasis of watershed management and will guide activities across the Forest. A 5-year action plan will be developed to aid in the implementation of the watershed direction in the Plan. Watershed program personnel will engage primarily in assisting in the assessment of water quality protection needs. They will be involved in development and implementation of BMP's, evaluation of BMP effectiveness, and in assisting and coordinating watershed management with timber, range,

minerals, and fish projects. Increased emphasis will also be given to water quality monitoring at both the ambient and project levels.

Potential impacts of forest management on water quantity will also be a focus of watershed program activities. The Forest will continue to study the effects of timber harvest activities on water quantity related parameters at the Umatilla Barometer Watershed. These parameters will include water yield, low flows, peak flows, and timing of flows. Information from these studies will be used to adjust Forest management policies and practices, if needed. Where water uses are sensitive to flow timing changes, the potential to affect such changes will be considered during project planning activities. Forest-wide Standards and Guidelines will be applied to insure that favorable conditions of flow are maintained.

Proper management of stream and riparian areas will also receive emphasis in the activities of the watershed program. The primary method for achieving riparian area objectives will be the application of Forest-wide Standards and Guidelines (also see Riparian/Fish discussion in this section). The Forest will adhere to all provisions of Executive Orders relating to wetland and floodplain management.

A moderate level of watershed improvement activity is planned for the next decade to restore degraded watershed areas and to improve the productivity of watersheds in general. Upgrading the watershed improvement needs inventory will be an emphasis in the early part of the planning period. The improvement will decline in the future since emphasis will be on prevention of adverse impacts to watershed condition rather than on restoration.

Special management emphasis will be given to water and related resources in certain critical watersheds throughout the planning period including. The Mill Creek Municipal Watershed (Management Area F2), where timber harvest and livestock grazing will be prohibited; large portions of the Walla Walla River Watershed (F4), which will preclude timber harvest; and within the riparian areas of the upper North Fork John Day (C7), which will also prohibit timber harvest.

The Forest has nearly completed the water rights applications process for obtaining the consumptive use rights needed to meet resource objectives. But up to half a dozen new cases per year are anticipated, primarily to meet the range program needs. Instream flow needs will be identified, quantified, and protected on a case-by-case basis as need arises.

As a result of emphasis on and management of water, water temperature regimes are expected to improve in areas where past activities have affected stream surface shading. And even though stream sedimentation is expected to increase on a localized basis, any water quality changes will be well within the acceptable levels prescribed by Oregon and Washington State standards. Also, given the assumption of little change in local precipitation patterns, future water yields are anticipated to be about the same as they have been in the past, averaging about 2.5 million acre-feet annually. Potential impacts to downstream water users and instream habitat should be low; water yields and low flows are not expected to change appreciably from current conditions.

## **SOIL**

The Umatilla National Forest Soil Resource Inventory (USDA Forest Service 1978a) serves as the main document for program and project planning. It is supplemented and supported by the technical knowledge of forest resource experts. However, an updated soil inventory is planned for the next decade to provide more detailed and complete information on what the effects of each project will be upon the soil resource. The inventory will allow for better management of the soil resource, and will help maintain its basic productivity by giving Forest managers access to better information for decision making. Forest managers will be able to apply a better understanding of soils to such things as reforestation, site preparation, and potential regeneration success.

In the future, a major emphasis of the Forest soils program will be the maintenance of soil productivity. Programs and projects involving the soil resource will be evaluated in terms of the existing productive capacity and the potential changes to that capacity if the program or project is carried out. The objectives for potentially ground-disturbing projects are to prevent significant changes to soil productivity, and to mitigate or restore degraded soils to a preactivity condition if preventative measures cannot be applied during the project.

The Forest-wide Standards and Guidelines are designed to maintain a minimum of 80 percent of a project area (or cutting unit) in a nondetrimental soil condition with respect to the effects of compaction, displacement, and erosion. Threshold detrimental soil conditions are expressed in terms of bulk density levels, amount of bare ground, burned soil condition, mass failure rate, and displaced soil amount. If a project is expected to cause the threshold values of an area affected detrimentally to exceed the standard values, then the project is either altered to meet the standard or dropped. Monitoring studies will be conducted to identify trends and long-term effects, and to insure that Forest-wide Standards and Guidelines are being followed and met. The Forest plans to support and cooperate with research efforts which address long-term site productivity concerns.

## **MINERALS**

Continuing interest is assumed in the mineral resources of the Forest although the actual amount and location of projected mineral activity are difficult to predict. In the interest of decreasing this uncertainty, and for the purpose of encouraging mineral development, the Forest will continue to support geologic mapping and mineral resource inventory programs.

The Forest will apply the Forest-wide Standards and Guidelines to regulate the surface resource impacts of mineral activities so that they are conducted in as compatible a manner as possible with other resource uses and environmental standards. The overall objective is to ensure that no unnecessary or undue degradation of the environment occurs, while ensuring that environmental protection stipulations and reclamation objectives are reasonable, enforceable, economical, and successful. When necessary, reclamation objectives will be ensured by adequate bonding.

Furthermore, ongoing reclamation projects, such as the one in place on Clear Creek near Granite, Oregon, will continue to receive emphasis. Riparian and fish habitat areas that have been degraded through mining activity in the past, or ones that have been damaged through more common forest practices, will undergo scheduled rehabilitation along with other such areas.

Withdrawals from mineral entry include congressionally mandated wildernesses, the Mill Creek Municipal Watershed, some key areas including RNA's, campgrounds, and administrative sites, and areas as determined necessary through an analysis of affected resource values. Existing and proposed withdrawals have been reviewed as specified in the Federal Land Policy and Management Act of 1976. The review was completed in 1990. As seen in Table 4-19, about 13 percent of the Forest, composed mainly of old growth, riparian, dispersed and developed recreation sites, and special areas, will be managed under increased access and resource protection restrictions. The remainder of the Forest (65 percent) will have normal restrictions through permits and operating plans.

### **TABLE 4-21. EFFECTS OF MANAGEMENT AREA DIRECTION ON MINERAL ACCESS BY MINERAL POTENTIAL**

## Umatilla National Forest

Access Restrictions	High	Moderate	Low/Unknown	Total	Percent + Net NF Acres
Withdrawn	-	30,000	323,273	353,273	25
High	3,500	1,000	20,100	24,600	2
Moderate	4,600	4,000	141,700	150,300	11
Low	-	-	872,034	872,034	62

Within withdrawn areas, valid existing rights must be confirmed before approving mineral development activities. However, once confirmed, the Forest will facilitate the mineral development activities authorized by those rights. In many withdrawn areas, prospecting activities can be conducted in a manner compatible with the purposes of the withdrawal. Such activities provide no rights to develop the mineral resources, so when proposed, they should be encouraged. The results of any such prospecting will be used when reviewing withdrawals, as required by FLPMA. If mineral resources are discovered, and mineral development is determined to be the best use for an area that is presently withdrawn, the withdrawal may be revoked.

Minerals are not subject to scheduling, and the Forest has little or no direct control over any utilization of the resource until a project or program has been proposed. Since proposals come from the public or other agencies, determination of where or when entry will be requested is impossible to plan for, and control over future mineral activity is a very difficult proposition.

However, as with other resources, program and project review will be an important part of management of the minerals program. Through the review procedures and strict adherence to FLPMA, NEPA, and NFMA, mineral management activities can be made more efficient, and reclamation techniques and objectives can be made more successful. The actual effects that mineral activities have on sensitive resources will also be evaluated. In addition, the mineral supply/demand situation will be studied and newly acquired mineral resource information will be evaluated for possible impact on the Forest and the Plan.

### LANDS

Use of existing utility corridors will be continued. One potential new corridor extending from Blalock Mountain to Troy, Oregon, is identified and may be used pending an EIS.

Existing term special uses are expected to continue through the life of the Plan. Given adequate funding, inspection for pipelines (oil and gas transmission), power lines, and electronic sites will occur annually, at a minimum. All other inspection frequencies will follow schedules found in the Forest Service manuals.

Landownership guidance is provided in Forest-wide Standards and Guidelines and management area direction. Direction is also provided by the Land Ownership Adjustment Plan (May 1986), which is incorporated into the Forest Plan, by reference. Overall priorities for landownership adjustments are: (1) Those that make improved resource management possible, and (2) those that increase management efficiency and reduce management costs. The Landownership Adjustment Plan is found in Appendix B of the Forest Plan.

### TRANSPORTATION

#### Roads

The Forest transportation system is (and will continue to be) planned, constructed, and managed to facilitate land and resource management objectives. Coordination with the objectives of wildlife, timber, range, recreation, fish, and water is essential. Specific direction for transportation system planning, construction, and operation is summarized in the Forest-wide Standards and Guidelines and management areas.

New road construction will occur almost entirely as a result of timber harvest operations and will be limited to local roads. The arterial and collector roads are essentially in place. Arterials and collectors currently at standards lower than required to meet objectives will be reconstructed to an appropriate standard. Reconstruction will be required on some local roads for safety, economy of operations, and/or to meet resource objectives. Construction and reconstruction activities are shown in Table 4-1, and activity schedules for all classes of roads are listed in Appendix A of the Plan. The disaggregation of road construction between the Districts is shown in Table 4-22.

**TABLE 4-22. MILES OF CONSTRUCTION BY DISTRICT PER DECADE**

Umatilla National Forest

District/Decade	1	2	3	4	5
Heppner	215	75	34	19	7
North Fork John Day	406	168	79	42	18
Pomeroy	90	56	14	2	0
Walla Walla	259	88	37	22	7

Each ranger district will develop access management programs within 2 years in order to determine the nature and extent of road access that will best meet resource requirements as well as address the public's desire for access to those resources. The access management programs will be developed through a NEPA process that involves interested and affected publics. Guidance for these programs will come from the management area direction in the Plan as well as Forest-wide Standards and Guidelines for meeting resource needs. The program will be developed into the district motorized access and travel management plan (also see Recreation and Wildlife). The effect of these programs will most likely be a reduction in the amount of open road available on the Forest.

Forest-wide, many roads will be closed, primarily in response to big game habitat and recreation requirements, but also to meet soil, water, and economic criteria. Some areas will have most roads open to provide a balance of recreation experiences. Open road densities will be managed and monitored on an allocation zone (subwatershed) or management area basis. A Forest-wide average open road density of 2.0 miles per square mile is anticipated to result from implementation of management area direction; open road density will vary between allocation zones in response to objectives. All of the arterial and about half the collector roads will be managed for passenger cars, and the remainder will be for high clearance vehicles as shown on the following page.

The total amounts of Forest roads managed for passenger and high clearance vehicles are as follows:

Roads managed for passenger cars - 900 miles, and roads managed for high clearance vehicles - 2,530 miles.

Trails

Amount of construction and reconstruction of planned trails is described in the recreation section and shown in Table 4-1 and Appendix A of the Plan.

**AIR QUALITY**

Air quality protection will be achieved by complying with Forest-wide Standards and Guidelines and direction in the Pacific Northwest Region FEIS, Managing Competing and Unwanted Vegetation (Nov 1988). The Forest will also comply with state and local regulations and guidelines directed at preventing and controlling air pollution.

## **FIRE MANAGEMENT**

The fire management program supports accomplishment of many of the land and resource objectives. A high level of cost-effective fire protection will be employed to protect resource values and investments. An appropriate suppression response of confine, contain, or control will be made on all wildfires commensurate with the objectives and standards and guidelines identified for each management area. Wildfire suppression, use of fire and fuel treatments will require coordination with resource managers in order for all programs to be successfully accomplished. Within the scope of the Forest Plan, a fire management plan will be developed to provide additional program detail and direction.

The National Fire Management Analysis System (NFMAS) will be used to monitor the protection programs that were developed on the basis of the fire-related needs of planned land and resource management objectives. The system will provide a consistent method for evaluating and comparing the effectiveness and efficiency of the fire management program. Efficiency will be measured using an economic criterion based on the total cost of the fire program, plus the net change in the value of planned resource outputs on the protection areas as a result of wildfire (cost and net value change).

Fire will be allowed to more fully play its natural role in the ecology of the Forest. Fire management in wilderness will be directed by the appropriate wilderness activity plans (includes fire management), which have been incorporated into the Forest Plan by reference. Natural fire occurring in wilderness will be treated as a prescribed fire until declared a wildfire. All human-caused fires occurring in wilderness require an appropriate suppression response.

Prescribed fire will be used as a management tool to reduce fire hazards created by management activities and naturally occurring fuels, to prepare sites for reforestation and to maintain and improve other resources such as range and wildlife. Prescribed burning will be the principal program and technique used for winter range habitat maintenance, for forage enhancement and to assist in keeping big game animals on the Forest during the winter.

## **FOREST-WIDE STANDARDS AND GUIDELINES AND MANAGEMENT AREAS**

### Introduction

The Forest-wide Standards and Guidelines and management areas have been developed according to Regional direction. Each document has been prepared for the purposes of:

1. Identifying direction for activities on the Umatilla National Forest.
2. Identifying management actions to resolve the issues, concerns, and opportunities (ICO's).

Forest-wide Standards and Guidelines are applicable to all areas of the Forest unless specifically stated in the management areas. Forest-wide Standards and Guidelines include management requirements (MR's) and other important direction. The management areas are designed to apply to specifically identified land areas. Both Forest-wide Standards and Guidelines and management areas contain goal statements reflecting the expected results for a Forest resource, activity, or land area. Each provides direction emphasis from the USDA Forest Service manuals, handbooks, and the Regional Guide. Each responds to Forest ICOs, appropriate laws including applicable state and local laws, regulations, existing direction, land capabilities, and professional judgment.

# FOREST-WIDE STANDARDS AND GUIDELINES

## RECREATION

### Goal

### MANAGE FOR A BROAD SPECTRUM OF RECREATION OPPORTUNITIES AND EXPERIENCES ON THE FOREST.

### General

1. Use the Recreation Opportunity Spectrum (ROS) to inventory the array of recreation opportunities on the Forest and to guide management of the physical, social, and managerial settings.
2. Encourage public participation in recreation management and in the decisionmaking process for projects, programs, or policies affecting recreation opportunities.
3. In all management activities, incorporate recreation considerations to enhance the quality of opportunities and positively affect use.
4. Provide Forest recreationists with freedom of choice in selecting sites, areas, routes, and activities to meet their recreation needs.
5. Emphasize "leave no trace" techniques in all portions of the Forest to reduce management costs and minimize resource impacts.
6. Increase revenues from recreation use where cost-effective. Fees should be competitive, based on market values and the principle that those who benefit directly pay for the activity or facility. Where possible, receipts should be used to benefit the area where the fees were collected.
7. Risk management will include reasonable efforts to provide inspections of lands and facilities, warnings on the safe use of areas/facilities and inherent dangers, management of medical emergencies, training and supervision of personnel, accident and injury reporting, documentation, and sharing of information.
8. Develop a Forest Recreation Opportunity Guide (ROG) containing the kinds and locations of the Forest recreational opportunities. Highlight a wide variety of opportunities (locations and activities) to disperse use; e.g., roadless, old growth, wildlife areas, historic sites, unique ecological areas, scenic routes, facilities for the disabled, motorized, rivers, streams, and other special places. Include basic management policies and regulations that govern the area. Update as needed to keep information current.
9. Maintain and update the Recreation Information Management (RIM) System to provide data for recreation planning and management per manual and handbook direction.
10. Maintain recreation as an important component of access management. Acquire the access needed to provide Forest recreation opportunities, in compliance with laws and regulations. Retain or acquire public access to all areas of the Forest utilizing easement, prescriptive rights, land acquisition, and land exchange procedures.
11. Priority will be placed on preventing conflicts among users by good communications and providing information to affected people. Indirect management actions (i.e., design, education, information, etc.) will be preferred over direct actions (i.e., restrictions, enforcement, etc.). Generally, recreation conflicts will be resolved in order of priority: (1) Public safety, (2) wise use of resources, (3) retention of or increased wide spectrum of opportunities, (4) prevention or filling of recreation opportunity voids, and (5) relation to the surrounding environment.

12. Make the first impression of the Forest a good one. Put priority on 'curb appeal' at Forest entrances, administrative sites, major Forest roads, recreation developments and other high use places.
13. A positive approach should be used when stating rules and regulations (signs, brochures, etc.). Regulation of outdoor recreation should be minimized; ensure that those adopted are effective, useful, and justified. Regulations should contribute to enjoyable experiences in the long run, rather than be for the convenience of administrators.

#### Customers

1. Customer satisfaction will receive attention equal to that given to good land stewardship.
2. Emphasize customer service by:
  - a. developing knowledge and understanding of customer needs, wants, and preferences. Monitor changes in customer preferences to respond with appropriate services;
  - b. developing, implementing, and administering programs and services that provide a variety of ways to satisfy customer needs and wants;
  - c. increasing Forest employee awareness and responsiveness to needs and wants of customers; and
  - d. strengthening outreach programs about Forest information and recreation opportunities to underserved communities, minorities, and publics.

#### Recreation Service: Partnerships

1. Seek new partnerships with outdoor recreation user groups and other recreation providers (for-profit, non-profit entities and public agencies) and strengthen existing ones to enhance recreation resources, services, and facilities. Explore expansion of partnerships with aging, handicapped, minority, youth organizations, and CTUIR.
2. Cooperate with the private sector to increase recreation opportunities adjacent to resorts and recreational facilities. Public service concessionaires (outfitters, ski areas, campground operators, etc.) will be encouraged to be partners with the Forest Service in developing and providing recreation opportunities. Managers will recognize the necessity of developing and maintaining partnerships in the public interest.
3. Utilize all types of methods to improve partnerships. Leverage available Forest Service dollars by attracting outside funding and support from potential partners whenever possible.
4. Develop and utilize a communications network with recreation providers to share recreation information within the Forest Service and with partners.
5. Where Forest Service Manual and 'Umatilla National Forest Outfitter-Guide Application Evaluation Procedure' criteria are met, outfitter and guide operations may be authorized and permitted.
6. Priority will be given to facilities and operations providing services beneficial to the interpretation of natural resources and national forest management.

#### Dispersed Recreation

1. Provide for a spectrum of recreational activities such as hunting, fishing, gathering forest products, viewing scenery, camping, hiking, floating, and so forth.



2. Provide a range of physical (remoteness, size of area, evidence of humans), social (encounters), and managerial (restrictions, information services) settings for recreation.
3.
  - a. Inventory, evaluate, and manage dispersed occupancy sites and other special places. Project planning will provide for the protection of established occupancy spots (especially hunter camps) and other special places. Sites will be rendered unusable only when not in public demand or a higher priority use for other resources is timely, clearly needed, and where other sites to satisfy the recreation need are made available.
  - b. Manage the occupancy sites and adjacent area to at least partial retention visual quality level.
4.
  - a. Incorporate an integrated ecosystems approach, the special appeal of the Blue Mountains, Scenic Byways and Corridors Management (roads, trails, and rivers) into Forest recreation planning and management. Coordinate with adjacent landowners to achieve a continuity of management along corridors and areas.
  - b. Identify the potential of any proposed activity to change Recreation Opportunity Spectrum (ROS) classes in all project environmental analyses.
5. Manage public use as necessary to provide safety, sanitation, and appropriate resource setting, while minimizing regimentation. When necessary to place restrictions on use, reasons should be explained and displayed in offices, literature, and at the point of restriction.
6. Provide specialized or modernize dispersed facilities, or site modification needed to maintain or enhance the variety of dispersed recreation opportunities, prevent pollution from human waste, provide safety (including fire), or reduce undesired resource effects.
7. Encourage people not requiring or desiring a wilderness setting to use nonwilderness National Forest System lands for their recreation needs.
8. Location and design standards for, and construction of, new or reconstructed roads and trails will accommodate user developed occupancy spots at locations and quantities appropriate to the planned ROS experience level.
9. Operate and maintain the Forest road system to provide dispersed recreation opportunities in concert with management area emphasis and direction.
10. Limit motorized vehicles to roads, trails, and areas which are designated for use in the Umatilla National Forest Motorized Access and Travel Management Plan. Temporary exceptions are authorized for those conducting official duties including firefighting, organized rescues, duties by special use permit or contract, and others listed in the Forest Motorized Access and Management Plan or having the district ranger's authorization.

#### Recreation Sites

1. Developed facilities will be administered and maintained to provide visitor safety and sanitation, protect facility and site resources, and provide for visitor recreation needs and convenience.
2. Developed facilities will be kept in a safe and sanitary condition or closed or removed. Minimum standard is Condition Class #2 (RIM Facility and Condition Standards, FSH 2309.11, Section 192-21) (USDA Forest Service [n.d.]a).
3. Plan, budget, and implement a systematic renovation and replacement of existing recreation facilities. Where practical, older facilities should be redesigned and adapted to allow access by people with physical disabilities. Provide specialized facilities needed to meet developed recreation demand.

4. The minimum level of management for any developed site will be Development Scale 2 (FSM 2310).
5. Appropriate recreation facilities will be considered for all lakes, water impoundments, and other water oriented opportunities.
6. New recreation sites and facilities may be constructed in response to identified demand for additional facilities or specific needs for customer satisfaction, or to fill recreation opportunity voids. An environmental analysis will be used to confirm the need for new sites and facilities.
7. Access roads to developed sites should be operated and managed to permit passenger car traffic.

#### Interpretation

Provide interpretation, information, and environmental education with focus on prehistory, history, ecological principals, and multiple use to enhance recreation experiences, promote understanding of people living in harmony with nature, increase understanding of Forest Service management, and help visitors avoid practices that may result in undesirable resource effects.

#### **INTERPRETIVE GUIDELINES**

ROS Class	Appropriate Interpretive Methods
P	Interpretation through self-discovery, possibly augmented by books or guides with no site facilities.
SPNM	Interpretation through self-discovery, augmented by books, guides, and maps, but no site facilities.
SPM	Interpretation through simple onsite facilities such as signs or numbered posts, mounted on native-like rustic materials, or printed or other portable media.
RM	Interpretation through very limited onsite facilities, maps, brochures, guides, and other portable media.
RN	Interpretation through signs and other structures such as overlooks, decks, boardwalks, etc. Native-like materials with some refinement in design. Printed and other portable media as well as limited interpretation from Forest Staff.
R	Interpretation through complex facilities and structures using quite refined materials, a variety of interpretive media, some staff contacts in contact stations, guided walks, and amphitheatre programs.

#### Visual Resource Management

1. The Forest will follow direction given in the Forest Service Visual Management System. The minimum visual quality objective is maximum modification (MR).
2. Design roads, trails, and vegetative manipulation to be consistent with adapted visual quality objectives indicated by the management prescription.
3. Created openings will be shaped and blended, to the extent practicable, with the natural terrain (MR).
4. Areas not meeting their assigned visual quality objectives will be rehabilitated.

#### Off-highway Vehicle Use

1. Ensure that off-highway vehicle (OHV) use is managed to protect other resources, promote safety of users, and minimize conflicts with other uses (Executive Order EO 11644, as amended by EO 11989). Use OHV prohibitions only where needed to minimize disturbance of wildlife, provide a range of recreation opportunities, or to protect the soil and water resources.
2. Continue and expand programs and agreements with Oregon and Washington for snow, OHV, and ATV trails and facilities.

3. Encourage OHV use to remain on designated routes by using route location, design, and public information programs. Routes should be planned to integrate on-road and off-road travel and disperse use across broad areas
4. If necessary to eliminate OHV use, insofar as possible, provide a substitute area for the OHV opportunity eliminated.
5. In riparian areas, trails for motorized use will be managed to protect water quality and fish and wildlife habitat. Existing motorized use trails should be relocated outside the floodplain or 'hardened' where practical. OHV use will be limited to designated routes.
6. Emphasize permitted activities rather than prohibited ones in signing and information to minimize recreation use conflicts.
7. Review the Forest motorized access and travel management plans annually and revise as necessary (usually biennially).
8. Public information describing the areas and routes where motorized use is permitted, prohibited, or restricted; explaining the conditions of use; and providing reasons for such closures will be provided on a travel map. The map will be reviewed annually and revised as necessary (usually biennially).

#### Trails

1. Provide and manage the Forest trail system as a recreation resource that complements land management objectives.
2. Provide and manage a trail system to offer the full range of opportunities and difficulty levels: Primitive, mechanized, all-season, barrier-free, short and extended, interpretive, historical, and more. Provide for trail difficulty levels appropriate to recreation opportunity objectives.
3. Annually update the Forest Trail Management Plan to identify the current mix of development, management, and maintenance.
4. Construct, reconstruct, relocate, maintain, and manage trails and associated trailheads to standards appropriate for serving the intended type and level of use and to provide opportunities for satisfying recreation experiences, while minimally affecting soil, water, and vegetative resources, and requiring minimal maintenance.
5. Priority for new trails or trail relocation will be to provide route loops, fill opportunity voids, or resolve user or resource conflicts.
6. Trails located in resource development areas must be included in the implementation strategy analysis and project environmental analysis. Any decision to abandon the trail must be clearly documented. To the extent possible, trails should be protected during project activities. If not practical to preserve an existing trail, the trail should be relocated temporarily or permanently.
7. Trail maintenance activities will be determined by trail type, difficulty level, the appropriate trail guide (FSH 2309.18), and the amount and type of use.
8. Coordinate access road design and maintenance levels with desired objectives for the served trail system.

#### TRAIL MANAGEMENT GUIDELINES

	Difficulty Level		
General Guidelines	Easy	More Difficult	Most Difficult
Overall Objectives	Make trail convenient, and safe, and protect resources.		

General Guidelines	Difficulty Level		
	Easy	More Difficult	Most Difficult
Safety Considerations	Correct hazards so that inexperienced customers may use trail without danger	Notify customer of unusual or unexpected hazards. Correct hazards which are not easily dealt with by an experienced person.	Notify customer of unusual or unexpected hazards. Correct situation if notification is impractical.
Maintenance Frequency	Annual or more frequent as needed	Every two years, or as needed to protect resource.	Every two to five years or as needed to protect resource and retain investment.
Alignment	Uniform and consistent horizontal and vertical alignment	Alignment usually follows contour of the land, but is designed to prevent soil erosion.	Allow trailbed to meander so long as gullying, excessive soil movement or water siltation does not occur.
Tread Maintenance	Provide even, safe surface.	Provide safe surface and prevent resource damage.	Prevent resource damage.
Drainage Maintenance	Prevent erosion and soft trailbed	Prevent soil movement.	Prevent water siltation.
<b>TRAILWAY MAINTENANCE</b>			
Logging Out	Provide clear passage	Keep traffic on trailbed.	Prevent resource damage.
Brush Cutting	Provide convenient, clear passage.	Retain identity of trail.	Prevent eye injury.
Structures	Maintain for appearance and safety.	Maintain to protect investment and for safety.	Maintain for safety; remove if unsafe.
Signs	Maintain attractive appearance and current design. Provide frequent reassurance.	Maintain to be functional and natural appearing. Provide direction necessary for novice map reader.	Maintain to be functional with a weathered look. Provide minimal direction and reassurance.

## **CULTURAL RESOURCES**

### Goal

PROVIDE FOR THE PROTECTION AND PRESERVATION OF CULTURAL RESOURCE VALUES THROUGH A PROGRAM WHICH INTEGRATES INVENTORY, EVALUATION, PROTECTION, AND ENHANCEMENT.

### Inventory

1. A professionally supervised Cultural Resource Inventory Program will be conducted in compliance with applicable Federal historic preservation legislation and regulation (National Historic Preservation Act as amended (MR)).
  - a. All projects including surface-disturbing projects will be managed to comply with 36 CFR 800 and FSM 2360. All requirements for consultation with the respective State Historic Preservation Offices (SHPOs) before, during, and after a project will be followed. The area of a project's potential environmental impact will be surveyed for cultural resources and areas of Native American religious use. Native American groups will be consulted as appropriate.

- b. Parts of the forest without anticipated projects but with likelihood that cultural resources exist will be inventoried in conjunction with annual update training for cultural resource technicians. Highest priority areas for survey include those that:
    - (a) Are relatively unknown due to a lack of surveys in or near the area;
    - and/or (b) are important to understanding the historic or prehistoric occupations of the forest; and/or (c) are expected to have high site densities.
2. Update the Forest Cultural Resources Management Overview as needed. At a minimum, the Overview will be reviewed annually.
3. The Forest Cultural Resource Inventory Plan will be updated, as needed, to reflect advances or changes in the data base, management objectives, legislation, and Regional or Forest research designs. Review of the inventory plan will be accomplished annually.
4. Results of project level cultural resource inventories, or the intent to carry out such inventories, will be documented through environmental analysis for the project (MR).

#### Evaluation

1. Identified cultural resource properties will be evaluated by a professional cultural resources specialist using the significance criteria of the National Register of Historic Places (NRHP) (36 CFR 60.4) and the guidelines provided by the Lithic-dominated Sites Programmatic Memorandum of Agreement (USDA Forest Service 1983b) and other standard National and Regional criteria (MR). Sites which will be affected during a project will be evaluated before the project proceeds. A schedule will be developed to evaluate all other sites.
  - a. In consultation with the SHPOs from Washington and Oregon, identified sites will be evaluated for eligibility for the NRHP. Sites considered eligible will be assigned a priority for nomination to the NRHP.
  - b. The NRHP criteria are contained in 36 CFR 60.4. Nominations will be coordinated with the planning activities of the respective SHPOs. Priorities for nomination will be based on a consideration of the SHPO plans and the overall cultural resources program.

#### Protection

1. The Forest will develop management plans for the various classes of prehistoric and historic resource properties found on the Forest (MR)
  - a. All properties identified as eligible for the NRHP will be evaluated in terms of present land allocation for any possible conflict, and site-specific management plans will be developed in consultation with the respective SHPOs (MR).
  - b. Management plans shall be prepared for historical properties eligible for the NRHP unless previous data collection has fully documented the characteristics that qualify the site for the NRHP and those under Granger-Thye permit (FSM 5/83 R-6 SUPP 61-2361.21) (MR).
2. Until proper evaluation occurs, all known cultural resource properties will be protected as though they were eligible for the NRHP (MR). Measures for the protection of known cultural resources from vandalism, natural destruction, and project impacts will include patrols and regular site visitation, data recovery plans, site treatment plans, physical protection, signing, integrated resource management programs, public education, area and site closures and, where necessary, electronic site monitoring.
3. Sites listed in or nominated to the NRHP will be inspected periodically, unless previous data recovery has fully documented the characteristics that qualify the site for the NRHP.

All other sites, except those which have been formally determined ineligible for the NRHP, will be inspected on an as needed or opportunity basis. Sites susceptible to rapid deterioration and/or human disturbance will be inspected most frequently.

4. Confidentiality of cultural resource site locations will be maintained (36 CFR 296.18) (MR).
5. To avoid damage to cultural resources, coordination requirements with fire management suppression activities will also be used during fire suppression and rehabilitation activities

#### Enhancement

1. Cultural resources interpretive opportunities onsite will be pursued as opportunities arise. Other interpretive opportunities which will be pursued as high priority are:
  - a. cultural resources displays in the Supervisor's Office and in district offices;
  - b. trails and interpretive signs at less frequently visited sites;
  - c. interpretive signs along viewsheds and special interest areas;
  - d. preparation of popular literature, brochures, and films regarding the Forest cultural resources;
  - e. presentation of popular talks regarding the Forest's cultural resources; and
  - f. professional cultural resource interpretation for presentation at meetings and/or dissemination through professional publications.
2. The Forest shall foster active programs of research through permits to, and cooperative agreements with, qualified institutions, organizations, and individuals, and by identifying opportunities for research (MR).
3. Management of cultural resources will be coordinated with other agencies including the respective State Historic Preservation Offices and the Advisory Council on Historic Preservation. Management of American Indian traditional religious sites will be coordinated with the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, and the Confederated Tribes of the Warm Springs Indian Reservation of Oregon.

#### **WILDLIFE HABITAT**

##### Goal

MAINTAIN OR DEVELOP EFFECTIVE LEVELS OF WELL-DISTRIBUTED WILDLIFE HABITAT THROUGHOUT THE FOREST TO MAINTAIN VIABLE POPULATIONS OF ALL EXISTING NATIVE AND DESIRED NON-NATIVE VERTEBRATE SPECIES.

##### Old Growth

1. Maintain (or develop where presently unavailable) old growth tree habitat distributed throughout the Forest in units within suitable and/or capable habitat for the pileated woodpecker, pine marten, and northern three-toed woodpecker as the Forest indicator species as follows (MR):
  - a. Pileated woodpecker- maintain coniferous forest habitat units 300 contiguous acres in size in seral stages V or VI as reproduction areas (may be 50-acre minimum sized units no greater than one-quarter mile apart to total 300 acres) distributed throughout the Forest so that generally each 12,000 to 13,000 acre area of capable habitat contains at least one suitable habitat area. Capable

habitat units may be utilized where no suitable habitat is available. An additional 300 acres of feeding habitat in close proximity to habitat units will be provided.

- b. Pine marten-maintain coniferous forest habitat units of 160 contiguous acres in size in seral stages V or VI with a crown closure of at least 50 percent distributed throughout the forest in suitable habitats so that there is at least one habitat area every 4,000 to 5,000 acres of capable habitat.
  - c. Northern three-toed woodpecker-maintain coniferous forest habitat units 75 acres in size in seral stages V or VI distributed throughout the Forest suitable habitats so that there is a least one habitat area for every 2,000 to 2,500 acres of capable habitat.
2. Maintain sufficient amounts of old growth forest stands to provide habitat for all wildlife species that may be dependent on, or make heavy use of, this habitat type including. Northern goshawk, great gray owl, Cooper's and sharp-shinned hawks, Townsends warbler, Hammond's flycatcher, Vaux's swift, white-headed woodpecker, brown creeper, and others.
  3. A thorough, field verifiable inventory of existing old growth stands will be conducted and tracked through time during the plan implementation.
  4. Boundaries or locations of old growth units may be adjusted or moved when the following conditions are met:
    - a. Proposals are based or documented on the general examinations,
    - b. unit size criteria, distribution of units and number of acres will be maintained,
    - c. old growth characteristics or quality will be maintained, and
    - d. changes will be made through the amendment process (see Forest Plan Chapter 5).

#### Dead and Down Tree Habitat

1. Within all designated old growth forest habitat units, maintain no less than the following minimum average number of hard snags (MR):
  - a. Pileated woodpecker-two hard snags per acre, at least 12 inches dbh, within the 300-acre reproductive area (45 of these snags will be at least 20 inches dbh). Maintain an average of two hard snags per acre, at least 10 inches dbh, on an additional 300 acres in close proximity for feeding habitat.
  - b. Pine marten-maintain an average of two hard snags per acre, at least 12 inches dbh (24 of these will be at least 20 inches dbh). Also maintain an average of six down logs per acre, at least 12 inches dbh and 20 feet long.
  - c. Northern three-toed woodpecker-maintain an average of two hard snags per acre, at least 10 inches dbh within the 75-acre reproductive area (45 of these snags will be at least 12 inches dbh).
2. Unless specified in management area direction, as a minimum, provide the required numbers and sizes of hard snags throughout the Forest to maintain primary cavity excavators at 40 percent of their potential population throughout their present range. Use procedures outlined in "Wildlife Habitats in Managed Forests-The Blue Mountains of Oregon and Washington" (Thomas and others 1979) to determine the number and sizes to be provided. Snags will be distributed so that an appropriate number of dead and down tree habitats (preferably in 'clumps' of live and dead trees) is left for each logical harvest size unit (or no larger than 40-acre units). Provisions will also be made for future or replacement dead and down tree habitat.

3. In addition, all standing, soft snags will be left during timber harvest operations, unless they are determined to be safety hazards.

#### Nongame Wildlife Habitat

1. Nest and roost sites used by raptors will be protected from all management activities and human disturbance around the nest site until nesting and fledging are completed. Levels of protection will vary by the requirements of the raptor species involved, and will be evaluated by the District wildlife biologist and protection measures implemented on the ground. The nest and associated roost tree(s) will also be marked as "Wildlife trees" and protected from all management activities.
2. Large dead and down woody materials at least 16 feet or more in length and at least 12 inches in diameter at the small end will be left at the rate of an average of two down logs per acre. The desired condition is to have uncharred logs; as many uncharred logs as practical should be retained per project area.
3. Introduction of wildlife species will be carefully coordinated with the various state wildlife agencies on a case-by-case basis through the NEPA process. The reintroduction of native species such as peregrine falcon, Rocky Mountain bighorn sheep, and beaver will be encouraged.
4. Cliffs, talus, and caves are recognized as relatively unique habitats of the Forest and all potentially disturbing or altering management activities will be carefully evaluated on the ground during the planning process to insure their protection and proper management.
5. Seeps, springs, bogs, wallows, and other wet areas, generally under 10 acres, are inherently unique and will be evaluated on a project level basis for their value as wildlife habitat and to provide appropriate levels of protection.

#### Riparian Areas

Riparian areas will be managed to retain dead and down tree habitat to maintain 100 percent of the potential population level for cavity users and will emphasize retention of satisfactory cover.

#### Big Game

1. Big game habitat effectiveness models will be used in project planning to provide the quality, quantity, and distribution of cover and forage needed to reach management objectives for each planning area. Forage, cover, and road densities are factors that will be considered and monitored on each subwatershed and/or management area identified within the Forest.
2. Forest stands managed for satisfactory cover will be 40 feet or more in height with a canopy closure of at least 70 percent and generally no less than 600 feet wide. The desired cover condition will generally appear as a multi-layered stand capable of obscuring 90 percent of a standing elk at a distance of 200 feet or less. Stands managed for marginal cover will be no less than 10 feet in height with a canopy closure of at least 40 percent and also capable of hiding 90 percent of a standing elk at a distance of 200 feet.
3. Forest stands designed and managed to maintain or enhance elk use should provide cover of 600 feet to 1,800 feet in width. Exceptions may be made by wildlife biologists based upon an on-the-ground assessment of the value of the stand(s) for elk.
4. In evaluating habitat effectiveness for big game (elk and deer) species, roads considered as 'open' to vehicular access are those that receive, on average, more than four trips per month. Timing of use will be measured on a monthly basis.



5. Provide available forage to meet the requirements of desired populations of Rocky Mountain elk, mule and white-tailed deer, and bighorn sheep.
6. For big game evaluations, timber harvest units will be considered as forage areas until the new stands qualify as marginal cover.
7. Key big game use areas and habitats such as migrational corridors, calving/fawning areas, and wallows will be considered in the design and implementation of projects to retain or protect their important characteristics.
8. District access management plans will include provisions that will assist the states in meeting management objectives for bull/buck escapement.

#### Big Game Winter Range

1. Where available, maintain no less than 10 percent of each identified winter range as satisfactory cover.
2. On designated big game winter ranges, Forest management activities will be restricted during the big game winter use period of December 1 through March 30 or April 15 (as specified for individual winter ranges) to meet big game management objectives

#### Wildlife Programs

1. Emphasize partnerships in managing and enhancing the Forest wildlife resources. Utilize all types of available opportunities and methods in strengthening existing and developing new partnerships to attract funding and support for wildlife programs and resources.
2. Strengthen the Recreation Outreach Program related to fish and wildlife resources.
3. Survey user and other publics' (customers') concerns and preferences related to wildlife management on the Forest and develop programs and services or adjust management to provide a variety of ways to meet their needs and wants.

### **RIPARIAN/FISH HABITAT**

#### Goal

PROVIDE AND MAINTAIN A DIVERSE, WELL-DISTRIBUTED PATTERN OF FISH HABITATS TO ASSIST IN DOUBLING ANADROMOUS RUNS IN THE COLUMBIA RIVER BASIN (BY THE YEAR 2000) IN COOPERATION WITH STATES AND OTHER AGENCIES. THE GOAL APPLIES TO ALL AREAS DOMINATED BY RIPARIAN VEGETATION INCLUDING AREAS CONTAINING ANADROMOUS AND RESIDENT FISH HABITAT, PERENNIAL AND INTERMITTENT STREAM COURSES, WETLANDS, AND FLOODPLAINS

#### General

1. Maintain or restore biological, chemical, and physical qualities of Forest fish habitats (PL 92-500, as amended by PL 95-217, the Clean Water Act of 1977) (U.S. Laws, Statutes, etc. 1977) (MR). (See Forest-wide Standards and Guidelines for Protection of Water Quality Under 'Water Resources.')
2. Steelhead and rainbow trout are used as indicator species for anadromous and resident fish. Provide habitat to maintain steelhead and rainbow by meeting Best Management Practices and Clean Water Act standards (MR) and implementing fish habitat enhancement projects.
3. Areas in which fish habitat or water quality are being adversely impacted will be given high priority for treatment to correct the impacting activity or mitigate or rehabilitate the effects of the impact

4. Meet the direction and processes for management of wetlands and floodplains in accordance with EO 11990 and EO 11998 and FSM 2527 (MR).
5. Seeps, springs, bogs, and other wet areas, generally under 10 acres, are inherently unique and will be evaluated on a project level basis for their wildlife and other values and will be given appropriate levels of protection. Where needed, employ mitigation measures to protect unique vegetation, wildlife, and water related characteristics.
6. Exchange of riparian areas will only be undertaken to improve overall national forest riparian management. Acquiring private inholdings within riparian areas is a high priority.

#### Best Management Practices (BMP's)

Implement Best Management Practices (BMPs) to meet water quality standards (Clean Water Act of 1977, FSM 2500) (ibid.) and protect streams and adjacent areas to maintain aquatic resources. Refer to the water portion of the Forest-wide Standards and Guidelines and FEIS Appendix E for water quality Best Management Practices.

#### Class IV Streams

1. Management activities will not deteriorate water quality below existing established water quality goals for downstream Class I and II streams; water quality changes in Class IV may involve some temperature and turbidity increases.
2. BMPs for Class IV stream areas will be concerned primarily with preventing soil and debris movement, including slumps, earth slides, etc., from migrating downstream into higher class streams during periods of runoff.
  - a. Woody vegetation and ground cover adjacent to stream channels will be managed to provide a continuous supply of inchannel large woody material to the stream system in order to maintain or enhance streambank stability and to filter sediment generated on adjacent slopes.
  - b. Felling, skidding, and road construction across the stream should be avoided. When streams cannot be reasonably avoided, activities should be conducted at times when streams are dry and at locations where streambank and stream channel disturbances are minimized. Skid trail crossings of intermittent stream channels will be predesignated.
  - c. Roads and trails shall be located, constructed, and maintained so that the streambank and stream channel receive as little disturbance as possible.
  - d. Human-caused woody debris, less than 6 inches in diameter and 4 feet or more in length, that gets into the stream channel shall be carefully removed unless otherwise justified by environmental analysis.
  - e. Grazing will be conducted under principles of livestock management systems which will protect soil, vegetation, and water quality.
  - f. Within riparian areas, ground-disturbing activities will be limited to the degree necessary to maintain and protect water quality and fish habitat.
3. Assess the potential for improving stream and riparian conditions, and where opportunities exist, improve intermittent streams to perennial flows.
4. Manage roads and trails to protect riparian wildlife values, fish habitat, and water quality. Water quality and/or fish habitat problems caused by roads will be corrected.
5. Discourage cutting of dead and down material for fuelwood within riparian area.

#### Class III Streams

Class III streams are perennial and care must be taken during all seasons to protect downstream values.

*The following practices are in addition to those needed for Class IV streams:*

1. In order to prevent damage to streambanks and riparian habitat and to keep undesirable levels of slash out of the stream, avoid felling timber across stream channels.
2. Logging equipment shall not operate in the channel proper. All logs shall be fully suspended over the stream or crossed on temporary structures.
3. Within the riparian areas, limit mineral soil exposure by ground-disturbing activities to 10 percent of the project area.
4. For Class III (and I and II) stream reaches on the Forest which exceed desired maximum stream temperatures, as identified in state water quality standards, management activities within the contributing watershed shall not reduce stream surface shade below ecological potential (except at required crossings). Where ecological potential has not been determined for a reach, assumed ecological potential shall be 80 percent stream surface shade.

For Class I, II, and III stream reaches which do not exceed desired maximum temperatures, management activities within the contributing watershed shall not reduce stream surface shading more than 20 percent below ecological potential in upstream reaches. Where ecological potential has not been determined for a reach, assumed ecological potential shall be 80 percent stream surface shade.

5. Smolt habitat capability will be increased by improved summer and winter rearing habitat associated with greater amounts of inchannel large wood. Trees within one tree height of the stream channel will be managed to provide for a continuous supply of naturally occurring large woody material for future instream fish and riparian habitat in adjacent and downstream reaches. Upland areas and lands adjacent to Class IV streams may also be managed to provide large wood when these areas are determined to be critical to the provision of inputs of future large wood to downstream fish-bearing reaches. Inchannel large woody material objectives will be established during the environmental analysis process for projects affecting present or future levels of inchannel large woody material.

Permitted construction activities proposed for instream locations are reviewed by state fish and wildlife agencies and approved on a case by case basis dependent on fish species present at the time of the proposed activity. Permitted activities such as instream bridge or Culvert construction will normally be limited to the following timeframe:

River System	Start	Finish
North Fork John Day River	July 15	August 15
Umatilla River (steelhead habitat)	July 1	October 15
Umatilla River (spring Chinook habitat)	July 1	August 15
Meacham Creek	July 1	August 15
Walla Walla River	July 1	November 15
Snake River		
Tucannon River	July 15	August 31
Asotin Cr.	July 15	August 31
Remainder of Snake R. System	July 15	September 30

6. Riparian forage utilization standards and the range goal found in the Range section are the principal management tools used in achieving desired vegetation conditions.

Intensive range management, including superior grazing systems, will be practiced to protect and improve riparian vegetation and anadromous fish and wildlife habitats. Range management techniques that control livestock distribution and timing of use will be used to meet riparian goals. Periods of extended rest may be utilized in some situations where necessary to allow re-establishment of desired shrub communities. Grazing systems utilizing riparian pastures may be required to maintain water quality and protect riparian vegetation. Improvements should be located to encourage livestock use away from the riparian areas. Riparian corridor fencing should be considered on a very limited basis for special applications.

Within 8 years of revision of allotment management plans (AMP's), recovery of hardwood and shrub vegetation will be at least 75 percent of the expected achievement based on riparian classification and inventory.

#### Class I and II Streams

Management activities will not degrade water quality, fish, or aquatic resources below the water quality goals except for temporary change due to permitted activities (FSM 2526). The following practices are in addition to guidelines for Class III and IV streams and BMPs (not necessarily all inclusive):

1. Allow for the passage of both adult and juvenile fish in the design and construction of bridges, dams, and culverts.
2. Human-caused existing, stable, natural woody debris shall be removed (usually by hand) only in cases where fish migration is blocked, water quality is impaired, erosion is occurring as a result of the debris, or access for recreation purposes is hampered. Existing natural woody debris will not be removed in wilderness.
3. Streambanks should have 80 percent or more of their total lineal distance in a stable condition.
4. Increases in water temperature will seldom be allowed in Class I streams. Exceptions (within state standards) must be based on analysis indicating full maintenance or enhancement of existing beneficial uses of the water and be approved through an environmental assessment. Water temperature increases in Class II streams will be limited to the quantitative criteria in state water quality standards.

#### Fish Programs

1. Emphasize partnerships in managing and enhancing the Forest fish resources. Utilize all types of available opportunities and methods in strengthening existing partnerships and developing new ones to attract funding and support for fish programs and resources.
2. Strengthen the Recreation Outreach Program related to fish and wildlife resources.
3. Survey user and other publics (customers) concerns and preferences related to fish management on the Forest and develop programs and services or adjust management to provide a variety of ways to meet their needs and wants.

### **RANGE**

#### Goal

MANAGE THE FORAGE RESOURCES FOR AN UPWARD VEGETATIVE TREND IN AREAS IN LESS THAN 'FAIR' CONDITION AND AN UPWARD OR STABLE TREND FOR AREAS IN

'FAIR' OR BETTER CONDITION, WHILE PROVIDING FOR FORAGE PRODUCTIVITY AND MAKING SUITABLE RANGE AVAILABLE FOR LIVESTOCK GRAZING. INCREASE THE LEVEL OF FORAGE PRODUCTION WHERE COST EFFICIENT AND CONSISTENT WITH OTHER RESOURCE GOALS.

#### General

1. Protect the productivity and make suitable National Forest System lands available for grazing and browsing use in coordination with other resource uses. There is no minimum output requirement (Federal Land Policy and Management Act, Sec. 402, 36 CFR 222.1(a)) (US. Laws, Statutes, etc. 1976) (MR).
2. Suitable livestock range will be allocated by permit consistent with the management objectives for resources established by the Forest Plan.
3. Grazing allotments will be administered through the Forest Service grazing permit system, using inspections, monitoring, and permittee meetings.

#### Allotment Management Plans

1. Allotment management plans will be developed, revised, or maintained to implement the management direction of the Forest Plan. The planning process will involve grazing permittees, appropriate out-service agencies and interested publics. Cooperative resource management planning (CRMP), will be used for plan development where applicable. Plans will include:
  - a. The objectives for managing the vegetation resource, and activities needed (and a time schedule) to meet forage objectives as defined in the Forest Plan;
  - b. the grazing system to be used, season of use, class of livestock, and stocking levels;
  - c. range improvements needed to achieve allotment objectives, and an economic efficiency analysis;
  - d. forage production and utilization rates; and
  - e. the coordination requirements to be used in conjunction with other resources.
2. Allotment management plans will include a strategy for managing riparian areas for a mix of resource uses. A measurable desired future riparian condition will be established based on existing and potential vegetative conditions. When the current riparian condition is less than that desired, objectives will include a schedule for improvement. The plans will identify management actions needed to meet riparian objectives within the specific timeframe. Measurable objectives will be set for key parameters such as stream surface shading, streambank stability, and shrub cover as described in 'Managing Riparian Ecosystems (Zones) for Fish and Wildlife in Eastern Oregon and Eastern Washington' (1979). The plans will address the monitoring needed to determine if the desired rate of improvement is occurring.
3. Plans currently not consistent with this direction will be developed or revised on a priority basis under a schedule established by the Forest Supervisor.
4. Identify allotments with riparian areas in unsatisfactory condition (see Glossary). Areas in such condition might have: (1) suitable range with forage in less than fair condition and less than stable trend, or (2) basic resource damage or other resource damage occurring.

#### Forage Utilization

1. Forage utilization standards will be incorporated in allotment management plans. Allotment management plans may include utilization standards which are lower or occasionally higher than listed in the following tables. Standards higher than those shown will be accepted only when they are designed to meet specific resource objectives and desired future condition for a given management area. The standards include cumulative annual use by big game and livestock.
2. Utilization for grass and grass-like species is based on the percent of plant weight removed. Utilization for shrub species is based on incidence of use, weight, and/or twig length (e.g , utilization is 50 percent if 50 out of 100 leaders are browsed).
3. Satisfactory condition is determined by allotment classification and/or forage condition. Unsatisfactory condition is anything not meeting satisfactory conditions (refer to definitions found in the Glossary).
  - a. Allowable use of available forage ON RIPARIAN AREAS (MAXIMUM percent of annual utilization by big game and livestock) is:

RANGE MANAGEMENT STRATEGY

	B (Minimum)	C (Extensive)	D (Intensive)
Grass & Grass-like Species on areas in			
Satisfactory Condition	40%	45%	50%
Unsatisfactory Condition	0-30%	0-35%	0-40%
Shrub Species on areas in			
Satisfactory Condition	30%	40%	50%
Unsatisfactory Condition	0-25%	0-30%	0-35%

- b. Allowable use of available forage ON UPLAND AREAS (MAXIMUM percent of annual utilization by big game and livestock) is:

RANGE MANAGEMENT STRATEGY

	B (Minimum)	C (Extensive)	D (Intensive)
Forested Areas**			
Satisfactory Condition	40%	45%	50%
Unsatisfactory Condition	0-30%	0-35%	0-40%
Grasslands			
Satisfactory Condition	50%	55%	60%
Unsatisfactory Condition	0-30%	0-35%	0-40%
Shrublands			
Satisfactory Condition	40%	45%	50%
Unsatisfactory Condition	0-25%	0-30%	0-35%

\*\* Applies to areas where timber has not yet been cut, or where it was cut at least 30 years ago

- c. Transitory ranges (where timber has been harvested in the last 30 years) contain increased levels of forage from either reseeding efforts or natural seeding. The general guideline for utilization of transitory forage is:

- Utilization up to 60 percent for domestic livestock in a given area; and
- not to exceed 80 percent for big game and livestock combined.

### Improvements

1. The allotment management plan will implement a cost-effective program, consistent with management objectives. Structural improvements such as fences and water developments, and nonstructural improvements such as burning, seeding, and fertilizing may be used to achieve the management goals. Range improvements will be constructed and maintained with consideration for other resource needs (e.g., wildlife, visuals). Other activities such as predator, noxious weed, and unauthorized livestock controls may be necessary.
2. Encroachment of trees on natural grasslands and meadows, recognized primarily for their forage value and habitat they provide, may be controlled.
3. Forage may be enhanced where no conflict with reforestation goals will result. Transitory range will be managed in conjunction with timber management to achieve higher forage production and the desired level of forage utilization. Forage enhancement may be used to reduce other plants' competition with tree growth.

### Operating Plans

Annual operating plans will schedule livestock distribution and use patterns to prevent or resolve local resource conflicts; the allotment management plan will be implemented with specific instructions for each year's planned use.

## **ECOSYSTEMS & DIVERSITY**

### Goal

PROVIDE FOR DIVERSITY OF PLANT AND ANIMAL COMMUNITIES AND TREE SPECIES CONSISTENT WITH OVERALL MULTIPLE-USE OBJECTIVES FOR THE FOREST. MAINTAIN OR ENHANCE ECOSYSTEM FUNCTIONS TO PROVIDE FOR LONG-TERM INTEGRITY (STABILITY) AND PRODUCTIVITY OF BIOLOGICAL COMMUNITIES.

1. Maintain native and desirable introduced or historic plant and animal species.
2. Provide or develop an ecologically sound distribution and abundance of plant and animal communities and species on the stand, basin, and forest levels.
3. Provide for all seral stages of terrestrial and aquatic plant associations in a distribution and abundance that meets the goal. Early successional stages may be improved through introduced forage species in order to increase production, protect soil resources, and prevent noxious or other undesirable weed invasion.
4. Meet standard and guideline requirements including:
  - a. Vertical, horizontal, and species diversity shown in Timber,
  - b. old growth/mature tree, dead and down tree, and big game habitats size, characteristics, and spacial locations described in Wildlife or specific management areas:
  - c. riparian vegetation and instream condition and characteristics in Riparian/Fish;
  - d. vegetative condition shown in Range; and

- e. habitat specifications for plants and wildlife identified in Threatened, Endangered, and Sensitive Species and Management Areas A9 and D2.
5. During project planning, site-specific management prescriptions should be developed and evaluated that meet objectives for biological diversity and ecosystem function. Project planning evaluations should consider use of minimum fragmentation approaches or clustered timber harvest design.
6. Reductions in diversity of plant and animal communities and tree species from that expected in a natural forest, or from that similar to the existing diversity in the planning area, may be prescribed to meet overall multiple-use objectives.
7. The introduction of plants will be assessed and controlled to meet management objectives and to prevent any native species (or plant community) from becoming 'endangered or threatened.'
8. Plant community ecology is sensitive to management changes. The communities will be monitored for diversity relative to successional stages and type conversions.
9. Identify, inventory, and provide for local, traditional Native American food and cultural plants.

## **TIMBER**

### Goal

PROVIDE FOR PRODUCTION OF WOOD FIBER CONSISTENT WITH VARIOUS RESOURCE OBJECTIVES, ENVIRONMENTAL CONSTRAINTS, AND CONSIDERING COST EFFICIENCY.

### Commercial Forest Lands

Regulated timber harvest will be allowed only on lands classified as tentatively suitable (see Umatilla National Forest Stage 1 Analysis) (USDA Forest Service 1983a) (MR). Also, see Resource Map of Land Tentatively Suitable for Timber Production.

All acres designated as tentatively suitable forest land are capable of being adequately restocked within 5 years. Lands on which regulated timber harvest will be applied will be determined through the Forest planning process and designated as suitable.

### Nondeclining Even Flow

1. For base sale schedules, the planned sale for any decade will be equal to or greater than the planned sale and harvest for the preceding decade of the planning period, provided that the planned sale is not greater than the long-term sustained-yield capacity consistent with the management objectives of the alternative (36 CFR 219.1 2(d)(1). Departures will be evaluated when any of the following conditions are indicated:
  - a. None of the alternatives considered provides a sale schedule that achieves the assigned goals of the RPA program as provided in 219 4(b);
  - b. high mortality losses from any cause can be significantly reduced or prevented, or forest age-class distribution can be improved, thereby facilitating future sustained-yield management; and/or
  - c. implementation of the corresponding base sale schedule would cause a substantial adverse impact upon a community in the economic area in which the forest is located (36 CFR 219.16(a)(2)(1)) (MR).

### Harvest Level Determinations



The management intensities and utilization standards used in determining harvest levels will be consistent with the current Regional Plan (36 CFR 219.16(4)(2)(1)).

#### Silvicultural Systems Selection

1. Selection of the appropriate silvicultural system will be guided by criteria (a-g) and the land management emphasis. Criteria (a) through (g) are identified in the Regional Guide for the Pacific Northwest Region\* (USDA Forest Service 1984) and 36 CFR 219.27(b)\*\* and were subsequently combined to eliminate duplication of content and procedure.
  - a. Selected method must produce a volume of marketable trees that meet utilization standards and are designated for harvest (Regional Guide\*: criterion 1)
  - b. Selected method must use available and acceptable logging methods (Regional Guide\*. criterion 2; 36 CFR\*\*: criterion 4).
  - c. Selected method must be capable of meeting special management and multiple-use objectives (Regional Guide\*: criteria 3 and 6; 36 CFR\*\*: criteria 1 and 6).
  - d. Selected method must permit control of vegetation to establish desired species composition, density, and rates of growth (Regional Guide\*: criterion 4, 36 CFR\*\*: criteria 4 and 6).
  - e. Selected method must promote a stand structure and species composition which minimize risks from insects, disease, and wildfire (Regional Guide\*: criterion 5).
  - f. Selected method must assure that lands can be adequately restocked (36 CFR\*\*: criterion 2).
  - g. Selected method must be practical and economical in terms of transportation, harvesting, preparation, and administration of timber sales (36 CFR\*\*: criterion 7).
  - h. In addition, no harvest cutting method was selected primarily because it resulted in the greatest dollar return or provided the highest output of timber; and no method was selected which permanently reduced site productivity, or could not assure conservation of the water and soil resources (36 CFR: criteria 3 and 5).

#### Use of Clearcutting

The National Forest Management Act of 1976, section 6(g)(3)(f)(i), states that clearcutting is to be used only where it is found to be the optimum method. Further direction is contained in the Regional Guide for the Pacific Northwest Region, 36 CFR 219.36, and Forest Service Manual 2471.1. Where even-aged management is appropriate and desired to meet management and resource objectives, clearcutting will be analyzed against both shelterwood and seed tree methods. Determination of the optimum silvicultural method will consider stand condition and structure, insect and disease problems, silvics of the tree species concerned, plant community, logging method feasibility and probability of success, site characteristics, regeneration difficulty, economics, and other factors all in the context of meeting the resource objectives for that management area portrayed in the Forest Plan.

#### Management Intensities

1. Management intensities will vary with site productivity, timber species, other resource management objectives, and timing of implementation. Each of the following timber management practices is eligible and may be used singularly or in a combination to determine the appropriate management intensity.
  - a. Site preparation - chemical, mechanical, biological, manual, animal, and prescribed fire.

- b. Tree improvement (genetics) including selected trees and protective measures such as implanting, genetic stock, evaluation plantations, seed production areas, and seed orchard sites.
- c. Reforestation by planting, seeding, or natural means.
- d. Growing-stock protection from animals, insects, and diseases.
- e. Release and weeding - chemical, mechanical, biological, manual, animal, and prescribed fire.
- f. Precommercial thinning.
- g. Fertilization
- h. Pruning
- i. Commercial thinning.
- j. Sanitation harvest.
- k. Salvage harvest.
- l. Final harvest - including even-aged management practices of shelterwoods, seed tree units and clearcuts, and uneven-aged practices of individual tree and group selection.

#### Road Management

Operate and maintain the Forest road system to meet management area emphasis and direction.

#### Utilization Standards

The following standards shall apply on the Forest for determination of the regulated harvest:

<u>Working Group</u>	<u>Minimum DBH (in.)</u>	<u>Minimum Top DIB (in.)</u>
First Decade		
North Associated	9	6
South Associated	9	6
Ponderosa pine	9	6
Lodgepole pine	7	4
Commercial thinning	7	4
Future Decades		
All Species	7	4

#### Culmination of Mean Annual Increment

Minimum rotation lengths will be based upon the length of time required to achieve volume production equivalent to at least 95 percent of culmination of mean annual increment. Exceptions are permitted for the use of sound silvicultural practices, for salvage or sanitation harvesting, or for the removal of a particular species of trees after considering the multiple objectives of the area (MR).

#### Silvicultural Prescriptions

1. Silvicultural prescriptions will be prepared for all activities proposing management of forest vegetation to meet resource objectives. Stand diagnoses will be prepared for alternatives in environmental assessments. Unit prescriptions will be prepared for the

selected alternative and will be recorded in project environmental assessments or analysis files and in stand data records.

2. All prescriptions will be prepared or approved by a certified silviculturist.
3. Elements required in a silvicultural prescription are documented in FSM 2478 and the Silvicultural Examination and Prescription Handbook (FSH 2409.26d). The Silvicultural Prescription Handbook will be used as the guide for all even-aged management prescriptions. Guides to the practice of uneven-aged management appear in the Forest-wide Standards and Guidelines. No standardized format will be required, but all requirements must be addressed in the prescription or through project environmental analysis.
4. Silvicultural prescriptions must address the following:
  - a. Designation of number and sizes of snags, green wildlife trees, and downed logs that will meet the habitat requirements for cavity dependent species;
  - b. protection, maintenance, and enhancement of hardwood vegetation found in activity areas;
  - c. an analysis of the options of shelterwood, natural regeneration, and uneven-aged management as part of the selection of a regeneration harvest method;
  - d. an optimum and minimum stocking level where regeneration harvests are applied;
  - e. integrated pest management in both the long and short term (pests include insects, diseases, animals, and vegetation); and
  - f. the use of prescribed fire as a silvicultural tool in support of returning fire to its natural role in the ecosystem.
5. Stand examinations and/or other data gathering processes will be used to verify or develop silvicultural prescriptions. Data gathering processes will be designed to provide the appropriate detail and accuracy commensurate with the complexity of the silvicultural and resource decisions at hand.

#### Reforestation

1. The optimum stocking level should be based on the objective of maximum cubic foot volume production, unless other resource objectives are identified and documented during the project planning process. The minimum stocking level should be based on the total number, distribution, and condition of trees needed to carry out the least intensive silvicultural strategy identified in the Forest Plan, or as specified in Regional stocking level curves (FSH 2409.26d) or site specific local curves including mortality predicted at 20 percent over the length of the rotation. A site-specific analysis documented in the silvicultural prescription may justify a change in management intensity or predicted mortality level.
2. When trees are cut to achieve timber production objectives, the cutting shall be planned and implemented to assure and expect adequate restocking of lands within 5 years after final harvest. Research technology, knowledge, and experience shall be the bases for determining whether regeneration practices can be expected to result in adequate restocking. Adequate restocking means that the harvest area will contain the minimum number, size, distribution, and species composition of regeneration. Five years after final harvest means: 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting (36 CFR 219.27(c)(3)).
3. Minimum stocking for this planning period will be as follows.

Ponderosa pine working group	100 trees per acre
North Associated	200 trees per acre
South Associated	150 trees per acre
Lodgepole pine	100 trees per acre

The above numbers apply to a plantation at the time of certification, normally the third growing season after planting. In stands prescribed for natural regeneration, certification will occur after the final harvest and postsale activities are completed, and the trees have experienced one additional growing season. In addition, there should be no evidence of significant imminent mortality that would reduce stocking below these levels by more than 20 percent between the time certified and the time the trees reach 4.5 feet in height. Stocking should also be of desirable species capable of being managed to meet management area objectives.

4. As a minimum, planted seedlings will meet SIA seed certification standards. Whenever possible, seedlings will meet SB certification standards. Genetically improved stock will often be interplanted in areas reforested by natural regeneration to increase both species and inter-species diversity. When planting in areas experiencing disease problems such as root rots or dwarf mistletoes, disease resistant species will be favored.
5. The decision to replant, interplant, or apply additional site preparation to naturally regenerate harvested areas which are stocked (above the minimum stocking level but below the optimum stocking level), should be based on a site-specific economic analysis. The economic analysis should weigh the additional costs of replanting, interplanting, or applying supplemental site preparation against the discounted benefit of the additional volume contributed from trees added in the retreatment. Retreatment should not be prescribed with a benefit host ratio of less than 1.0 unless warranted by other management objectives identified and documented in the project planning process.
6. In regeneration units, site preparation (if any) should be completed within 2 years of harvest. Planting (if any) shall occur within 1 year of site preparation. Exceptions can occur, but only to meet resource objectives or because of extenuating circumstances.
7. Regeneration examinations should be made in accordance with FSM 2472.4, including as a minimum, examinations after the first and third growing seasons. Certification of regeneration units must be made based on a site-specific determination; regeneration units must meet minimum stocking guidelines prior to certification as successfully reforested. Staked tree surveys will be conducted on major tree species, nursery lots, and management practices. Measurements will be made the first, third, and fifth seasons after planting in order to monitor seedling survival and growth, to evaluate the effectiveness of management practices, and to gather data for the development of future managed yield tables.

#### Precommercial Thinning

1. Precommercial thinning is recommended when:
  - a. It is consistent with management objectives;
  - b. Overstocking will reduce future yields below planned levels;
  - c. The expected return from increased future timber production and value exceeds the cost of the thinning; or
  - d. Stocking level control is necessary to protect the stand from losses due to insects and diseases.

2. Stands with an average DBH over 6 inches should not normally be precommercially thinned unless not thinning the stand would incur significant losses from insects, diseases, or stagnation.
3. Precommercial thinning requires at least minimum stocking in trees capable of responding to release. Trees should have a minimum of 30 percent live crown ratio and be sufficiently free of disease or damage to make a merchantable product.

#### Management of Advanced Regeneration

1. Advanced regeneration is defined as conifers of less than merchantable or marketable size which are established in areas proposed for silvicultural activities. Advanced regeneration should be retained and managed as future crop trees if these trees are of desirable species and acceptable condition.
  - a. Trees of acceptable condition will generally have the following characteristics:
    - 1) A minimum live crown ratio of 40 percent, except in the case of true firs, where the minimum crown ratio is 50 percent;
    - 2) a reasonable probability of remaining undamaged following management activity, fuels treatment, and site preparation;
    - 3) they must be free of major diseases; be predicted to maintain a minimum of 10 inches of leader growth annually within a 20-year period; and have a reasonable expectation that they will remain disease free until rotation age; and
    - 4) a reasonable expectation must exist that the trees will increase in height and diameter growth when given increased growing space.
  - b. Timber harvest and post-harvest activities (fuels treatment and site preparation) should be tailored to protect advanced regeneration from damage as much as is practical. Where more than 20 percent of the prescribed minimum stocking level can be met through the retention of advanced regeneration, the appropriate timber sale and service contract provisions should be used to insure protection of desirable advanced regeneration.

#### Natural Regeneration

1. Natural regeneration should be the preferred alternative where economic stand, and site conditions are appropriate and where natural regeneration does not conflict with other resource objectives identified and documented during the project planning process. Species diversity and preference should be important considerations. Natural regeneration prescriptions should identify optimum and minimum stocking level, specified regeneration time period, and first time success, as well as meet standards and guidelines for species preference and species diversity.
2. Appropriate stand and site conditions for natural regeneration include:
  - a. Seed trees should display acceptable genetic characteristics including growth, bole form, and branching habit;
  - c. past cone production should be in evidence to the extent necessary to meet minimum stocking levels within the specified time period;
  - d. there should be a sufficient number of seed trees that can be retained on-site in an acceptable condition following management activities;
  - e. there should be no diseased seed trees unless they can be removed or girdled before regeneration reaches a height of 2 feet, or within 10 years after the seed cut; and

- f. site preparation should be accomplished while protecting the residual seed trees and advanced regeneration.
3. Lands harvested must be expected to be adequately stocked with natural regeneration or fill-in planting to minimum acceptable stocking levels within 5 years after final harvest.
4. Natural regeneration should be prescribed where the minimum stocking levels will be met during the specified time period with a first time success of 80 percent or greater.
5. Fuels treatment and site preparation should generally be carried out following the regeneration cut so that no fuels treatment is needed following the final removal harvest.

#### Species Preference

1. In determining which conifer species to favor during the development of silvicultural prescriptions, consideration should be given to the following objectives: (1) Long-term stand health, vigor, and productivity specifically related to insect and disease impacts; (2) economic efficiency based on the costs and values associated with timber management; and (3) the biological diversity needs for wildlife species, visual quality, or other resource needs in accordance with the standards and guidelines for diversity.
  - a. Consideration should be given to the growth and yield effects of predicted insects and diseases associated with the preference given to an individual species over another. Preference should generally be given to the healthiest and fastest growing trees where there is reasonable assurance they will continue to meet these objectives until rotation age. Favor should be shown to a species or a mix of species predicted to produce the highest net value over time while meeting needs for diversity and long-term ecological health.
  - b. The economic analysis should consider the costs associated with establishing and protecting an individual species, the current market values for those species, current and projected rates of growth, and projected harvest sizes and log grades produced from the management area under consideration.
  - c. In the North and South Associated Working Groups, strong consideration should be given to maintenance of stands dominated by early successional species including ponderosa pine, Douglas-fir, western white pine, and western larch since, in these forest types, the potential for insect and disease depredation is high if latter successional species are managed. Economic analysis should clearly recognize the potential for future damage. Management activities should maintain desirable advanced or natural regeneration of lodgepole pine or climax species (including true firs) in future stand composition in order to promote species diversity.
  - d. In the Ponderosa Pine Working Group, silvicultural prescriptions will feature ponderosa pine while other associated species will be maintained at low levels to provide for ecological diversity needs.
  - e. In the Lodgepole Pine Working Group, plant communities are found in which lodgepole pine is either climatically climax, or successional to sub-alpine fir and Engelmann spruce. Western larch is often a major component depending on the specific site. Management activities should work with the ecological forces at hand and accept a major stocking of lodgepole pine. Whenever possible, diversity should be enhanced by promoting stocking of western larch and Engelmann spruce.

#### Diversity

Management activities should be tailored to provide the horizontal, vertical, and vegetative species diversity necessary for the maintenance of wildlife species, aesthetics, and recreational objectives as established in the Plan.

#### Horizontal Diversity (harvest unit size)

1. Even-aged management strategies can have a positive effect on the development of large-scale horizontal diversity. In intermediate or mixed-age stands greater than 40 acres in size, harvest activities such as overstory removal, precommercial thinning, and commercial thinning should be prescribed in unit sizes and tree spacings that complement the eventual development of horizontal diversity. The needs for long term stand health and vigor achievable through stand density control should take precedence over the short term need for horizontal diversity.
2. Strong consideration should also be given to the staggered regeneration of large even-aged areas. Some stands may be regenerated prior to the culmination of mean annual increment while others may be regenerated later to create horizontal diversity in the long run. This will be especially important in the Lodgepole Pine Working Group, given the historic patterns of beetle infestation and wildfires creating large blocks of even-aged, often single species stands.
3. The Forest will conform to the Regional guidelines on created forest openings. Forest openings created by even-aged silviculture should not exceed 40 acres. Exceptions are permitted in the following cases:
  - a. When natural catastrophic situations such as fires, windstorms, or insect or disease attacks occur;
  - b. on an individual case by case basis after a 60-day public notice and review by the Regional Forester; and
  - c. when any one of the criteria in the Regional Plan is met but not exceeded by more than 50 percent without review by the Regional Forester or 60-day public notice.
4. A harvested area will no longer be considered a created opening for timber management when the prescribed crop tree stocking is above minimum acceptable levels and trees are at or above 4 ½ feet in height and free to grow (MR). Where other resource management considerations are limiting, such as wildlife habitat and visual requirements, a created opening will no longer be considered an opening when the vegetation in it meets the management objective.
5. Created openings will be separated by blocks of land or areas generally not classed as created openings. The blocks of land between created openings shall vary in size, contain one or more logical logging units, and be large enough, and of a stand structure to meet resource requirements of the Forest Plan (MR).
6. Openings to be created contiguous to natural openings, should receive attention during the analysis and prescription for treatment. The decision to create openings contiguous to natural openings shall be supported by prescriptions specific to individual natural openings, or to a group of natural openings where their importance is diminished by more frequent occurrence. The created openings should generally not exceed one-third the size and/or be contiguous to no more than one-third the edge of a natural opening where the natural opening exceeds 30 acres in size. Limitations for created openings contiguous to natural openings less than 30 acres in size will be subject to the Interdisciplinary decision making process and review of land management objectives.

#### Vertical Diversity

1. Vertical structural diversity can best be maintained with uneven-aged management or small even-aged harvest units. Application of a mix of both even and uneven-aged management strategies is desirable to provide benefits from horizontal and vertical diversity.
2. Within forest types where both even and uneven-aged prescriptions are appropriate, each silvicultural strategy should be represented on no less than 10 percent of the area harvested in an allocation zone.

#### Species Diversity

1. In regeneration units where single species management is not dictated by plant community composition, at least two and preferably more tree species will be managed together over time. Preference may be given to a single species, but as a minimum, 20 percent of the stocking should be made up of other species.
2. Reforestation of 'noncommercial' tree species (hardwoods and conifers such as Pacific yew, Western juniper, etc.), should be considered in meeting management area objectives.
3. Special and unique ecological communities such as aspen and other hardwood stands, seeps, springs, bogs, and other riparian areas should receive special attention and protection from potentially damaging management activities. Silvicultural prescriptions will specifically address measures to protect, maintain, and enhance aspen and other hardwood clones, clumps, and stands.

#### Uneven-aged Silvicultural Systems

1. Uneven-aged management can be applied using either individual tree or group selection silvicultural systems. The decision to apply either system should be based on actual stand and site conditions. Silvicultural systems described here for uneven-aged management are described in further detail by David M. Smith in *The Practice of Silviculture*, 7th edition, published in 1962.
2. Individual tree selection should be applied where forest stands contain a variety of size classes, usually three or more, which are evenly distributed on nearly every acre throughout the stand and contain preferred species without significant disease problems.
3. Individual tree selection is perhaps most applicable in mature and multi-storied pure ponderosa pine stands in the ponderosa pine community types, and in Douglas-fir climax communities in stands that are free of Douglas-fir dwarf-mistletoe.
4. Group selection should be applied where forest stands are irregular, contain a mosaic of small even-aged groups, where control over species is important, or where significant disease problems are present. Even-aged groups may be as small as one quarter acre and contain two or three mature trees or may be as large as 3 acres. Even-aged groups are usually 2 acres or less in size. From an ecological viewpoint, maximum group size is reached when climatic conditions within the even-aged group are no longer modified by the adjacent stand. Activities will vary within each small even-aged group depending on the size, age, and density of the trees. In group selections, each small group opening will be tended similarly to an even-aged managed opening. When fully managed, a stand mosaic of several size classes interspersed with each other in small-sized groupings will occur with each occupying approximately the same percentage of the stand.
5. The application of uneven-aged management by group selection will be objective oriented and will depend on the number of age classes desired, the percent of land desired in each class, and the desired interval between harvest entries.



6. Uneven-aged management can also be applied in the Associated and Lodgepole Working Groups but with more difficulty, and it would most often be accomplished using group selection methods. Due to serious problems commonly found with shade tolerant species, uneven-aged management practices should strive to ensure stand dominance by more seral disease free species such as ponderosa pine, western larch, lodgepole pine, and western white pine. Dominance in these community types is established when stocking by early successional species can be maintained at or above 50 percent of the minimum stocking level established in the silvicultural prescription on 80 percent of the treated acres.
7. Uneven-aged management will generally be applied on slopes of less than 30 percent. Uneven-aged management will generally not be applied where cable or skyline yarding systems are prescribed due to the costs of such operations and the difficulty of protecting residual growing stock.
8. Uneven-aged management can be applied where the total area impacted by detrimental soil compaction, erosion, or displacement can be restricted to less than 20 percent of the stand.
9. Uneven-aged management is particularly appropriate adjacent to streamside management units and other riparian areas, in visual zones, in areas with recreational emphasis, in creating vertical diversity for wildlife, in protecting the integrity of special areas such as elk wallows or springs or other microsites, or anytime where maintenance of forest cover is an important objective.
10. The silvicultural prescription should be designed to move the stand structure toward an uneven-aged diameter class distribution through an orderly sequence of harvest activities occurring during the next 20 to 100 years. Stand simulation models such as 'Prognosis' should be used as the primary tool to evaluate the optimum levels of growing stock and diameter distributions which best meet management objectives.
11. Timber harvest and post sale activities will normally be planned on a 20-year entry cycle. Other entry cycles may be appropriate to meet resource objectives, or to better create the desired stand structure. Stands should not be harvested at times other than the prescribed entry cycle times except to salvage fire killed trees, or when bark beetle related mortality has occurred at epidemic levels, when extensive mortality has been caused by other catastrophic events, or in case stand performance has fallen below acceptable levels and the stand has become high risk for bark beetles.
12. Each silvicultural prescription should specify stand management criteria including the appropriate "Q" value or relationship between numbers of trees of different diameter classes, the appropriate residual basal area, and the upper diameter limit or rotational size for trees to be harvested. These stand management criteria will vary depending on site quality and management emphasis.
13. All post sale activities necessary for the entry cycle, including fuels treatment, site preparation, planting, precommercial thinning, and conifer release should occur no later than 5 years following the harvest entry. Site preparation will be prescribed so as to favor the preferred species. To ensure dominance by desired species, planting may be necessary. When natural regeneration is desirable, leave trees can be left in the small groups if appropriate. Each small group opening will then be tended similarly to an even-aged managed opening.
14. Extreme care must be exercised in applying uneven-aged management practices to stands infected with dwarf-mistletoes, bole rots, or root rots. In some cases these pests may preclude the prudent use of this prescription. In other situations, nonhost species can be favored to minimize the impacts from the pest agents.

## **WATER**

### Goals

MANAGE NATIONAL FOREST RESOURCES TO PROTECT ALL EXISTING BENEFICIAL USES OF WATER AND TO MEET OR EXCEED ALL APPLICABLE STATE AND FEDERAL WATER QUALITY STANDARDS. WITHIN THE FOREST CAPABILITY, MAINTAIN OR ENHANCE WATER QUANTITY, QUAUPI, AND TIMING OF STREAMFLOWS TO MEET NEEDS OF DOWNSTREAM USERS AND OTHER RESOURCES. MAINTAIN INTEGRITY AND EQUILIBRIUM OF ALLSTREAM SYSTEMS, RIPARIAN AREAS, AND WETLANDS ON THE FOREST. MANAGE DESIGNATED MUNICIPAL SUPPLY WATERSHEDS TO PROVIDE WATER WHICH, WITH TREATMENT, WILL RESULT IN A SATISFACTORY AND SAFE SUPPLY.

### General

1. Meet (MR) or exceed state requirements in accordance with the Clean Water Act for protection of waters of the State of Oregon (Oregon Administrative Rules, Chapter 340-41), and the State of Washington (Washington Administrative Code, Chapters 173-201 and 202), through planning, application, and monitoring of Best Management Practices (BMP's) in conformance with the Clean Water Act, regulations, and Federal guidance.
2. For all lands within national forest boundaries (including private lands), no more than 30 percent of the forest land within a subwatershed will have timber stand age classes of 0-10 years except where analysis documented in an environmental assessment indicates that watershed condition would not be impaired.
3. In (sub)watersheds where project scoping identifies an issue or concern regarding the cumulative effects of activities on water quality, quantity, or stream channels, a cumulative effects analysis will be performed. The analysis will include land in all ownerships in the (sub)watershed. Activities on national forest lands in the (sub)watersheds should be dispersed over time and space to the extent practicable, and at least to the extent necessary to meet MR's. On intermingled ownerships, coordinate scheduling efforts to the extent practicable.
4. Meet the direction and processes for management of wetlands and floodplains in accordance with EO 11990 and EO 11998 and FSM 2527 (MR).

### Protection of Water Quality

1. In cooperation with the States of Oregon and Washington, the Forest will use the following process:
  - a. Select and design BMP's based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for potentially impacted waters.
  - b. Implement and enforce BMP's.
  - c. Monitor to ensure that practices are correctly applied as designed. Monitor to determine the effectiveness of practices in meeting design expectations and in attaining water quality standards
  - d. Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMP's do not perform as expected.
  - e. Adjust BMP design standards and application when monitoring shows that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. Evaluate the appropriateness of water quality criteria for

reasonably assuring protection of beneficial uses. Consider recommending adjustment of water quality standards.

2. Use the existing process agreements to implement state water quality management plans on lands administered by the Forest as described in Memorandum of Understanding between:
  - b. The Oregon Department of Environmental Quality and U. S. Department of Agriculture, Forest Service (2/12/79 and 12/7/82), and "Attachments A and B" referred to in this MOU (Implementation Plan for Water Quality Planning on National Forest Lands in the Pacific Northwest 12/78 and Best Management Practices for Range and Grazing Activities on Federal Lands, respectively).
  - c. The Washington Department of Ecology and U.S. Department of Agriculture Forest Service (7/79), and 'Attachment A' referred to in this MOU (Implementation Plan for Water Quality Planning on National Forest Lands in the Pacific Northwest 12/78).

For a more complete explanation of the above, refer to Appendix E in the FEIS, 'Best Management Practices'. Individual, general Best Management Practices are described in *General Water Quality Best Management Practices*, Pacific Northwest Region, 11/88, which provides guidance but is not a direction document. A description is included of the process, limitations, and use of the BMP's.

3. Evaluations of both the ability to implement BMP's and their estimated effectiveness will be made at the project level. Projects may include general BMP's, site-specific BMP's or combinations of both.
4. Management activities will not degrade water quality, fish, or aquatic resources below the water quality goals except in temporary change due to permitted activities (FSM 2526). See Riparian/Fish Forest-wide Standards and Guidelines and Best Management Practices (BMP's).
5. Provide for the treatment of sewage and other point sources of pollution discharged into streams and waters (MR).

#### Watershed Improvements

1. Inventory potential watershed rehabilitation sites that are identified during project Scoping. Treat backlog of watershed rehabilitation needs by the year 2010.
2. Areas in which fish habitat or water quality are being adversely impacted will be given high priority for treatment to mitigate or rehabilitate the effects of the impact or correct the impacting activity.
3. Watershed improvements will be designed, constructed, and maintained to conform with the resource objectives and goals of the management area.
- 5) Rehabilitate abandoned mineral exploration and development sites to meet water quality and management area goals and resource objectives.

#### Water Rights/Use Management

1. Secure water rights to support resource management and activities. Where diversions, point of use, and water transmission facilities are located on National Forest System lands, special use permits shall be conditioned to achieve resource objectives and management area goals.
2. Minimum instream flows needed to achieve mandated national forest management objectives shall be protected. Needed instream flows will be calculated on a case-by-case basis through critical analyses (via NEPA) of proposed water uses, diversions,

transmission facilities applications, and renewal of permits. Protection of instream flow needs may be achieved through filing protests with states where applications are made that adversely affect national forest resources, asserting claims for this water under Federal or state laws where applicable, making recommendations to FERC for provision of instream flows, coordinating with state water resource planning agencies to identify instream flows on national forest land as protected uses, or reaching formal agreements over use. Purchase of water rights, conservation pools, and impoundments are other means of achieving objectives.

3. For water withdrawal projects which could effect downstream flows, consideration shall be given in the NEPA process to minimum instream flow needs as identified by state water resource planning agencies and local tribal agencies. Coordinate these activities with the Fish and Wildlife Service as provided for in FSM 2610.1-4.

#### Wilderness

The full natural streamflows within Congressionally designated wilderness will be protected except for that amount of water claimed under valid water rights existing at the time of designation.

#### Coordination

Provide assistance to other agencies and states in snow surveys, water inventories, and flood forecasting.

## SOIL

### Goal

MANAGE NATIONAL FOREST LANDS TO MAINTAIN OR ENHANCE SOIL AND LAND PRODUCTIVITY (FSM 2520.2, 6/87).

### Soil Productivity

1. Plan and conduct land management activities so that reductions of soil productivity potential caused by detrimental compaction, displacement, puddling, and severe burning are minimized.
2. Nutrient capital on forest and rangelands is to be maintained at acceptable levels (MR). Maintain a minimum of 80 percent of an activity area in a condition of acceptable productivity potential. Examples of an activity area are: A timber sale cutting unit, a grazing allotment pasture, a site preparation or slash disposal project or similar area. Acceptable productivity potential is defined as a less than 20 percent increase in soil bulk density in volcanic-ash derived soils, and a less than 15 percent increase in soil bulk density in other Forest soils; soil displacement of less than 50 percent of the topsoil or humus enriched A1 and/or AC horizons from an area of 100 sq. ft or more which is at least 5 feet in width; molding of soil in vehicle tracks and rutting to a 6-inch depth or more; or as severely burned soils that have the top layer of mineral soil significantly changed in color (usually to red), and the next one-half inch blackened from organic matter charring (FSM 2520.3, Supplement 50, 6/87)(MR)).
3. Plan and conduct land management activities (FSM 2520.3, Supplement 50,6/87 (MR)) so that soil loss from surface erosion and mass wasting, caused by said activities, will not result in an unacceptable reduction in soil productivity or in water quality (MR). Maintain minimum percent effective ground cover after cessation of any soil-disturbing activity as follows:

Erosion Hazard Class	Minimum % Effective Ground Cover	
	1 <sup>st</sup> Year	2 <sup>nd</sup> Year
Low (Very Slight)	20 – 30	30 – 40
Medium (Moderate)	30 – 45	40 – 60
High (Severe)	45 – 60	60 – 75
Very High (Very Severe)	60 –75	75 –90

4. Management activities shall be designed and implemented to retain sufficient ground vegetation and organic matter to maintain long-term soil and site productivity.
5. Active slump and landslide areas will generally be considered to be unavailable for road construction. Areas with known landslide potential and lake sediments will require special transportation planning, design, layout, preconstruction, construction, and maintenance techniques.

### Floodplains/Wetlands

Meet direction and processes for management of floodplains and wetlands (MR). Address the presence of, and potential impacts to any floodplains/wetlands within the project area in project environmental assessments.

### Best Management Practices

- 1 Along all perennial streams, adjacent floodplains, and riparian areas take actions to prevent soil movement, including slumps, earth slides, and other debris and material from moving downstream into higher class streams.
- 2 In floodplains, riparian areas, and aquatic habitats, ground-disturbing activities are limited to the degree necessary to minimize erosion and sedimentation.

#### Inventory

Inventory the Forest soil resources according to available standards to predict and assess responses to activities.

#### Soil Improvements

Plan and accomplish rehabilitation projects to meet soil and water objectives and standards.

#### Coordination

Assist other agencies and states in collection of soil resource data,

## MINERALS AND ENERGY

### Goal

PROVIDE FOR EXPLORATION, DEVELOPMENT, AND PRODUCTION OF A VARIETY OF MINERALS ON THE FOREST CONSISTENT WITH VARIOUS RESOURCE OBJECTIVES, ENVIRONMENTAL CONSTRAINTS, AND CONSIDERING COST EFFICIENCY.

### Energy (Gas, Oil, Coal, and Geothermal)

1. Mineral leases, permits, and licenses will be managed according to FSM 2820 and 36 CFR 228.
2. All lease applications submitted by the Bureau of Land Management will be reviewed in a timely fashion and necessary stipulations to protect surface resources will be required. Recommendations for operating plans for energy minerals requiring mitigation measures to protect surface resources will be provided when requested by the USDI Bureau of Land Management (BLM).
3. Post-leasing activity will involve the review and joint approval by the Forest Service and BLM of detailed operating plans concerning activities in a site-specific area.

### Non-Energy Minerals

1. Mineral exploration and mineral removal are permitted throughout the Forest except in withdrawn areas.
2. Under the mining laws, claimants are entitled to access to their mining claims. Access for exploration and development of locatable mineral resources will be analyzed in response to a proposed operating plan. A decision on approval of reasonable access will be made as a result of appropriate environmental analysis.
3. When claimants propose mining activities which involve disturbance of the surface resources, a notice of intent and/or a proposed plan of operation must be submitted. The proposal will be processed in a timely manner in accordance with 36 CFR 228.
4. During development of operating plans or plan modifications. Reasonable alternative mitigation measures and/or operating requirements will be developed to define the appropriate stipulations needed to protect other resources while still meeting the objectives of the mineral operator. The test for operating plan requirements is 'reasonableness.'
5. Reclamation standards will be developed using an interdisciplinary process to insure land restoration to a productive condition to the extent reasonable and practicable. When reasonable, opportunities to enhance other resources will be considered. Concurrent reclamation will be stressed. Reclamation bonds will be based on actual reclamation costs.
6. Claims on which application for patent have been made will be examined and conclusion of validity will be presented to the BLM for final action.

### Withdrawals

Withdrawal of lands from appropriation or entry under the mining or mineral leasing laws will be in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA) (US. Laws, Statutes, etc. 1976). Review of existing withdrawals will be made by 1991 to determine whether, and for how long, the continuation of the existing withdrawal would be consistent with the statutory objectives of the programs for which the lands were dedicated.

### Common Materials Minerals

Use of currently developed common mineral (sand, gravel, and rock) material sources will be given priority over undeveloped sources. Exceptions will be made when existing sources are unable to economically supply the quality and quantity of material needed, or when conflicts with other resource uses are found to be unacceptable.



## LAND ADJUSTMENTS

### Goal

PROVIDE AN OPTIMUM PATTERN OF LANDOWNERSHIP WITHIN THE UMATILLA NATIONAL FOREST CONSIDERING RESOURCE GOALS AND EFFICIENCY OF MANAGING THE FOREST.

### Land Classification Groups

1. Modifications will be made to the national forest landownership pattern to accomplish the objectives of this Forest Land and Resource Management Plan. Opportunities for improving the pattern will come through land exchanges, purchases, donations, and transfers with other agencies. Acreages within each group are summarized in the Forest Plan.

The public and private lands in and surrounding the Forest have been classified and prioritized to indicate the optimum landownership pattern. A detailed map of land ownership adjustments is available for review at the Forest Supervisor's Office. All lands have been placed in one of the following groups:

#### Group I

- a. Group I includes lands of which Congress has either directly or indirectly instructed the Forest Service to retain existing Federal ownership, and those remaining non-Federal lands the Forest Service has been directed to acquire for a designated purpose. Acquisition of less than fee title will be considered if direction and land management objectives can be met.

#### Group II

- b. The basic criterion for Group II lands is special management to meet a particular public need or purpose. Such lands include special interest areas and areas allocated to recreation, range, fish and wildlife, visual, watershed (including riparian), soils, and timber values. Landownership direction is to retain national forest ownership and acquire private lands as the opportunity or need occurs. Acquisition of less than fee title will be considered if direction and land management objectives can be met.

#### Group III

- c. Group III encompasses lands where management direction emphasizes commodity production. These lands will be available for land adjustment and usually will include most of the land considered in exchange projects. Areas of mixed private and Federal ownership are included with the objective of rearranging ownership patterns to benefit commodity production goals for both ownerships. Included are some isolated parcels that can be managed best by the Forest Service or other public agency. The assumption for lands in this group is that they will be managed to provide similar types of outputs whether in private or public ownership. Normally, solid national forest ownership will not be available for land exchange.

#### Group IV

- d. Lands include small isolated tracts of national forest, costly to administer and without special resource features. The landownership direction is to generally make these lands available for exchange for private lands in Groups I, II, or III.

#### Group V

- e. These are lands which need more intensive study and planning before landownership decisions can be made. Land acquisition and disposal decisions will be deferred until the needed studies have been completed.

#### Land Adjustment Priorities

1. Priorities for lands which should be considered for acquisition to meet essential national forest management needs are:

- Priority 1 - Group I lands
- Priority 2 - Group II lands
- Priority 3 - Group III lands

2. Priorities of national forest lands available for exchange are:

- Priority 1 - Group IV lands
- Priority 2 - Group III lands

## LAND USES

### Goal

PROVIDE FOR THE USE AND OCCUPANCY OF THE FOREST BY PRIVATE INDIVIDUALS OR FEDERAL, STATE, AND LOCAL GOVERNMENTS WHEN SUCH USE IS CONSISTENT WITH FOREST MANAGEMENT OBJECTIVES, IS IN THE PUBLIC INTEREST, AND CANNOT BE REASONABLY SERVED BY DEVELOPMENT ON PRIVATE LAND.

### General

1. Special use evaluation, permit issuance, fees, and administration will be in accordance with FSM 2700 and 36 CFR 251.
2. In considering special use applications, the needs of the general public will be given priority over the applicant.
3. Land to be used will be suitable for the proposed use and kept as small as is consistent with the intended purpose. National forest land will not be made available for private development when suitable private land is available to support needs.
4. Provisions will be made to protect land and resources of the national forest. The Forest Service will approve location of all developments, designs, and plans for construction of facilities.
5. New permits will be selected through a competitive process if there is a competitive interest. If additional recreation services or facilities are determined to be needed and should be provided by the private sector, the Forest will explore the opportunity of doing this by expanding existing permits or by issuing permits for a new service or facility.

### Right-of-way Grants and Acquisition

1. Grant needed easements to state and local governments for existing and relocated roads and highways. Follow 36 CFR 212.8, 9, 10 and 11 in granting access across lands and easements administered by the Forest Service.
2. Acquire road and trail right-of-way across non-national forest land to implement and support land and resource management activities. Coordinate with intermingled and adjacent landowners and state and local government in developing roads, road systems, or trails that serve the needs of all parties.

### Landlines

Survey and mark boundaries to accomplish the following priorities: (1) Protect present corners or references when the possibility of disturbance exists, (2) resolve or prevent encroachments, (3) assist Forest users in identifying public lands, and (4) help assure full utilization of National Forest resources.

### Communications Sites

1. Applicants for communications sites and facilities will be directed toward use of sites in the following order:
  - a. Utilization of residual capacity of existing approved sites.
  - b. Utilization of capable new sites determined through and following an environmental analysis. Site plans will normally be prepared prior to installing facilities.

### Recreation Residences

1. Authorization for noncommercial recreation residences will continue in existing tracts through year 2003 (unless canceled for breach). Prior to December 31, 1993, an analysis (following the NEPA process) of recreation residence continuance will be conducted for all tracts. Nonrenewal will only be considered if the clear weight of the evidence is on the side of the need for a higher public purpose or use.
2. No additional recreation residence tracts will be created.
3. Vacant lots within established tracts may be developed or used as 'in lieu' sites for nonrenewed permit holders as long they are managed or developed according to contemporary national policy.

#### Utility and Transportation Corridors

1. When applications for rights-of-way for utilities and highways are received, the Forest first priority will be to utilize residual capacity within, or contiguous to existing corridors. The corridors will be planned and located to minimize ground and air disturbance.
2. Additional corridors which may be needed for major utilities or highways will be designated through an interagency environmental analysis, following the procedures set forth in the Regional Guide.
3. New corridors will not be allowed in: Exclusion Areas: Wilderness (B1) and wild sectors of Wild and Scenic Rivers (A7)
4. New corridors may be allowed in avoidance areas only if management area standards and guidelines are met fully. Avoidance areas include: Scenic Areas (A8), Research Natural Areas (D2), scenic and recreation sectors of Wild and Scenic Rivers (A7), Unroaded Areas (A1, A2), Viewsheds (A3), Roaded Natural Areas (A5), Recreation sites (A6), Special Interest Areas (AS) with others to be named by subsequent environmental analyses.

#### Other Uses

1. Applications for licenses or grants associated with dams and reservoirs may be recommended for approval if they are consistent with management goals and objectives.
2. The Walla Walla Municipal Watershed agreement may be modified as a result of the management direction for the watershed. Other formal or informal agreements may be entered into if needed

## TRANSPORTATION SYSTEM

### Goal

PROVIDE AND MANAGE A SAFE AND ECONOMICAL ROAD AND TRAIL SYSTEM AND FACILITIES NEEDED TO ACCOMPLISH THE LAND AND RESOURCE MANAGEMENT AND PROTECTION OBJECTIVES ON THE UMATILLA NATIONAL FOREST.

### Planning

1. The Forest Transportation System will be planned to serve long-term multiple resource needs using area plans that integrate resource, timber, and transportation requirements. The system will be the minimum necessary to provide access for the activities authorized under Management Area direction. Documentation of the planned system will be found in area or project transportation plans.
2. Annually update the Forest Road Management Plan and Forest Trail Management Plan to evaluate the mix of development, traffic management, and maintenance. As part of the Road Management Plan, prepare and maintain Road Management Objectives (RMOs) for all proposed and existing system roads. Maintain the Forest Transportation Information System (TIS) and the Trails Inventory.

### Roads Construction

Roads will be designed, constructed, and reconstructed according to standards appropriate to planned uses and activities, safety, economics, and impacts on lands and resources using criteria in FSM 7700 and 7720.

### Operations and Maintenance

1. Road access will be adequate to accomplish commercial, resource, and protection management activities. Operate and maintain all roads according to management area emphasis and direction, maintenance levels established in updated RMOs, and standards defined in FSM 7700, 7732, and FSH 7709.15.
2. During commercial activities, public access may be discouraged or prohibited.
3. Traffic management may be used to control access due to road structural limitations, safety considerations, road standards, or limitations imposed by resource management.
4. Coordinate with county, state, and other Federal agencies on road and traffic management.
5. Prepare and update Forest Sign Plan and accomplish signing according to direction established in the plan.

### Cost Share

1. Where appropriate, the Forest will enter into new, and continue existing, cost share agreements.
2. The Forest Cost Share program will be managed according to principles established in FSM 5467 and the deeds.

### Road Closures

1. Obliterate all roads not in the Forest Development System or authorized by permit, lease, or easement. Obliterated roads will be revegetated to provide stabilization and to return the area to its intended use. Short term (temporary) roads will be obliterated.
2. Road closures will be based on the following criteria (in accordance with FSM 7730):
  - a. Need to protect the facility;

- b. need to protect soil and water;
  - c. expected need or use;
  - d. safety of expected users:
  - e. need to protect critical cultural values,
  - f. need to maintain or improve habitat for wildlife,
  - g. need to provide planned recreation experience opportunities, and
  - h. cost of maintenance.
3. Close long-term intermittent roads to motorized use at the termination of sale or post sale activities as appropriate. Maintain these roads at Level I until needed for reentry (FSM 7705).
  4. Commercial, public, and administrative traffic may be granted motorized access over designated closed roads by permit only. Permitted use must be based on an analyses of need, benefit, and cost and may be issued individually or under a blanket authorization as in a project EA or contract. In authorizing use, consideration will be given to the management area and road objectives, and the reason and timing of the closure as stated in the Road Management Objective (RMO). Limited single use permits will be rare; if a road is authorized for use, generally it will be open for all uses.

#### Trails

See Recreation.

## **FACILITIES**

### Goal

PROVIDE AND MANAGE ADMINISTRATIVE FACILITIES SUFFICIENT TO ACCOMPLISH LAND AND RESOURCE MANAGEMENT OBJECTIVES OF THE FOREST.

1. Buildings, utility systems, and related facilities will be planned, developed, operated, and maintained for safe use, support of the Forest resource programs, and cost effectiveness.
2. The construction of new buildings and/or related facilities or additions to existing facilities will comply with the approved site development plan.
3. Prepare Forest Facilities Master Plan and individual administrative site development plans for all forest administrative sites. Long-term development and maintenance costs will be considered in facilities planning.
4. Management and maintenance of facilities should be guided by the following priorities for expenditure of funds:
  - a. Emergencies.
  - b. public and employee safety and health,
  - c. handicapped access,
  - d. immediate management needs,
  - e. maintenance of present condition/prevention of deterioration,
  - f. energy conservation, and

g. comfort and appearance.

## FIRE AND FUELS

### Goal

PROVIDE AND EXECUTE A FIRE PROTECTION AND FIRE USE PROGRAM THAT IS COST EFFICIENT AND RESPONSIVE TO LAND AND RESOURCE MANAGEMENT GOALS AND OBJECTIVES.

### Wildfire Response

1. Wildfires that threaten life, property, public safety, improvements, or investments will receive aggressive suppression action using an appropriate suppression strategy.
2. All wildfires will require a timely suppression response with appropriate forces and strategy of either one, or a combination of the alternatives of confinement, containment, or control. Inform public about philosophy of fire management policy.
3. For moderate to high intensity wildfire (flame length over 2 ft.) emphasis should be on the appropriate response (strategy) by management areas as follows:

Management Areas	Suppression Response Emphasis
A6	Control
A9	Control
D2	Control
F1	Control
F2	Control
F3	Control
A3	Control
A8	Control
A7	Control
C1	Control
C2	Control
A1	Control & Contain
A2	Control & Contain
A10/E2/C4/E1 (Plantation first 40 years)	Control & Contain
C5	Control & Contain
C6	Control & Contain
C7	Control & Contain
A4	Control & Contain
A5	Control & Contain
F4	Control & Contain
F5	Control & Contain
C3 (timber)/C8/C3A	All Strategies
A10/E2/C4/E1 (All others)	All Strategies
C3 (grass)	All Strategies
D1	All Strategies
B1	All Strategies

4. In most cases when wildfires do not threaten to exceed the acceptable sizes and intensities of the management area, the lowest cost suppression option is appropriate.
5. Wildfires that escape initial action and threaten to exceed established limits will require that an "escaped fire situation analysis" be prepared. This analysis weighs the cost of suppression against the potential change in resources. Suppression actions should be appropriate for the values threatened.



6. If more than 5 percent of a subwatershed (outside wilderness) has sustained high intensity burns during the preceding 3 years, or visibly accelerated erosion is occurring within a subwatershed due to past burns, emphasize a control strategy on all wildfire in the remainder of the subwatershed to minimize further damage.

#### Presuppression

1. Utilize the National Fire Management Analysis System to determine the most cost-efficient fire protection organization. As conditions change and better information is developed, the fire organization will be reevaluated with this system.
2. Cost-effective plans for the prevention of human-caused fires will be aimed at specific risks to be determined by ongoing monitoring of current and recent fire reports.
3. The mix of aerial and ground detection activities will be reviewed periodically to maintain the most cost-efficient combination.
4. Provide equipment and training for USDA Forest Service employees outside of the fire management organization to assist in initial attack.

#### Fuels Management

1. Levels and methods of fuels treatment will be guided by the protection and resource objectives of the management area. Emphasis will be on intensive utilization of wood residues using a marketing strategy to reduce fuel loadings.
2. Prescribed fire will be utilized to meet management objectives and maintain fuel profiles in all ecosystems. Normally, prescribed burning will be a planned ignition. However, unplanned ignitions may be used as prescribed fires if (a) a prescribed fire plan has been prepared and approved, and (b) the fire is burning within prescription.
3. Burning plans will be prepared in advance of ignition and approved by the appropriate line officer for each prescribed fire. A prescribed fire exceeding both prescription and line holding capabilities will be declared a wildfire and appropriate suppression action taken.
4. Emphasize maintenance of air quality when planning prescribed fire use. Practical means of smoke management (reduction, avoidance, and scheduling) will be employed. All burning will be planned and conducted in accordance with state smoke management plans.

## **AIR QUALITY**

### Goal

**MAINTAIN AIR QUALITY AT A LEVEL ADEQUATE FOR PROTECTION AND USE OF NATIONAL FOREST RESOURCES AND MEET OR EXCEED APPLICABLE FEDERAL AND STATE STANDARDS AND REGULATIONS.**

1. The Forest will demonstrate reasonable progress in reducing total emissions from prescribed burning under the Prevention of Significant Deterioration (PSD) program.
2. All prescribed burning will be in accordance with state smoke management plans.
3. Available predictive methods and models and cost efficient technologies will be used to minimize impacts of prescribed burning on smoke sensitive and Class I areas.
4. Smoke management mitigating measures, listed in the Pacific Northwest Regional Guide FEIS (USDA Forest Service 19&4), and Managing Competing and Unwanted Vegetation

FEIS (USDA Forest Service 1988) will be used to reduce emissions from prescribed burning.

5. The Forest will cooperate with the states on possible redesignation of areas to Class I.

## **PEST MANAGEMENT**

### Goal

PROTECT FOREST AND RANGE RESOURCES FROM UNACCEPTABLE LOSSES DUE TO DESTRUCTIVE FOREST PESTS.

1. Integrated pest management (IPM), prevention, and suppression strategies will be utilized to manage pests within the constraints of laws and regulations and to meet Forest-wide management objectives. Methods may include management practices (cultural or silvicultural); biological, mechanical, manual, prescribed fire, or chemical treatments; or regulatory measures.
2. All pest management suppression project proposals will be analyzed through the NEPA process to select an appropriate suppression response.
3. Where practical, noxious weeds and invader plants will be controlled to prevent threats to adjacent agricultural lands or to prevent unacceptable loss of forest and range productivity.
4. Plans for control of competing and unwanted vegetation including noxious weeds will be in keeping with *Managing Competing and Unwanted Vegetation (FHS) USDA, Forest Service, 1988*. The five-step process, composed of site analysis, strategy selection, project design, action, and monitoring, will be used in managing competing and unwanted vegetation for site specific projects and will be documented in an environmental analysis.
5. Individual project plans will specify licensing approval and public notification requirements for pesticide use on a case-by-case basis.

## **THREATENED, ENDANGERED, AND SENSITIVE SPECIES**

### Goal

MAINTAIN OR IMPROVE HABITATS FOR ALL THREATENED OR ENDANGERED PLANT AND ANIMAL SPECIES ON THE FOREST, AND MANAGE HABITATS FOR ALL SENSITIVE SPECIES TO PREVENT THEIR BECOMING THREATENED OR ENDANGERED.

1. Legal and biological requirements for the conservation of endangered, threatened and sensitive plants and animals will be met. All proposed projects that involve significant ground disturbance or have the potential to alter habitat of endangered, threatened or sensitive plant and animal species will be evaluated to determine if any of these species are present (FSM 2670 Threatened, Endangered and Sensitive Plants and Animals).
2. Where endangered or threatened species are present, the required biological assessment process will be carried out according to the requirements of the Endangered Species Act (Public Law 93-205); consultation requirements with USDI Fish and Wildlife Service and state agencies will be met. Before the project can be carried out, protection or mitigation requirements shall be specified (36 CFR 219.27(a)(8)). Habitat for existing federally classified threatened and endangered species will be managed and monitored to achieve objectives of recovery plans.
3. When sensitive species are present, a biological evaluation will be prepared. There must be no impacts to sensitive species without an analysis of the significance of adverse effects on its population, habitat, and on the viability of the species as a whole. For sensitive plant species, it may be helpful to consult with local knowledgeable and interested botanical authorities. Habitat for sensitive plants and animals will be managed to ensure that the species do not become threatened or endangered through Forest Service actions. Species management guides will be prepared over the next 5

years and will be used as strategies for ensuring that sensitive species do not become threatened or endangered or result in a loss of species viability.

4. For endangered, threatened and sensitive species, determine and monitor the status of populations and habitats and the strategies implemented for protection. Maintain and update lists of threatened, endangered, and sensitive plants and animals periodically as new information is collected. Submit pertinent forest information to the Regional Office for updating Regional Forester's Sensitive Species lists, and to the appropriate agencies for inclusion in state-wide data bases.
5. The Forest and ranger districts will keep records and inventories of essential and critical habitats and their distribution. Inventories will include careful monitoring of the species and their habitats.
6. Collection of T/E/S plant species will only be allowed under permit. The issuance of permits must be preceded by the same degree of assessment required for other projects.
7. Maintain contacts with Federal, state, and other agencies, groups, and individuals concerned with the management of T/E/S species (USDA Forest Service 1981). The Oregon Department of Fish and Wildlife and the Washington Department of Wildlife will be consulted for technical information in development of species management guides and in determinations of viable population levels of sensitive species. Other contacts regarding sensitive species information will be with the Nature Conservancy's Oregon Natural Heritage Data Base and the Washington Natural Heritage Program in order to maintain or periodically update the Forest T/E/S species list and assist in achieving state goals for conservation of endemic species.

#### Bald Eagle Habitat (Threatened Species)

1. Bald eagles and their habitat will be protected and managed in accordance with the latest available management guidelines and the Pacific States Bald Eagle Recovery Plan. The target recovery goal is two nesting pairs along the Grande Ronde River and one pair along the Walla Walla River. Occupied bald eagle habitat will be monitored to determine the effectiveness of planned action and recovery efforts.
2. Informal consultation will be initiated with the USDI Fish and Wildlife Service to discuss the question of 'effect' when a project involving site disturbance is within one mile of a bald eagle nest (FSM 2670 Bald Eagle Management and Consultation; Worthington 1980).
3. Within 2 years of Forest Plan implementation, a management plan should be prepared for known nest sites and potential bald eagle habitat on the National Forests. Consult the Bald Eagle Recovery Plan (Brown 1985), the Bald Eagle Management Guidelines for Oregon and Washington (USDI Fish and Wildlife Service 1981) and FSM 2670 for specific management guidelines.
4. Prior to development of the management plan, interim requirements for management of bald eagle habitat will include completion of a nest site management plan which includes the following standards
  - a. Nesting Sites
    - Bald eagle nest sites will be protected, including existing and yet-to-be-discovered active and inactive nests sites. Manage each area under the territory zone concept (Brown 1985).
    - Primary zone. Not less than 330 ft. from the nest, with actual size and shape of zone adjusted to include all the area near the nest tree that is actually utilized.

Zone size can vary, reflecting local topography, potential for blowdown, and location of important habitat components. No timber harvesting is permitted in the primary zone unless designed to enhance stand characteristics for the benefit of nesting eagles. Human activities in the primary zone will be controlled year-round to insure that the site remains suitable as nesting habitat.

- Secondary zone. The secondary zone extends from 330 ft. out to a minimum of 660 ft. from the nest; the zone minimizes disturbance and protects the primary zone. Zones need not be circular, but will reflect local physiographic conditions and the tolerance of the nesting pair to disturbance factors (Brown 1985). The width of the zone could be considerably wider, depending on the degree to which vegetation or topography screens the nest from potential disturbance. The zone will contain important roosting sites, perching sites, and alternate nest sites. Timber may be harvested in the secondary zone, provided eagle habitat requirements take precedence. Human activity in the secondary zone will be controlled only during the period when the birds are present, normally between January 1 and August 31.

#### b. Feeding and Roosting Sites

- Regularly used feeding and roost sites shall be protected. Human activities will be controlled if they adversely affect the eagles use of a feeding area. Only Forest practices that maintain the suitability of the area for eagle roosting will be used. The area encompassed will have at least a 330-foot radius, and possibly up to one-fourth mile. Wildfires in the area will be controlled.

#### c. Maintenance of Potential Nesting Habitat

- Forest land within 1 mile of foraging habitat is potential bald eagle nesting habitat. Habitat provided at potential nest sites must be in mature or old-growth forest and possess characteristics outlined in Brown (1985).

#### Gray Wolf (Endangered Species)

Investigate and evaluate all reports of gray wolf sightings on the Forest, in cooperation with the Washington Department of Wildlife, Oregon Department of Fish and Wildlife and the USDI Fish and Wildlife Service. If resident wolves are discovered, initiate appropriate actions in consultation with the USDI Fish and Wildlife Service, ODFW, and WDW to insure the protection of the animals. Implement recovery objectives should a plan be completed.

#### Peregrine Falcon Habitat (Endangered Species)

1. Peregrine falcons are not known to nest on the Forest. Habitat for nesting and feeding, however, does exist. Sufficient existing nesting and feeding habitat will be protected to meet the objectives of the Pacific Coast Recovery Plan for the American Peregrine Falcon (USDI Fish and Wildlife Service 1982). Any nest found will be protected; associated habitat (such as feeding areas) will also be protected, and enhanced if necessary.
2. Within 3 years after implementation of the Forest Plan, an inventory should be completed which catalogues habitat suitable for peregrine falcon. Within 1 year after finishing the inventory, the Forest should complete habitat management or nest site management plans for peregrine falcons.

## COMMUNITY DEVELOPMENT AND HUMAN RESOURCES

### Goal

#### PROMOTE HUMAN RESOURCES, CIVIL RIGHTS, AND COMMUNITY DEVELOPMENT WITHIN THE ZONE OF INFLUENCE OF THE UMATILLA NATIONAL FOREST.

1. The Forest will maintain and implement an affirmative action plan in its hiring, supervisory, and contracting procedures.
2. The Forest will actively pursue the employment of the handicapped and ensure that the needs of the handicapped are considered in the design of Forest facilities.
3. The Forest will conduct compliance reviews as required by Title VI of the Civil Rights Act of 1964, within standards established by the Forest Service.
4. The Forest will be managed to minimize physical, social, and administrative barriers to its use.
5. Special efforts will be made to inform the general public, including minorities and the underprivileged, about Forest programs.
6. The ceded land rights and privileges of the Walla Walla, Cayuse, Umatilla, Nez Perce, and Warm Springs Indian Tribes, under the treaties of 1855 (U.S. Laws, Statutes, etc. 1855a, 1855b, 1855c), will be appropriately provided for in Forest activities.
7. The Forest managers will ensure Native Americans access, use, and possession of sacred objects, and their freedom to worship through ceremonial and traditional rights as specified in the American Indian Religious Freedom Act (P.L 95341) (U.S. Laws, Statutes, etc. 1978b). Management of these areas will be coordinated with the leaders of the Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs Indian Reservation of Oregon as appropriate.
8. Resource planning and development activities will be coordinated with plans and programs of each of the tribes.
9. The Forest will participate in human resource programs that support community and economic development.
10. The Forest will coordinate with local, state, and Federal planning and development agencies. The Forest will support local economic development strategies that enhance community and economic development. Emphasis will be on defining complementary roles and implementing programs that best serve the public.
11. The Forest will promote or assist in promoting developmental, tourism, and recreational activities that help build strong, diversified rural economies and improve the quality of life in rural communities.
12. Increase public awareness of, involvement in, and support for Forest resource management objectives and programs.
13. The Forest will provide courteous and responsive public service in all management activities.

## GENERAL PROCEDURES

### Goal

#### MEET IDENTIFIED LAND, RESOURCE, AND SUPPORT ACTIVITY GOALS.

1. Activities affecting Forest system lands and resources will be analyzed, and results documented through the Environmental Analysis (NEPA) and associated planning procedures.
2. Identify, design, and achieve a high level of multiple-use coordination in all resource management activities
3. Economic efficiency will be a consideration in Forest and project level planning and development.
4. The appropriate setting for each Management Area is determined by the area goals, desired conditions, and suitability of the area to achieving these conditions. When an allowable project would result in conditions that do not meet the setting criteria, address the need for changing the designated setting as part of the environmental assessment process. Evaluation includes factors such as activity extent, duration of impact, season of operation, sight or sound impacts, and feasibility of rehabilitation.
5. The concept of time limited management areas or 'sunset' strategy may be used. Specific areas of application and potential changes are identified in the individual management Areas C4 and C8 (in the Forest Plan). Timber harvest and management may be used in designated areas: projects will be tested and evaluated in meeting objectives and public concerns; and area(s) converted to predetermined allocations depending on (acceptability of) results. The NEPA process and public involvement will be used to design, implement, monitor and evaluate the projects. Adjustments in management area allocations apply to areas being tested or designated in individual management area direction.
6. Management of Forest system lands, resources, and activities will be coordinated with appropriate local, state, and Federal agencies, private landowners, Native American tribes, and interest and user groups.

## MANAGEMENT AREAS

### Introduction

Management areas provide the multiple-use direction for managing specific areas of land. Each management area is described in terms of (1) a goal statement which reflects the expected results for a Forest resource, activity, or land area; (2) a description and location where the management area direction will be applied; (3) a desired future condition statement; and (4) the direction emphasis for the Umatilla National Forest which supplements Forest Service manuals, handbooks, and the Regional Guide for the Pacific Northwest Region. Management areas respond to Forest issues, concerns and opportunities, appropriate laws, regulations, existing direction, land capabilities, and professional judgment.

Management areas together with the map of the Forest Plan identify activities and where each will take place during implementation of the Forest Plan. Table 4-23 displays the acres managed under each management area.

**TABLE 4-23. MANAGEMENT AREAS**

### Umatilla National Forest

	<u>M Acres</u>	
A 1	NONMOTORIZED DISPERSED RECREATION	27.3
A2	OHV RECREATION	7.5
A3	VIEWSHED 1	43.7
A4	VIEWSHED 2	28.7
A5	ROADED NATURAL	4.7
A6	DEVELOPED RECREATION	4.4
A7	WILD AND SCENIC RIVERS	7.6
A8	SCENIC AREA	31.4
A9	SPECIAL INTEREST AREA	3.2
AI 0	WENHA-TUCANNON SPECIAL MANAGEMENT AREAS	3.3
B1	WILDERNESS	304.4
C1	DEDICATED OLD GROWTH	41.2
C2	MANAGED OLD GROWTH	3.6
C3	BIG GAME WINTER RANGE	152.8
C3A	SENSITIVE BIG GAME WINTER RANGE	8.2
C4	WILDLIFE H4BITAT	258.9
C5	RIPARIAN AND WILDLIFE	27.2
C7	SPECIAL FISH MANAGEMENT AREA	105.3
C8	GRASS-TREE MOSAIC (GTM)	98.5
D2	RESEARCH NATURAL AREA	1.6
E 1	TIMBER AND FORAGE	91.4
E2	TIMBER AND BIG GAME	199.5
F2	MILL CREEK MUNICIPAL WATERSHED - UNDEVELOPED	20.8
F3	HIGH RIDGE EVALUATION AREA	0.9
F4	WALLA WALLA RIVER WATERSHED	35.0



## **A1 NONMOTORIZED DISPERSED RECREATION**

### **GOAL**

PROVIDE NONMOTORIZED RECREATION OPPORTUNITIES IN AN AREA CHARACTERIZED BY A PREDOMINANTLY NATURAL OR NATURAL APPEARING ENVIRONMENT WITH MINIMUM SIGHTS AND SOUNDS OF HUMAN ACTIVITY.

### **DESCRIPTION**

Applies to all or parts of roadless areas and/or other selected Forest areas [2,500 acres and larger] with essentially natural or natural appearing environments and meeting Semi-primitive Recreational Opportunity Spectrum (ROS) settings.

The following areas, or part of areas, are included in the management area:

- Hell's Half-acre (Cutsforth Park) Area (Heppner);
- Upper Tucannon Roadless Area west of Bear Creek (Pomeroy): and
- Wenatchee Creek Roadless Area and area south of Forest Road 4304 (Pomeroy).

### **DESIRED FUTURE CONDITION**

Moderate to large natural or natural appearing areas remain undeveloped (unroaded and unlogged). Recreationists shall be able to enjoy the outdoor opportunities for closeness to nature, self-reliance, and tranquility. Opportunities to enjoy hiking, camping, hunting, and other recreational activities in relatively undisturbed, natural settings, will be made available. Interactions between users will be low, but there will be evidence of other users. Little or no evidence of motorized use, restrictions, and controls will exist. Existing wheel tracks and primitive roads will revert to natural conditions or be used as trails.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Manage recreation to a semi-primitive setting (ROS Users Guide, USDA Forest Service n.d.) within the area: Roaded Natural settings may occur along the boundaries. Areas will be managed to maintain opportunities for visitors to get away from others and achieve a feeling of remoteness from sights and sounds of humans.

Access will be mostly for remote walk-in or horseback activities in an area generally free of roads. Off-highway vehicle (OHV) use will not be permitted.

**EXCEPTION:** In the Cutsforth Park area on the Heppner District, provision will be made to allow a snowmobile access route to Kelly Prairie.

Trail and associated facility construction, reconstruction, and maintenance will be permitted. Trail system will be designed and maintained to disperse use and have varying but challenging difficulty levels to achieve the objectives of the area. Motorized equipment may be permitted in trail development and maintenance.

Recreation site modification and facility development should be level 2 or less (see Glossary). Facilities will be limited to meet safety and sanitary needs.

If needed, utilize limits of acceptable change criteria to implement limits on group size, number of animals, and other measures in order to meet social encounter criteria for semi-primitive recreation opportunities. Utilize a minimum of onsite controls and restrictions to protect resources and promote safe use of the area.

#### **VISUAL**

Retention is the visual quality objective provided within the area and along area boundaries.

## CULTURAL

Meet Forest-wide Standards and Guidelines.

## WILDLIFE AND FISH

Habitat improvement projects are acceptable for wildlife and fish, provided they meet the Retention visual quality objective (VQO) and the goal for the Semi-primitive setting.

Provide habitat to support cavity excavators at 80 percent of potential population.

Identified old growth units within the management area will be retained as part of the dedicated old growth system.

## RIPARIAN

Meet Forest-wide Standards and Guidelines.

## RANGE

Moderate level of grazing is permitted. Improvement maintenance and development are permitted. Improvement development must not detract from the Semi-primitive setting. The full range of range management strategies (B to D) could apply.

## TIMBER

Timber harvest will not be scheduled. Salvage may be allowed where the goal of providing a Semi-primitive Nonmotorized setting can be met.

## WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

## LANDS

Land Classification II (acquisition) will generally be used to meet public needs. Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

No roads will be developed. Existing wheel tracks will be closed to motor vehicle use and converted to trails.

## FIRE

The appropriate wildfire suppression response should emphasize control and/or contain strategies for moderate to high intensity fires. Under appropriate fire prediction conditions, low intensity wildfires (0-2 foot flame length) may be permitted to play a natural role within the setting when resulting in a 1 to 2-year vegetative recovery.

Low impact wildfire suppression methods should be used; rehabilitation may be used to mitigate wildfire impacts in conflict with semi-primitive and visual quality objectives.

## FUELS

Prescribed low intensity fire with a 1 to 2-year recovery period is acceptable. A less than 1 year recovery is most desirable if conditions are suitable.

## PESTS

Use integrated pest management (IPM) principles and strategies in meeting management area objectives. Suppress pests when outbreaks threaten recreation objectives or resources in adjacent areas. Favor biological methods when available.

Prescribed fire may be used to help reduce stocking and conditions favorable for bark beetle and dwarf mistletoes. Control of defoliators may also be accomplished by spraying following approval of an environmental analysis. Use of salvage harvest is limited to catastrophic events.

## **A2 OHV RECREATION**

PROVIDE MOTORIZED RECREATION IN A PREDOMINATELY NATURAL OR NATURAL APPEARING ENVIRONMENT WITH A MODERATE DEGREE OF ISOLATION FROM SIGHTS AND SOUNDS OF HUMAN ACTIVITY.

### **DESCRIPTION**

Applies to all or parts of roadless areas and/or other selected Forest areas [2,500 acres and larger] with an essentially natural appearing environment and meeting Semi-primitive (ROS) settings.

The following areas, or parts of areas, are included in the management area:

- Spangler Roadless Area (Pomeroy): and
- Lookingglass Roadless Area (Walla Walla).

### **DESIRED FUTURE CONDITION**

Moderate to large natural appearing areas will remain generally undeveloped (no logging but some constructed four-wheel drive ways). Recreationists will be able to enjoy a variety of challenging off-highway vehicle (OHV) opportunities on trails or drive ways, without standard developed roads and concentrations of people. Opportunities to enjoy hiking, camping, hunting, and other recreational activities in a natural setting will be available. Existing wheel tracks and primitive roads will become OHV trails.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Manage recreation to a Semi-primitive Motorized setting (ROS Users Guide, USDA Forest Service n.d) within the area; Roaded Natural settings may occur along the boundaries.

Manage the area to keep contacts between users low to moderate. If needed, implement appropriate measures to meet social encounter criteria for Semi-primitive Motorized opportunities, based on limits of acceptable change criteria. Utilize minimum onsite controls and restrictions to protect resources and promote safe use of the area.

Access will be mostly for remote motorcycle or ATV and some walk-in activities. Motorized use will be limited to designated trails and closed roads (not cross-county); snowmobile use will be acceptable on an area basis.

Trail and associated facility construction, reconstruction, and maintenance will be permitted, including trails for OHV use. Trail systems will be designed and maintained to disperse use, provide varying but challenging motorized difficulty levels, and protect soil and water resources. Trail maintenance activities will be determined by amount and type of use, trail type, difficulty level, and appropriate trail guide.

#### **VISUAL**

Retention is the Visual Quality Objective (VQO) within the area and along area boundaries.

#### **CULTURAL**

Meet Forest-wide Standards and Guidelines

#### **WILDLIFE**

Wildlife habitat improvement projects are acceptable provided the projects meet the Retention visual quality objective and the goal for the Semi-primitive Motorized setting.

Provide habitat to support cavity excavators at 80 percent of potential population level.

Identified old growth units within the management area will be retained as part of the dedicated old growth system.

#### FISH

Fish habitat improvement projects are acceptable and will meet the Retention visual quality objective.

#### RIPARIAN

Meet Forest-wide Standards and Guidelines.

#### RANGE

A moderate level of grazing is permitted. Improvement maintenance and development are permitted. Improvement development is not to detract from the Semi-primitive setting. The full range of management strategies (B to D) could apply.

#### TIMBER

Timber harvest will not be scheduled. Tree removal or cutting may be allowed where the goal of providing a Semi-primitive Motorized setting can be met

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Land Classification II (acquisition) will generally be used to meet public needs. Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet Forest-wide Standards and Guidelines for lands and land uses.

#### TRANSPORTATION

Four-wheel drive ways are acceptable; these routes will be designed and managed to 'discourage' highway vehicle use.

#### FIRE

The appropriate wildfire suppression response should emphasize control and/or contain strategies for moderate to high intensity fires. Under appropriate fire prediction conditions, low intensity wildfires (0-2 foot flame length) may be permitted to play a natural role within the setting when resulting in a 1 to 2-year vegetative recovery.

Low impact wildfire suppression methods should be used; rehabilitation may be used to mitigate wildfire impacts in conflict with semi-primitive and visual quality objectives.

#### FUELS

Prescribed low intensity fire with a 1 to 2-year recovery is acceptable. A less than 1 year recovery is most desirable if conditions are suitable.

#### PESTS

Use integrated pest management (IPM) principles and strategies in meeting management area objectives. Suppress pests when outbreaks threaten dispersed recreation objectives or resources in adjacent areas. Favor biological methods when available.

Prescribed fire may be used to help reduce stocking and conditions favorable for bark beetle and dwarf mistletoes. Control of defoliators may also be accomplished by spraying following approval of an environmental analysis. Use of salvage harvest is limited to catastrophic events.

### **A3 VIEWSHED 1**

#### **GOAL**

MANAGE THE AREA SEEN FROM A PRIMARY TRAVEL ROUTE, USE AREA, OR WATER BODY, WHERE FOREST VISITORS HAVE A MAJOR CONCERN FOR THE SCENIC QUALITIES (SENSITIVITY LEVEL 1) AS A NATURAL APPEARING LANDSCAPE.

#### **DESCRIPTION**

The strategy applies to all or parts of the defined Sensitivity Level 1 travel routes, use areas, or water bodies. Sensitivity levels are defined in the Umatilla National Forest landscape management text, and viewshed boundaries are defined on the Forest Visual Quality Objective (VQO) maps.

The following defined viewsheds, or parts of viewsheds, are included in the management area:

1. Tucannon River Road 4712 and Tucannon river from Junction 4713 to Columbia/Garfield County line) (Pomeroy);
2. Touchet River Road 64 (Forest Boundary to Forest Road 6437) (Walla Walla);
3. Tiger Creek Road 65 (Forest Boundary to Forest Road 6411) (Walla Walla);
4. Forest Road 6403 (Forest Road 64 to Forest Road 6411) (Walla Walla);
5. Skyline Road 64 (Tollgate to Jubilee Lake) (Walla Walla);
6. State Highway 204 (Forest Boundary to Forest Boundary\*) (Walla Walla);
7. Bull Prairie Lake Road 2039 (State Hwy. 207 to Forest Boundary\*) (Heppner);
8. State Highway 244 (Forest Boundary to Forest Boundary) (North Fork John Day [NFJD]);
9. Ukiah-Granite Road 52 (Bridge Creek to Forest Road 73\*) (NFJD);
10. Forest Road 73 (Forest Road 52 to Forest Boundary\*) (NFJD);
11. North Fork John Day River Road 55 (Forest Boundary to Big Creek\*) (NFJD);
12. State Highway 395 (Dale to Meadow Brook Summit [Forest Boundary]\*) (NFJD); and
13. Forest Road 10 (Olive Lake east to Forest Boundary\*) (NFJD).

\*with enclave(s)

#### **DESIRED FUTURE CONDITION**

Viewsheds will be managed primarily to meet the visual quality objectives of retention and partial retention. An attractive, natural appearing landscape will be created or maintained. A maximum of three distance zones for each viewshed, including foreground, middle ground, and background radiating from the viewer position (and a visual quality objective for each zone), have been delineated according to the process defined in the Agriculture Handbook 462, *National Forest Landscape Management*, Vol. 2, Chap. 1, The Visual Management System (USDA Forest Service 1974).

Management activities will be done with the highest sensitivity to people's concern for scenic quality. Vegetative manipulation will be conducted so that Forest management activities are not usually noticeable in the foreground and remain visually subordinate in the middle ground viewing area. All viewsheds will have vegetative management plans. Timber harvest areas will be sized and shaped to be compatible with the natural surroundings, but harvest may be noticeable in the background. Forest stands will occasionally be logged in order to maintain

long-term health and vigor, and to encourage a park-like, natural appearance with big trees in the immediate foreground. Recreational opportunities will be mostly road oriented

## MANAGEMENT AREAS STANDARDS AND GUIDELINES

### RECREATION

Manage dispersed recreation in the area to a Roaded Natural physical and social setting (ROS Users Guide, USDA Forest Service, n.d.).

Recreation facility development and maintenance and site modification level 1 or 2 are permitted (see Glossary). Recreation facility design, construction, and maintenance, including trails and trailheads, are to meet the visual quality objective assigned to the area and blend with the natural landscape.

Provide the opportunity for mostly road oriented activities.

Off-highway vehicle (OHV) use is allowed. OHV use may be limited to designated roads, trails, and areas.

### VISUAL

Visual Quality Objective (VQO) will generally be Retention in the foreground and Partial Retention in the middle ground. Exceptions are defined through the process described in Agriculture Handbook 462. Activities within these viewsheds may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes of landscape should be of such size, amount, intensity, direction, and pattern that they continue to provide a natural appearance, except for short-term changes to meet long-term objectives.

Principles of visual management will be applied so that positive attributes of a managed forest can be enjoyed while negative visual aspects of activities will be minimized.

Landscapes containing negative visual elements will be rehabilitated. Landscapes will be enhanced by opening views to distant peaks, unique rock forms, unusual vegetation, or other features of interest

Viewshed corridor plans will be developed for all Sensitivity Level 1 viewsheds and will guide project activities when completed.

### CULTURAL

Meet Forest-wide Standards and Guidelines.

### WILDLIFE

Dead and down tree habitat will be managed to provide or maintain 60 percent of the potential population level for all primary cavity excavators.

Wildlife habitat improvement and maintenance projects are permitted provided they meet the visual quality objective of the distance zone in which they occur.

### RIPARIAN

For all Class I, II, and III streams and associated riparian areas within the management area, anadromous fish habitat will be managed to produce at least 90 percent of potential smolt habitat capability index (SCHL) by meeting standards (for fish) shown in Management Area C5.

### FISH

Fish habitat improvement and maintenance are permitted as long as projects meet the appropriate VQO in the distance zone in which they occur.

### RANGE



A moderate level of livestock grazing is permitted. Openings created by management of timber stands should be available for management as transitory range. Development and maintenance of range improvements are permitted. Range utilization standards, management practices, and improvements are to be designed and managed to meet visual quality objectives.

**TIMBER**

Timber will be managed on a scheduled basis. All timber management practices and intensities shall be permitted consistent with achieving the primary visual quality goals.

EXCEPTION: Timber harvest will not be scheduled (or permitted) in the following viewshed corridor: The Tucannon River Road 4712 and river from Junction 4713 to Columbia/Garfield County line.

Uneven-aged management is the preferred and most commonly used silvicultural system; even-aged management techniques may also be used to meet objectives.

Scheduling of treatments and timber harvest, logging systems, debris disposal, reforestation, and stand improvement practices will be designed and implemented to accomplish visual management objectives.

1. Timber stands which have remained unmanaged in the past because of their visual sensitivity will begin receiving treatment, when desirable, to meet viewshed objectives.
2. Manage the viewshed for an overall mix of size classes of trees. The mix of age classes to be achieved as the overall long-term objective of the viewshed are:

Percent	Foreground Age Classes	
	Retention	Partial Retention
20	0-50	0-36
20	51-100	37-72
20	101-150	73-108
20	151-200	109-145
20	201-250	146-181

3. Emphasis will be on viewing large diameter trees and multi-age stands; both vertical and horizontal diversity are also to be emphasized. The large tree component should be as dispersed as necessary to give the overall character of large trees to the area. The standards in Tables 4-24 and 4-25 will be used in achieving desired visual characteristics.
4. A created opening is defined as an opening developed through management activities where tree heights are less than 20 feet. Created openings will be shaped and blended with the natural terrain.
5. Exceptions to created opening size and maximum percentage in openings at one time are permitted under catastrophic circumstances such as blow down, insect and disease attacks, wildfire, and others. Landscapes will be rehabilitated under these conditions.
6. Thinnings and plantings in the foreground will leave irregularly spaced trees. Mixed conifer stand regeneration in foregrounds and middle grounds will be planned for at least two species with no more than 65 percent in a single species.

## TIMBER (Cont.)

### Even-aged Management Visual Resource Standards

**TABLE 4-24. EVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Standards Factor		Ponderosa Pine Working Group North & South Associated		Lodgepole Pine Working Group
		Retention	Part. Retent.	Retention/Part. Ret.
Maximum % Harvest per Decade	Foreground	4	5	5
	Middleground	9	10	10
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	8	10	10
	Middleground	15	20	20
Target Tree Diameter (inches DBH)		30	24	12
Number of Target Trees at Final Removal (Per Ac.)		3-5	3-5	10
Maximum Unit Size (Ac.)	Foreground >500 ft.	3	5	5
	Middleground	5	10	10

<sup>1</sup> Applies to regeneration harvests. Not applicable to intermediate or overstory removal harvests except where an opening is created.

### Uneven-aged Management Visual Resource Standards

**TABLE 4-25. UNEVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

#### Umatilla National Forest

Standards Factor		Ponderosa Pine Working Group North & South Associated		Lodgepole Pine Working Group
		Retention	Part. Retent.	Retention/Part. Ret.
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	8	10	10
	Middleground	15	20	20
Target Stand Diameter (inches DBH)		24	20	12
Maximum Unit Size (Ac.)	Immediate Foreground	1	1.5	2
	Foreground >500 ft.	2	2	2
	Middleground	2	2	2

<sup>1</sup> Applies to group selection harvests. Not applicable to single tree selection or intermediate harvests except where an opening is created

## WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS AND ENERGY

Meet the visual quality objectives within the intent of the Forest-wide Standards and Guidelines for minerals and energy.

Utilize existing access routes to developments where possible.

Provide for reclamation on completion of all projects within the viewshed corridors.

## LANDS

Special use sites will be permitted provided they can be designed and located to blend with the characteristic landscape.

Existing special use sites will be reviewed for meeting visual management requirements at established permit renewal dates. If a special use site fails to meet standards, it will be brought into compliance.

Land Classification II (acquisition) will generally be used to meet special public needs.

Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet other Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

New roads and trails will be permitted and will be located, designed, and constructed to be mostly unnoticeable from the main travel route. Cut and fill slopes will be revegetated with species less palatable to livestock to minimize adverse visual effects.

Road maintenance activities will be permitted and conducted to minimize adverse visual impact by the retention of the maximum amount of existing vegetation, by encouraging the most rapid revegetation of disturbed areas outside of the surfaced roadway, and by reducing earthwork to a minimum.

Road closures in the foreground, such as gates and berms, should be designed and constructed to blend with the natural characteristics of the landscape while remaining consistent with safety requirements.

Gravel pits, borrow areas, etc., will meet the assigned visual quality objective.

Signs needed for traffic regulation and information should be few in number, be designed and located to meet aesthetic objectives, and be in accord with safety requirements.

## FIRE

For moderate to high intensity wildfires, the appropriate suppression response will emphasize a control strategy.

Wildfire suppression efforts should utilize low impact methods. Use of heavy equipment may require restoration efforts to mitigate visual impacts.

## FUELS

Prescribed low intensity fire with minimal scorch is acceptable. A 1 year or less recovery period is most desirable in the viewshed, if conditions are suitable.

Acceptable visual quality, including fuel loadings in the foreground, are depicted by the following photos from the Photo Series for Quantifying Forest Residues (Technical Reports PNW-52, PNW-51, PNW-105) (USDA Forest Service 1976a, 1976b, 1980):

	Ponderosa Pine	Lodgepole Pine	Associated Species
Natural Fuels	1-PP4	1-LP3	3-PP and Assoc.3 1-PP and Assoc.4
Thinning Fuels	(No acceptable photos)		1-DF-1-TH
Clearcut	2-LP3-PC	2-LP3-PC	2-DF4-CC
Selection Harvest	1-PP4-PC	2-LP-3-PC	7-PP and Assoc.4-PC

Fuel treatments in foreground areas should be planned, timed, and implemented to avoid being highly visible and to minimize adverse visual effects. In the immediate foreground (within 200-300 feet of observers) handpiling, hauling material away, utilizing it for fuelwood, etc., are activities preferable to machine piling and crushing and should be completed prior to the next high human-use period.

In foreground areas, slash and damaged unmerchantable trees will be treated to a higher standard than in the middle ground and background. Fuel loadings meeting reforestation and wildlife standards in middle ground and background areas will normally be compatible with the visual objectives.

#### PESTS

Use integrated pest management (IPM) principles and strategies to manage insect and disease pests in meeting viewshed objectives. All treatment strategies may be utilized. Emphasize strategies that improve visual quality, aesthetics, and safety. Treatment of bark beetles and root rots is emphasized.

Suppress pests when outbreaks threaten users and/or managed resources. Use suppression methods that minimize site disturbance.

## **A4 VIEWSHED 2**

### **GOAL**

MANAGE THE AREA SEEN FROM A TRAVEL ROUTE, USE AREA, OR WATER BODY WHERE SOME FOREST VISITORS HAVE A MAJOR CONCERN FOR THE SCENIC QUALITIES (SENSITIVITY LEVEL 2) AS A NATURAL APPEARING TO SLIGHTLY ALTERED LANDSCAPE.

### **DESCRIPTION**

The strategy applies to all or parts of the defined Sensitivity Level 2 travel routes, use areas, or water bodies. Sensitivity levels are defined in the Umatilla National Forest landscape management text, and viewshed boundaries are defined on the Forest Visual Quality Objective (VQO) maps.

The following defined viewsheds, or parts of viewsheds, are included in the management area:

1. Pomeroy-Grouse Road 40 (Forest Boundary to Forest Boundary\*) (Pomeroy);
2. Forest Road 4608 (Godman Guard Station to Teepee Springs) (Pomeroy);
3. Forest Road 46 (Godman Guard Station to Skyline Road 64) (Pomeroy/Walla Walla);
4. Skyline Road 64 (Forest Road 46 to Forest Road 6415') (Walla Walla);
5. Forest Road 4600300 (Forest Road 64 to Twin Buttes) (Walla Walla);
6. Tiger Creek Road 65 (A4 terminus to with Forest Road 64) (Walla Walla);
7. Forest Road 6415 (Forest Road 64 to Forest Road 6413) (Walla Walla);
8. County Highway 900 (Umatilla Indian Reservation to Forest Boundary) (Walla Walla);
9. Thomas Creek Road 32 (Forest Boundary to Summit Road 31) (Walla Walla);
10. Summit Road 31 (State Highway 204 south to Forest Boundary 13 segments) (Walla Walla);
12. State Highway 207 (Forest Boundary to Forest Boundary) (Heppner);
13. Forest Road 21 (Forest Road 53 to Forest Road 2103\*) (Heppner);
14. Forest Road 2103 (Forest Road 21 to Penland Lake\*) (Heppner);
15. Forest Road 53 (Forest Road 21 east to Forest Boundary\*) (Heppner);
16. Pearson Creek Road 54 (Forest Boundary to State Highway 244); and
17. Desolation Creek Road 10 (Dale to Olive Lake [4 segments]) (North Fork John Day).

\* with enclaves

### **DESIRED FUTURE CONDITION**

Viewsheds will be managed primarily to meet the visual quality objectives of partial retention and modification. An attractive, near natural landscape will be maintained or created. A maximum of three distance zones for each viewshed including foreground, middleground, and background radiating from the viewer position (and a visual quality objective for each zone) have been delineated according to the process defined in the Agriculture Handbook 462, 'National Forest Landscape Management,' Vol. 2, Chap. 1, The Visual Management System (USDA Forest Service 1974).

Management activities will be done with sensitivity to people's concern for scenic quality (Level 2), with vegetative manipulation conducted so that Forest management activities remain visually subordinate in foregrounds of selected travel routes and sites. All viewsheds will have approved

vegetative management plans. Management activities will be obvious in the middleground and background viewing area, but designed to compliment their surroundings. Forest stands will occasionally be logged in order to maintain long-term health and vigor, and to encourage a park-like, near natural appearance with big trees in the immediate foreground. Recreation opportunities will be mostly road oriented

## MANAGEMENT AREAS STANDARDS AND GUIDELINES

### RECREATION

Manage dispersed recreation in the area for a range of physical and social settings from Rooded Natural to Rooded Modified (ROS Users Guide, USDA Forest Service, n.d.).

Recreation facility development and maintenance and site modification level 1 and 2 are permitted (see Glossary). Facilities (including trails and trailheads) designed, constructed, developed, and maintained in the area, are to blend with the natural landscape character and meet visual quality objectives.

Provide the opportunity for mostly road oriented activities.

Off-highway vehicle (OHV) use is allowed. OHV use may be limited to designated roads, trails, and areas.

### VISUAL

Visual Quality Objective (VQO) will generally be Partial Retention in the foreground and Modification in the middleground. (Exceptions are defined through the process described in Agriculture Handbook 462.) Activities within these viewsheds may repeat or borrow from form, line, color, and texture which are frequently found in the characteristic landscape. Changes of landscape should be of such size, amount, intensity, direction, and pattern that they continue to provide a natural appearing or slightly altered appearance, except for short-term changes to meet long-term objectives.

Principles of visual management will be applied so that positive attributes of a managed forest can be enjoyed while negative visual aspects of activities will be minimized.

Landscapes containing negative visual elements will be rehabilitated. Landscapes will be enhanced by opening views to distant peaks, unique rock forms, unusual vegetation, or other features of interest.

Viewshed corridor plans will be prepared for all sensitivity level 2 viewsheds and will guide project activities when completed.

### CULTURAL

Meet Forest-wide Standards and Guidelines.

### WILDLIFE

Dead and down tree habitat will be managed to provide or maintain 60 percent of the potential population level for primary cavity excavators.

Wildlife habitat improvement and maintenance projects are permitted provided they meet the visual quality objective of the distance zone in which they occur.

### FISH

Fish habitat improvement and maintenance projects are permitted provided they meet the appropriate VQO in the distance zone in which they occur.

### RIPARIAN

For all Class I, II, and III streams and associated riparian areas within the management area, anadromous fish habitat will be managed to produce at least 90 percent of potential smolt habitat capability index (SCHL) by meeting standards (for fish) shown in Management Area C5

**RANGE**

A moderate level of livestock grazing is permitted. Openings created by management of timber stands should be available for management as transitory range. Development and maintenance of range improvements are permitted. Range utilization standards, management practices, and improvements are to be designed and managed to meet visual quality objectives.

**TIMBER**

Timber will be managed on a scheduled basis. All timber management practices and intensities shall be permitted consistent with achieving the primary visual quality goals.

Timber harvest will not be scheduled in the following viewshed corridors:

	EXCEPTED PORTIONS
Road 40	Road 44 to Forest Boundary
Road 4600300	Road 64 Easterly to Road 4608
Road 4600301	Road 46 to End
Road 4608	Road 4600300 to End
Road 64	Between Road 46 and W-T Wilderness Boundary
Road 46	Road 65 to Road 46

Uneven-aged management is the preferred and most commonly used silvicultural systems in the foreground; even-aged management techniques may also be used to meet objectives. Both systems are available in the middle and background zones.

Scheduling of treatments and timber harvest, logging systems, debris disposal, reforestation, and stand improvement practices will be designed and implemented to accomplish visual management objectives.

1. Timber stands which have remained unmanaged in the past because of their visual sensitivity will begin receiving treatment, when desirable, to meet viewshed objectives.
2. Manage the viewshed for an overall mix of size classes of trees. The following mix of age classes should be achieved as the overall long-term objective of the viewshed.

Foreground Age Classes	
Percent	Partial Retention
20	0-36
20	37-72
20	73-108
20	109-145
20	146-181

3. Emphasis will be on viewing large diameter trees and multi-age stands; both vertical and horizontal diversity will also be emphasized. The large tree component should be dispersed as necessary to give the overall character of large trees to the area. The

standards in Tables 4-26 and 4-27 will be used in achieving desired visual characteristics.

Even-aged Management Visual Resource Standards

**TABLE 4-26. EVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Umatilla National Forest

Standards		Ponderosa Pine Working Group North & South Associated	Lodgepole Pine Working Group
Factor		Partial Retention	Partial Retention
Maximum % Harvest per Decade	Foreground	5	5
	Middleground <sup>2</sup>	10	10
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	10	10
	Middleground <sup>2</sup>	20	20
Target Tree Diameter (inches DBH)		24	12
Number of Target Trees at Final Removal (Per Ac.)		3-5	10
Maximum Unit Size (Ac.)	Foreground >500 ft.	5	5
	Middleground <sup>2</sup>	10	10

1 Applies to regeneration harvests. Not applicable to intermediate or overstory removal harvests except where an opening is created.

2 Modification will be the general visual standard for middleground; where partial retention is assigned to the middleground, the above standards apply.

Uneven-aged Management Visual Resource

**TABLE 4-27. UNEVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Umatilla National Forest

Standards		Ponderosa Pine Working Group North & South Associated	Lodgepole Pine Working Group
Factor		Partial Retention	Partial Retention
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	10	10
	Middleground <sup>2</sup>	20	20
Target Stand Diameter (inches DBH)		20	12
Maximum Unit Size (Ac.) <sup>1</sup>	Immediate foreground	1.5	2
	Foreground >500 ft.	2	2
	Middleground <sup>2</sup>	2	2

1 Applies to group selection harvests. Not applicable to single tree or intermediate harvests except where an opening is created.

2 Modification will be the general visual standard for middleground; where partial retention is assigned to the middleground, the above standards apply.

4. A created opening is defined as an opening developed through management activities where the tree heights are less than 20 feet. Created openings will be shaped and blended with the natural terrain.
5. Exceptions to created opening size and maximum percentage in created openings at one time are permitted under conditions of catastrophic occurrence such as blow down, insect and disease attacks, wildfire, and others. Landscapes will be rehabilitated under these conditions.
6. Thinnings and plantings in the foreground will leave irregularly spaced trees. Mixed conifer stand regeneration in foregrounds will be planned for at least two species with no more than 65 percent in a single species.



## WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS AND ENERGY

Meet the visual quality objectives within the intent of the Forest-wide Standards and Guidelines for minerals and energy.

Utilize existing access routes to developments where possible.

Provide for reclamation upon completion of all projects within the viewshed corridors.

## LANDS

Special use sites will be permitted, provided they can be designed and located to blend with the characteristic landscape.

Existing special use sites will be reviewed for meeting visual management requirements at established permit renewal dates. If a special use fails to meet standards, it will be brought into compliance.

Land Classification II (acquisition) will generally be used. Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

New roads and trails will be permitted and will be designed and constructed to meet the partial retention and modification visual quality objectives. Cut and fill slopes within view will be revegetated species with less palatable to livestock to minimize adverse visual effects.

Road maintenance activities will be permitted and conducted to minimize adverse visual impact by the retention of the maximum amount of existing vegetation, by encouraging the most rapid revegetation of disturbed areas outside of the surfaced roadway, and by reducing earthwork to the minimum.

Road closures in the foreground, such as gates and berms, should be designed and constructed to blend with the natural characteristics of the landscape while remaining consistent with safety requirements.

Gravel pits, borrow areas, etc., will meet the assigned visual quality objective.

Signs needed for traffic regulation and information should be few in number, be designed and located to meet aesthetic objectives, and be in accord with safety requirements.

## FIRE

For moderate to high intensity wildfires, the appropriate suppression response will emphasize control and/or contain strategies.

Wildfire suppression efforts should utilize low impact methods. Use of heavy equipment may require restoration efforts to mitigate visual impacts.

## FUELS

Prescribed low intensity fire with minimal scorch is acceptable in the partial retention area. In the partial retention area a 1 year or less recovery period is most desirable, if conditions are suitable.

Acceptable visual quality, including fuel loadings in the foreground, are depicted by the following photos from the Photo Series for Quantifying Forest Residues (Technical Reports PNW-52, PNW-51, PNW-105) (USDA Forest Service 1976a, 1976b, 1980):

	Ponderosa Pine	Lodgepole Pine	Associated Species
Natural Fuels	1-PP-4	1-LP-3	3-PP and Assoc.3 1 -PP and Assoc.4
Thinning Fuels	(No acceptable photos)	(No acceptable photos)	1-DF-1-TH
Clear Cut	2-LP3-PC	2-LP-3-PC	2-DF-4-CC
Selection Harvest	1-PP-4-PC	2-LP-3-PC	7-PP and Assoc. 4-PC

Fuel treatments in foreground areas should be planned, timed, and implemented to avoid being highly visible and to minimize adverse visual effects. In the immediate foreground (within 200-300 feet of observers) handpiling, hauling material away, utilizing it for fuelwood, etc., are methods preferable to machine piling and crushing. Treatment should be completed prior to the next high human-use period.

In foreground areas, slash and damaged unmerchantable trees will be treated to a higher standard than in the middleground and background. Fuel loadings meeting reforestation and wildlife standards in middleground and background areas will normally be compatible with the visual objectives.

#### PESTS

Use integrated pest management (IPM) principles to manage insect and disease pests in meeting viewshed objectives. All treatment strategies may be utilized. Emphasize strategies that improve visual quality, aesthetics, and safety. Treatment of bark beetles and root rots is emphasized.

Suppress pests when outbreaks threaten users and/or managed resources. Use suppression methods that minimize site disturbance.

### **A5 ROADED NATURAL**

#### GOAL

PROVIDE DISPERSED RECREATION OPPORTUNITIES IN AN ARE CHARACTERIZED BY A PREDOMINANTLY NATURAL TO NEAR NATURAL APPEARING ENVIRONMENT WITH MODERATE EVIDENCES OF THE SIGHTS AND SOUNDS OF MAN. SUCH EVIDENCES USUALLY HARMONIZE WITH THE NATURAL ENVIRONMENT.

#### DESCRIPTION

The strategy may be applied to all or portions of areas currently inventoried as Semi-primitive or Roaded Natural in the Umatilla National Forest ROS inventory. Areas currently inventoried as Roaded Modified may be allocated if they are identified as needed for this recreation opportunity.

The following areas are included in the management area:

- Relay Station Area (Spout Springs); and
- North Mt. Emily Roadless Area.

#### DESIRED FUTURE CONDITION

An attractive natural to slightly altered appearing landscape will be created and/or maintained over a large area. Recreation opportunities of all types will be abundant and available throughout the area, with emphasis on motorized use and some trail and cross country opportunities in a natural appearing environment. The natural setting will have modifications which may be noticed within the area, but which will remain unnoticed or visually subordinate from selected travel routes and use areas. Activities will be done with average sensitivity to people's concern for scenic quality (Level 2). The forested area will appear as a mosaic of

different sized trees with many small created openings throughout. Through special design efforts, structural improvements (including range), roads, trails, and created openings will blend with the natural environment. Discordant visual elements shall be rehabilitated. The Forest will be logged regularly so that long-term stand health and vigor can be maintained and growth of big trees be encouraged throughout the area.

## MANAGEMENT AREAS STANDARDS AND GUIDELINES

### RECREATION

Manage dispersed recreation in the area to a Roaded Natural physical and social setting as described in the ROS User's Guide (USDA Forest Service n.d.). Encourage dispersed activities that meet the goal.

Recreation site modification and facility development should be Level 2 or less (see Glossary), and will be designed to blend with the natural landscape character. Facilities will include those needed to meet safety and sanitary needs.

Emphasize interpretive services to enhance understanding and appreciation of the area and forest management.

Provide for mostly road oriented opportunities and for walk-in or horseback activities in a natural to slightly altered environment.

Trail and associated facility construction, reconstruction, and maintenance shall be permitted including trails for OHV use. The trail system will be designed and maintained to disperse use, provide varying but challenging difficulty levels, and to meet area objectives.

Trailhead facilities will be designed, constructed, and maintained to meet visual quality objectives.

Off-highway vehicle (OHV) use is permitted. Motorized use may be limited to trails and roads: snowmobile use is acceptable on an area-wide basis.

### VISUAL

Activities in the area will meet the visual quality objective of Partial Retention as the standard. Activities may repeat or borrow from form, line, color, and texture which are frequently found in the characteristic landscape. Changes of landscape should be of such size, amount, intensity, direction, and pattern that they continue to provide a natural appearing or slightly altered appearance, except for short-term changes to meet long-term objectives.

Principles of visual management will be applied so that positive attributes of a managed forest can be enjoyed while negative visual aspects of activities will be minimized.

Landscapes containing negative visual elements will be rehabilitated. Landscapes will be enhanced by opening views to distant peaks, unique rock forms, unusual vegetation, or other features of interest.

### CULTURAL

Meet Forest-wide Standards and Guidelines.

### WILDLIFE AND FISH

Dead and down tree habitat will be managed to provide or maintain 60 percent of the potential population level for all primary cavity excavators.

Habitat improvement projects for wildlife and fish are encouraged, provided they meet the foreground partial retention visual quality objective and the goal for the roaded natural setting.

### RIPARIAN

For all Class I, II, and III streams and associated riparian areas within the management area, anadromous fish habitat will be managed to produce at least 90 percent of potential smolt habitat capability index (SCHL) by meeting standards (for fish) shown in Management Area C5.

**RANGE**

Livestock grazing is permitted; all range management strategies are available consistent with visual and recreation goals. Openings created by management of timber stands are available for management as transitory range.

The full range of development and maintenance of structural and nonstructural improvements is permitted while consistent with meeting visual goals. Seeding of forage species is permitted where tree establishment and growth are not restricted.

Permit increased domestic livestock and/or big game grazing to capture increases in transitory range. Utilize available forage at 80 percent or less.

**TIMBER**

Timber will be managed on a scheduled basis. All timber management practices and intensities shall be permitted consistent with achieving the primary visual quality goals.

Uneven-aged management is the preferred and most commonly used silvicultural system in the foreground; even-aged management techniques may also be used to meet objectives. Both systems are available in the middle and background zones.

Scheduling of treatments and timber harvest, logging systems, debris disposal, reforestation, and stand improvement practices will be designed and implemented to accomplish visual management objectives.

1. Manage the area for an overall mix of age classes of trees. The following mix of age class types should be achieved as the overall long-term objective of the area:

Percent	Foreground Age Classes
	Partial Retention
20	0-36
20	37-72
20	73-1 08
20	109-1 45
20	146-1 81

2. Emphasis will be on viewing large diameter trees and multi-age stands; both vertical and horizontal diversity will also be emphasized. The large tree component should be dispersed as necessary to give the overall character of large trees to the area.
3. The standards in Tables 4-28 and 4-29 will be used in achieving desired visual conditions.
4. A created opening is defined as an opening developed through management activities where the tree heights are less than 20 feet. Created openings will be shaped and blended with the natural terrain. Created openings will normally be limited as shown in the following tables and will be subordinate to the characteristic landscape.
5. Exceptions to created opening size and maximum percentage in openings at one time are permitted under catastrophic occurrences such as blow down, insect and disease attacks, wildfire, and others. Landscapes will be rehabilitated under these conditions.

6. Thinnings and plantings in the area will leave irregularly spaced trees. Mixed conifer stand regeneration will be planned for at least two species with no more than 65 percent in a single species.

Even-aged Management Visual Resource Standards

**TABLE 4-28. EVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Umatilla National Forest

Standards		Ponderosa Pine Working Group North & South Associated	Lodgepole Pine Working Group
Factor		Partial Retention	Partial Retention
Maximum % Harvest per Decade	Foreground	5	5
	Middleground <sup>2</sup>	10	10
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	10	10
	Middleground <sup>2</sup>	20	20
Target Tree Diameter (inches DBH)		24	12
Number of Target Trees at Final Removal (Per Ac.)		3-5	10
Maximum Unit Size (Ac.) <sup>1</sup>	Foreground >500 ft. <sup>3</sup>	5	5
	Middleground <sup>2</sup>	10	10

1 Applies to regeneration harvests. Not applicable to intermediate or overstory removal harvests except where an opening is created.

2 Modification will be the visual standard for middleground; where partial retention is assigned to the middleground, the above standards apply.

3 Applies to key roads, trails, and use areas.

Uneven-aged Visual Management Resource Standards

**TABLE 4-29. UNEVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Umatilla National Forest

		Ponderosa Pine Working Group North & South Associated	Lodgepole Pine Working Group
Factor		Partial Retention	Partial Retention
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	10	10
	Middleground <sup>2</sup>	20	20
Target Stand Diameter (inches DBH)		20	12
Maximum Unit Size (Ac.) <sup>1</sup>	Immediate foreground	1.5	2
	Foreground >500 ft. <sup>3</sup>	2	2
	Middleground <sup>2</sup>	2	2

1 Applies to group selection harvests. Not applicable to single tree or intermediate harvests except where an opening is created.

2 Modification will be the visual standard for middleground; where partial retention is assigned to the middleground, the above standards apply.

3 Applies to key roads, trails, and use areas.

**WATER AND SOIL**

Meet Forest-wide Standards and Guidelines.

**MINERALS AND ENERGY**

Meet the visual quality objectives within the intent of the Forest-wide Standards and Guidelines for minerals and energy.

Utilize existing access routes to developments where possible.

Provide for reclamation upon completion of all projects within the area.

## LANDS

Special use sites will be permitted in these areas, provided they can be designed and located to blend with the characteristic landscape.

Existing special use sites will be reviewed for meeting visual management requirements at established permit renewal dates. If a special use fails to meet standards, it will be brought into compliance.

Land Classification II (acquisition) will generally apply to meet special public needs.

Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

New roads shall be permitted and will be designed and constructed to blend with the natural characteristics of the landscape. Cut and fill slopes will be revegetated with species less palatable to livestock to minimize visual effects. Maintenance of roads shall be permitted.

Road maintenance activities will be conducted to minimize adverse visual impact by the retention of the maximum amount of existing vegetation, by encouraging the most rapid revegetation of disturbed areas outside of the surfaced roadway, and by reducing earthwork to the minimum.

Road closures in the foreground, such as gates and berms, should be designed and constructed to blend with the natural characteristics of the landscape. Gravel pits, borrow areas, etc., will meet the partial retention visual quality objective.

Signs needed for traffic regulation and information should be designed and located to meet aesthetic objectives and be in accord with safety regulations.

## FIRE

For moderate to high intensity wildfires, the appropriate suppression response will emphasize control and/or contain strategies.

Wildfire suppression efforts should utilize low impact methods. Use of heavy equipment may require restoration efforts to mitigate visual impacts.

## FUELS

Prescribed low intensity fire with minimal scorch is acceptable. A 1 year or less recovery period is most desirable, if conditions are suitable.

Acceptable visual quality, including fuel loadings, are depicted by the following photos from the Photo Series for Quantifying Forest Residues (Technical Report PNW-52) (USDA Forest Service 1976b):

	Ponderosa Pine	Lodgepole Pine	Associated Species
Natural Fuels	1 -PP4	1 -LP3	3-PP and Assoc.3 1-PP and Assoc.4
Thinning Fuels	(No acceptable photos)	(No acceptable photos)	1 -DF-I -TH
Clearcut	2-LP-3-PC	2-LP-3-PC	1-DF-4-CC
Selection Harvest	I -PP4-PC	2-LP-3-PC	7-PP and Assoc. 4-PC

Fuel treatments should be planned, timed, and implemented to avoid being highly visible and to minimize adverse visual effects. Handpiling, hauling material away, utilizing it for fuelwood, etc., are methods preferable to machine piling and crushing. Treatments should be completed prior to the next high human-use period.

## PESTS

Use integrated pest management (IPM) principles to manage insect and diseases in meeting management area objectives. All treatment strategies may be utilized. Emphasize strategies that improve visual quality, aesthetics, and safety. Treatment of bark beetles and root rots is emphasized.

Suppress pests when outbreaks threaten users and/or managed resources. Use suppression methods that minimize site disturbance.

## A6 DEVELOPED RECREATION

### GOAL

PROVIDE RECREATION OPPORTUNITIES THAT RE DEPENDENT ON THE DEVELOPMENT OF STRUCTURAL FACILITIES FOR USER CONVENIENCES WHERE INTERACTION BETWEEN USERS AND EVIDENCE OF OTHERS IS PREVALENT.

### DESCRIPTION

Developed recreation opportunities occur on sites designated for development and concentrated use, e.g., campgrounds, picnic grounds, boating sites, ski areas, recreation residences, and organization camps. Only sites classified as development scale 3 or higher are considered in this strategy.

The following recreation sites are included in the management area:

#### Pomeroy Sites

Teal Spring  
Wickiup  
Tucannon  
Big Springs  
Godman  
Alder Thicket  
Rose Spring  
Little Turkey  
Slick Ear  
Stentz Spring

#### Heppner Sites

Bull Prairie  
Penland Lake  
Fairview

#### Walla Walla Sites

Beaver Marsh  
Buck Creek  
Umatilla Forks  
Jubilee Lake  
Woodland  
Woodward  
Monet  
Ski Bluewood  
Spout Springs  
Tollgate  
Target Meadows

#### North Fork John Day Sites

Lane Creek  
Bear Wallow Creek  
Frazier  
Pearson  
Tollbridge  
No. Fk. John Day

### DESIRED FUTURE CONDITION

Readily accessible, appropriately designed recreation facilities shall provide for concentrated use by people seeking a variety and convenience of developed recreation opportunities and experiences. Recreationists will enjoy outdoor opportunities where social interactions are moderate to high. Controls and regulations will be noticeable to obvious.

Recreation facilities such as roads, buildings, ski lifts, loading/unloading ramps, boat docks, bulletin boards, picnic tables, campsites, and others shall be evident in moderate to heavily modified sites. However, facility design and construction will blend with the color, shapes, and lines of the surrounding natural environment. Created openings or tree removal shall exist to accommodate facilities, provide scenic views, or meet vegetative management goals within, and surrounding, the developed site. Partnerships with members of the hospitality industry will be strong.

### MANAGEMENT AREAS STANDARDS AND GUIDELINES

#### RECREATION



## Sites

1. Provide and manage developed recreation primarily to Roaded Natural settings with some Rural settings (ROS Users Guide, USDA Forest Service, n.d.).
2. Provide the opportunity for mostly road oriented or related activities.
3. Facilities will be provided mostly at recreation development scale 3 (Roaded Natural) with some development scale 4 (Rural). Development scale 5 (Urban) sites on National Forest lands will be provided by private or public developers.
4. Developed sites will be administered and maintained to provide visitor safety and sanitation, protect facility and site resources, and provide for visitor recreation needs and convenience.
5. Cleaning, policing, and minor maintenance will be performed regularly and consistently at each fee site to give the overall appearance of being clean and sanitary, free of litter, neat in appearance, and well kept. Other sites will be maintained to assure basic health and safety, appropriate resource effects, and protection of investments.
6. Developed recreation sites are to be appropriate to the forest environment and will be planned, constructed, and maintained to provide facilities only for forest recreation such as fishing, camping, picnicking, skiing, swimming, hiking, and riding.
7. The Forest will consider expansion of its existing high use sites before considering the development of any new sites; long-term desirability of the site for continued use, site suitability, and potential alternative sites will be evaluated prior to expansion.
8. The Jubilee Lake, Bull Prairie, Olive Lake, North Fork John Day River, and Tucannon sites will be modified to make them usable by the disabled. Where the need exists, facilities in other existing recreation sites will be modified to make them usable by the handicapped. Future developments will be planned and designed to make other facilities accessible to the handicapped.
9. The developed site may encompass an area larger than just the area on which developed facilities are located. These areas will be managed as a Roaded Natural setting in which trails may be developed to provide dispersed recreation opportunities. These areas will also provide a transition between the developed site and resource development areas.
10. All recreation sites at development scale 3 and above will be evaluated, and fees will be charged for the use of facilities when it is administratively and economically feasible to administer the fee system.
11. Periodically reevaluate sites to determine the need to eliminate or reduce the development scale of sites that are not cost-effective, not providing the appropriate resource setting, or not needed to meet recreation management objectives.

## Special Uses

1. Where recreation services and facilities are determined to be needed, feasible, and appropriate in the forest environment, development, and operation using partnership agreements will be encouraged.
2. Developed sites may be operated on a charge basis by a concessionaire when it would result in better service to the public.
3. The Buck Creek Organization Camp will be kept for public use. Before or at the time of expiration or renewal of the authorization, a 'needs' assessment will be made in consultation with the operator to consider whether the activities, uses, and developments should be continued, expanded, or otherwise changed in order to best serve the public

interest. An operation and maintenance plan will be prepared to specify actions needed to meet health and safety standards, maintenance needs, upgrading and additional requirements, or other structural and operational modifications.

4. As termination dates for recreation residence authorization approach, an analysis of recreation residence continuance will be made for each tract. The uses will be allowed to continue unless a positive higher public use is determined.

#### Off-highway Vehicle (OHV)

OHV use will be restricted to the roads and trails within the developed sites and managed to minimize conflicts between users.

#### VISUAL

The Visual Quality Objective is Retention or Partial Retention, depending on the sensitivity level of the site.

Development and maintenance of sites will be accomplished within the standards established for each site. In the cases where this cannot be accomplished due to the size of a structure or facility, then blending into the natural setting by minimizing contrast with the natural form, line, color, and texture will suffice.

A vegetation management plan will be developed and implemented for each site at development scale 3 and above.

#### CULTURAL

Meet Forest-wide Standards and Guidelines.

#### WILDLIFE

Wildlife habitats and habitat improvements may be developed, maintained, or enhanced to increase wildlife viewing opportunities, provided habitat and improvements don't conflict with the safety of developed site users, and are consistent with the management of the site.

#### FISH

Fish habitat improvements are encouraged.

#### RANGE

Domestic livestock grazing will ordinarily be excluded from developed sites. It will be allowed on certain sites at specified periods (i.e., sheep grazing on ski area slopes in summer) on a controlled basis to reduce the fire hazard, and to maintain or improve the vegetation.

Developed sites that have facilities for recreation pack-and-saddle stock will not provide pastures.

#### TIMBER

Trees will be managed on a nonscheduled basis to meet recreation objectives and to reduce the risk of public injury from hazardous trees or vegetation.

Logging and slash disposal practices will be selected that least impact the site.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Subject to analysis of public values, including mineral values, recreation sites may be recommended for withdrawal from mineral entry. Development of energy resource leases within recreation sites will be restricted.

## LANDS

Developed sites will be retained in Federal ownership. Other Forest-wide Standards and Guidelines apply.

## TRANSPORTATION

A wide spectrum of transportation facilities (ranging from high-standard, double-lane paved roads to low-standard, single-lane dirt roads and trails) to developed sites can be constructed, utilized, operated, and maintained.

Access roads should be managed to encourage passenger car traffic, normally at Traffic Service Level A.

Road maintenance activities will be conducted to minimize adverse visual impact by retaining the maximum amount of existing vegetation, encouraging the most rapid revegetation of disturbed areas outside of the surfaced roadway, and reducing earthwork to the minimum.

## FIRE

For all wildfires, the appropriate suppression response is control.

Emphasis will be on protecting life and facilities.

Low impact wildfire suppression methods should be used except where high intensity fire situations may exist.

Fire prevention activities should be emphasized at developed sites. Public contract and a signing program are encouraged.

## FUELS

Slash resulting from hazard tree removal will be made available for firewood to campground users.

## PESTS

Utilize integrated pest management (IPM) principles and strategies to prevent or control unacceptable vegetative losses due to insects and diseases. Emphasize prevention and early detection measures. Prevent, control, or suppress pest outbreaks with a minimum of disturbance to protect users and/or developments. Favor biological and silvicultural treatments where possible.

Remove hazardous trees as identified in the Vegetative Management Plan. Bark beetles and root disease occurrences which impact safety will be aggressively treated. Control of defoliators is also emphasized to meet visual objectives.

## A7 WILD AND SCENIC RIVERS

### GOAL

MANAGE CLASSIFIED WILD AND SCENIC RIVER SEGMENTS TO APPROPRIATE STANDARDS AS WILD, SCENIC, OR RECREATIONAL RIVER AREAS, AS DEFINED BY THE WILD AND SCENIC RIVERS ACT, PUBLIC LAW 90-542, OCTOBER 2, 1968 (U.S. LAWS, STATUTES, ETC. 1968), AND EXPANDED BY THE OMNIBUS OREGON WILD AND SCENIC RIVERS ACT OF 1988 (PUBLIC LAWS 100-557).

### DESCRIPTION

The following river segments were designated by the Omnibus Oregon Wild and Scenic Rivers Act of 1988 and are managed under this management area:

1. Grande Ronde River: Approximately 17.4 river miles and a one-quarter mile corridor<sup>1</sup> on each side. Total area amounts to 5,200 acres of National Forest System lands, 485 acres in private ownership, and 25 acres of BLM.

Entire Segment Designation - Wild

2. North Fork John Day River: Approximately 38.7 river miles and a one-quarter mile corridor<sup>1</sup> on each side. Total area amounts to 10,514 acres of National Forest System lands, 712 acres in private ownership and 77 acres of state lands.

Segment 1 Trail Creek to Big Creek. Designation – Wild

Segment 2 Big Creek to Texas Bar Creek. Designation – Scenic

Segment 3 Texas Bar Creek to Umatilla National Forest Boundary.  
Designation - Recreational

3. Wenaha River: Approximately 18.7 river miles and a one-quarter mile corridor<sup>1</sup> on each side. Total area amounts to 5,484 acres of National Forest System lands and 158 acres in private ownership.

Entire Segment South Fork-North Fork junction to the Forest Boundary,  
Designation - Wild

### DESIRED FUTURE CONDITION

Each component of the Wild and Scenic River System will be administered to protect and enhance the values for which the rivers were classified and to provide public use and enjoyment of those values. Emphasis will be given to protecting the outstandingly remarkable values for which the river was designated. Anadromous fisheries, wildlife, aesthetic, scenic, historic, archeologic, scientific and other features will be protected. Approved management plans will establish detailed corridor boundary and specify management activities, land acquisition, easements, and other information necessary to protect each segment of the rivers.

### WILD RIVERS

Wild rivers or sections of rivers will be free of impoundments and continue to be accessible by trail and/or water, and inaccessible by road. The viewing area and shorelines will be essentially natural appearing. Signs of human activity, including structure or evidence of resource use, will be kept to a minimum or will be inconspicuous. Sectors within the wilderness will be managed as Wilderness. The opportunity to interact with a natural environment, with challenges and minimal sights and sounds of other people will be available. There will generally be no use of

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<sup>1</sup> NOTE: The one-quarter mile corridor on each side of the river is an interim boundary. The final boundary will be established upon approval of the management plan for each river.

motorized vehicles. Where a need to regulate use exists, indirect methods will predominate. Outfitters will provide services to people to help them enjoy and interpret the environment.

## SCENIC RIVERS

Scenic rivers or sections of rivers will be free of impoundments; shorelines and viewing areas will be largely natural appearing. Some recreation structures, evidence of timber harvest roads, and other evidence of human activity may be present, but will not detract from the near natural appearance and scenic qualities of the immediate environment. A variety of water related recreation opportunities will be available. The rivers will be accessed in places by road. Motorized use on a few trails within the corridor will occur. There will be very few restrictions on recreation use. Frequency of contact with others will be moderate. Ongoing activities such as timber harvest, fish habitat improvement, mining, and others may be permitted if scenic and recreation values are met or enhanced and adverse effects avoided.

## RECREATIONAL RIVERS

The recreational sections will be free of impoundments and be readily accessible from roads. Some major public use facilities such as developed campgrounds, administrative buildings, bridges, private residences, and commercial businesses will remain within the corridor. Considerable development and timber harvest may have occurred and be evident near the river, but the area shall be managed to protect recreation and scenic values. A range of recreational opportunities will be available in settings in which interactions are relatively high and visitors are likely to share their recreational experience with other individuals or groups.

## MANAGEMENT AREAS STANDARDS AND GUIDELINES

### GENERAL

For each designated Wild and Scenic River, development and management plans will be prepared and completed within 3 full fiscal years of designation.

The formal boundary of the designated rivers will be established concurrently with the development and management plans. The management area boundary will conform to the established Wild and Scenic River boundary.

Upon completion and approval of Wild and Scenic Rivers management plans, the Forest Plan will be amended to incorporate them.

### INTERIM MANAGEMENT OF STUDY RIVERS

Management direction for each designated river corridors identified in the Omnibus Oregon Wild and Scenic Rivers Act and other rivers identified for study will provide protection in the following ways

1. To the extent the Forest Service is authorized under law to control stream impoundments and diversions, the free flowing characteristics of the identified river cannot be modified.
2. Outstandingly remarkable values of the identified river area must be protected and, to the extent practicable, enhanced.
3. Management and development of the identified river and its corridor cannot be modified to the degree that classification (or eligibility) would be affected (i.e., classification cannot be changed from wild to scenic or scenic to recreational).

Protection may be modified or discontinued for rivers identified in the forest planning process for study in the following cases:

1. For the entire river or segment(s) of the river that are determined to be ineligible for the Wild and Scenic Rivers System.

2. For the entire river, if determined to be unsuitable for the Wild and Scenic Rivers System, following the appropriate review process.
3. For unsuitable segment(s) of a river recommended for Wild and Scenic River designation after the Record of Decision is signed by the Secretary of Agriculture.
4. Following Congressional action for suitable segments of the river that are not included in the Wild and Scenic Rivers System.

## WILDERNESS

River sectors located within wilderness will be managed under wilderness or Wild and Scenic River principles and standards and guidelines, whichever is most restrictive.

## RECREATION

River-oriented recreation opportunities may be provided, consistent with maintaining and protecting Wild and Scenic River values.

River area recreation will be managed according to the following interim standards:

### Wild Classification:

1. Manage areas for Primitive, Semi-primitive Nonmotorized (SPNM).
2. Access will be mostly for floating, walk-in, or horseback opportunities along wild segments.
3. No motorized use is permitted in the Grande Ronde, Wenaha, or the wild segment of the North Fork John Day rivers. Motorized watercraft will not be allowed on wild sections of the rivers.
4. Only rustic recreation facilities and settings may be permitted (development scale 1 or 2).

### Scenic Classification:

1. Manage areas for Semi-primitive Nonmotorized (SPNM) to Semi-primitive Motorized (SPM) settings.
2. A mix of access types will be available in scenic section including open roads, roads closed to motorized use, and walk-in or horseback opportunities in a few remote areas.
3. Motorized vehicle, including off-highway vehicle, use may be permitted.
4. Recreation developments are permitted but will not exceed development scale 3.

### Recreation Classification:

1. Manage areas for Roaded to Rural settings.
2. Road access will be provided to most areas along the recreation sectors.
3. Maintain accessibility for motorized vehicles; OHV use may be permitted on designated trails.
4. All recreation development scales may be permitted.

Trail and related facility construction, reconstruction, and maintenance are permitted in all classes.

Outfitter and guide services may be permitted under special use permit for all classifications.

## VISUAL

Manage visual resources to meet standards for each classification as follows:

River Classification	Visual Quality Objective
Wild	Preservation is the normal
Scenic	Retention may be used for some limited recreation facilities
Recreation	Retention foreground
	Partial Retention middleground
	Partial Retention foreground Modification middleground

(See Glossary for description of terms.)

Activities within corridors may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes should be of such size, amount, intensity, direction, and pattern that they are not visually evident in the foreground distance zone and are visually subordinate to the characteristic landscape in the middleground distance zone.

Principles of visual management will be applied so that positive attributes of a managed forest can be enjoyed while negative visual aspects of activities will be minimized.

Landscapes containing negative visual elements will be rehabilitated. Landscapes may be enhanced by opening views to distant peaks, unique rock forms, unusual vegetation, or other features of interest.

River corridor viewshed management direction will be established as part of the river management plans. In the interim, direction will be guided by Forest visual quality mapping, associated visual quality standards, and direction in these standards and guidelines.

## CULTURAL

Meet Forest-wide Standards and Guidelines.

## WILDLIFE AND FISH

Wildlife and fish habitat improvement, development, and maintenance projects are permitted, provided Wild and Scenic Rivers objectives are met.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators.

## RANGE

The existing domestic livestock grazing level and management intensity (prior to designation of rivers) is permitted consistent with recreation, visual, and other management objectives.

Development and maintenance of range improvements are permitted. Range utilization standards, management practices, and improvements will be designed and managed to meet wild and scenic and riparian objectives.

## TIMBER

In the Wild sections, timber will be managed on a nonscheduled basis to meet Wild and Scenic River goals. Cutting of trees is only permitted where needed to meet primitive recreation, environmental or other Wild and Scenic River objectives.

In the Scenic and Recreation sections, timber harvest is permitted on a scheduled basis. Standard silvicultural practices and intensities consistent with meeting Scenic and Recreation river objectives are permitted.

Uneven-aged management is the preferred and most commonly used silvicultural system; even-aged management techniques may also be used to meet objectives. Scheduling of treatments, timber harvest, logging systems, debris disposal, reforestation, and stand improvement practices will be designed and implemented to accomplish river management objectives.

1. Where timber management is scheduled, manage the river corridors for an overall mix of size classes of trees. The following mix of age classes should be achieved as the overall long-term objective of the viewshed.

Percent	Foreground Age Classes	
	Retention	Partial Retention
20	0-50	0-36
20	51 -1 00	73-1 08
20	101-150	37-72
20	151-200	109-1 45
20	201 -250	146-181

2. Emphasis will be on viewing large diameter trees and multi-age stands, both vertical and horizontal diversity are also to be emphasized. The large tree component should be as dispersed as necessary to give the overall character of large trees to the area. The standards in Tables 4-30 and 4-31 will be used in achieving desired visual characteristics.
3. A created opening is defined as an opening developed through management activities where tree heights are less than 20 feet. Created openings will be shaped and blended with the natural terrain.
4. Exceptions to created opening size and maximum percentage in openings at one time are permitted under catastrophic circumstances such as blow down, insect and disease attacks, wildfire, and others. Landscapes will be rehabilitated under these conditions.
5. Thinnings and plantings in the foreground will leave irregularly spaced trees. Mixed conifer stand regeneration in foregrounds and middle grounds will be planned for at least two species with no more than 65 percent in a single species.

#### Even-aged Management Visual Resource Standards

**TABLE 4-30. EVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Standards Factor		Ponderosa Pine Working Group North & South Associated		Lodgepole Pine Working Group
		Retention	Part. Retention	Partial Retention
Maximum % Harvest per Decade	Foreground	4	5	5
	Middleground	9	10	10
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	8	10	10
	Middleground	15	20	20
Target Tree Diameter (inches DBH)		30	24	12
Number of Target Trees at Final Removal (Per Ac.)		3-5	3-5	10
Maximum Unit Size (Ac.) <sup>1</sup>	Foreground >500 ft.	3	5	5
	Middleground	5	10	10



1 Applies to regeneration harvests. Not applicable to intermediate or overstory removal harvests except where an opening is created.

## Uneven-aged Management Visual Resource Standards

**TABLE 4-31. UNEVEN-AGED MANAGEMENT VISUAL RESOURCE STANDARDS**

Standards Factor		Ponderosa Pine Working Group North & South Associated		Lodgepole Pine Working Group
		Retention	Part. Retention	Partial Retention
Maximum % of Area in Created Openings at One Time <sup>1</sup>	Foreground	8	10	10
	Middleground	15	20	20
Target Stand Diameter (inches DBH)		24	20	12
Maximum Unit Size (Ac.) <sup>1</sup>	Immediate foreground	1	1.5	2
	Foreground >500 ft.	2	2	2
	Middleground	2	2	2

<sup>1</sup> Applies to group selection harvests. Not applicable to single tree or intermediate harvests except where an opening is created.

Fuelwood cutting may be permitted but will be limited to dead or down material.

### WATER AND SOIL

All dams, diversions, levees, and hydroelectric power facilities are prohibited within the management area.

### MINERALS AND ENERGY

Subject to valid existing rights, minerals that constitute the bed or bank or are situated within one-quarter mile of the bank of any river designated a Wild river are withdrawn from appropriation. On other river sections, through analysis and consideration of all public values, including minerals values, rivers may be recommended for withdrawal from mineral entry where appropriate and necessary.

Protect river and corridor from common materials mining. Common mineral materials will not be removed pending completion of the river management plans.

### LANDS AND LAND USES

Where opportunities exist, private land within a formally designated Wild and Scenic River will be acquired. All Federal land will be retained in public ownership.

Wild sections are 'Exclusive Areas' for development of new utilities (transmission lines, gas lines, etc.). Scenic and Recreation areas are 'Avoidance Areas.' Where no reasonable alternative exists, additional or new facilities should be restricted to existing right-of-way.

Meet Lands and Land Uses Forest-wide Standards and Guidelines.

### TRANSPORTATION

Existing roads and trails may be operated and maintained in keeping with overall management and river segment objectives. Reconstruction of roads and trails may be permitted upon approval of a project environmental assessment.

New roads and trails may be permitted, consistent with maintaining and protecting Wild and Scenic River values.

### FACILITIES

Maintain existing facilities that support Wild and Scenic River management objectives. Fences, gauging stations, and other management facilities may be permitted if there is no major effect

on the character of the area. Addition of new facilities, including recreation facilities, may be permitted, consistent with maintaining and protecting Wild and Scenic River values.

#### FIRE

For moderate to high intensity wildfires, the appropriate suppression response will emphasize a control strategy. Emphasis should be on protecting life and facilities.

Wildfire suppression efforts should utilize low impact methods, as use of heavy equipment may require restoration efforts to mitigate visual impacts.

#### FUELS

Prescribed burning is permitted. Low intensity prescribed fires, producing minimal scorch and rapid recovery, are the most desirable.

#### PESTS

Use integrated pest management (IPM) principles and methods. Prescribed fire may be used to help reduce stocking and conditions favorable for bark beetle and other insects and diseases.

Suppress pests when outbreaks threaten users and/or managed resources. Use suppression methods that minimize site disturbance.

## **A8 SCENIC AREA**

### **GOAL**

**PROTECT OR ENHANCE THE UNIQUE NATURAL CHARACTERISTICS OF DESCRIPTION LANDSCAPES NOTED FOR THEIR SCENIC BEAUTY.**

### **DESCRIPTION**

Scenic areas are areas of natural variety where unique physical characteristics give viewing pleasure and dispersed recreation opportunities to the forest user. The strategy applies to all or part of the current scenic areas and other identified selected forest areas with high scenic values.

The following defined areas are included in the management area:

- The Grande Ronde Roadless Area outside of the Wild River corridor (Walla Walla); and
- the Greenhorn Mountain Roadless Area plus Lost Lake, Olive Lake, and north of the Greenhorn Townsite and the Jumpoff Joe Roadless Area.

### **DESIRED FUTURE CONDITION**

Areas of unique natural beauty and high scenic quality will remain mostly unmodified. Opportunities to experience the scenic values, feelings of vastness and isolation from sights and sounds of human activity, sense of independence, closeness to nature, and self-reliance shall be maintained and enhanced. Around the edges or through parts of the area, existing roads are to be retained so that motorized users will have an opportunity to experience the unique beauty and sense of vastness. Trail systems featuring nonmotorized recreation will be fully developed to encourage and disperse use. In a few cases, vegetative manipulation shall be used to enhance the scenic and other resources in the area.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Semi-primitive Nonmotorized settings (ROS) will be provided within the area, except for intrusions of Semi-primitive Motorized or Roded Natural settings through edges or parts of the area or to vantage points. Areas will be managed to maintain opportunities for visitors to get away and achieve a feeling of remoteness from sights and sounds of others.

Recreation site modification and facility development should be level 2 or less (see Glossary), with facilities generally being limited to meeting safety and sanitary needs. A minimum of onsite controls and restrictions should be utilized to protect resources and promote safe use of the area.

Emphasize interpretive services to enhance understanding and appreciation of the area's special features. In order to do this, use self-discovery, augmented by books, guides, and maps, and a few minimal onsite facilities.

Nonmotorized use will be favored. Access will be mostly for remote walk-in or horseback activities in an area generally absent of roads; designated existing roads will provide motorized opportunities. Snowmobile use may be permitted on designated routes or areas.

Trail and associated facility construction, reconstruction, and maintenance will be permitted. The trail system will be the primary travelway and designed to take advantage of scenic opportunities, encourage and disperse use, provide varying (mostly easy, but some challenging) opportunities, and meet area objectives. Motorized equipment may be permitted in trail development and maintenance. Rustic road and trail signs within the area may be provided with directions, destination distances, feature names, and interpretation.

Based on limits of acceptable change criteria, if needed, implement limits on group size, number of animals, or other measures to meet social encounter criteria for semi-primitive recreation.

#### VISUAL

Retention is the visual quality objective (VQO) for the area including intrusions of Semi-primitive Motorized (SPM) and Roaded Natural (RN) areas; activities will meet retention VQO standards. The short-term goal of rehabilitation is used to upgrade landscapes as necessary.

Landscapes may be enhanced by opening views to distant scenery, unique landforms, unusual vegetation, or other features of interest.

#### CULTURAL

Meet Forest-wide Standards and Guidelines.

#### WILDLIFE AND FISH

Habitat improvement and maintenance projects for wildlife and fish are acceptable, provided they meet the Retention visual quality objective and goals for semi-primitive settings.

Wildlife habitat improvement projects are permitted in the Grande Ronde Scenic Area including Elbow, Bear, and Alder creeks and other drainages.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators.

Identified old growth units within the management area will be retained as part of the dedicated old growth system.

#### RANGE

Light grazing is permitted with a B range management strategy. The emphasis for forage allocation is to wildlife.

Where range improvements are needed, design and implement improvements to be compatible with scenic area objectives.

#### TIMBER

Timber will be managed on a nonscheduled basis. Trees will only be cut to meet or enhance scenic area objectives (i.e., catastrophic occurrences, trails, vistas, rehabilitation of discordant views, etc.).

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines. Operating plans are to include reasonable, operationally feasible requirements to meet scenic area objectives.

Provide access to valid mining claims and private lands.

Access proposals will be analyzed for stage of operations, adequacy of existing routes, and feasibility and reasonableness of alternative routes, with an emphasis on use of existing routes. Roads to be constructed will be done to minimum standard needed for the proposed use, will meet scenic area objectives, and will be obliterated to the extent feasible following completion of activities.

#### LANDS

National Forest System lands within a designated scenic area will be maintained in public ownership.

Where the opportunity exists, private land within a designated scenic area will be acquired. The area will be managed as an "Avoidance Area" for utility and transportation corridors. Other lands and land uses Forest-wide Standards and Guidelines apply.

#### TRANSPORTATION

Existing roads that contribute to the viewing experience, or that serve as access to valid mining claims, will be retained and maintained. Parking areas within or adjacent to the area will be located and designed to prevent noise and visual disturbances to users.

New roads will not be constructed or roads reconstructed (see Minerals and Energy for exceptions).

Close all roads except those needed as access to private lands, valid mining claims, or which are designated open to meet Scenic area and public use objectives.

#### FIRE

The appropriate wildfire suppression response will emphasize a control strategy for moderate to high intensity fires. Under appropriate fire prediction conditions, low intensity wildfires (0-2 foot flame length) may be permitted to play a natural role within the setting when resulting in a 1 to 2-year vegetative recovery.

Low impact wildfire suppression methods should be used; rehabilitation may be used to mitigate wildfire impacts in conflict with visual quality objectives.

#### FUELS

Prescribed fire may be used as a tool to manage ecosystems that are dependent on fire as part of their natural succession, or to enhance thrift and vigor of native vegetation.

Prescribed low intensity fire with a 1 to 2-year recovery period is acceptable. A less than 1 year recovery is most desirable if conditions are suitable.

#### PESTS

Use integrated pest management (IPM) principles to manage insects and diseases in meeting scenic area objectives. Suppress pests when outbreaks threaten scenic area objectives or resources in adjacent areas. Favor biological methods when available. Control of defoliators may be accomplished by spraying following approval of an environmental analysis. Use of salvage harvest is limited to catastrophic events.

## **A9 SPECIAL INTEREST AREA**

### **GOAL**

MANAGE, PRESERVE, AND INTERPRET AREAS OF SIGNIFICANT CULTURAL, HISTORICAL, GEOLOGICAL, BOTANICAL, OR OTHER SPECIAL CHARACTERISTICS FOR EDUCATIONAL, SCIENTIFIC, AND PUBLIC ENJOYMENT PURPOSES.

### **DESCRIPTION**

Several unique areas (generally small in size) have been identified for their special features. The areas may be classified under 36 CFR 294.9, and managed to protect the special features in their natural condition, and to foster public use and enjoyment of those features. Special features which fall within this description are:

Cultural-Historical Areas - Lands possessing historical sites, buildings, or objects of National Register significance related to a theme group, or those having special cultural association to the Native American Community.

- Greenhorn (NFJD)
- Olive Lake - Fremont Powerhouse (NFJD)
- Target Meadows (Including Burnt Cabin Overlook)(Walla Walla)

Geological Areas - Lands having unique geological features or significance.

- Big Sink (Walla Walla)

Botanical Areas - Lands containing specimens, groups of plant colonies, or plant communities which are significant because of form, color occurrence, habitat location, life history, ecology, variety, or other features.

- Charley Creek (Pomeroy)
- Ruckel Junction (Walla Walla)
- Sheep Creek Falls (Pomeroy)
- Shimmiehorn Canyon (Walla Walla)
- Teal Spring (Pomeroy)
- Woodward Campground (Walla Walla)

Viewpoints - Sites affording opportunities for viewing forest activities and landscape settings.

- Bald Mountain (Overlooking Lookingglass Canyon)(Walla Walla)
- Big Creek Meadow (Overlooking the North Fork of the John Day River)(NFJD)
- Big Hole (Overlooking the Wenaha River)(Walla Walla)
- Bridge Creek (Overlooking Bridge Creek Wildlife Area and the confluence of Camas Creek with the North Fork of the John Day River)(NFJD)
- Gray Rock (Overlooking Mt. Emily and Elgin)(Walla Walla)
- Lookout Mountain (Overlooking Alder Creek and Bear Creek drainages of the Grande Ronde River)(Walla Walla)
- Potamus Point (Overlooking Potamus Creek)(NFJD)
- Table Rock (Overlooking Mill Creek and the Walla Walla River valley) (Walla Walla)

- Umatilla Breaks (Overlooking the North Fork Umatilla Wilderness)(Walla Walla)

Other Areas—Includes lands containing significant flora and fauna or fossils for zoological or paleontological interpretations.

#### DESIRED FUTURE CONDITION

The special attributes for which the areas are recognized shall provide a variety of unique recreation opportunities for public use and enjoyment. The areas and features will remain in a substantially undisturbed condition. Fences, signs, viewpoints, and other facilities may exist if needed to protect the features or to provide for public use and enjoyment. Evidence of management activities will be subordinate to these special points of interest. Various methods of interpretive services are to be provided to enhance understanding and appreciation of them.

#### MANAGEMENT AREAS STANDARDS AND GUIDELINES

##### General

Management plans may be developed for individual areas and may supplement direction provided for the management area. Any such plans will be amended to the Forest Plan.

##### RECREATION

Manage the special interest features, sites, and areas to provide Semi-primitive or Roaded Natural ROS Settings.

Access will relate to features being managed: activities will be mostly road oriented with some access through walk-in or horseback opportunities in a few areas.

Visitor use and activities will be managed to prevent degradation and enhance features of the Special Interest Area. Onsite controls and restrictions may be used to protect resources and promote use and enjoyment of the area.

Interpretive services will be emphasized.

Site development and facilities will be designed and located to protect or enhance the special features. Facilities may be provided for visitor use, environmental interpretation, safety of visitors, and to protect or enhance resource values. Facilities may be included inside the area where not in conflict with the overall purpose of the special interest area.

Off-highway vehicle (OHV) use will be restricted to designated routes.

Trails may be developed and maintained to meet the objective of the Special Interest classification, especially for onsite interpretation.

##### VISUAL

Manage for Retention visual quality objective.

##### CULTURAL

Meet Forest-wide Standards and Guidelines.

##### WILDLIFE

Wildlife habitat improvement and maintenance are permitted within the objective of the area. Emphasis is on habitat improvement for viewing wildlife.

##### FISH

Meet Forest-wide Standards and Guidelines.

##### RANGE

Domestic livestock may be permitted to utilize existing forage without changing overall natural Characteristics or conflicting with the purpose of the area. Structural improvement,

development, and maintenance is permitted where livestock use is allowed; structural improvements may be used to exclude domestic livestock.

#### TIMBER

Timber harvest will not be scheduled or programmed. Tree cutting and vegetation management may be permitted in order to maintain or enhance the special features of the interest area, to provide for public safety (in areas of concentrated use), to construct or maintain improvements, or in a catastrophic situation. When tree cutting is employed, systems will be designed to protect the resource and meet SIA goals. Firewood cutting shall not be allowed.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS

Protection of SIA areas will be required during mineral exploration and development activities.

An area may be recommended from withdrawal for mineral entry in situations where mitigation measures do not adequately protect management area values, and all values (including minerals) have been evaluated.

Removal of common mineral material within the management area will not be permitted.

#### LANDS

Retain all Special Interest Areas in public ownership. Honor existing private access rights-of-way.

For historic-cultural and other resources, special use authorizations are acceptable, provided management objectives are met, area values are protected, and use is guided by, and conforms with, an approved management plan.

Forest-wide Standards and Guidelines apply to other lands and land uses.

#### TRANSPORTATION/FACILITIES

Roads are generally not permitted unless they exist prior to classification or they facilitate the recreation use, enjoyment, and interpretation of the area. Facilities may be developed and maintained to meet the objective of the special interest classification. Roads, walkways, gates, signs, and other facilities will meet the Secretary of Interior's Standards for Historic Preservation Projects in Cultural-Historical areas.

#### FIRE

The wildfire suppression response strategy of confine, contain, and control is consistent with area objectives. Wildfire suppression efforts will utilize low-impact control methods. Use of heavy equipment on cultural resource properties is prohibited.

#### FUELS

Fuel treatments should emphasize maintenance of the natural character of the area. For cultural/historical areas, fuel treatments will be planned and implemented to avoid negative impacts. Loadings should be reduced to minimize potential of high-intensity fires. Acceptable treatments on cultural-historical areas will include hand piling, hauling material away, etc. Prescribed fire may be used to manage other types of SIA's where it aids in maintenance and protection of the feature.

#### PESTS

Utilize integrated pest management (IPM) principles and strategies to prevent unacceptable vegetation losses due to pests. Emphasize prevention and early detection measures.



Suppress pest outbreaks with a minimum of disturbance to protect users and/or resources. Favor biological and silvicultural treatments where possible. Remove hazardous trees as identified in vegetative management plans.

## **A10 WENAHA-TUCANNON SPECIAL MANAGEMENT AREA**

### **GOALS**

MANAGE THE WENAHA-TUCANNON SPECIAL MANAGEMENT AREA FOR MULTIPLE-USE PURPOSES AS SET FORTH IN:

The Conference Report of the Endangered American Wilderness Act of 1978 (HA. Report No. 95-861) (US. Laws, Statutes, etc. 1978c) recognized both the Wilderness Act and special conditions in two areas. The report emphasized the traditional big game hunting use and the desire to maintain fish and wildlife populations and habitat.

### **DESCRIPTION**

Two areas are originally identified. In the Forest Plan, the management area applies to that part of the Upper Tucannon Roadless Area east of Bear Creek (Pomeroy) and south of the Tucannon River.

### **DESIRED FUTURE CONDITION**

Elk habitat management is to be emphasized in order to provide the opportunity for traditional hunting. The Forest will be seen as a variety of vegetative patterns creating a mosaic of forage and cover for big game. Although management activities such as timber harvest and road construction will be evident, clearcuts will be absent. Narrow roads that follow the contour of the land will allow access to the area, but shall be closed to motorized use at the conclusion of logging and reforestation activities. High quality water is to be produced from the areas. Dispersed recreation of all types shall be available but access will remain limited.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

A Roaded Modified social and physical setting may result from meeting the goal; Roaded Natural or Semi-primitive settings may occur along boundaries near wilderness. Most dispersed recreation activities are available and emphasized, but hunting and fishing will be featured.

Recreation site modification and facility development levels 1 and 2 (see Glossary) are permitted. Developed recreation is not permitted.

Access will be mostly for walk-in or horseback opportunities on roads and trails closed to motorized use.

Trail and associated facility construction, reconstruction, and maintenance are permitted. Protection and improvement of existing trails is emphasized.

Off-highway vehicle (OHV) use is not permitted.

#### **VISUAL**

Visual quality objective emphasis is middleground Partial Retention, but may include some Modification.

#### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

#### **WILDLIFE**

Manage habitat to maintain or enhance resident and migratory elk populations, as follows:

Elk habitat will be managed to achieve a habitat effectiveness index of no less than 60, including discounts for roads open to motorized vehicular traffic, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). Marginal cover, satisfactory cover,

and forage areas will be managed to meet size and spacing criteria as described in Habitat Effectiveness for Elk on Blue Mountain Winter Ranges (Thomas and others 1988).

The potential habitat effectiveness standard will be measured on a subwatershed (allocation zone) basis. Potential habitat effectiveness may fall below the 60 percent level on an individual project so long as the subwatershed (allocation zone) objective is met. In such cases, the project objective is long-term (20 years) improvement in cover.

#### Cover

A minimum range of 15 percent of the area will be managed as satisfactory cover (20 percent is desired). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover potentially attainable will be created or maintained. A minimum of 30 percent of an area will be managed as total cover.

Stands managed for satisfactory cover will meet the following criteria:

- Be at least 40 feet in height, with a canopy closure of at least 70 percent in mixed conifer/lodgepole pine types, and no less than 50 percent in the ponderosa pine type,
- should be 1,200 to 1,850 feet in width (larger cover areas are preferable). Exceptions may be made by wildlife biologists based on an on-the-ground assessment of the stand(s) value for elk; and
- satisfactory cover should generally appear as a multi-layered timber stand.

Marginal cover will be no less than 10 feet in height with a canopy closure of at least 40 percent, and should be 600 to 1,200 feet wide. Exceptions may be made by wildlife biologists based on an on-the-ground assessment of the stand(s) value for elk.

All cover areas will be managed to provide sufficient vegetation to obscure 90 percent of a standing elk at a distance of 200 feet or less.

#### Forage

Available forage will be allocated to meet big game management objectives. Available excess forage may be allocated to domestic livestock.

Big game forage improvement projects such as seeding, browse planting, and fertilization may be used. Structural improvements may be used to protect these investments. Prescribed burning may be practiced in order to maintain a static or upward trend in fair or better range condition.

#### Other

Emphasis should be placed on retaining and protecting big game, key use areas, and habitats such as migrational corridors, calving/fawning areas, wallows, springs, seeps, and bogs.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators and maintained for other cavity users

An average of one unburned slash pile for every 2 acres should be retained on even-aged regeneration harvest units for wildlife cover.

Manage to maintain or establish a high level of vegetative diversity at a minimum level of 15 percent in each of the following five seral stages:

Grass/Forb	Young Sawtimber
Shrub/Seedling	Mature/Overmature
Pole/Sapling	

## FISH

Fish habitat improvement projects and their maintenance will be permitted.

## RANGE

Domestic livestock grazing is permitted at Range Management Strategy B. All available range and livestock management practices consistent with the primary management goal of maintaining or enhancing habitat for big game and other wildlife species may be used. Range improvements may be permitted to the extent they are compatible with the management goal.

## TIMBER

Permit timber harvest on a scheduled basis, and road construction and management within the following constraints:

1. The full range of silvicultural practices and intensities, except clearcutting, will be permitted. The selected silvicultural systems applied to timber stands within suitable forest lands will be based on a site-specific examination and analysis, and will be designed to achieve management goals. Harvest practices may include shelterwood, salvage, removal, and commercial thinnings, as well as group or individual tree selection. Other silvicultural practices may include natural and artificial regeneration, planting genetic stock when available, precommercial thinning, release, and insect, disease, and animal damage protection.
2. Logging and road building should be done with conventional practices.
3. Timber harvest activities are not to be permitted in these areas during the months of October and November, or during elk calving season.

## WATER

Provide specified erosion control measures. Install the types and quantities of drainage structures associated with these roads, which will continue to function properly for several years without periodic maintenance.

Meet Forest-wide Standards and Guidelines.

## SOIL

Special erosion protection measures will be undertaken to protect the resource.

Roads shall be treated during permanent road closure periods so as to minimize the danger of soil erosion. Erosion control measures to be taken may include, but are not limited to:

1. Revegetation of the roadbed with herbaceous species,
2. outsloping,
3. crossditching,
4. covering with logging slash, and
5. hand maintenance of drainage structures

## MINERALS

Meet Forest-wide Standards and Guidelines while meeting the intent of the Conference Report (fish, wildlife, soil, and water protection measures).

## LANDS

Retain all lands in Federal ownership. Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

All roads built into these areas for the purpose of timber harvesting are to be designed, built, and maintained to minimize soil disturbance and meet objectives for, and minimize impacts on, fish and wildlife.

Roads shall be constructed and maintained at the minimum widths necessary to safely accommodate logging equipment and trucks. The basic running surface width of these roads shall not exceed 12 feet.

Maintain standards of alignment and grade that allow roads to follow, as nearly as possible, the contours of the land with a minimum of excavation and earth movement to accomplish the construction.

The roads built into timber harvest areas shall be closed to motorized vehicles at the conclusion of logging and reforestation activities. During the closure periods, measures (including steel gates with suitable locks with openings adequate for passage of people and horses) shall be taken to ensure that motorized vehicles cannot enter onto or travel upon these roads, unless needed in emergency situations for the protection of life or property. Suitable measures shall be taken to assure their revegetation.

#### FIRE

For all wildfires in the management area, all suppression strategies (appropriate responses) may be used. Suppression practices will be designed to protect investments in managed forests and to prevent large acreage losses to wildfire.

#### FUELS

Fuels should not exceed an average of 12 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52, 1976) (USDA Forest Service 1976b):

Even-aged Management	3-PP-4-PC	4-PP-I-TH	I-PP&ASSOC-4-PC	2-LP-3-PC
Uneven-aged Management	2-PP-4-PC	12-LP-3-PC	4-PP-I-TH	5-PP&ASSOC-4-PC

All types of prescribed fire may be used to accomplish management objectives.

#### PESTS

Use integrated pest management principles and strategies in meeting management area objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments can be prescribed early.

Consistent with resource objectives, protect forest stands (habitat) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that increase pest populations above epidemic levels. Suppress insects and disease using cost-efficient strategies when outbreaks threaten resource management objectives.

## **B1 WILDERNESS**

### **GOAL**

MANAGE TO PRESERVE, PROTECT, AND IMPROVE THE RESOURCES AND VALUES OF THE FOREST WILDERNESSES, AS DIRECTED BY THE WILDERNESS ACT OF 1964.

### **DESCRIPTION**

The Umatilla National Forest has three designated wildernesses:

1. Wenaha-Tucannon located in the northern Blue Mountains of northeastern Oregon and southeastern Washington. A total of 177,465 acres lies within the wilderness, in three counties in Washington and one in Oregon.
2. North Fork Umatilla located in the northern Blue Mountains of northeastern Oregon. A total of 20,144 acres is included in the wilderness in two counties in Oregon.
3. North Fork John Day located in the central Blue Mountains of northeastern Oregon. There are 106,787 acres in the wilderness in two counties in Oregon.

Specific management direction for the Wenaha-Tucannon, North Fork John Day, and North Fork Umatilla wildernesses is summarized in the Forest Plan, Appendix 6.

### **DESIRED FUTURE CONDITION**

Each of the Forest wildernesses will appear to be affected primarily by the forces of nature, with the imprint of human activities substantially unnoticeable. Natural processes, including fires, will continue to be the primary forces affecting the condition of wildernesses. The Limits of Acceptable Change (LAC) process will be fully implemented to provide the framework for establishing acceptable and appropriate resource and social conditions (especially the amount and type of use) in wilderness settings. The areas will be managed so as not to have degraded the wilderness attributes for which they were designated. There will be some evidence of human influence due to the existence of valid mining claims and past use; however, mitigation techniques will be utilized which minimize the impact of these activities. The surrounding area will be managed so as not to adversely affect the wilderness resource. Access roads and trailheads will distribute use adequately. Most trails will provide an element of challenge and some risk.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **WILDERNESS**

General:

Wildernesses will be managed as follows:

1. Provide opportunity for solitude, physical and mental challenge, primitive recreation experiences, education, and research.
2. Maintain the wilderness characteristics in such a manner that ecosystems are unaffected by human manipulation and influences, and plants and animals develop and respond to natural forces.
3. Natural ecological succession including natural fire will be allowed to occur without endangering adjacent lands.
4. Emphasis is on preserving, enhancing, and restoring wilderness character and public values. Protection of the wilderness resource will be the primary criterion used to resolve conflict between resource areas.

5. Use of motors and mechanized equipment is prohibited. Exception can be permitted with Forest Supervisor's approval for emergencies involving life, health, and safety. The Regional Forester must approve all other use of motorized equipment.
6. Pacific Northwest Region objectives for wilderness areas will be used as Forest-wide Standards and Guidelines for management of wilderness areas and providing wilderness opportunities for the public.
7. Wildernesses will be managed to prevent degradation. Each wilderness will be kept essentially as wild as it was at the time of classification. Nondegradation will apply to all values of wilderness: social, physical, and biological values. If degradation occurs at specific sites or areas, an equal or greater area will be improved elsewhere to keep overall condition at least as good as it was prior to the new impact. Conditions will be improved in situations where natural processes are not operating freely, or where the values for which the wildernesses were created are impaired. Examples of this situation occur where core areas of the wildernesses do not meet at least Primitive Wilderness Resource Spectrum (WRS) conditions and where popular destination points near the edges of wildernesses (within influence of day-use activities), or heavily-used travel corridors within the core area, do not meet at least Semi-primitive WRS conditions. The impact of mining activities in the North Fork John Day Wilderness is another example of a condition that will be improved.

## RECREATION

### Use

1. Recreation is an appropriate use of the wildernesses to the extent that it does not degrade values established for wilderness.
2. Management action of limiting and/or distributing visitor use will be based on application of the Limits of Acceptable Change (LAC) process described by Stankey, et al., in The Limits of Acceptable Change (LAC) System for Wilderness Planning (General Technical Report INT-176) (USDA Forest Service 1985b). The lands within the wildernesses will be assigned to one of the wilderness resource spectrum (WRS) classes described for each wilderness. The management emphasis for each opportunity class is stated in the Managerial Setting portion of the description.
3. Manage the traditional hunting use to protect wilderness characteristics and resources
4. Visitor use will be managed at a level compatible with the wilderness resource to prevent loss of solitude or unacceptable depreciation of the wilderness qualities. The primary emphasis will be on maintaining wilderness conditions, according to specified indicators and standards, rather than a specified amount of use. Tentative capacities for the wildernesses are:  
  
Wenaha-Tucannon - 115,000 RVD/yr.  
North Fork Umatilla - 15,000 RVD/yr.  
North Fork John Day - 85,000 RVD/yr.
5. If indicators do not meet standards established for each wilderness, the following procedures will be used by priority:
  - a. Inform/educate users and correct resource damage;
  - b. Where there is physical site alteration, make the site less appealing or less acceptable, remove evidence of use, naturalize the site, and scatter debris;
  - c. Restrict causative activity by regulations; e.g., party size, length of stay, type of equipment, or pack stock;

- d. close site or area to use until it is rehabilitated or restored to wilderness conditions and suggest alternative areas for use; and
  - e. restrict number of visitors.
6. Information and education contacts will emphasize appropriate wilderness behavior, distribution of use, management goals and objectives, and visitor assistance. Programs will be designed to allow 60-80 percent of the users to read or hear the wilderness message prior to entering the area.
  7. Encourage visitors to adopt a 'leave no trace' ethic:
    - a. Use self-contained stoves,
    - b. remove fire circles and scatter remaining charcoal,
    - c. refrain from cutting green trees or limbs,
    - d. practice a Pack-It-In, Pack-It-Out policy, and
    - e. use biodegradable soap and dispose of human waste and waste water from cooking and washing at least 100 feet from streams and lakes.

#### Facilities:

1. Construction, installation, and maintenance of permanent improvements will generally be avoided. Rustic facilities (development level 1) may be added or maintained to preserve and/or protect the wilderness resource. Facilities will be designed and placed to minimize their intrusion upon the wilderness setting and will meet use requirements within limits of acceptable change for the WRS class.

#### Trails:

1. Provide a range of trail difficulty consistent with WROS classes. Trails will generally be managed to provide 'More' and 'Most' difficult opportunities.
2. Trails will be constructed, reconstructed, or maintained at standards appropriate to the WRS setting specified in the Trail Management Plan.

#### Activities:

1. Activities may be restricted or controlled as necessary to preserve the opportunity for solitude and primitive recreation experiences.
2. Contain permanent loss of ground cover to a maximum of 800 sq. ft. per acre in heavily used areas. Revegetation of impacted areas can occur.

#### Recreation Opportunity Spectrum:

The wilderness will be managed to provide the setting, activity, and experience in the Recreation Opportunity categories of Primitive and Semi-primitive Nonmotorized.

Core areas of the wildernesses will generally be managed to meet Primitive WRS conditions, except that heavily used travel corridors may meet Semi-primitive Nonmotorized (SPNM) conditions. Popular destination points near the edges of wildernesses (within influence of day use activities) will meet at least SPNM conditions.

#### Signs:

1. Provide for minimal signing at entrances and key trail intersections. Use standard oak signs for entrances and trail signs.
2. Where activities occur adjacent to the wilderness, the activity will be responsible to locate and post the boundary.



## VISUAL

Preservation and retention visual quality objectives will meet the physical and biological goals for the areas. Preservation is the primary VQO for the wilderness. The retention VQO will apply to management activities (e.g., gas and mineral exploration, range improvements, trail construction).

## CULTURAL

Meet Forest-wide Standards and Guidelines.

Cultural resource sites and structures will be protected until they are evaluated. Sites or structures not qualifying for the National Register of Historic Places will be removed or allowed to deteriorate naturally unless they are:

1. Necessary to support the values set forth in Section 4(b) of the Wilderness Act of 1964:  
or
2. Serving administrative purposes as necessary for protection of the wilderness resource (Wilderness Act of 1964 [Section 4(c)]) (U.S. Laws, Statutes, etc. 1964); or
3. Essential to cultural resource management as described in FSM 2323.82.

All structures shall be evaluated for their historical significance. Evaluation should include comparative analysis to determine a property's relative importance.

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 outlined in 36 CFR 800 for comment by the Advisory Council on Historic Preservation. Abandoned structures should be allowed to deteriorate naturally after following procedures outlined in 36 CFR 800, including recording the site to appropriate standards and other mitigative measures described in the concluding Memorandum of Agreement. Any retained or maintained structure shall be managed to have a minimum impact on the wilderness resource.

If it is determined, after historical evaluation, that a structure is not of significance, it shall be removed by a practical method compatible with the goals of this Plan and the site shall be restored to as natural a condition as is practical.

Onsite interpretation will not be done. Interpretation may be done offsite with brochures and audio-visual programs.

## WILDLIFE AND FISH

Wildlife viewing, hunting, and fishing are appropriate uses of wilderness.

Wildlife and fish habitat management will be permitted where they conform to the management of the wilderness resource.

Reestablishment of indigenous species is permitted, subject to environmental assessments and Regional Forester approval.

Coordinate with the state wildlife and game agencies to establish user densities that are compatible with the management of the wilderness.

## RANGE

Grazing of domestic livestock is permitted at places and approximate levels established prior to the effective date of wilderness classification. A level 'B' or 'C' strategy for range can apply. Sustained livestock grazing may be reduced if damaging to the resource. Existing livestock management improvements may be maintained. Structural range improvements may be built only when necessary to protect the resource (not to increase capacity).

Permittees will be encouraged to install and replace range improvement facilities with native materials where practical.

All grazing areas within the wilderness will be designated as livestock grazing allotments. Objectives for the allotment management will be consistent with resource conditions in the assigned WRS. As a minimum, managers will:

1. Establish recommended grazing dates, based on range readiness checks,
2. Determine capacity, condition, and trend, and
3. Monitor actual use levels.

Use of supplemental feeds for recreation livestock will be encouraged over open grazing. Encourage use of feeds that are free of nonindigenous and noxious weed seed.

#### TIMBER/VEGETATION

Timber harvest is not permitted.

Natural ecological processes of plant succession will be encouraged to occur, including ecological systems dependent on the natural role of fire.

Live trees may be utilized for administrative purposes.

Fuelwood gathering is restricted to onsite use in conjunction with recreation and authorized activities.

Geological and mineral surveys may be performed by the US. Geologic Survey and Bureau of Mines.

#### WATER AND SOIL

Protect full natural flow of streams within the wildernesses, except for valid water rights existing at the time of classification.

Water developments may be authorized by the President where such developments are deemed necessary.

Meet Forest-wide Standards and Guidelines for Soil and Water.

#### MINERALS

The wilderness is closed to mineral entry and mineral leasing, subject to valid existing rights.

Occupancy, structures and use of motorized and mechanized equipment related to mining activities are permitted to the extent allowed by law and regulations. Every reasonable effort should be made through the Operating Plan to minimize their effect on the wilderness resource, compatible with rights of claimants and lessees.

#### LANDS

Acquisition of private parcels of land within the wilderness boundary is a high priority.

Wildernesses are an 'Exclusion Area' for utility corridors.

Rights-of-way and nonrecreational special uses will be managed in conformance with the Wilderness Act and capacity objectives.

Nonconforming uses established prior to wilderness designation will be administered so as to minimize their impacts. New nonconforming structures (temporary or permanent) and uses are not permitted

#### TRANSPORTATION

Roads are not permitted except for those with legally established rights.

## AIR QUALITY

Forest activities outside the wilderness will be conducted to protect the clarity of the air to maintain visibility standards

Where manageable or negotiable, identify and mitigate outside influences adversely affecting air quality within wildernesses. The air quality related values will be identified when a Prevention of Significant Deterioration (PSD) action that may impact the wilderness is received.

## FIRE

Fire will be considered an inherent part of the general wilderness ecosystem. All naturally-occurring ignitions within wilderness are prescribed fire until declared wildfire.

All wildfires will receive an appropriate suppression response. Suppression actions may include surveillance, confinement, containment, or control depending on fire location and burning conditions.

Low impact suppression measures will be applied. Some forms of mechanized equipment may be used if the result is to lessen the long-term physical and social impact on wilderness areas from suppression actions.

Prescribed fires may be used as a tool to manage ecosystems within the wilderness in accordance with management plans for each wilderness (FSM 2324).

## PESTS

Monitor the levels and activities of pests normally associated with wilderness and old growth ecosystems. Most insect and disease agents do not normally pose threats to adjacent lands; effects of endemic levels will be accepted as naturally-occurring phenomena.

Suppression activities for insect and disease outbreaks may be permitted with Chief of the Forest Service approval to prevent loss within wilderness and/or unacceptable resource damage to resources in adjacent areas. Favor biological methods when available. Management of insects and diseases will follow direction in FSM 2324.1.

## GENERAL PROCEDURES

### EMERGENCIES

1. Motorized equipment and mechanical transport may be allowed when an emergency condition exists involving human health and safety (FSM 2326.1).
2. Removal of seriously ill injured, or deceased persons will be considered an emergency justifying landing of an aircraft. For emergency helicopter landings, natural openings will be utilized where possible rather than cutting new openings.
3. Responsibility for search and rescue of lost or injured visitors is held by the county of jurisdiction (County Sheriffs). The Forest Service will provide assistance within its capacity as requested. The Forest Service will provide for other considerations including limiting the impact of operations on wilderness values to a minimum.
4. Public communications from inside wilderness will be restricted to emergencies.

### RESEARCH

Research may be conducted when:

1. Necessary to support values set forth in Section 4(b) of the Wilderness Act; or,
2. It cannot be accomplished outside the wilderness; and,
3. It is done in compliance with the protection of the wilderness values and wilderness experience of visitors.

## **C1 DEDICATED OLD GROWTH**

### **GOAL**

PROVIDE AND PROTECT SUFFICIENT SUITABLE HABITAT FOR WILDLIFE SPECIES DEPENDENT UPON MATURE AND/OR OVERMATURE FOREST STANDS, AND PROMOTE A DIVERSITY OF VEGETATIVE CONDITIONS FOR SUCH SPECIES.

### **DESCRIPTION**

Designated mature and old growth forest stands will be located and retained to distribute suitable habitat throughout the Forest for wildlife species dependent upon this habitat type. Forest stands will meet ecological, biological, size and distribution criteria as suitable old growth for survival and reproduction of indicator species. The Forests management indicator species for this habitat group include the pileated woodpecker, pine marten, and northern three-toed woodpecker. Other important dependent species include northern goshawk, Vaux's swift, Townsend warbler, brown creeper, and a variety of cavity users. If an insufficient supply of mature and old growth forest stands is available, stands capable of meeting old growth criteria will be identified and retained as old growth.

The management area applies to the system of dedicated old growth habitat units distributed across the Forest to meet requirements for Forest indicator species. All Districts include a few additional dedicated units to improve overall old growth distribution. Locations of dedicated units are shown on management area and old growth resource maps.

### **DESIRED FUTURE CONDITION**

Old growth areas will be characterized by stands of naturally appearing overmature trees. Stands of mature trees may be included in the old growth category to provide a better distribution of this habitat type throughout the Forest. Trees in these stands are relatively large (with many trees greater than 21 inches d.b.h.), past the point of rapid growth, and some have visible evidence of decay and decline including mycorrhizal fungi and other microorganisms. Other typical characteristics include a multi-layered, deep canopy with trees of two or more age classes and an abundance of both standing dead and down wood material. Stands will be dispersed in quantities and sizes which meet the needs of dependent wildlife species.

The mature and old growth stands will contribute towards the Forest diversity and aesthetic values. Management activities will normally be excluded within designated units except to enhance or perpetuate old growth forest habitat conditions. Management emphasis will be on supporting sustainability of old growth/mature tree habitat characteristics and components. Vehicle use is also normally restricted, but will occur on designated routes (roads and trails) to access other parts of the Forest.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Dispersed recreational opportunities and settings will range from Primitive to Roded Natural (ROS Users Guide). Recreational opportunities will be consistent with the maintenance of old growth habitat characteristics.

No developed recreational facilities are permitted.

Access will be mostly for walk-in or horseback opportunities on roads closed to motorized use, with some open road opportunities.

Motorized vehicle use will be restricted to only those designated routes (roads and trails) necessary to cross the area and/or provide for activities occurring in adjacent management areas.

## VISUAL

Management will result in a natural appearing (Retention) landscape. Visual quality will be subordinate to old growth habitat goals.

## CULTURAL

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

In addition to size and distribution criteria described in the Forest-wide Standards and Guidelines, designated old growth habitat units will include the following items:

Twelve to fifteen live trees per acre greater than 21 inches d.b.h. (6 inches d.b.h in lodgepole pine stands).

A minimum average of 225 hard snags 12 inches d.b.h., per 100 acres, in mixed conifer and ponderosa pine stands (15 of these hard snags will be greater than 20 inches d.b.h.); and an average of 180 hard snags, greater than 10 inches d.b.h., per 100 acres, in lodgepole pine stands. Dead and down tree levels will include an appropriate number of the larger diameter classes (12-inch and 20-inch d.b.h. trees) to provide habitat at 100 percent of the potential population level. At least 50 percent of these snags will be 15 feet tall or taller, with the remainder at least 6 feet high.

A minimum of two to four down logs at various stages of decomposition per acre in muted conifer and lodgepole pine stands, and at least one to two logs per acre in ponderosa pine stands. The logs should be at least 6 inches in diameter at the large end for lodgepole pine, 17 inches in diameter at the large end for ponderosa pine and mixed conifer, and 20 feet or more in length.

Two or more canopy levels. A single canopy level is acceptable in lodgepole pine stands.

At least 55 percent crown closure with emphasis on stands with 70 percent or more crown canopy closure.

Evidence of moderate to high levels of decadence.

A low level of human disturbance with few if any open roads within the stand.

Maintain snags to provide 100 percent of the potential population level within the designated old growth habitat areas. Maintain a minimum of two hard snags, greater than 10 inches d.b.h., per acre, on an additional 300 acres immediately adjacent to the designated old growth units as feeding habitat for pileated woodpeckers.

Snags and dead and down tree habitat will be created in designated old growth units and adjacent feeding areas that are deficient in these habitat components. Practices may include girdling, topping, or felling of live trees.

In the event of catastrophic loss of existing designated old growth habitats causing a drop below the minimum distribution requirements, replacement units in the most advanced successional stage available will be selected in close proximity to the original location.

Structural and nonstructural habitat improvements (including prescribed burning) and their maintenance may be utilized, but only to maintain or enhance old growth habitat characteristics.

## FISH

All fish habitat improvement, development, and maintenance projects are permitted within the constraints of retaining or enhancing old growth habitat characteristics.

Use of mechanical equipment for fish habitat improvement projects is permitted although no roads or permanent trails may be constructed for access.

## RANGE

Moderate levels of livestock grazing are permitted; however, forage in general will be limited to that which is normally present under densely forested canopies. Bedding by domestic sheep in dedicated old growth units will not normally be permitted.

Maintain existing range improvement structures. Additional structural improvements are generally not permitted.

## TIMBER

Timber management and harvest activities will not be scheduled or permitted.

Fuelwood cutting, salvage harvest, or the removal of any dead or down material will not be permitted, unless the unit(s) is lost as a result of catastrophic conditions.

## WATER AND SOIL

Meet Forest-wide Standards and Guidelines

## MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

## LANDS

Exchange of land involving existing old growth may occur where the quality, size, and spacing requirements of dedicated old growth units are met.

Issuance of any permits or licenses that may adversely impact dedicated old growth units will be discouraged.

## TRANSPORTATION

Roads and trails are permitted but will be limited to the number and miles necessary to meet surrounding area objectives, while minimizing impacts to wildlife in the old growth units. Activities may include construction and reconstruction of new roads and trails, and operation and maintenance of open roads and trails. Where feasible and practical, road construction within designated old growth units should be avoided.

Most roads (and areas) in dedicated old growth units should be closed; restrict motorized vehicle use to designated open roads and trails.

## FIRE

For moderate to high intensity wildfires, the appropriate suppression response should emphasize control strategies.

Low impact suppression methods should be favored. Use of mechanical equipment to suppress wildfires is acceptable within the objective of minimizing the impact of the suppression effort on the old growth values.

## FUELS

Natural fuel treatments are permitted to maintain or enhance old growth habitat characteristics or reduce the potential for a high number of and/or severely burned acres.

Natural fuels should not exceed an average of about 12 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Natural Forest Residues (Technical Report PNW 105) (USDA Forest Service 1980):

2-PP&ASSOC-4      3-LP-3      2-MC-3      6-PP-4

Prescribed burning is the preferred method of fuel treatment.

## PESTS

Monitor the levels and activities of pests normally associated with old growth ecosystems. Effects of endemic levels will be accepted as naturally occurring phenomena. No special management practices will be utilized to control losses from insects or diseases at endemic levels.

Suppress or control pests when outbreaks reach epidemic levels and threaten catastrophic loss of dedicated old growth resources or other resources on adjacent lands. Favor biological treatment methods or prescribed burning. IPM methods will not conflict with wildlife objectives.

## **C2 MANAGED OLD GROWTH**

### **GOALS**

PROVIDE AND PROTECT SUFFICIENT SUITABLE HABITAT FOR WILDLIFE SPECIES DEPENDENT UPON MATURE AND OVERMATURE LODGEPOLE PINE FOREST STANDS, AND PROMOTE A DIVERSITY OF VEGETATIVE CONDITIONS FOR SUCH SPECIES.

### **DESCRIPTION**

Designated mature and old growth and replacement forest habitat within the delineated higher elevation lodgepole pine types will be located, distributed, and managed (using silvicultural techniques) for wildlife indicator species. Forest stands will meet ecological, biological, size, and distribution criteria as suitable old growth for survival and reproduction of indicator species. The Forest management indicator species for this habitat group is the northern three-toed woodpecker. Other important dependent species include northern goshawk, Vaux's swift, townsend warbler, brown creeper, and a variety of cavity users. Developing lodgepole pine old growth stands, in various stages of management, will meet size and distribution criteria. Locations of managed units are shown on management area and resource maps.

### **DESIRED FUTURE CONDITION**

In managed old growth stands, activities will often be evident and directed towards development and maintenance of old growth lodgepole forest attributes. Stands will be dispersed in quantities and sizes which meet dependent wildlife species needs. Lodgepole stands managed for old growth will have two stand characteristics, each dependent on the extent of management activities such as timber harvest, planting, thinning, and others. The lodgepole pine units will consist of about equal acreage in two distinct age classes, 0 to 60 and 60 to 120. The areas with stands less than 60 years old will often appear as 'typically' managed forest stands influenced by timber management practices; and the stands over 60 years will display typical signs of old growth, with large diameter trees, abundant dead and down material, vertical diversity, evidence of some decadence, and fading evidence of past timber management practices. Dispersed recreation opportunities will be available in the younger stands but motorized opportunities will be limited in older stands. The mature and old growth stands will contribute towards the Forest diversity and aesthetic values.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Dispersed recreational opportunities will range from Roaded Natural to Roaded Modified (ROS Users Guide). Recreational opportunities will be consistent with the maintenance of old growth habitat characteristics.

No developed recreational opportunities or facilities are permitted.

Access will be mostly for walk-in or horseback opportunities on roads closed to motorized use, with some open road opportunities.

Motorized vehicle use will be restricted to the designated routes (roads and trails) necessary to cross the area (see Transportation) and/or to provide access for activities occurring in adjacent management areas.

#### **VISUAL**

Management activities will result in a natural appearing (Retention) to a modified (Maximum Modification) visual setting. Visual quality will be subordinate to old growth habitat goals.

#### **CULTURAL**

Meet Forest-wide Standards and Guidelines.



## WILDLIFE

In addition to size and distribution criteria described in Forest-wide Standards and Guidelines, managed old growth habitat units will include the following items in the oldest age classes (60-120 years for lodgepole pine):

1. Twelve to fifteen live trees per acre, greater 6 inches d.b.h. in lodgepole pine stands.
2. an average of two hard snags, greater than 10 inches d.b.h., per acre, in lodgepole pine stands. At least 50 percent of these snags will be 15 feet tall or taller with the remainder at least 6 feet high;
3. a minimum of two to four down logs at various stages of decomposition per acre in lodgepole pine stands, and at least 6 inches in diameter at the large end;
4. although two or more canopy levels is preferred, a single canopy level is acceptable in lodgepole pine stands;
5. at least 55 percent crown closure with emphasis on stands having 70 percent or more crown canopy closure;
6. evidence of moderate to high levels of decadence; and
7. a low level of human disturbance with few, if any, open roads within the stand.

Maintain snags to provide 100 percent of the potential population level within the managed old growth habitat areas.

Snags and dead and down tree habitat will be created in all managed old growth units that are deficient in these habitat components. Practices may include girdling, topping, or felling of live trees.

In the event of catastrophic loss of any existing designated old growth habitats causing a drop below the minimum distribution requirements, replacement units in the most advanced successional stage available will be selected in close proximity to the original location.

Structural and nonstructural habitat improvements and their maintenance may be utilized to maintain or enhance old growth habitat characteristics

## FISH

All fish habitat improvement, development, and maintenance projects are permitted within the constraints of retaining or enhancing old growth habitat characteristics.

Use of mechanical equipment for fish habitat improvement projects is permitted although no roads or permanent trails may be constructed for access.

## RANGE

Moderate levels of livestock grazing is permitted; however, forage in general will be limited to that which is normally present under densely forested canopies. Bedding by domestic sheep in managed old growth units will not normally be permitted.

Maintain existing range improvement structures. Additional structural improvements are generally not permitted.

## TIMBER

Timber harvest is permitted on a scheduled basis to enhance wildlife habitats as follows:

1. Maintain the distribution requirements for an equal number of 75-acre units in the lodgepole pine type in both of the 0 to 60 years and 60 to 120 years age classes, so that existing old growth units would be managed and move geographically through time.

The full range of silvicultural practices and intensities would apply to the 0 to 60-year age class in order to develop the large tree component as soon as possible. Emphasis will be on even-aged management techniques and practices.

2. When these stands assume the characteristics of old growth habitat, timber management activities (including fuelwood cutting, salvage harvest, or the removal of any dead or down material) will not normally be permitted, except for those practices that may be needed to maintain or enhance old growth characteristics.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Exchange or acquisition of land may occur where it will not adversely affect existing old growth quality, size, and spacing requirements.

Issuance of any permits or licenses that may adversely impact managed old growth units will be discouraged.

#### TRANSPORTATION

For areas in the 0 to 80-year category in mixed conifer, and 0 to 60 in lodgepole pine, roads and trails may be constructed, reconstructed, operated, and maintained.

For old growth areas older than 80 years in mixed conifer, and 60 years in lodgepole pine, roads and trails are permitted but will be limited to the number and miles necessary to meet surrounding area objectives and minimize impacts to wildlife in the old growth units. Where feasible and practical, old growth units should be avoided. Activities may include construction and reconstruction of new roads and trails, and operation and maintenance of open roads and trails.

Restrict motorized vehicle use within managed old growth units to open roads and trails in all age classes older than 80 years for the ponderosa pine and mixed conifer types, and older than 60 years for the lodgepole pine type. Most roads in these areas should be closed to motorized use.

#### FIRE

For moderate to high intensity wildfires, the appropriate suppression response should emphasize control strategies.

Low impact suppression methods should be favored. Use of mechanical equipment to suppress wildfires is acceptable within the objective of minimizing the impact of the suppression effort on the old growth values.

#### FUELS

Natural fuel treatments are permitted to maintain or enhance old growth habitat characteristics or reduce the potential for severely burning an old growth area.

Natural fuels should not exceed an average of about 12 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Reports PNW 52) (USDA Forest Service 1976b):

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Age Class	Lodgepole Pine	Ponderosa Pine/Mixed Conifer
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0-60 0-80	2-LP-3-PC	3-PP-4-PC 4-PP-1-TH 1-PP&ASSOC-4-PC
60-120 80-160 and 160-240	3-LP-3	2-PP&ASSOC-4 2-MC-3 6-PP-4

Prescribed burning is the preferred method of fuel treatment.

#### PESTS

Use integrated pest management (IPM) principles to meet management area objectives. Emphasis will be on the prevention of stand and fuels conditions that increase pest populations above epidemic levels. Natural or endemic levels are acceptable, and no special management practices will be employed to control losses from insects or diseases at these levels.

Suppress or control pests when outbreaks threaten managed old growth resources, the ability of stands to become old growth, or other resources on adjacent lands. Favor biological methods when acceptable. IPM methods will not conflict with wildlife objectives.

### C3 BIG GAME WINTER RANGE

#### GOAL

MANAGE BIG GAME WINTER RANGE TO PROVIDE HIGH LEVELS OF POTENTIAL HABITAT EFFECTIVENESS AND HIGH QUALITY FORAGE FOR BIG GAME SPECIES.

#### DESCRIPTION

The Big Game Winter Range strategy applies to all or parts of winter ranges delineated in coordination with the Oregon Department of Fish and Wildlife and the Washington Department of Wildlife. Big game winter ranges are generally located on the lower elevation, 'front' country, of the Forest. The designated winter range boundaries encompass areas that provide habitat for 90 percent or more of the wintering elk population during the winter use period 6 years out of 10. Each winter range is assigned a winter use period ranging from 4 to 4 1/2 months. A total of 21 winter range areas are identified on the Umatilla National Forest totaling 277,677 acres.

All or parts of the following defined big game winter ranges are included in the management area:

WINTER RANGE	NO.	STATE
Touchet	1	WA
Tucannon	2	WA
Asotin	3	WA
Wenaha	5	WA/OR
Wenatchee	6	WA
Phillips Creek	10	OR
McKay Creek	11	OR
Birch Creek	12	OR
Albee	13	OR
Cable Creek	14	OR
Bridge Creek	15	OR
Bone Point	16	OR
Desolation	17	OR
Heppner	18	OR
Kahler Basin	19	OR
Monument	20	OR
Mt. Emily	21	OR

#### DESIRED FUTURE CONDITION

Big game winter ranges will appear primarily as a mosaic of managed forests, brush patches, and large grasslands. Forested areas will contain a mix of harvested even-aged, uneven-aged, and natural stands, creating patterns of cover patches and forage areas for big game.

Management activities may be locally apparent: created openings will range up to 25 acres in size. Where natural potential exists, cover areas will be developed and/or maintained to occur as groups of larger trees, 10 acres or more in size, with dense canopies. Use of prescribed fire will be apparent. Areas of early spring green-up and other forage changes due to prescribed fires and other means will occur in a mosaic pattern over the winter ranges; quality forage will be abundant because of management. Most roads and trails will be closed to vehicle traffic during the winter and there will be minimum human disturbance to big game during this period. Livestock use will compliment big game management. As a result of management, quality big game habitat will be achieved and assist in meeting state big game populations and productivity goals, and Forest recreation objectives. During an 'average' winter, most of the wintering big game will remain on public lands keeping impacts to private lands low.

## MANAGEMENT AREAS STANDARDS AND GUIDELINES

### RECREATION

A Roaded Modified social and physical setting Recreational Opportunity Spectrum (ROS), may result in meeting the goal. Dispersed recreation activities that meet the goal are permitted.

Recreation site modification and facility development levels 1 and 2 (see Glossary) are permitted.

Access will be mostly for walk-in or horseback opportunities on trails or closed roads, with some road-oriented activities.

Off-highway vehicle (OHV) use will be permitted on designated routes. OHV use will be curtailed by closures where this use is determined to be detrimental to wintering big game species.

Trail and associated facility construction, reconstruction, and/or maintenance shall be permitted. Trail activities and use will be curtailed by closures where and when determined to be detrimental to wintering big game species.

### VISUAL

A range of visual quality objectives from Retention to Maximum Modification will apply.

### CULTURAL

Meet Forest-wide Standards and Guidelines.

### WILDLIFE

Elk habitat will be managed on designated big game winter ranges to achieve a habitat effectiveness index of no less than 70, including discounts for roads open to motorized vehicular traffic as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). The habitat effectiveness standard will be measured on an individual winter range basis.

#### Cover

Marginal and Satisfactory cover will be managed to the extent possible to meet optimum size and distribution criteria as described in 'Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges' (Thomas and others 1988).

Where possible, a minimum of 10 percent of each winter range will be maintained and managed as satisfactory cover (15-20 percent is desirable). If this is not attainable because of low natural potential, the highest possible percentage of satisfactory cover will be created or maintained.

Where possible, a minimum of 30 percent of an area will be managed as total cover (satisfactory and marginal).

Stands managed for satisfactory cover will meet the following criteria:

- Provide stand width of 600-1,200 feet. Exceptions may be made according to Forest-wide Standards and Guidelines;
- be at least 40 ft. in height with a canopy closure of at least 70 percent in mixed conifer types and no less than 50 percent in the ponderosa pine types; and
- should be at least 10 acres in size. Larger cover areas are preferred.

The desired cover condition will generally appear as a multi-layered stand and meet elk 'hiding' criteria by obscuring 90 percent of a standing elk at a distance of 200 feet or less.

Marginal cover will include stands no less than 10 feet in height, with a canopy closure of at least 40 percent, and meet elk 'hiding' criteria.

Forest stand harvest and management may be permitted in cover areas to meet long-term, big game cover objectives as determined on each winter range. Forest stands that can only qualify as marginal cover due to site potential (generally ponderosa pine stands) may receive timber harvest and management (see Timber) as long as big game habitat management objectives are met.

#### Forage

Both the quantity and quality of forage for big game will be enhanced or maintained through improved livestock grazing systems, controlled seasonal use, an active prescribed burning program, and other measures.

Available forage will be allocated to meet big game management objectives. Available forage in excess to wildlife needs may be allocated to domestic livestock.

Big game forage and cover improvement projects such as prescribed burning, seeding and planting, browse planting, release, mechanical ground and vegetative disturbance, fertilization, and others may be employed. Structural improvements may be used to protect these investments.

#### Other

All management activities will be restricted, where necessary, during the big game winter use period of December 1 through March 30 or April 15.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide or maintain 60 percent of the potential population level for all primary cavity excavators as described in Wildlife Habitats in Managed Forests (Thomas and others 1979).

#### FISH

Fish habitat improvement projects and their maintenance will be permitted.

#### RANGE

Domestic livestock grazing is permitted at Range Management Strategy C. All available range and livestock management practices consistent with the primary management goal of maintaining or enhancing the big game winter ranges may be used.

Structural range improvements are permitted to the extent they are compatible with big game winter ranges. This may entail the use of let-down fences, etc.

#### TIMBER

Timber will be managed on a scheduled basis with the exceptions noted below. All timber management practices and intensities consistent with achieving the big game and other wildlife habitat goals will be permitted. The selected silvicultural systems applied to timber stands within suitable forest lands will be based on a site-specific examination and analysis and will be designed to achieve wildlife habitat management goals.

**EXCEPTION:** Designated big game winter range located between Skookum Creek and Potamus Creek on the Heppner District will have no scheduled timber harvest activity during the first 10 years following approval of this Plan.

Harvest practices will emphasize uneven-aged management including individual tree and group selection, but may also include even-aged management practices of clearcutting, shelterwood, and seed tree. Salvage of mortality is to be permitted, consistent with meeting objectives; commercial thinnings may also be utilized consistent with the need to maintain satisfactory cover. Other permitted cultural practices will include natural and artificial regeneration, planting

genetic stock when available, precommercial thinning, and animal damage control protection. Logging and road building should be done with conventional practices including helicopter.

Fuelwood cutting is permitted consistent with the established goals of enhancing big game habitat and maintaining prescribed levels of dead and down tree habitat.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Delineated winter range acres in Federal ownership will generally be retained.

Acquire inholdings within delineated winter range lines where opportunities exist.

Other Forest-wide Standards and Guidelines for lands and land uses apply.

#### TRANSPORTATION

Roads will be closed to motorized use as needed, and especially during the winter use period, to meet big game habitat effectiveness objectives, unless the roads are needed as through routes or to access private lands.

#### FIRE

For moderate to high intensity wildfires (average flame lengths over 2 ft.), all wildfire suppression strategies may be emphasized.

Under appropriate fire prediction conditions, wildfires may be permitted to play a natural role on the winter ranges to meet big game habitat objectives.

#### FUELS

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52) (USDA Forest Service 1976b):

Even-aged Management	3-PP-4-PC	4-PP-1 -TH	1 -PP&ASSOC-4-PC	2-LP-3-PC
Uneven-aged Management	2-PP4-PC	2-LP-3-PC	4-PP-1 -TH	5-PP&ASSOC4-PC

All types of prescribed fire may be used including broadcast burning, underburning, or range burning.

#### PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and disease to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

Consistent with resource objectives, protect forest stands (habitats) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels. Aggressively suppress insects and disease using cost efficient strategies when outbreaks threaten resource objectives.





### **C3A SENSITIVE BIG GAME WINTER RANGE**

#### **GOAL**

MANAGE SENSITIVE AREAS OF BIG GAME WINTER RANGE TO PROVIDE HIGH LEVELS OF POTENTIAL HABITAT EFFECTIVENESS (AT OR ABOVE THE CURRENT LEVELS).

#### **DESCRIPTION**

The strategy applies to parts of winter ranges delineated in coordination with the Washington Department of Wildlife (and Oregon Department of Fish and Wildlife). The sensitive portions of designated winter ranges are the areas used nearly every year by wintering elk populations because of topography, slope, and current quality of cover and forage. The areas are generally at lower elevations of the designated winter ranges and lie adjacent to private lands.

Parts of (extensions) the Asotin big game winter range (Pomeroy) are included in the management area.

#### **DESIRED FUTURE CONDITION**

The area will appear as a mosaic of plant communities, including grassland forage area, brush, and some stands of trees. Use of prescribed fire will be apparent and carried out to maintain or increase the quality and quantity of forage and amount of cover on the area. Areas of early spring forage green-up due to prescribed fire will occur in a mosaic pattern over the winter range. Increased forage and cover will help encourage big game use on public lands and discourage high levels of winter use on the adjacent private lands. Most roads and trails will be closed to vehicle traffic during the winter, and there will be minimum human disturbance to big game during this period.

#### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

##### **RECREATION**

A Roaded Modified social and physical setting (ROS) may result in meeting the goal. Dispersed recreation activities that meet the goal are permitted.

Recreation site modification and facility development levels 1 and 2 (see Glossary) are permitted.

Access will be mostly for walk-in or horseback opportunities on trails or closed roads, with some road-oriented activities.

Off-highway vehicle (OHV) use is permitted on designated routes. OHV use will be curtailed by closures where this use is determined to be detrimental to wintering big game species.

Trail and associated facility construction, reconstruction, and maintenance will be permitted. Trail activities and use will be curtailed by closures where and when determined to be detrimental to wintering big game species.

##### **VISUAL**

A range of visual quality objectives from Retention to Modification will apply.

##### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

Elk habitat will be managed on sensitive portions of designated big game winter ranges to achieve a habitat effectiveness index of no less than 70, including discounts for roads open to motorized vehicular traffic, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). The habitat effectiveness standard will be measured on an individual winter range basis.

### Cover

Marginal and satisfactory cover will be managed to the extent possible to meet optimum size and distribution criteria, as described in 'Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges' (Thomas and others 1988).

Where possible, a minimum of 10 percent of each area will be maintained and managed as satisfactory cover (15-20 percent is desirable). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover possible will be maintained. Where possible, a minimum of 30 percent of an area will be managed as total cover.

Stands managed for satisfactory cover will meet the following criteria:

- Provide stand width of 600-1,200 feet,
- be at least 40 ft. in height with a canopy closure of at least 70 percent in mixed conifer types and no less than 50 percent in the ponderosa pine types; and
- should be at least 10 acres in size. Larger cover areas are preferred.

The desired cover condition will generally appear as a multi-layered stand and meet elk 'hiding' criteria by obscuring 90 percent of a standing elk at a distance of 200 feet or less.

Marginal cover will include stands no less than 10 feet in height with a canopy closure of at least 40 percent and meet above elk 'hiding' criteria.

### Forage

Both the quantity and quality of forage for big game will be enhanced or maintained through improved livestock grazing systems, controlled seasonal use, a prescribed burning program, and other measures.

Available forage will be allocated to meet big game management objectives. Available forage excess to wildlife needs may be allocated to domestic livestock.

Big game forage and cover improvement projects such as prescribed burning, seeding and planting, browse planting, release, tree removal, mechanical ground and vegetative disturbance, and fertilization may be employed. Structural improvements may be used to protect these investments.

### Other

All management activities will be restricted where necessary during the big game winter use period of December 1 through March 30 or April 15.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979).

## FISH

Fish habitat improvement projects and their maintenance will be permitted.

## RANGE

Domestic livestock grazing is permitted at Range Management Strategy C. All available range and livestock management practices consistent with the primary management goal of maintaining or enhancing the sensitive portions of big game winter range may be used.

Structural and nonstructural range improvements are permitted to the extent they are compatible with big game winter ranges management.

## TIMBER

Timber harvest will not be scheduled. Activities such as harvest and reforestation may be used as management tools to maintain the highest possible cover class over time.

Under catastrophic conditions, timber may be salvaged and cover reestablished.

## WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

## LANDS

All delineated winter range acres in Federal ownership will generally be retained.

Acquire inholdings within delineated winter range lines where opportunities exist.

Other Forest-wide Standards and Guidelines for lands and land uses apply.

## TRANSPORTATION

During the winter use period, close to motorized use roads not needed as through routes or as access to private lands. Roads will be closed to motorized use, as needed, to meet big game habitat effectiveness objectives.

Road construction, reconstruction, and maintenance will be permitted to access other parts of the Forest, except during the winter and spring big game use period.

## FIRE

For moderate to high intensity wildfires (average flame lengths over 2 ft.), all wildfire suppression strategies may be emphasized.

Under appropriate fire prediction conditions, wildfires may be permitted to play a natural role on the winter ranges to meet big game habitat objectives.

## FUELS

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52) (USDA Forest Service 1976b):

3-PP-4-PC		4-PP-1 -TH		1 -PP&ASSOC-4-PC		2-LP-3-PC
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All types of prescribed fire may be used including broadcast burning, underburning, or range burning.

## PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and disease to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

Consistent with resource objectives, protect forest stands (habitats) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pest increases above epidemic levels. Aggressively suppress insects and disease using cost efficient strategies when outbreaks threaten resource objectives.

## **C4 WILDLIFE HABITAT**

### **GOAL**

MANAGE FOREST LANDS TO PROVIDE HIGH LEVELS OF POTENTIAL HABITAT EFFECTIVENESS FOR BIG GAME AND OTHER WILDLIFE SPECIES WITH EMPHASIS ON SIZE AND DISTRIBUTION OF HABITAT COMPONENTS (FORAGE AND COVER AREAS FOR ELK, AND SNAGS AND DEAD AND DOWN MATERIALS FOR ALL CAVITY USERS) UNIQUE WILDLIFE HABITATS AND KEY USE AREAS WILL BE RETAINED OR PROTECTED.

### **DESCRIPTION**

Applicable to all or parts of the forest acres classified as tentatively suitable for timber management and other included acres classified as suitable and transitory range (see Wildlife and Timber sections below for exceptions).

The management area applies to about 32 percent of the suitable lands across the Forest on all districts. Locations are shown on the management area maps.

### **DESIRED FUTURE CONDITION**

The Forest will be a mosaic of even-aged and uneven-aged stands dispersed in a manner to create a pattern of forage, and marginal and satisfactory cover for big game. Management activities including timber harvest, prescribed fire, tree planting, and thinning will be readily apparent. Created openings will range from 1-2 acres up to 40 acres (generally 20 to 30 acres) in size. At least 15 percent of the area will be maintained as satisfactory cover, which will appear as stands of trees larger than 10 acres in size, with crown closures of 70 percent or more. An additional 15 to 25 percent of the area will be maintained as marginal cover with crown closures of 40 to 69 percent, and generally capable of obscuring 90 percent of a standing elk at a distance of 200 feet or less. Stands managed using uneven-aged practices will also be apparent. Through the use of both even-aged and uneven-aged silvicultural treatments, horizontal and vertical diversity of timber stands will be maintained, providing habitat for a wide variety of wildlife species.

A variety of native and seeded grasses, sedges, forbs, and shrubs will be available for big game, other wildlife, and domestic livestock. Range and timber management practices will result in improved range condition and increased amounts of available forage.

Emphasis will be apparent on managing roads, providing security for big game, protecting important calving and fawning areas, and providing for a quality hunting experience. Road closures and other management techniques will result in a noticeable amount of travel restrictions across the area. Dispersed recreation opportunities of all types will be available, but motorized access may be limited. As a result of management, quality big game and other wildlife habitat will assist in meeting state wildlife agency population and productivity goals and Forest recreation objectives.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

A Roaded Modified social and physical setting (ROS) may result from meeting the goal. Dispersed recreation activities that meet the goal are permitted.

Recreation site modifications and facility development levels 1 and 2 (see Glossary) are permitted.

Access should mostly be for walk-in or horseback opportunities on roads, trails, and areas will generally be closed to motorized use, with some motorized use opportunities on open roads and trails.

Trail and associated facility construction, reconstruction, and/or maintenance are permitted as long as consistent with overall objectives of wildlife management.

Off-highway vehicle use is permitted on designated roads and trails where compatible with big game and other wildlife species' habitat effectiveness, recreation, and other resource objectives.

#### VISUAL

Management activities will result in a range of visual settings from natural appearing to modified. Visual quality will be subordinate to the wildlife habitat goals.

#### CULTURAL

Meet Forest-wide Standards and Guidelines.

#### WILDLIFE

Elk habitat will be managed to achieve a habitat effectiveness index of no less than 60, including discounts for roads open to motorized vehicular traffic, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). Marginal cover, satisfactory cover, and forage areas will be managed to meet size and spacing criteria as described in Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges (Thomas and others 1988). The habitat effectiveness standard will be measured on a subwatershed (allocation zone) basis.

**EXCEPTION:** The Rhea Creek watershed area (Allocation Zone HO2), lying to the north and west of the ridgeline running east-west between Madison Butte and Coalmine Hill on the Heppner District, will be managed to achieve a habitat effectiveness index of no less than 90.

#### Cover

A minimum of 15 percent of the area will be managed as satisfactory cover (20 percent is desirable). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover potentially attainable will be created or maintained. A minimum of 30 percent of an area will be managed as total cover.

Stands managed for satisfactory cover will meet the following criteria:

- Be at least 40 feet in height, with a canopy closure of at least 70 percent in all forest types;
- should be 1,200 to 1,850 feet in width (larger cover areas are preferable) though exceptions may be made by wildlife biologists on an on-the-ground assessment of the stand(s) value for elk; and
- satisfactory cover should generally appear as a multi-layered timber stand.

Marginal cover will be no less than 10 feet in height with a canopy closure of at least 40 percent, and 600 to 1,200 feet wide. Exceptions may be made by wildlife biologists on an on-the-ground assessment of the stand(s) value for elk.

All cover areas will be managed to provide sufficient vegetation to obscure 90 percent of a standing elk at a distance of 200 feet or less.

**EXCEPTIONS:** Exceptions to the achievement of HEI and cover standards may be made on an individual project basis. Such cases would include situations where past harvesting, large scale insect and disease damage, and/or catastrophic fires have made the possibility of accomplishing the desired future condition (DFC) (long-term potential) marginal within a reasonable period (without applying additional silvicultural treatments such as regeneration harvest, tree planting, release, and other cultural operations).

Where these situations exist, activities may occur that reduce HEI and cover further in the near term only if they are consistent with the ultimate goal of the management area, and if the

activities will clearly result in achieving a higher HEI cover condition and desired future condition (DFC) in a shorter period of time than if the area was left untreated.

All such activities will be supported by a documented NEPA analysis and will include a cumulative effects analysis of big game habitat in the project area over time. The analysis will also describe the anticipated improved condition on a subwatershed or management area basis. All exceptions must be recommended by the District Ranger and approved by the Forest Supervisor for implementation.

#### Forage

Available forage will be allocated to meet big game management objectives. Available excess forage may be allocated to domestic livestock.

Big game forage improvement projects such as seeding, browse planting, and fertilization may be used. Structural improvements may be used to protect these investments. Prescribed burning may be practiced in order to maintain a static or upward trend in fair or better range condition.

#### Other

Emphasis should be placed on retaining and/or protecting big game key use areas and habitats such as migrational corridors, calving/fawning areas, wallows, springs, seeps, and bogs.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide OT maintain EO percent of the potential population level for all primary cavity excavators and maintained for other cavity users.

An average of one unburned slash pile for every 2 acres should be retained on even-aged regeneration harvest units for wildlife cover.

Manage to maintain or establish a high level of vegetative diversity at a minimum level of 15 percent in each of the following five seral stages:

Grass/Forb	Young Sawtimber
Shrub/Seedling	Mature/Overmature
Pole/Sapling	

#### FISH

Fish habitat improvement projects and their maintenance will be permitted.

#### RANGE

Domestic livestock grazing is permitted at Range Management Strategy C. All available range and livestock management practices may be used as long as consistent with the primary management goal of maintaining or enhancing the big game and all other wildlife species' habitat.

Structural range improvements are permitted to the extent they are compatible with the management goal. This may entail the use of let-down fences, etc.

#### TIMBER

Timber will be managed on a scheduled basis. All timber management practices and intensities consistent with achieving the primary wildlife habitat management goals will be permitted. The selected silvicultural systems applied to timber stands within suitable forest lands will be based on a site-specific examination and analysis, and will be designed to achieve management goals.

Harvest practices may include clearcutting, shelterwood, salvage, removal, and commercial thinnings, as well as group or individual tree selection. Other cultural practices may be used including natural and artificial regeneration, planting genetic stock when available, release,

precommercial thinning, and insect, disease, and animal damage protection. Logging and road building should be done with conventional practices, including helicopter.

Fuelwood cutting is permitted consistent with established goals to enhance big game habitat and to maintain or manage dead and down tree habitat at 80 percent of the potential population level.

**EXCEPTION:** The concept of a time limited or "sunset" strategy may be used on designated areas within C4 under conditions listed in the Forest-wide Standards and Guidelines. This concept applies to the Jaussaud Corral Roadless Area (about 4,000 acres). Timber harvest volumes will be scheduled for such areas. Areas will revert from C4 to an A2 or other agreed upon designation by the year 2000. Areas may remain in C4 status pending NEPA review and decision.

The area of application in Jaussaud Corral is west of Little Lookingglass Creek running north/south along east boundary of section 2 to Timothy Guard Station on the Walla Walla Ranger District. The designated area will remain in the scheduled cut until the year 2000, at which time, it will follow a 'sunset strategy' and revert to an A2 designation, without scheduled harvest. To remain in the C4 Management Area, the decision would be evaluated through the NEPA process in either a new Forest Plan, amendment, or separate review. In the interim, harvest will proceed via uneven-aged management, using small group selection. One identified stand of old growth, near Timothy Guard Station, will be removed from entry entirely.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Land Classification II (acquisition) will generally apply to meet public needs. Lands may be exchanged in cases of demonstrated positive net public benefit.

Meet Forest-wide Standards and Guidelines for lands and land uses.

#### TRANSPORTATION

Road construction, reconstruction, and maintenance are permitted, consistent with the primary overall objective of wildlife habitat management.

Roads will be limited to minimum standards necessary for timber harvesting.

Roads will be closed to meet big game habitat and/or recreation objectives. Roads will be closed upon completion of harvest activities or when open timber sales are inactive. Exceptions may be made by the District Ranger based on a documented analysis and supporting rationale of the need to keep individual roads open.

#### FIRE

For all wildfires in the management area, all suppression strategies (appropriate responses) may be used. Suppression practices will be designed to protect investments in managed forests and to prevent large acreage losses to wildfire.

Wildfire prevention activities should be emphasized.

#### FUELS

Fuels should not exceed an average of 12 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52) (USDA Forest Service 1976b):



Even-aged Management	3-PP-4-PC	4-PP-1 -TH	1 -PP&ASSOC-4-PC	2-LP-3-PC
Uneven-aged Management	2-PP4-PC	2-LP-3-PC	4-PP-1 -TH	5-PP&ASSOC4-PC

All types of prescribed fire may be used to accomplish management objectives.

#### PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and disease to meet management objectives. Detection and monitoring of pest conditions and populations will be done so that corrective treatments, consistent with resource objectives can be prescribed at the earliest opportunity.

Within the wildlife habitat objectives, protect forest stands (habitats) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels. Aggressively suppress insects and disease using cost efficient strategies when outbreaks threaten resource objectives.

## **C5 RIPARIAN (FISH AND WILDLIFE)**

### **GOAL**

MAINTAIN OR ENHANCE WATER QUALITY, AND PRODUCE A HIGH LEVEL OF POTENTIAL HABITAT CAPABILITY FOR ALL SPECIES OF FISH AND WILDLIFE WITHIN THE DESIGNATED RIPARIAN HABITAT AREAS WHILE PROVIDING FOR A HIGH LEVEL OF HABITAT EFFECTIVENESS FOR BIG GAME.

### **DESCRIPTION**

The management area is applicable to all designated riparian areas associated with Class I, II, and III streams, including adjacent floodplains and wetlands as shown on the management area maps.

### **DESIRED FUTURE CONDITION**

A near natural setting will predominate adjacent to the stream, with a wide variety of plant communities of various species, sizes, and age classes. In forested riparian zones, a continuous high tree canopy layer will be present and the forest will appear denser than in the surrounding land. Upper and mid-level conifer and hardwood canopy structure and lower shrub level will provide desired levels of stream surface shading, streambank stability, and satisfactory cover for big game.

Evidence of uneven-aged timber harvest will be common, but there will be only minimal impact on riparian vegetation and visual quality. Some small openings may occur feathering outward away from the stream. The more common occurrence will be isolated stumps amidst an uneven-aged forest, resulting from single tree and small group selection practices.

Riparian vegetation will be dense and diverse, contributing shade for water temperature control, stable streambanks and controlled sediment, and complex fish habitat along the banks. Large diameter standing dead and live trees will provide a long-term supply of large woody material for instream fish habitat and channel stability. A variety of other habitats including dead and down tree habitat and satisfactory cover for big game will be found within the riparian area. Forest wildlife species will continue to use riparian habitat areas disproportionately more than any other habitat type. Evidence of streambank trampling from livestock will be less common. Dispersed recreation activities of all types will be abundant and available for a variety of users. Quality riparian management will assist in meeting anadromous and resident fish productivity goals.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

A variety of ROS social and physical settings ranging from Roaded Natural to Roaded Modified may occur. Dispersed recreation activities that meet the goal are permitted.

Recreation site modification and facility development levels 1 and 2 are permitted.

Provide for mostly road oriented recreation opportunities and for walk-in or horseback, with some OHV opportunities in isolated areas.

Off-highway vehicle (OHV) use is permitted but limited to designated routes.

Trail and related facility development and maintenance are permitted. Manage trails to protect wildlife and fish habitat, and water quality values. Apply Forest-wide Standards and Guidelines for OHV trail construction and management.

#### **VISUAL**

Management activities may result in a natural appearing (Retention) to a modified (Modification) visual setting. Visual quality should be subordinate to riparian habitat objectives.

## CULTURAL

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

Maintain dead tree (snag) habitat at the 100 percent level for all cavity users as described in 'Wildlife Habitats in Managed Forests-Blue Mountains of Oregon and Washington' (Thomas and others 1979). Emphasis will be given to retaining large diameter trees (20 inches d.b.h. or greater).

Retain large dead and down woody material (20 feet or more in length and 12 to 17 inches in diameter at the small end) at the rate of four Class I or Class II logs per acre, as defined by Thomas and others (ibid.). The desired condition is uncharred logs.

Manage riparian areas to produce satisfactory cover. Satisfactory cover consists of tree stands at least 40 feet in height, with a crown closure of 70 percent or more, and two or more canopy layers.

Structural and nonstructural wildlife habitat improvement projects and their maintenance are permitted. Prescribed burning may be utilized to meet the riparian management objectives.

## FISH

Anadromous fish habitat (includes stream and associated riparian area) will be managed to produce at least 90 percent of potential smolt habitat capability index (SHCI). The standard should be achieved by meeting the following:

- Riparian vegetation will be managed to promote floodplain, bank, and channel stability, to provide resiliency to disturbance and promote aquatic diversity.
- Where natural conditions permit, streamside vegetation along the entire length of perennial streams will be managed to maintain an average shading of 80 percent of the entire stream surface shaded. Where existing shading is already below this level, retain all vegetation contributing to stream surface shading.
- Lands and trees adjacent to perennial streams will be managed to provide for a continuous, well distributed supply of naturally occurring, large woody material for instream fish and riparian habitat. At a minimum, these lands will include a zone within one tree height of the stream channel but may be extended to upland areas when the additional areas are determined to be critical to the provision of future large wood to downstream fish bearing reaches.
- Streams will be managed to provide pools that are relatively large, frequent, well distributed, and persistent during low flows.
- Forest-wide Standards and Guidelines for water temperature and instream flows will be met.
- The sediment budget will fall well within the range and frequency adapted to by indigenous aquatic communities.

Fish habitat enhancement, restoration, and maintenance practices (projects) will be used to increase smolt habitat capability.

## RANGE

Intensive range management, including superior grazing systems, such as periodic rest, will be practiced to protect and improve riparian vegetation and anadromous fish and wildlife habitats. Periods of extended rest may be utilized in some situations where it is necessary to allow re-establishment of desired shrub communities.

Meet the forage utilization standards for riparian areas, found in the Range portion of Forest-wide Standards and Guidelines.

Range management techniques that control livestock distribution and timing of use will be used to meet riparian habitat goals. Range improvements that maintain or enhance riparian habitat goals will be permitted. Improvements should be located to encourage livestock use away from the riparian areas. Grazing systems utilizing riparian pastures may be required to maintain water quality and protect riparian vegetation. Riparian corridor fencing should be considered on a limited basis for special applications.

#### TIMBER

Timber will be managed on a scheduled basis.

EXCEPTION: All C5 riparian areas in the headwaters of the Tucannon River system will not have scheduled timber harvest.

A range of silvicultural practices and intensities, including both even-aged and uneven-aged management, is permitted when compatible with water quality and anadromous fish and wildlife habitat objectives. Uneven-aged management strategies are emphasized. Single tree selection is the preferred management tool within 50 feet of the stream channel.

The selected silvicultural systems applied to timber stands within suitable forest lands will be based on a site specific examination and analysis, and will be designed to achieve management goals. Harvest practices may include group or individual tree selection, salvage, removal, and commercial thinnings, as well as clearcutting, shelterwood, and seed tree. Other cultural practices may be used including natural and artificial regeneration, planting genetic stock when available, release, precommercial thinning, and insect, disease, and animal damage protection or control.

Created openings adjacent to live streams may be permitted, provided the stream surface shading, large woody material, and water quality requirements for fisheries are met. If natural shading is below the 80 percent level, meet the Forest-wide Standards and Guidelines for riparian/fish habitat (Class III streams).

Created openings should generally be 1 acre or smaller, but no larger than 2 acres in size. No more than 6 percent of the entire riparian area within a subwatershed will be in created openings (trees less than 10 feet in height) at any time.

All yarding or skidding systems are acceptable. Constraints may be placed on yarding and skidding systems on a site-specific basis to protect riparian vegetation and habitat, and to preclude damage to soil and water resources. Meet tree falling and logging Forest-wide Standards and Guidelines in riparian/fish habitat (Class III streams).

Discourage cutting of dead and down material for fuelwood within riparian area.

Mechanical site preparation or aerial application of fertilizer is not permitted.

#### WATER

Meet Forest-wide Standards and Guidelines.

#### SOIL

Within 250 feet of all streams and wet areas associated with streams, limit the mineral soil exposed by ground-disturbing activities to 10 percent of the project area.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines while protecting fish habitat investments.

#### LANDS

Meet Forest-wide Standards and Guidelines for riparian/fish habitat, lands and land uses.

#### TRANSPORTATION

Construction, reconstruction, and the maintenance of roads will be permitted when consistent with the riparian management goals. New roads should be located outside the riparian area (except for crossings) unless alternatives are determined to have higher adverse impacts to resources.

Water quality and fisheries habitat problems caused by roads will be corrected.

#### FIRE

The appropriate wildfire suppression response should emphasize control and/or contain strategies.

Wildfire suppression efforts should utilize low-impact methods. Use of heavy equipment may require restoration and/or mitigation to maintain riparian values.

#### FUELS

Fuels management activities will be designed and executed to maintain or enhance the anadromous fish and wildlife habitat within the constraints of 10 percent exposed mineral soils and 80 percent stream surface shading.

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52, 1976) (USDA Forest Service 1976b):

3-PP4-PC

4-PP-1-TH

1 -PP&ASSOC-4-PC

2-LP3-PC

Prescribed fire may be used, consistent with riparian objectives.

#### PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and disease to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

Consistent with resource objectives, protect forest stands (habitats) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels.

The use of pesticides must not conflict with riparian/wildlife management objectives.

## **C7 SPECIAL FISH MANAGEMENT AREA**

### **GOAL**

**MAINTAIN AND ENHANCE WATER QUALITY AND PRODUCE HIGH LEVELS OF ANADROMOUS FISH HABITAT ON AN AREA-WIDE BASIS.**

### **DESCRIPTION**

The special fish management area includes all land within a watershed, subwatershed, or other manageable area. The management area applies to much of the Umatilla National Forest portion of the North Fork John Day drainage (referred to in Senate Report No. 98-465, dated May 18, 1984). The management area is located on the North Fork John Day District, as shown on management area maps.

### **DESIRED FUTURE CONDITION**

In riparian areas, a natural to near natural setting and vegetation development will predominate, with a variety of plant communities, sizes, and age classes. A high tree canopy layer will be present, and the forest will appear denser than surrounding areas. Forest canopy of conifers and hardwoods will provide desired levels of stream surface shading and long-term supply of large woody material for instream fish habitat and snags. Vegetation will contribute to stable streambanks and complex fish habitat along the banks. Dispersed recreation opportunities associated with stream and stream sides will be available for all Forest visitors.

In upland areas of the watersheds, the Forests will appear as a mosaic of even-aged and uneven-aged stands with highly dispersed created openings of 1 to 40 acres in size. Management activities of all types will be observable. Horizontal and vertical diversity in vegetation will be apparent; also, a discontinuity in forest age classes (noncontinuous and fewer age classes) will be noticeable within a watershed.

Emphasis placed on careful timber harvest and road construction and maintenance will be reflected in the high quality water being produced. Dispersed recreation opportunities of all types will be available, though some limitations in access may occur. As a result of management, anadromous fish recovery and long-term fish population goals will be met.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

A Roaded Modified and Roaded Natural social and physical setting (ROS) may result from meeting the goal. Dispersed recreation activities that meet the goal are permitted.

Recreation site modifications and facility development levels 1 and 2 (see Glossary) are permitted.

Provide the opportunity for road oriented, walk-in, and horseback activities. Motorized access may be limited to designated roads, trails, and areas.

Trail and associated facility construction, reconstruction, and maintenance are permitted as long as consistent with water quality and anadromous fish habitat objectives.

Off-highway vehicle (OHV) use is permitted and will be managed to meet management area goals and to prevent unacceptable damage to anadromous fish habitat and associated riparian soils and vegetation.

#### **VISUAL**

A range of visual quality objectives may apply-from Retention to Maximum Modification.

#### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

Wildlife habitat improvement and maintenance projects are permitted provided the activities meet the goal.

Dead and down tree habitat will be managed in the riparian areas to provide or maintain 100 percent of the potential population level and, in the upland areas, 60 percent of the potential population level for all primary cavity excavators, and maintained for other wildlife species.

An average of one unburned slash pile for every 2 acres should be retained for wildlife cover on even-aged regeneration harvest units.

Elk habitat will be managed to achieve a habitat effectiveness index of no less than 45, including discounts for open roads (see Thomas and others 1979). A minimum of 10 percent of an area will be managed as satisfactory cover (15-20 percent is desirable). A minimum of 30 percent of an area will be managed as total cover. Management activities will not create barriers to impede movement of big game.

## FISH

Anadromous fish habitat (includes streams and associated riparian areas) will be managed to produce at least 90 percent of potential smolt habitat capability index (SHCI). The standard should be achieved by meeting the following:

- Riparian vegetation will be managed to promote floodplain, bank, and channel stability, resiliency to disturbance, and aquatic diversity.
- Where natural conditions permit, streamside vegetation along the entire length of perennial streams will be managed to maintain an average shading of 80 percent of the entire stream surface shaded. Where existing shading is already below this level, retain all vegetation contributing to stream surface shading.
- Lands adjacent to perennial streams will be managed to provide for a continuous, well distributed supply of naturally occurring large woody material for instream fish and riparian habitat. At a minimum, these lands will include a zone within one tree height of the stream channel but may be extended to upland areas when the additional areas are determined to be critical to the provision of future large wood to downstream fish-bearing reaches.
- Streams will be managed to provide pools that are relatively large, frequent, well distributed, and persistent during low flows.
- Forest-wide Standards and Guidelines for water temperature and instream flows will be met.
- The sediment budget will fall well within the range and frequency adapted to by indigenous aquatic communities.

Fish habitat enhancement, restoration, and maintenance practices (projects) will be used to increase smolt habitat capability.

## RANGE

Intensive range management including superior grazing systems, such as periodic rest, will be practiced to protect and improve riparian vegetation and anadromous fish habitat.

Grazing practices will normally involve complete or periodic rest.

Range management techniques that control livestock distribution and timing of use will be used to meet riparian goals. Range improvements (and their maintenance) will be permitted, and should be located to encourage livestock use away from the riparian areas.

Meet the Forest-wide Standards and Guidelines for forage utilization in riparian areas and uplands found in the Range portion of Forest-wide Standards and Guidelines.

#### TIMBER

In the riparian areas, salvage timber harvest may be permitted where anadromous fish habitat can be protected and improved. Other types of scheduled timber harvest will not be permitted.

Outside of riparian areas, timber will be managed on a scheduled basis. For all lands within national forest boundaries, timber harvest will be scheduled so that no more than 25 percent of the forest land within a subwatershed will have timber stand age classes of 0-20 years at any one time, except where analysis documented in an environmental assessment indicates that watershed condition and anadromous fish habitat would not be impaired.

Silvicultural systems and harvest practices within 500 feet of Class I and II streams will emphasize prevention of induced sediment production. In this zone and beyond, a full range of silvicultural practices and intensities including both even-aged and uneven-aged management systems can occur when compatible with water quality and anadromous fish habitat objectives.

All timber management practices and intensities are permitted. The selected silvicultural systems applied to timber stands within suitable forest lands will be based on site-specific examination and analysis, and will be designed to achieve management goals. Harvest practices may include clearcutting, shelterwood, seed tree, salvage, removal, and commercial thinnings, as well as group or individual tree selection. Other cultural practices may be used including natural and artificial regeneration, planting genetic stock when available, release, precommercial thinning, and insect, disease, and animal damage protection or control.

All yarding and skidding systems are acceptable within ground-disturbing constraints.

#### WATER

Meet Forest -wide Standards and Guidelines.

#### SOIL

Within 250 feet of all streams and wet areas associated with streams, limit the mineral soil exposed by ground-disturbing activities to 10 percent of the project area.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines while protecting fish habitat investments.

#### LANDS

Acquiring private inholdings within riparian areas is a high priority for landownership adjustments.

Exchange of riparian areas will be undertaken only to improve overall national forest riparian management.

Meet the Forest-wide Standards and Guidelines for lands and land uses.

#### TRANSPORTATION

Road construction, reconstruction, and maintenance are permitted as long as consistent with the objectives of water quality and anadromous fish habitat.

Road construction will rarely occur within 500 feet of Class I and II streams, within 250 feet of Class III and IV streams, or on slopes over 60 percent. Road location, design, construction, and maintenance techniques used will focus on minimizing soil loss impacts to water quality and fisheries habitat.

Water quality and fisheries habitat problems caused by roads will be corrected.



Roads may be closed to motorized use to meet water quality, fisheries, recreation, and/or big game objectives.

## FIRE

For moderate to high intensity wildfires (average flame lengths over 2 feet), emphasis should be on the appropriate suppression response of control and/or contain.

Wildfire suppression efforts should utilize low-impact methods.

Use of heavy equipment may require restoration and/or other mitigation to maintain fish habitat quality.

## FUELS

Fuels management activities will be designed and executed to maintain or enhance anadromous fish habitat.

Within the riparian constraints of 10 percent exposed mineral soils and 80 percent stream surface shading, prescribed burning may be utilized in riparian areas as long as consistent with strategy goals. Within fish and water goals, prescribed fire may be used on the remainder of the management area in order to meet resource objectives.

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class, and an average residue depth of 6 inches as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52, 1976) (USDA Forest Service 1976b):

3-PP-4-PC

4-PP-1 -TH

1-PP&ASSOC-4-PC

2-LP-3-PC

## PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and disease to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

Consistent with resource objectives, protect forest stands (habitats) by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels. Aggressively suppress insects and disease using the cost efficient strategies when outbreaks threaten resource objectives.

The use of pesticides must not conflict with riparian, fish, and water management objectives.

## **C8 GRASS-TREE MOSAIC (GTM)**

### **GOAL**

ON AREAS KNOWN AS GRASS-TREE MOSAIC (GTM). PROVIDE HIGH LEVELS OF POTENTIAL HABITAT EFFECTIVENESS, HIGH QUALITY FORAGE FOR BIG GAME WILDLIFE SPECIES, VISUAL DIVERSITY, AND PROTECT EROSION SOILS.

### **DESCRIPTION**

The strategy applies to all or parts of lands covered primarily with grassland vegetation interspersed with patches or stringers of forest vegetation, often on steep topography with shallow soils. The lands can be further identified as follows:

1. Most of the area is composed of big game winter ranges delineated in coordination with the Oregon Department of Fish and Wildlife and Washington Department of Wildlife.
2. The remainder of the area consists of summer range land contiguous to the identified big game winter ranges.

The combination is known as grass-tree mosaic and is identified on Forest planning maps. The designated winter range portions of the GTM encompass areas that provide habitat for 90 percent or more of the wintering elk populations, during the winter use period, 6 years out of 10. Each winter range is assigned a winter use period ranging from 4 to 4 ½ months. In general, the area contains more than 70 percent herbaceous vegetation.

The C8 Management Area applies to areas on the Pomeroy, Walla Walla, and Heppner ranger districts as shown on the management area maps. The area encompasses about 98,500 acres.

### **DESIRED FUTURE CONDITION**

Generally these areas will remain natural appearing with the predominant view being made up of patches or stringers of timber occurring on open, generally steep hillsides. Many forest stands will appear as mature timber with some having multi-layered canopies. Some stands will be more open as the result of management activities designed to improve big game habitat. Areas of early spring forage green-up will occur in a mosaic pattern over the winter range portion of this area. Forage will be abundant and improved through management. Quality big game habitat will be maintained and enhanced, thereby helping to achieve big game management population and productivity goals. In addition, during an average winter, most of the wintering big game will remain on public lands, helping to keep impacts to private lands low.

Recreation opportunities of all types will be available throughout the area. Through portions of the area, recreationists will be able to enjoy motorized activities. Vehicle access will be restricted on many roads year-round and others seasonally during winter big game use periods, and on important calving areas during the spring and early summer. Additionally, road construction and reconstruction will generally be limited.

The identified roadless areas will remain unroaded and will provide opportunities for recreationists to experience closeness to nature, self-reliance, and tranquility.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

Areas mapped as roadless (1984) within the GTM will remain roadless; the roadless areas will primarily provide Semi-primitive Nonmotorized, with some Semi-primitive Motorized settings (ROS). The remaining area may provide Roaded Natural and Roaded Modified opportunities in meeting the goal.

Recreation site modifications and site development should be level 2 or less (See Glossary). Facilities will generally be limited to meeting safety and sanitary needs. A minimum of onsite controls and restrictions will be utilized to protect resources and promote safe use of the area.

## RECREATION

Access will be mostly for walk-in and horseback opportunities.

Off-highway vehicle (OHV) use is permitted and will normally be restricted to designated trails or closed roads. However, such use may be curtailed by closure or other measures where it is determined to be detrimental to big game species. Motorized use will be permitted on designated open roads.

Trail and associated facility construction, reconstruction, and maintenance will be permitted. Trail systems will be designed and maintained to disperse use, provide varying but challenging difficulty levels, and meet area objectives. Trail use may be curtailed by closure where and when determined to be detrimental to wintering big game species and/or other resource values.

If needed, implement limits on group size, number of animals, and/or other measures (based on limits of acceptable change criteria) to meet social encounter criteria for semi-primitive recreation opportunities. Utilize a minimum of onsite controls and restrictions to protect resources and promote safe use of the area.

## VISUAL

A range of visual quality objectives will apply—from Retention to Modification.

## CULTURAL

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

Elk habitat will be managed to maintain a habitat effectiveness index of no less than 70, including discounts for open roads. Marginal and satisfactory cover will be managed to the greatest extent possible in order to meet optimum size and distribution criteria, as described in the draft publication 'Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges' (Thomas and others 1988). The habitat effectiveness standard will be measured on a subwatershed (allocation zone) basis.

### Cover

Where possible, a minimum of 10 percent of the winter and summer range parts of the GTM will be managed as satisfactory cover (15-20 percent is desirable). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover potentially attainable will be created or maintained. Where possible, a minimum of 30 percent of an area will be managed as total cover (satisfactory and marginal).

Stands managed for satisfactory cover will meet the following criteria:

- Provide stand width of 600-1,200 feet. Exceptions can be made according to Forest-wide Standards and Guidelines;
- be at least 40 ft. in height with a canopy closure of at least 70 percent in all forest types and in the ponderosa pine type on big game winter ranges maintain a canopy closure of at least 50 percent; and
- should be at least 10 acres in size. Larger cover areas are preferable.

The desired cover condition will generally appear as a multi-layered stand, and will meet elk 'hiding' criteria by obscuring 90 percent of a standing elk at a distance of 200 feet or less.

Marginal cover will include stands no less than 10 feet in height with a canopy closure of at least 40 percent and will meet above the above elk 'hiding' criteria.

### Forage

Available forage will be allocated to meet big game management objectives. Available forage in excess of wildlife needs may be allocated to domestic livestock.

Big game forage and cover enhancement projects are encouraged. Improvement projects such as prescribed burning, seeding and planting, browse planting, release, mechanical ground and vegetative disturbance, fertilization, and others may be employed. Structural improvements may be used to protect these investments.

#### Other

All management activities will be regulated during the big game winter use period of December 1 through March 30 or April 15.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators and other non-game wildlife species, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979).

#### FISH

Fish habitat improvement projects and their maintenance will be permitted.

#### RANGE

Domestic livestock grazing is permitted at a level C management strategy. All available range and livestock management practices may be used consistent with the primary management goals of maintaining or enhancing the big game winter and summer ranges, and providing sufficient residual forage for big game species during the winter use period.

Structural range improvements are permitted to the extent that they are compatible with big game management.

#### TIMBER

Timber harvest will not be scheduled. However, timber management activities (including harvest, reforestation, and others) may be permitted and used only where analysis shows they are needed to achieve the objectives for big game harvest and for other wildlife species. Under catastrophic conditions, timber may be salvaged and cover reestablished.

**EXCEPTION:** The time limited or 'sunset' strategy concept may be used on designated areas within C8 under conditions listed in Forest-wide Standards and Guidelines. The concept applies to tentatively suitable lands in and adjacent to the Horseshoe Ridge Roadless Area as described below. Timber harvest volume will be scheduled for such areas. If no actions take place, or if results of timber harvest fail to meet specified objectives above, areas will revert automatically to standard C8 direction (no scheduled harvest) and schedules.

The approximately 9,000-acre Horseshoe Ridge area is south of a line from 'Smith Gate' east to Meacham Creek and is described as follows: Starting at the NE corner of section 19, T. 1 N., R. 36 E. bearing southerly and northeasterly along the proposed dedicated old growth (as shown on the management area maps) to Duncan Canyon, thence down Duncan Canyon to Meacham Creek. Thence southerly, westerly and northwesterly along Meacham Creek to the Forest boundary at about the SE corner of section 30, T.1 N., R. 36 E., north along the east boundary of sections 30 and 19 to the point of beginning. Important attributes for the area are cover for big game, 'spiritual' resources, high riparian and fish values, and visual quality. Timber may be harvested on a scheduled basis as directed by C8 Management Area Standards and Guidelines 'Exception' and resource objectives established for each project (timber sale) until the year 2000. By the year 2000, if the objectives above are not met, 'excepted' areas will revert to C8 without the 'Exception' and be removed from the scheduled cut. If objectives are met, the area

may be allocated to a different management strategy through the project review process and a separate NEPA evaluation.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

All delineated winter range acres and adjacent land in Federal ownership will generally be retained.

Acquire inholdings within delineated winter range lines and adjacent land where opportunities exist.

Other Forest-wide Standards and Guidelines for lands and land uses apply.

#### TRANSPORTATION

Where no other feasible and economical options exist, roads may be constructed, reconstructed, and maintained through the area to provide access to other management areas, as long as they are consistent with the stated visual, watershed, and wildlife objectives.

Portions of the grass-tree mosaic (GTM) currently identified (mapped) as roadless will be maintained in an unroaded condition.

Roads will be closed to motorized use, as needed, to meet big game habitat effectiveness objectives.

#### FIRE

For moderate to high intensity wildfires (average flame lengths over 2 S), all wildfire suppression strategies may be emphasized. Under appropriate fire prediction conditions, wildfires may be permitted to play a natural role on the winter ranges to meet big game habitat and other resource objectives.

#### FUELS

In the forested areas, fuels should not exceed an average of 12 tons per acre in the 0 to 3-inch size class, and an average residue depth of 6 inches as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52) (USDA Forest Service 1976b)'

3-PP4-PC

4-PP-1 -TH

1-PP&ASSOC-4-PC

2-LP-3-PC

All types of prescribed fire may be used including broadcast burning, underburning, or range burning.

#### PESTS

Use integrated pest management (IPM) principles and strategies in meeting management area objectives. Aggressively suppress insects and disease using the cost efficient strategies when outbreaks threaten resource objectives or resources on adjacent lands. Favor biological methods in meeting protection and suppression requirements.

Protect forest stands (habitat) consistent with resource objectives by practicing prevention activities. Prescribed fire may be used to help reduce stocking and conditions favorable for bark beetle and dwarf mistletoes. Control of defoliators may also be accomplished by spraying following approval of an environmental analysis. Use of salvage harvest is limited to catastrophic events.

## **D2 RESEARCH NATURAL AREA**

### **GOALS**

PRESERVE NATURALLY OCCURRING PHYSICAL AND BIOLOGICAL UNITS WHERE NATURAL CONDITIONS AND PROCESSES ARE MAINTAINED, INSOFAR AS POSSIBLE, FOR THE PURPOSES OF: 1) COMPARISON WITH THOSE LANDS INFLUENCED BY MAN; 2) PROVISION OF EDUCATIONAL AND RESEARCH AREAS FOR ECOLOGICAL AND ENVIRONMENTAL STUDIES; AND 3) PRESERVATION OF GENE POOLS FOR TYPICAL AND RARE AND ENDANGERED PLANTS AND ANIMALS.

### **DESCRIPTION**

Eight areas have been identified and are managed as research natural areas. Two (Pataha and Rainbow Creek) have been established by Chief's order. The other six candidate areas are: Elk Flats Meadow, Elk Flats-Wenaha Breaks, Kelly Creek Butte, Mill Creek Watershed, Vinegar Hill, and Birch Creek Cove. Establishment reports and management plans for each area may contain more specific constraints or permitted uses.

### **DESIRED FUTURE CONDITION**

The ecological community will continue to evolve through natural processes. Natural physical, and biological conditions will be maintained, insofar as possible, to preserve the vegetation for which the area was created. Use, except for scientific and educational purposes, will be generally discouraged.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

Establishment reports and management plans for each area will contain specific constraints or permitted uses.

### **RECREATION**

Recreation activities and uses, including overnight camping, hunting and trapping, and pack and saddle stock use will be discouraged or prohibited if such use threatens or interferes with the objectives and values of the Research Natural Area.

All recreation OHV use will be prohibited.

There will be no onsite interpretive or demonstrative facilities.

Educational use of an RNA may be approved for any group or purpose.

Publicity that would attract the general public will be avoided.

Existing trails will remain and be maintained as long as the RNA objectives are not compromised. Travel should be restricted to the trails.

New trails will not be constructed, unless needed for research purposes.

### **WILDERNESS**

For an RNA(s) established in wilderness, management direction for wilderness will take precedence.

Research on RNA's in wilderness will be related to wilderness.

### **VISUAL**

Retention is the visual quality objective for RNA's.

### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

## WILDLIFE AND FISH

Habitat manipulation and introduction of exotic species of plants, animals, or fish is not permitted.

Snags and down tree habitat will be maintained at naturally occurring levels.

## RANGE

Prohibit grazing of domestic livestock unless it is needed to establish or maintain a specific vegetation type.

Improvements are not permitted; boundary fencing may be required to provide protection to the RNA.

## TIMBER

Timber management use and practices are excluded. Cutting and removal of vegetation is prohibited, except as part of an approved scientific investigation.

Firewood cutting is not permitted.

## WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

For RNA(s) established in municipal watershed(s), management direction for the municipal watershed will take precedence.

In cooperation with the PNW Research Station, rehabilitation plans will be developed and implemented in the event of soil disturbing activities such as fire suppression. Soil stabilization of naturally occurring soil loss or movement should not be permitted unless part of an authorized study.

## MINERALS

Valid claims existing prior to Research Natural Area designation may be developed. Valid claims existing prior to any withdrawal from mineral entry shall be required to have an operating plan providing the least amount of impact. Mineral leases will require 'No Surface Occupancy' stipulation. Research Natural Areas may be recommended for withdrawal from mineral entry in situations where mitigation measures do not adequately protect management area values. The mineral potential of the area shall be assessed before withdrawal is recommended.

## LANDS

RNA's should generally be retained in public ownership. When possible, inholdings may be acquired when they contribute to RNA objectives.

An Establishment Record will be written for each RNA recommended in the Forest Plan. A management plan should be written for each established RNA. The management plan should include analysis of surrounding lands as related to the integrity of the RNA. The only special use permits issued will be those related to research; all others will be denied. Noncompatible existing special uses will be terminated. RNA's are 'Avoidance' areas for utility corridors.

Rights-of-way easements existing before RNA establishment will be honored. Upgrading easements that would compromise the objectives of the RNA will be discouraged. The Forest should recommend against FERC licenses or permits that compromise the objectives of the RNA.

Meet other lands and land use Forest-wide Standards and Guidelines contributing toward RNA objectives.

## TRANSPORTATION/FACILITIES

New transportation facilities are not acceptable.

New facilities shall not be bulk except on valid existing mining claims with approved operating plans, or as required as part of an authorized study.

#### FIRE

For moderate to high intensity wildfires, the appropriate suppression response should emphasize control strategies. Wildfire should be extinguished by the least disturbing means possible.

#### FUELS

If authorized in a management plan, low intensity unplanned fire or prescribed burns may be used as a tool to mimic a natural fire to: (1) Perpetuate the sere and thus the cell(s) the RNA represents; (2) return fire to its natural role in the area; and (3) return plant communities to a condition similar to that existing prior to active fire suppression.

#### PESTS

Action to control insects or diseases will not be taken unless an outbreak will drastically alter the natural processes within the RNA, or if it poses an unacceptable threat to resources adjacent to the RNA. Treatment to control insects and diseases within an RNA will support and promote the basic objective and purposes of establishing the area (FSM 4063.3[8]). Biological methods are preferred.

#### RESEARCH

Research projects and management will be coordinated with Pacific Northwest Research Station. Research will not be approved that will change vegetative or surface character of the area.

#### GENERAL

Research Natural Areas inside of wilderness or municipal watershed will be guided by direction for those areas, in situations where conflicts occur.



## E I TIMBER AND FORAGE

### GOAL

MANAGE FOREST LANDS TO EMPHASIZE PRODUCTION OF WOOD FIBER (TIMBER) AND ENCOURAGE PRODUCTION OF FORAGE.

### DESCRIPTION

Applies to all or parts of the forest areas classified as tentatively suitable for timber management and to inclusions of grasslands suitable for livestock grazing. The following areas are managed for timber and forage production under the management area:

- The area west of State Highway 207 on the Heppner Ranger District;
- generally, an area east of State Highway 207, and north of the hydrodivide of Stalling Butte, Tamarack Mtn. and Ant Hill; thence, northerly to Forest Road 22;
- nominally, a band or area south of Forest Roads 21, 2104, and 2105 ranging east from Forest Road 22 to the hydrodivide between Wickiup and Little Potamus Creeks, and
- that portion of the Squaw Roadless Area complementing the Wallowa-Whitman NF laying in the Grande Ronde drainage allocation.

### DESIRED FUTURE CONDITION

Intensive management of forests for timber production and other commodity products will be apparent. The Forest will primarily be a diverse mosaic of even-aged stands of many age classes, with trees somewhat uniformly spaced and well stocked. Regenerated stands will generally range from 20-40 acres. Stands managed using uneven-aged principles will also be apparent, particularly in the ponderosa pine types. A diversity of species will be present in plantations, but seral, more pest free species such as ponderosa pine, western larch, and lodgepole pine will be most evident. Larger trees will average 16-18 inches in diameter with the exception of trees left to meet cavity dependent wildlife needs and for the recruitment of large woody debris. Accumulated fuels will generally be light, and large destructive fire will seldom occur; prescribed fire will be an important management tool.

A variety of native and seeded grasses, sedges, forbs, and shrubs will be provided for both domestic livestock and wildlife. More of the forested rangelands will be in good forage condition class as the overstory is removed and understories thinned. Forage use will be high with improvements installed to facilitate stock distribution and the effective use of available forage. Fences and water developments will be evident. Recreational opportunities will be available for hunters, fishermen, off-highway vehicle operators, and other motorists.

### MANAGEMENT AREAS STANDARDS AND GUIDELINES

#### RECREATION

A Roaded Modified social and physical setting may result from meeting the goal. Recreation site modification and facility development levels 1 and 2 (Primitive and Semi-primitive) (see Glossary) are permitted. Dispersed recreation activities that meet the goal are permitted.

Provide the opportunity for mostly road-oriented recreation activities. Motorized access may be limited to designated roads, trails, and areas.

Trail and associated facilities construction, reconstruction, and maintenance are permitted.

Off-highway vehicle (OHV) use is permitted. OHV use may be restricted where damage to soil and water resources is occurring and/or public safety is threatened.

#### VISUAL

Manage areas to meet at least the Maximum Modification visual quality objective.

Provide for rehabilitation where needed to meet the visual quality objective.

## CULTURAL RESOURCES

Meet Forest-wide Standards and Guidelines

## WILDLIFE

Elk habitat will be managed to achieve a habitat effectiveness index of at least 30, including discounts for roads open to motorized vehicular traffic, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). The habitat effectiveness standard will be measured on a subwatershed (allocation zone) basis.

Dead and down tree habitat will be maintained at 40 percent of the potential population level for all primary excavators and maintained for other cavity users.

Structural and nonstructural improvement, development, and maintenance for wildlife are permitted.

## FISH

Meet Forest-wide Standards and Guidelines. Fish habitat improvement and maintenance projects are permitted.

## RANGE

Manage range and livestock through Range Management Strategies C and D with improved management systems. The full range of development and maintenance of structural and nonstructural improvements is permitted.

Seeding of forage species is permitted where tree establishment and growth are not restricted.

Permit increased domestic livestock and big game grazing to capture forage increases on transitory range.

Timber will be managed on a scheduled basis. All timber management practices and intensities will be permitted. Even-aged silviculture will be the most commonly used silvicultural system in the mixed conifer, associated species, and lodgepole pine plant communities. Uneven-aged management would be the preferred silvicultural system in ponderosa pine and mixed pine-Douglas-fir plant communities. Uneven-aged management may also be used where necessary to meet management goals.

The following practices may be employed:

## TIMBER

1. Site preparation - by chemical, mechanical, biological, manual means, or prescribed fire,
2. tree improvement - improved growing stock, genetic evaluation plantations, and seed production and seed orchard sites;
3. reforestation - natural or artificial;
4. protection of growing stock from animals, insects, and disease;
5. release and weeding;
6. precommercial thinning;
7. fertilization/pruning - may be permitted on a case-by-case basis;
8. commercial thinning;
9. salvage of mortality as needed: and

10. final harvest - including even-aged management practices of shelterwood, seed trees, and clearcut, and uneven-aged management practices of individual trees and group selection

All types of logging systems are permitted in order to meet resource objectives.

Maintain a blend of tree species with a preference for ponderosa pine, western larch, Douglas-fir, and lodgepole pine across the Forest. Shade tolerant species such as grand/white fir, Engelmann spruce, and sub-alpine fir should be maintained as minor stand components. Plant diversity should be enhanced or maintained.

Fuelwood and other miscellaneous forest products should be available for public use.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Land Classification Group III (available for land adjustment) is applicable.

Meet other Forest-wide Standards and Guidelines for lands and land uses.

#### TRANSPORTATION

Meet Forest-wide Standards and Guidelines for roads and trails.

Roads may be closed to motorized use in order to meet resource objectives and/or to reduce maintenance costs.

#### FIRE

For all wildfires in the management area, all suppression strategies (appropriate responses) may be used. Suppression practices should be designed to protect investments in managed tree stands and prevent losses of large acreages to wildfire.

Wildfire prevention activities should be emphasized.

#### FUELS

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches.

Desired fuel loadings are depicted by the following (Technical Reports PNW 51, 52):

Treatment/Working Class	Ponderosa Pine	Mixed Conifer	Lodgepole Pine
Precommercial Thinning	1-PP-1-TH 4-PP-1-TH	3-DF-1-TH 4-DF-1-TH	1-PP-1-TH
Clearcut	1-PP-4-CC	2-DF-4-CC 3-DF-4-CC	1-LP-3-LL
Shelterwood	3-PP-4-PC	1-DF-4-PC 3-DF-4-PC	--
Commercial Thinning/Removals	2-PP-4-PC	2-DF-3-PC	2-LP-3-PC
Selection	2-PP-4-PC 4-PP-4-TH	5-PP&ASSOC-4-PC	2-LP-3-PC

All methods of fuel treatment are appropriate. Utilization of wood residues should be encouraged in order to reduce fuel loadings. When treatment is needed to meet resource objectives, prescribed fire is preferred in fire-dependent ecosystems. In ecosystems where fire is not a useful tool, direct fuel treatment methods should be used in reducing fuel accumulations to meet resource management objectives.

Prescribed burning may be used to accomplish a variety of timber and forage production objectives. Care will be used when using prescribed fire due to high resource values and risk of escape fire.

#### PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and diseases to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

Protect growing stock consistent with the level of investment by practicing high intensity prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels. Aggressively suppress insects and diseases using the most cost-effective suppression strategies when outbreaks threaten resource management objectives. Use a variety of methods in meeting protection and suppression requirements.

## **E2 TIMBER AND BIG GAME**

### **GOAL**

MANAGE FOREST LANDS TO EMPHASIZE PRODUCTION OF WOOD FIBER (TIMBER), ENCOURAGE FORAGE PRODUCTION, AND MAINTAIN A MODERATE LEVEL OF BIG GAME AND OTHER WILDLIFE HABITAT.

### **DESCRIPTION**

Applies to all or parts of the Forest area classified as tentatively suitable for timber management and other included acres classified as suitable and transitory range.

The management area applies to about 25 percent of the suitable lands across the Forest on all Districts. The following areas are managed for timber and forage production under Management Area E2 (Locations are shown on management area maps):

- On Pomeroy Ranger District, the general forest area surrounding the north end of Road 40 from the Tucannon River and upper end of North Fork Asotin Creek north to the Forest Boundary;
- the High Ridge-Horseshoe Prairie, the Middle Ridge-Ruckel Junction, and the Griffin Peak-Chase Mountain areas on the Walla Walla Ranger District;
- Generally, an area ranging in a band from Alder Creek on the Heppner Ranger District east to the Forest Boundary; and
- generally, areas range southeasterly between Forest Roads 5412, 5427, astride State Highway 244 and north of Hidaway Creek on the North Fork John Day Ranger District.

### **DESIRED FUTURE CONDITION**

Management of forests for timber production, domestic livestock, big game, and other wildlife habitat will be apparent. Forests will contain a mosaic of even-aged and uneven-aged stands dispersed in a manner creating patterns of tree cover for big game and openings providing forage. Created openings will range from 1-3 acres up to 40 acres, but will often be 20-30 acres in size. Horizontal and vertical diversity will be apparent; tree species will be diverse, but seral, more pest-free species such as ponderosa pine, western larch, and lodgepole pine will predominate. Accumulated fuels will be generally light, and large destructive fires will seldom occur. Prescribe fire will continue to be an important management tool.

A variety of native and seeded grasses, sedges, forbs, and shrubs will be available for big game, other wildlife, and domestic livestock. Range and timber management practices will result in improved range condition and increased amounts of available forage for both big game and domestic livestock. Dispersed recreation opportunities of all types will be available for a variety of users. However, management of roads will result in a noticeable amount of travel restrictions in some areas.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

A Roaded Modified social and physical setting (ROS) may result from meeting the goal. Dispersed recreation activities that meet the goal are permitted.

Recreation site modifications and facility development levels 1 and 2 (see Glossary) are permitted.

Provide the opportunity for road oriented, walk-in, and horseback activities. Motorized access may be limited to designated roads, trails, and areas.

Trail and associated facilities construction, reconstruction, and maintenance are permitted.

Off-highway vehicle (OHV) use is permitted on designated roads, trails, and areas where compatible with big game habitat effectiveness, recreation, and other resource objectives.

#### VISUAL

Manage areas to meet Modification visual quality objective.

Provide for rehabilitation where needed to meet the visual quality objective.

#### CULTURAL RESOURCES

Meet Forest-wide Standards and Guidelines.

#### WILDLIFE

Elk habitat will be managed to achieve a habitat effectiveness index of no less than 45, including discounts for roads open to motorized vehicular traffic, as described in *Wildlife Habitats in Managed Forests* (Thomas and others 1979). Marginal and satisfactory cover and forage areas will be managed to meet or exceed the habitat effectiveness standard, using processes described in *Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges* (Thomas and others 1988). The habitat effectiveness standard will be measured on a subwatershed (allocation zone) basis.

A minimum of 10 percent of the area will be managed as satisfactory cover (15 to 20 percent is desired). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover potentially attainable will be created or maintained. A minimum of 30 percent of an area will be managed as total cover.

Stands managed for satisfactory cover will meet the following criteria:

- Be at least 40 feet in height, with a canopy closure of at least 70 percent in mixed conifer/lodgepole pine types, and no less than 50 percent in the ponderosa pine type;
- should be 1,200 to 1,850 feet in width (larger cover areas are preferable) though exceptions may be made by wildlife biologists based on an on-the-ground assessment of the stand(s) value for elk: and
- should generally appear as a multi-layered timber stand.

**EXCEPTIONS:** Exceptions to the achievement of HEI and cover standards may be made on an individual project basis. Such cases would include situations where past harvesting, large scale insect and disease damage, and/or catastrophic fires have made the possibility of accomplishing the desired future condition (DFC) (long-term potential) marginal within a reasonable period (without applying additional silvicultural treatments such as regeneration harvest, tree planting, release, and other cultural operations).

Where these situations exist, activities may occur that reduce HEI and cover further in the near term only if they are consistent with the ultimate goal of the management area, and if the activities will clearly result in achieving a higher HEI cover condition and desired future condition (DFC) in a shorter period of time than if the area was left untreated.

All such activities will be supported by a documented NEPA analysis and will include a cumulative effects analysis of big game habitat in the project area over time. The analysis will also describe the anticipated improved condition on a subwatershed or management area basis. All exceptions must be recommended by the District Ranger and approved by the Forest Supervisor for implementation.

Available forage will be allocated on an approximately equal basis between big game and domestic livestock.

Dead and down tree habitat will be managed to provide or maintain 60 percent of the potential population level for all primary cavity excavators, and maintained for other cavity users.

Structural and nonstructural improvement, development, and maintenance for wildlife are permitted.

Management activities will not create barriers to impede movement of big game animals.

An average of one unburned slash pile for every 2 acres should be retained for wildlife cover on even-aged regeneration harvest units.

Manage to maintain or establish a high level of vegetative diversity at a minimum level of 10 percent in each of the following five seral stages:

Grass/Forb	Young Sawtimber
Shrub/Seedling	Mature/Overmature
Pole/Sapling	

#### FISH

Meet Forest-wide Standards and Guidelines. Fish habitat improvement projects and their maintenance are permitted.

#### RANGE

Manage range and livestock at Range Management Strategies C and D with improved management systems. The full range of development and maintenance of structural and nonstructural improvements is permitted.

Seeding of forage species is permitted where tree establishment and growth are not restricted. Prescribed burning may be practiced to improve range forage conditions and trend.

Permit increased domestic livestock and big game grazing to capture forage increases on transitory range.

#### TIMBER

Timber will be managed on a scheduled basis. All timber management practices and intensities will be permitted. Even-aged silviculture will be the most commonly used silvicultural system in the mixed conifer, associated species, and lodgepole pine plant communities. Uneven-aged management would be the preferred silvicultural system in ponderosa pine and mixed pine-Douglas-fir plant communities. Uneven-aged management may also be used where necessary to meet management goals.

The following practices may be employed:

1. Site preparation - by chemical, mechanical, biological, or manual means, or prescribed fire;
2. tree improvement - improved growing stock, genetic evaluation plantations, and seed production and seed orchard sites;
3. reforestation - natural or artificial;
4. protection of growing stock from animals, insects, and disease;
5. release and weeding;
6. precommercial thinning;
7. fertilization/pruning - may be permitted on a case-by-case basis;
8. commercial thinning;
9. salvage of mortality as needed and

10. final harvest - including even-aged management practices of shelterwood, seed trees, and clearcut, or uneven-aged management practices of individual tree and group selection.

All types of logging systems are permitted in order to meet resource objectives.

Maintain a blend of tree species with a preference for ponderosa pine, western larch, Douglas-fir and lodgepole pine across the Forest. Shade tolerant species such as grand/white fir, Engelmann spruce, and sub-alpine fir should be maintained as a minor stand component. Vegetative diversity should be enhanced or maintained.

Fuelwood and other miscellaneous forest products should be available for public use.

#### WATER AND SOIL

Meet Forest-wide Standards and Guidelines.

#### MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

#### LANDS

Land Classification Group III (available for land adjustment) is applicable. Meet other Forest-wide Standards and Guidelines for lands and land uses.

#### TRANSPORTATION

Meet Forest-wide Standards and Guidelines for roads.

Roads may be closed to motorized use in order to meet big game habitat objectives, meet recreation and other resource objectives, and/or reduce maintenance costs.

#### FIRE

For all wildfires in the management area, all suppression strategies (appropriate responses) may be used. Suppression practices will be designed to protect investments in managed tree stands and prevent losses of large acreages to wildfire.

Wildfire prevention activities should be emphasized.

#### FUELS

Fuels should not exceed an average of 9 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches.

Desired fuel loadings are depicted by the following (Technical Reports PNW 51, 52):

Treatment/Working Class	Ponderosa Pine	Mixed Conifer	Lodgepole Pine
Precommercial Thinning	1-PP-1-TH 4-PP-1-TH	3-DF-1-TH 4-DF-1-TH	1-PP-1-TH
Clearcut	1-PP-4-CC	2-DF-4-CC 3-DF-4-CC	1-LP-3-LL
Shelterwood	3-PP-4-PC	1-DF-4-PC 3-DF-4-PC	--
Commercial Thinning/Removals	2-PP-4-PC	2-DF-3-PC	2-LP-3-PC
Selection	2-PP-4-PC 4-PP-1-TH	5-PP&ASSOC-4-PC	2-LP-3-PC



All methods of fuel treatment are appropriate. Utilization of wood residues should be encouraged in order to reduce fuel loadings. When treatment is needed to meet resource objectives, prescribed fire is preferred in fire-dependent ecosystems. In ecosystems where fire is not a useful tool, direct fuel treatments methods should be used in reducing fuel accumulations to meet resource management objectives.

Prescribed fire may be used to accomplish a variety of timber and forage production objectives. Care will be used when using prescribed fire due to high resource values and risk of escape fire.

## PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and diseases to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity. Protect growing stock consistent with the level of investment by practicing high intensity prevention activities.

Emphasis will be on the prevention of stand and fuels conditions that favor pest increases above epidemic levels. Aggressively suppress insects and diseases using the most cost-effective suppression strategies when outbreaks threaten resource management objectives. Use a variety of methods in meeting protection and suppression requirements.

## **F2 MILL CREEK MUNICIPAL WATERSHED - UNDEVELOPED**

### **GOALS**

PROVIDE WATER AT A LEVEL OF QUALITY AND QUANTITY WHICH, WITH PRIMARY TREATMENT BY THE MUNICIPALITY, WILL RESULT IN A SATISFACTORY AND SAFE POTABLE WATER SUPPLY.

### **DESCRIPTION**

The management area applies to all land in the Mill Creek Municipal Watershed above the intake, located in Section 12, Township 6 North, Range 37 East, W.M. The area was established as a municipal watershed by a cooperative agreement between the City of Walla Walla and the Secretary of Agriculture on June 26, 1918 (USDA Secretary 191 8). The watershed, comprising 21,740 acres, is located in Oregon and Washington.

### **DESIRED FUTURE CONDITION**

Natural vegetative conditions will occur throughout the watershed. Riparian areas will be in natural condition except where activities associated with culinary water supply development occur. The watershed will not be grazed by domestic livestock. Administrative and recreation access will continue to be restricted to meet water quality goals. The quantity and quality of surface waters shall be maintained or enhanced and will be suitable for culinary use by the City of Walla Walla after treatment

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Special big game hunts are allowed by permit for the purpose of protecting water quality. Other recreation activity is not allowed. Off-highway vehicle use is prohibited.

#### **VISUAL**

Meet Partial Retention visual quality objectives.

#### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

#### **WILDLIFE**

Meet Forest-wide Standards and Guidelines.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators and maintained for other cavity users.

#### **FISH**

Meet Forest-wide Standards and Guidelines.

#### **RANGE**

Livestock grazing is not permitted

#### **TIMBER**

No scheduled timber harvest activities are permitted. Firewood cutting is not permitted.

#### **WATER**

Provide water at a level of quality which meets Federal and state standards, and which, with primary treatment by the municipality, will result in a satisfactory and safe potable water supply.

Water resource management shall be conducted as follows:

1. Administer cooperative agreement with the City of Walla Walla;
2. monitor water quantity and quality;
3. administer area closure and provide a watershed rider;
4. administer permit system to control entry;
5. cooperate with Oregon Department of Fish and Wildlife and Washington Department of Wildlife on permit system;
6. coordinate with the Washington Department of Health; and
7. sanitary regulations will be observed by persons who occupy or are employed in the watershed.

## SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS

Lands within the watershed are withdrawn from all forms of location, entry, and patent under mining laws, and from disposition under laws pertaining to mineral leasing.

## LANDS

As opportunities arise and as needed, acquire watershed lands to improve overall watershed management.

Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

Construction of transportation facilities is not permitted. Maintain existing trails.

## FIRE

The area is high priority for control of wildfires. The appropriate wildfire suppression response should emphasize control strategies.

If retardant is needed for any reason, only water will be used. Tractor use will not be permitted on slopes of over 50 percent or within riparian areas. Fire suppression activities may require restoration and/or other mitigation to maintain water quality and quantity.

If catastrophic conditions occur, rehabilitation practices may be used all rehabilitation activities will be directed toward protecting or improving water quality, quantity, and timing. Projects will be coordinated with the City of Walla Walla.

## FUELS

Use of prescribed fire is permitted outside the riparian influence zone where needed to improve watershed conditions or reduce significant risk of watershed damaging wildfire. Prescribed burns are designed, located and scheduled to minimize risk of short term degradation of water quality.

## PESTS

Use integrated pest management (IPM) principals and strategies in managing insects and diseases to meet management objectives. Management of insects and diseases (including suppression activities) is permitted, in coordination with the City of Walla Walla, to prevent unacceptable damage in the watershed. The preferred method is use of biological controls.

## GENERAL

If conflicts occur between direction in Management Area D2, Research Natural Area, and direction for the Mill Creek Municipal Watershed, Management Area F2 requirements will prevail in order to meet municipal watershed objectives.

### **F3 HIGH RIDGE EVALUATION AREA**

#### **GOAL**

TO PROVIDE AN ADMINISTRATIVE STUDY AREA TO EVALUATE THE EFFECTS OF TIMBER HARVESTING ACTIVITIES ON WATER QUALITY AND STREAMFLOW REGIMES.

#### **DESCRIPTION**

The F3 Management Area applies to the High Ridge Evaluation Area which is approximately 560 acres in size. It is the part of the Umatilla National Forest Barometer Watershed that has been the study site for timber operations and watershed response testing.

Hydrologic data collection was initiated in 1965. Data currently being collected are measures of streamflow, water and air temperature, precipitation, and suspended sediment. Three smaller watersheds, located at the headwaters of Buck Creek, were silviculturally treated in 1976. The fourth watershed was untreated and serves as the control watershed. Additional timber harvest is planned. The hydrologic response to the treated watersheds is compared against that of the control in order to assess changes in flow regimes as a result of timber harvest. Of primary interest are changes in peakflow timing, peakflow volumes, peakflow durations, annual hydrograph distribution, streambank stability, and water quality.

#### **DESIRED FUTURE CONDITION**

The barometer watershed study will continue through the next 10-year period. The watershed will be characterized by a variety of vegetative conditions ranging from natural to highly modified. Modifications in timber canopy will result from a variety of standard timber harvest techniques and strategies, and will be studied for their impacts on water quality and streamflow regimes. Other development activities inconsistent with study objectives will be absent or show minimal impact. Changes in possible allocation will be reviewed at the next Forest Plan development.

#### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

##### **RECREATION**

Dispersed recreation uses are permitted. Developed recreation is not permitted.

##### **VISUAL**

A Maximum Modification visual quality objective is permitted.

##### **CULTURAL**

Meet Forest-wide Standards and Guidelines.

##### **WILDLIFE**

Meet Forest-wide Standards and Guidelines.

##### **FISH**

Meet Forest-wide Standards and Guidelines. No fish habitat is within the area.

##### **RANGE**

Livestock grazing will be permitted after timber operations are completed as long as grazing meets the objectives of the study.

##### **TIMBER**

Timber harvest and management entries are permitted based on outcome of present study. The full range of timber management practices and intensities is available.

Maintain the control watershed in a natural or unharvested condition.

## WATER

Monitor water quality and quantity to determine effects of timber and other forest management operations on water resources. Periodically report results of the barometer watershed monitoring.

## SOIL

Meet Forest-wide Standards and Guidelines.

## MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

## LANDS

Meet Forest-wide Standards and Guidelines for lands and land uses.

## TRANSPORTATION

Maintain the existing road system and keep the existing roads open. Roads may be constructed based on the requirements of the study.

## FACILITIES

Maintain and protect existing weather and water measuring stations. Other monitoring facilities may be added, as study needs arise.

## FIRE

The area has a high priority for protection from wildfire. The appropriate wildfire suppression should emphasize control strategies. Standard fire suppression techniques should be used.

Based on the objectives and requirements of the study, standard rehabilitation practices may generally be used where intense wildfire or suppression activities create a need for protecting or rehabilitating soil and water resources.

Fuel hazards may be treated to standards found in areas with intensive timber practices, or to levels determined from study requirements. Typical fuel treatment practices should be used.

## FUELS

Prescribed burning from planned ignitions will be used to accomplish a variety of timber and forage production objectives. Prescribed fire from unplanned ignitions will not be used due to high resource values and risk of escape fires.

## PESTS

Use integrated pest management (IPM) principles and strategies in managing insects and diseases to meet management objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity. Protect growing stock consistent with the level of investment by practicing high intensity prevention activities.

Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels. Aggressively suppress insects and diseases using the most cost-effective suppression strategies when outbreaks threaten resource management objectives. Use a variety of methods in meeting protection and suppression requirements.

## **F4 WALLA WALLA RIVER WATERSHED**

### **GOAL**

PROVIDE HIGH QUANTITY AND QUALITY OF WATER AND ELK HABITAT EFFECTIVENESS WHILE SUSTAINING OR ENHANCING OTHER RESOURCE VALUES. MANAGEMENT ACTIVITIES WILL NOT SUBSTANTIALLY CHANGE THE LEVEL OF WATER DISCHARGE FROM THE NATIONAL FOREST DURING THE MAY 1 THROUGH SEPTEMBER 30 PERIOD.

### **DESCRIPTION**

The management area applies to all National Forest land within the north and south forks of the Walla Walla watershed-except for the Target Meadows area on the south edge of the watershed and areas between both the Skyline Road (64) and the Tiger Canyon Road (65), and the watershed boundary. Aside from some forest management activities in the northwest portion of the area, most of the area is a natural appearing environment and is undeveloped.

### **DESIRED FUTURE CONDITION**

The headwaters of the north and south forks of the Walla Walla River will remain as large, natural appearing, primarily undeveloped area. The area will continue to provide high quantities of quality water, undisturbed big game and other wildlife habitat, and recreation opportunities featuring closeness to nature and self-reliance. Some additional logging and timber management will be evident only in areas where past harvest has occurred.

Riparian areas will be in a natural state. Surface runoff in streams will be of high quality and show no reduction in average annual yield or low flows. On the average, spring snowmelt peaks will not change significantly in magnitude. Quality big game habitat will be maintained and, in some cases, improved through prescribed fire, thereby helping to achieve big game management and Forest recreation goals. Forage will be abundant and improved through management.

Recreationists will be able to enjoy a variety of challenging off-highway vehicle (OHV) and other dispersed opportunities on trails, drive ways, or closed roads. Opportunities to enjoy hiking, camping, hunting, and other recreational activities in a natural setting will be available. Existing wheel tracks and primitive roads will become OHV trails. Emphasis will be on providing a quality hunting experience in an undisturbed environment. Road closures and other management techniques will result in a noticeable amount of travel restrictions across the area.

### **MANAGEMENT AREAS STANDARDS AND GUIDELINES**

#### **RECREATION**

Manage dispersed recreation for Semi-primitive Motorized physical and social settings (SPM - ROS Users Guide) on the area by maintaining opportunities to get away from others and experience feelings of remoteness. A Roaded Modified physical and social setting may result from meeting the goal on a small part of the developed area.

Recreation site modification and facility development levels 1 and 2 (see Glossary) are permitted.

Access will be primarily for remote off-highway vehicle (OHV), and walk-in or horseback opportunities on the undeveloped and parts of the developed areas, and for a small amount of motorized opportunities on the developed areas.

Trail and associated facility construction, reconstruction and maintenance are permitted, as long as consistent with overall area objectives.

Off-highway vehicle (OHV) use is permitted on roads, trails, and areas. Use may be limited to designated roads, trails, and areas to meet water quality and quantity, habitat effectiveness, and recreation objectives.

## VISUAL

Management activities will result in a range of visual quality objectives primarily Retention (R) and Partial Retention (PR) to some Modification (M).

Provide for rehabilitation needed to meet visual quality objectives where visual standards have not been met.

## CULTURAL RESOURCES

Meet Forest-wide Standards and Guidelines.

## WILDLIFE

### Areas with Timber Management

Elk habitat will be managed to achieve a habitat effectiveness index of no less than 60, including discounts for roads open to motorized vehicular traffic, as described in Wildlife Habitats in Managed forests (Thomas and others 1979). Marginal cover, satisfactory cover, and forage areas will be managed to meet size and spacing criteria as described in Habitat Effectiveness Index for Elk Habitat on Blue Mountain Winter Ranges (Thomas and others 1988).

A minimum of 10 percent of the winter range and 15 percent of the summer range area will be managed as satisfactory cover (20 percent is desirable on each area). If this is not attainable because of low natural potential, the highest percentage of satisfactory cover potentially attainable will be created or maintained. A minimum of 30 percent of the areas will be managed as total cover.

Stands managed for satisfactory cover will meet the following criteria:

- Be at least 40 feet in height, with a canopy closure of at least 70 percent in all forest types except that canopy closure will be no less than 50 percent on winter range ponderosa pine types;
- cover on summer ranges should be 1,200 to 1,850 feet in width (larger cover areas are preferable) though exceptions may be made by wildlife biologists based on an on-the-ground assessment of the stand(s) value for elk;
- width of cover on winter ranges should be 600-1,200 feet. Exceptions may be made according to Forest-wide Standards and Guidelines;
- on winter ranges, stands should be at least 10 acres in size (larger cover areas are preferred). Exceptions may be made, as shown above: and
- Satisfactory cover should generally appear as a multi-layered timber stand.

Marginal cover will be no less than 10 feet in height, with a canopy closure of at least 40 percent, and 600 to 1,200 feet wide. Exceptions may be made by wildlife biologists based on an on-the-ground assessment of the stand(s) value for elk.

All cover areas will be managed to provide sufficient vegetation to obscure 90 percent of a standing elk at a distance of 200 feet or less.

An average of one unburned slash pile for every 2 acres should be retained on even-aged regeneration harvest units for wildlife cover.

All Areas



Habitat effectiveness index of 60 and cover standards apply to all other areas within the management area.

Big game forage improvement projects such as seedling, browse planting, and fertilization may be used. Structural improvements may be used to protect these investments. Prescribed burning may be practiced in order to maintain or enhance rangeland forage conditions.

Available forage will be allocated to meet big game management objectives. Available excess forage may be allocated to domestic livestock. Manage to maintain or establish a high level of vegetative diversity.

Emphasis should be placed on retaining and/or protecting big game key use areas and habitats such as migrational corridors, calving/fawning areas, wallows, springs, seeps, and bogs.

Management activities will not create barriers to impede movement of big game animals.

Dead and down tree habitat will be managed to provide or maintain 80 percent of the potential population level for all primary cavity excavators, and maintained for other cavity users.

## FISH

Meet Forest-wide Standards and Guidelines for riparian/fish habitat.

Fish habitat enhancement, restoration, and maintenance practices (projects) may be used to increase smolt habitat capability.

## RIPARIAN

For all Class I, II, and III streams and associated riparian areas within the management area, anadromous fish habitat will be managed to produce at least 90 percent of potential smolt habitat index (SCHI) by meeting standards for Fish shown in Management Area C5.

## RANGE

Domestic livestock grazing is permitted at Range Management Strategy C. All available range and livestock management practices may be used where consistent with the primary management goal of maintaining or enhancing water quality and quantity and big game and other species' habitats.

Meet the forage utilization standards for riparian and upland areas, as found in the Range portion of Forest-wide Standards and Guidelines.

Structural range improvements are permitted to the extent they are compatible with the management goal.

## TIMBER

Within the north and south forks, Walla Walla River drainages, timber will be managed on a scheduled basis only on designated lands, as mapped. The area encompasses a total of 34,950 acres, of which 3,382 acres are suitable for timber management.

Where timber is managed on a scheduled basis, all timber management practices and intensities consistent with achieving the primary management goals will be permitted. The selected silvicultural system applied to timber stands within the suitable forest lands will be based on a site-specific examination and analysis, and will be designed to meet management goals. Harvest practices may include clearcutting, shelterwood, salvage, removal, and commercial thinning, as well as group or individual tree selection. Other cultural practices may be used including natural and artificial regeneration, planting genetic stock when available, precommercial thinning, release, and insect, disease, and animal damage protection.

Harvest of trees adjacent to existing harvested units will be scheduled only under the following conditions; no further harvest may occur until the conditions (items 1 and 2, below) are met:

1. Big game habitat, water quality and yield, and visual resource objectives can be met; and
2. units are determined to be established by using criteria in No. 1 (by acceptable stocking and appropriate species) and free to grow.

If catastrophic conditions occur, salvage may be employed where consistent with meeting water quality, quantity, and elk habitat objectives.

Timber harvest will not be scheduled or allowed in riparian areas of Class I, II, and III streams.

Logging and road building may be done with conventional practices. All yarding and skidding systems may be used, if within the ground-disturbing criteria (see Soil).

Fuelwood cutting may be permitted consistent with established goals and wildlife criteria.

## WATER

In addition to meeting Forest-wide Standards and Guidelines, the following water resource management measures shall be conducted:

1. Provide for: (a) Protection of riparian areas, (b) retention of snowpack, and (c) minimal loss of soil productivity and transport of eroded materials to surface waters. Created openings will generally be less than 10 acres in size. Shape, location, and orientation of harvest units (created openings) will be designed to increase snow redistribution into created openings, reduce evapo-transpiration losses, and provide maximum shading of induced snowpacks and adjacent tree boles.
2. Monitor water quality, quantity, and timing of yields.
3. Coordinate all resource activities to maintain or enhance existing water yields for irrigation during the period of May 1 to September 30.

## SOIL

Limit ground-disturbing activities within 250 feet horizontal distance of all streams, and wet areas associated with streams, to no more than 10 percent of exposed mineral soil per unit or project area.

Meet all other Forest-wide Standards and Guidelines for soils.

## MINERALS AND ENERGY

Meet Forest-wide Standards and Guidelines.

## LANDS

Meet Forest-wide Standards and Guidelines.

## TRANSPORTATION

Site-specific examinations and analysis will be conducted to determine the needs for additional roads or reconstruction. If additional or rebuilt roads are needed, they will meet the following standards and guidelines.

- All roads built into these areas for the purpose of timber harvest are to be built to minimize soil disturbance and adverse effects on water, fish, and wildlife populations. No construction will be permitted within 500 feet horizontal distance of Class I and II streams except at needed crossings.
- Roads shall be constructed and maintained at the minimum widths necessary to safely accommodate logging trucks and yarding equipment.

- Maintain standards of alignment and grade that will allow roads to follow, as nearly as possible, the contours of the land. Utilize a minimum of excavation and earth movement to accomplish the construction.

Roads will be maintained and shall be treated to minimize soil erosion. Erosion control measures to be taken might include, but need not be limited to:

1. Revegetation of the roadbed with herbaceous species,
2. Outsloping,
3. Crossditching,
4. Covering with logging slash, and
5. Hand maintenance of the drainage structures.

All existing and future roads will be closed at the conclusion of project activities except for:

1. Yellow Jacket Road No. 6500040,
2. Table Springs Road No. 6512000, and
3. Road No. 6500294 to Trail No. 3225.

Suitable measures shall be taken to assure revegetation and continued closure to motorized vehicle use, unless needed in emergency situations for the protection of life or property. During closure periods, measures shall be taken to ensure that motorized vehicles cannot enter onto or travel upon these roads.

#### FIRE

The appropriate wildfire suppression response should emphasize control and/or contain strategies for moderate to high intensity fires.

Low impact suppression methods should be used; rehabilitation and other measures may be used to mitigate wildfire and suppression impacts in conflict with water and soil objectives.

#### FUELS

Where timber is harvested and managed, fuels should not exceed an average of 12 tons per acre in the 0 to 3-inch size class and an average residue depth of 6 inches, as depicted in the Photo Series for Quantifying Forest Residues (Technical Report PNW 52) (USDA Forest Service 1976b):

Even-aged Management	3-PP-4-PC	4-PP-1-TH	1-PP&ASSOC+PC	2-LP3-PC
Uneven-aged Management	2-PP-4-PC	2-LP3-PC	4-PP-1-TH	5-PP&ASSOC-4-PC

All methods of fuel treatment are appropriate; hand treatment methods are preferred in riparian areas.

All types of prescribed fire may be used where consistent with meeting water quality goals.

#### PESTS

Use integrated pest management (IPM) principles and strategies to manage insects and diseases in meeting management area objectives. Monitoring and detection of pest conditions and populations will be done so that corrective treatments consistent with resource objectives can be prescribed at the earliest opportunity.

1. Protect forest stands (habitat) where consistent with resource objectives by practicing prevention activities. Emphasis will be on the prevention of stand and fuels conditions that favor pests increases above epidemic levels.
2. Suppress pests using cost efficient strategies when outbreaks threaten dispersed recreation, water and/or wildlife habitat objectives or resources in adjacent areas. Favor biological methods when available.
3. The use of pesticides will not conflict with water and habitat objectives.

# Chapter 5

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# CHAPTER 5. IMPLEMENTATION OF THE FOREST PLAN

## Introduction

The three parts of this chapter describe how the Forest Plan is to be put into practice. The first section explains how the management goals and objectives described in Chapter 4, Forest Management Direction, provide the driving force for project selection and scheduling. The second section describes the monitoring and evaluation process and the specific issue-related items that will be the basis for determining how well the objectives are being met and how closely the management standards and guidelines are being followed. The final section tells about the opportunities and procedures for changing the Plan through amendments and revision.

## IMPLEMENTATION DIRECTION

Implementation of a forest plan occurs through identification, selection, scheduling, and execution of management practices to meet management direction provided in the Plan. Implementation also involves responding to proposals by others for use and occupancy of National Forest System lands.

As described in Chapter 4, management direction is expressed in terms of Forest direction, Forest-wide Standards and Guidelines, and Management Area direction. Forest direction consists of goals, objectives, and management requirements, generally applicable to the entire Forest. Management area directions have management requirements specific to individual areas within the Forest in addition to the general Forest direction. All of this management direction responds to public issues and addresses concerns and opportunities with respect to the availability, suitability, and capability of the land and resources.

Implementation of this direction is the key to translating the goals, objectives, and management requirements stated in the Plan into results on the ground. The Plan is implemented through program development and budgeting, and annual work-planning processes. Through these processes, the Plan is supplemented to account for adjustments and changes in overall management direction.

The Plan provides direction for developing multi-year implementation programs. The Plan's scheduling practices, grouped as projects, are translated into multi-year program budget proposals which identify the needed expenditures. These processes complement the planning process as vehicles for requesting and allocating funds needed to carry out the planned management direction. The proposed annual Forest program budget is the basis for requested funding. Upon approval of a final budget for the Forest, the annual program of work is finalized and implemented. The accomplishment of the annual program of work is the incremental implementation of management direction in the Forest Plan.

### Consistency with other Instruments

This Forest Plan serves as the single land management plan for Umatilla National Forest. All other land management plans are replaced by the direction in this Plan; a list of these appears in Chapter 1, Table 1-1.

All outstanding and future permits, contracts, cooperative agreements and other instruments for occupancy and use of lands included in the Forest Plan will be brought into agreement with the Forest Plan, subject to the valid existing rights of the parties involved. This will be done as soon as practicable, probably within 3 years of the date of the Plan.

## Budget Proposals

The Forest Plan translates scheduled management practices into a multi-year program budget proposal. This schedule will be used for requesting and allocating the funds needed to carry out the planned management direction. Subsequent administrative activities (including budget proposals) which affect the Forest shall be based on the Forest management objectives in Chapter 4 and follow the project schedules in the Forest Plan, Appendix A.

Upon approval of a final budget, the Forest finalizes and implements the annual program of work. Accomplishment of this program results in incremental implementation of the management direction of the Forest Plan.

The Forest Supervisor may change the proposed implementation schedules to reflect differences between proposed annual budgets and appropriated funds. Such a schedule change shall be considered an amendment to the Forest Plan, but shall not be considered a significant amendment or require the preparation of an environmental impact statement, unless the change significantly alters the long-term relationships between levels of goods and Services projected under planned budget proposals as compared to those projected under the actual appropriations.

Environmental Projects and activities permitted through the Forest Plan are subject to site-specific Analysis environmental analyses under the NEPA process as they are planned for implementation. Site-specific project environmental analysis may rely on and utilize analyses and expected environmental effects from the FEIS and will be considered tiered to the Forest Plan. Such information or data may be incorporated by reference in project environmental assessments or environmental impact statements (EIS's). Environmental analyses for some proposed actions meeting established FSM 1950 criteria may qualify to be exempted or categorically excluded from preparation of an environmental assessment or EIS. An analysis file and/or project file must be available for public review, but it is not always necessary to document the analysis in the form of an environmental assessment or EIS.

## MONITORING AND EVALUATION

Monitoring is the means of measuring and evaluating the effectiveness of the Forest Plan implementation. Monitoring provides quantitative and qualitative information on the progress and results. It is a means to determine how well assumptions used in preparing the Plan reflect actual conditions, how well objectives of the Plan are being met, and how appropriate the management standards and guidelines are. Monitoring may lead to changes in management practices, or provide a basis for minor adjustments, amendment, or possible revision of the Plan.

Monitoring is intended to help keep the Forest Plan dynamic and responsive to change. When a situation is identified as being outside the limits of acceptable variability, appropriate amendment, revision, or other changes may be made. Monitoring consists of gathering data, observations, and information. During evaluation, the data and information are analyzed and interpreted. This process provides information necessary to determine whether or not planned conditions or results are being attained and when they are within the intent of the Plan.

The monitoring and evaluation process will provide information to help determine, for example, if:

1. Laws, regulations, and policies are being followed, including those found in the Forest Plan Management Areas and Forest-wide Standards and Guidelines, the Regional Guide, and the Forest Service Manual and Handbooks.
2. The Forest Plan responsively addresses the issues, concerns, and opportunities in a publicly acceptable manner.
3. The management prescriptions are producing the predicted or desired environmental results.
4. Costs of implementing the Plan are within projected limits.



5. Projected outputs are being produced.
6. There are new issues and concerns not adequately addressed by the Plan.

There are a number of monitoring systems currently in place to comply with administrative and legal responsibilities. Forest Plan monitoring does not replace these systems, but rather complements them by addressing specific issues and concerns identified through the planning process and providing additional information for determining the effectiveness of the Plan.

Evaluation of results of site-specific monitoring programs will be documented in the annual evaluation report. The significance of results of monitoring programs will be analyzed and evaluated by the Forest interdisciplinary team using the evaluation process summarized on a flow chart in this chapter (Figure 5-1).

Based on evaluation, any need for further action will be recommended to the Forest Supervisor. A recommendation could include:

1. No action needed - monitoring indicates goals, objectives and standards are achieved;
2. referring recommended action to the appropriate line officer for improvement of application of Forest Plan direction;
3. modifying management area direction as a Plan amendment;
4. revising the projected schedule of outputs; or
5. initiating revision of the Plan.

The documented file of the Forest Supervisor's decisions will include the results of monitoring and evaluation and be maintained for future use in amending or revising the Plan. At least every 5 years a plan evaluation will be completed and an evaluation report submitted, with recommended actions to the Supervisor for his consideration.

Monitoring worksheets which describe the monitoring/evaluation process in detail for each resource/issue are maintained on the Forest. These worksheets constitute a plan that is summarized in the table on the following pages. The plan includes the following components:

1. Monitoring Element - the resource or issue that will be monitored and evaluated.
2. Issues, Actions, Effects, to be Monitored - specific statements of what will be examined.
3. Suggested Monitoring Methods - a description of data collection methods and sources of information to be used. Many of the methods will include systems that are already in place on the Forest.
4. Reporting Frequency - the schedule of sampling or reviewing and reporting stated in years.
5. Precision/Reliability - two components are included here. First is the relative accuracy (precision) with which data are collected [precision is qualitatively rated as high (H), medium (M), or low (L)]. Second is reliability, or a measure of how accurately the monitoring measures the intent of the item (the same rating scheme as used for precision).
6. Units of Measure - the items that need to be observed in order to determine whether or not the issue is being resolved according to expectations.
7. Monitoring and Evaluation Responsibility - the line or staff person who will coordinate the monitoring activity.
8. Estimated Annual Cost - the average annual cost anticipated for all monitoring activities associated with the action, effect, or resource being monitored
9. Threshold of Variability – the variation (2) from the expected outputs or results that is permitted before corrective action is taken.

## Annual Summary

An annual summary will be made of evaluations and recommendations which address the identified requirements. These could include:

1. No action needed. Monitoring indicates management direction is being achieved;
2. clarification of management direction needed, monitoring indicates that management direction is being improperly applied due to a lack of clarity;
3. amendment of management direction needed;
4. evaluation not conclusive-additional study or information needed; or
5. initiation revision of the Plan.

Annual summaries of any revisions will be prepared and incorporated into the Plan as additions.

MONITORING ELEMENT	ISSUES/ACTIONS/EFFECTS TO BE MONITORED	SUGGESTED MONITORING METHODS	REPORTING FREQUENCY	PRECISION/RELIABILITY	UNIT(S) OF MEASURE	MONITORING & EVALUATION RESPONSIBILITY	EST. ANNUAL COST (1982 \$)	THRESHOLD OF VARIABILITY (For action see Figure 5-1)
GENERAL – MANAGEMENT AREAS	Determine if management area direction met; Determine if management area direction is valid.	Onsite review of selected activities; Questionnaire to Districts/publics what working/not working	Annually	M/H	Acres	District Rangers Planning Staff Officer	\$5,000	Selected projects not meeting Management Area Standards and Guidelines or project results judged as acceptable but not in compliance with direction.
GENERAL – STANDARDS AND GUIDELINES	Adherence to Standards and Guidelines not covered by separate monitoring item; Goals and objectives met by Standards and Guidelines.	Review of selected activities.	Annually	H/M	All Standards and Guidelines	District Rangers Planning Staff Officer and Forest Management Team	\$5,000	Selected projects judged not in compliance with the Plan Standards and Guidelines. Unacceptable deviation from stated goals and objectives.
RECREATION - Roadless Area Management - Semi-Primitive Recreation	Maintain integrity of roadless areas and meet management area direction for semi-primitive recreation.	Onsite Reviews; Review Timber Sale and other Activity Schedules	Annually	H/H	No. mi. of road and harvesting acres in roadless areas. Acres of semi-prim. Recreation.	District Rangers Planning Staff Officer	\$1,000	Roadless area activities not in compliance with management area direction. Actual SP ROS within 15% planned SP ROS.
RECREATION Off-Highway Vehicle Use	Determining OHV use and effects/meeting management direction.	RIM Use Source Document, field/onsite observations, Forest Travel Plan, RIM Basic Address, FROG, public comments, complaints, and law enforcement records	Annually	M/M	Various resource effects. No. and type of public comments	District Ranger Recreation Staff Officer	\$1,500	Resource effects which are beyond limits of acceptable change; Recreation or other user conflicts which are recurrent; Management area and motorized access objectives not being met.
RECREATION Visual Resources	Effects of management activities on visual resources/meeting visual resource standards.	Activity reviews, comparing project planning and execution with VOO; Presale-postsale activity and program reviews	2, 5, 10	H/H	Acres	District Rangers Recreation Staff Officer	\$1,000	> 10% of acres in management areas or allocation zone not in compliance with VOO (Retention or Partial Retention)
RECREATION Recreation Sites	Adequacy of facilities in meeting demand.	Fee compliance records, data and records onsite, and activity reviews, capital investment project data, customer surveys	Annually	M/M	Various RVD's Survey Results	District Rangers Recreation Staff Officer	\$1,500	> 60% occupancy rate at any site. Frequent or recurring customer complaints. Unacceptable resource impacts at sites.
WILDERNESS Nonconforming Uses	Effects of nonconforming uses within wildernesses	Activity and onsite reviews; Annual Wilderness Report; verify amount of wilderness which meets Primitive WRS standards; AMP, GIS, photo plots	Annually	H/H	No. of uses, citations issued. Other LAC measures	District Ranger Recreation Staff	\$1,000	Meet LAC Standards and Guidelines for each wilderness; Any consistent increase (or lack or reduction) of nonconforming uses.
WILDERNESS	Meeting management	Activity and onsite reviews;	Annually	H/H	Various –	District Ranger	\$6,350	Meet LAC Standards and

MONITORING ELEMENT	ISSUES/ACTIONS/EFFECTS TO BE MONITORED	SUGGESTED MONITORING METHODS	REPORTING FREQUENCY	PRECISION/RELIABILITY	UNIT(S) OF MEASURE	MONITORING & EVALUATION RESPONSIBILITY	EST. ANML COST (1982 \$)	THRESHOLD OF VARIABILITY (For action see Figure 5-1)
Management	direction to maintain or preserve wilderness' characteristics; Determine if Limits of Acceptable Change standards are appropriate and being met; and meeting recreation demand.	verify amount of wilderness which meets Primitive WRS standards; analyze site impact inventory; encounter surveys; review RIM use records; check fire reports verifying that Wilderness Fire Plans are consulted and followed; check AMP, GIS data, and establish photo plots.			including encounters, campsite densities, sq. foot of barren soil, no. of damaged trees, range condition, and other LAC indicators and standards.	Recreation Staff		Guidelines for each wilderness. Any reduction of amount of primitive WRS.
WILDLIFE Elk/Deer Habitat and Estimated Populations	Determine if big game habitat (effectiveness) and population trends meet management objectives.	Compile and summarize State (ODFW/W/DW) wildlife agency annual (April) census and composition records to determine population trends. Use habitat relationship modeling for projects, summarizing by allocations zone and/or mgmt. Area. Field/Photo/ Landsat review of HEI components of cover, forage, & density of roads open to vehicles.	As analyzed annually and summarized on a 5-year basis	M/M	Animal population estimates and Habitat Effectiveness Index (HEI)	Forest Wildlife Biologist District Ranger District Biologists	\$20,000 per year; \$50,000 every 5 <sup>th</sup> year for Landsat imagery, etc.	Elk habitat effectiveness indices including discounts for open roads, is more than 10% below the objective in any given allocation zone or management area. Population of a herd unit or winter range unit is more than 20% below state population index values as measured by total populations, bull/buck component, and cow/calf or doe/fawn ratios for a 3-year period.
WILDLIFE Old Growth Tree Habitat	Determine changes in inventoried old growth habitat and effects of projects on old growth (maintain integrity of old growth units). Determine if old growth habitat is meeting mgmt. Objectives (characteristics, species requirements, etc.)	Complete inventories or surveys to validate all old growth and dedicated habitat units documenting suitability (i.e., FWS Habitat Suitability Modes) and use. Validate, document, and report reduction in inventoried and dedicated old growth on a project basis. Maintain sight and use records on each indicator species for dedicated old growth units.	Summarize annually; completion/summary report – each 5 years	H/M	Acres/Habitat Condition	Forest Staff District Ranger and R.D. Staff Wildlife Biologist District Biologist	\$30,000 a year for first 5 years; \$10,000 a year thereafter	All designated sites identified in the Plan meet specifications. Components that provide effective habitat fall below desired levels. The old growth acreage remaining or the amount being converted in a 5-year period deviates from the planned amount by more than 20%.

MONITORING ELEMENT	ISSUES/ACTIONS/EFFECTS TO BE MONITORED	SUGGESTED MONITORING METHODS	REPORTING FREQUENCY	PRECISION/RELIABILITY	UNIT(S) OF MEASURE	MONITORING & EVALUATION RESPONSIBILITY	EST. ANNL COST (1982 \$)	THRESHOLD OF VARIABILITY (For action see Figure 5-1)
WILDLIFE Dead and/or Defective Tree Habitat	Determine if dead and down tree habitat is meeting management objectives/criteria. Determine if the expected primary excavators are occupying the habitat.	Examine habitat on 20% of timber sales within 1 year of sale closure per Ranger District. Evaluate timber inventory plot data each 10-year period. Establish and measure transects to determine longevity of snags in areas where fuelwood is cut. Conduct surveys as outlined in individual management indicator species write-ups.	Annually; 10-year Report Ann. Survey with a 5-year Report	H/M	No. of snags and live wildlife trees/acre; primary cavity excavator use (number and species observed)	Forest Wildlife Staff Forest Biologist District Biologists District Ranger	\$12,000	More than 10% of the surveyed areas have < 90% of the prescribed trees, snags, and logs present. Expected primary cavity excavators are absent from more than 10% of the surveyed sites, or are 80% or less of predicted numbers.
WILDLIFE Pileated Woodpecker Populations	Determine if habitat is meeting mgmt. Objectives for pileated woodpeckers; habitat is being occupied. Determine trends in populations.	In cooperation with the ODFW/WDW and others develop or utilize predictive models (i.e., FWS Habitat Suitability Models) and field samplehabitat and populations to selected standards on an annual basis.	Annually	M/M	No. of birds and/or sites used	Forest Biologist District Biologists Forest Wildlife Staff	\$6,500	> 10% variance from expectations In pileated woodpecker occupancy, use, or production within a 5-year average. Populations are on a downward trend.
WILDLIFE Pine Marten Populations	Determine if habitat is meeting objectives for pine marten. Determine if habitat is being occupied. Determine trends in populations.	Establish and read a system of sampling points for both summer and winter occurrence and use; Inventory 10% of designated units. Cooperate with ODFW and WDW on a sample design (e.g., FWS Habitat Suitability Models) to determine some normal ranges and departures from distributions.	Annually; 5-Year Summary	M/M	No. of animals and/or sites used	Forest Biologist District Biologists Forest Wildlife Staff	\$6,500	More than 10% of the identified pine marten habitat is unused within the expected distribution and use zones. More than a 20% variance from accepted norms for reproductive parameters. More than 20% variance from anticipated distributions.
WILDLIFE Northern Three-Toed Woodpecker Populations	Determine if habitat is meeting objectives for northern three-toed woodpecker. Determine if habitat is being occupied. Determine trends in populations.	Establish and annually read a system of sampling points to develop population trends. Inventory 10% of designated replacement units for progression toward "suitable" lodgepole pine old growth status. Check "programmed" thinning accomplishment (to	Annually; 5-year summary	M/M	No. of birds and/or sites used	Forest Biologist District Biologists Forest Wildlife Staff	\$4,000	Populations of three-toed woodpeckers are more than 20% below values expected in the Plan on a 5-year average. The number of larger diameter dead lodgepole pine is more than 15% below the objective in any given allocation zone at any point in time.

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WILDLIFE Threatened/ Endangered/ Sensitive Species Wildlife Populations and Habitat	Evaluate conditions of existing and potential nest or roost sites or other important habitats. Determine trends in populations.	develop the larger diameter snags). Use descriptions from the approved Recovery Plans and other appropriate documents for habitat evaluations. Note changes in conditions from previous surveys. Conduct interagency population trend surveys and mid-winter surveys. Record use of individual roost sites. Review all project management plans to insure Management Standards are being met. Check projects onsite.	Annually	M/M	Sites Populations	Forest Wildlife Staff Forest Biologist District Ranger District Biologists	\$5,000	Any nests, roosting sites, or important habitats compromised as a result of Forest Service management activities. Any delays in developing individual site management plans for reintroduction sites or for active nests. T&E species management guides to be completed within 5 years of Forest Plan implementation. Sensitive species guides will be completed within 10 years.
DIVERSITY Plant and Animal	Determine if plant and animal diversity is being maintained; the number of species and their distribution is not being diminished.	Use various resource inventories described elsewhere in Monitoring Plan to determine acres by successional stage and population trends of animal species.	Annually; 5-year summary	M/M	Acres by successional stage and MIS population trends.	District Biologists and Silviculturists and Forest Wildlife staff	\$6,000	No established thresholds of variability for the Forest except as noted above for MIS species.
PLANTS Threatened/ Endangered/ Sensitive Species Population levels of T/E/S Plants	Insure that T/E/S plant species are protected and management standards are met.	Summarize annual inventories of all proposed site-specific projects. Review all project management plans. Onsite review of projects with identified T/E/S plants.	Annually	M/M	Acres: Population totals per species; No. of existing species mgmt. Guides	District Ranger Botanist Wildlife Biologist Range Specialist Resource Staff	\$4,000	Any population compromised as a result of Forest Service management activities. Any delays in developing species management guides or biological evaluations for management of individual species.

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RIPARIAN/ WATER	Effects of Forest Management Activities on Riparian and water Resources; determine if riparian mgmt. Objectives are being met.	Implementation and Effectiveness Monitoring. Suggested minimum sample size per District: Two timber sales per year; - two allotment management plans per year; and one fish habitat and watershed restoration.	Annually with detailed effectiveness reports at 5-year intervals	H/M	Various	District Ranger Wildlife, Fish, Watershed Staff Officer	\$16,300	Non-attainment of Forest Plan Standards and Guidelines for riparian area management.
WATER Quantity	Effects of Forest Management Activities on Water quantity, Low Flows and Timing of Water Yields	Intensively monitored paired watershed studies on Umatilla Barometer Watershed. Intensively monitored south-end watershed study (Heppner District). Cooperation with PNW and local university research groups on studies defining the relation of runoff processes to Forest management activities.	Periodic basis upon completion of analyses within next 3 years. Every 3 years and at conclusion (south-end).	H/L	Flow	Walla Walla RD Heppner RD Watershed Staff Officer	\$28,500	Any decline in water yield in critical drainages or water yield or flow rate during critical late season periods not attributable to natural causes. Any change in timing of spring snowmelt which would cause detrimental impact to stream channel stability or deleteriously effect downstream water users.
WATER Quality	Effects of forest management activities on water quality to determine if standards are being met. Ascertain changes in critical water quality parameters relative to mine treatment operations.	Establishment of long term ambient general water quality monitoring stations. Establishment of heavy metal monitoring locations in Clear Creek and adjacent mine drainage treatment areas. Establishment of 12 macro-invertebrate sampling stations to monitor trends in biotic responses to water quality.	Annually with a report at 5-year intervals.	M to H/M	Various	District Ranger Resources Staff Officer	\$11,800	Exceeds State water quality standards or Forest water quality goals.
FISH Anadromous	Determine fish population trends for management	Anadromous fish numbers obtained from ODWF and	Annually with report at 5-	M/L	Steelhead Smolts	District Ranger Range, Wildlife,	\$12,600	A declining trend in population, for a specific species, over a period

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and Resident Fisheries	indicator species. Assess the attainment of fish habitat capability desired future conditions.	WDF. Resident fish population trends coordinated with the WDW and ODFW. Baseline stream inventory of selected fish habitat parameters. Baseline smolt counts using Hankin & Reeves (1988) methodology/ smolt trapping techniques.	year intervals;  Annually  Annually with report at 5-year intervals		Steelhead Redds  Smolt habitat capability  Resident trout habitat capability	Fish, and Watershed Staff Officer		of 5 or more years in a drainage.  A decrease of 10% or greater in fish habitat capability in a subwatershed.
WATER/FISH	Effects of Forest management activities on stream water temperatures; identification of major fish bearing waters which exceed desired maximum temperatures during late season low flow. Determine if standards and guidelines are being met.	Ocular estimate of stream surface shade using Hankin & Reeves physical stream survey methods. Application of riparian classification site potential to determine potential shade production during critical temperature periods. Application of temperature prediction model to determine the achievable low stream temperature during critical periods. Use of continuously recording thermographs and thermometers to identify problem streams and to monitor baseline temperature regimes; long-term trends in stream temperature and project level impacts on stream temperature.	Annual with a report at 5-year intervals	H/M	% stream surface shade.  H <sub>2</sub> O temp.	District Ranger Range, Wildlife, Fish, and Watershed Staff Officer	\$14,600	Non-attainment of Forest Plan Standards and Guidelines for stream surface shade and/or instream water temperatures.



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WATER/ FISH Stream Sedimentation	Impacts on Water Quality, Fish Habitat, and other resources from Forest management activities; determine if standards and guidelines are being met; effectiveness of interim instream sediment guidelines for estimating desired condition for the Forest.	Ocular estimates of percent surface fines and/or cobble embeddedness in spawning habitat using Hankin/Reeves physical survey technique. Automatic daily composited samples analyzed for suspended sediment concentrations and/or turbidity. Watershed surveys to determine sources of above normal sediment loads. Macro-invertebrate population sampling using techniques developed by Dr. Fred Mangum, USFS Aquatic Ecology Lab, Provo, UT.	Annually; On year taken with report at 5-year intervals	M/M	% surface fines;  % cobble embeddedness;  Mg/l sediment; JTU turbidity			
WATER/FISH Stream Channel Morphological Features	Determine if standards and guidelines are met; effects of management activities on stream morphology.	Ocular estimate of pool frequency using Hankin/Reeves physical stream survey. Ocular estimate of in-channel and floodplain large woody debris levels using Hankin/Reeves physical stream survey methodology.	Annually with report at 5-year intervals	H/M	Pools per miles of stream; in-channel large wood pieces per mile	District Ranger Range, Wildlife, Fish, and Watershed Staff Officer	\$30,100	Non-attainment of expected stream channel pool frequency.  Non-attainment of expected instream large wood levels
WATER FISH RIPARIAN Vegetation	Assure that riparian vegetation condition and trend is stable or improving	Forage utilization measured as Range monitoring. Ocular estimate of percent stream surface shade using Hankin A Reeves stream survey methodology. Riparian community classification/mapping of 90 miles of stream per year of non-wilderness class I, II, and III stream riparian areas. Classification will include estimates for stream surface shade potential, future potential large woody debris	Annually with report at 5 year intervals	M/M	Various	District Ranger Range, Wildlife, Fish, and Watershed Staff Officer	\$17,100	Non-attainment of Forest Plan standards for riparian area management and stream surface shade. Riparian vegetation trends moving away from the attainment of desired future conditions.

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SOIL Soil Productivity	Maintain long-term soil productivity; meet Forest-wide Standards and Guidelines for soils	frequency by decade; and hardwood and shrub recovery potential. Intensive measurement of detrimental soil factors using techniques in "Howes, Hazard, and Geist" (1985), on 3 harvest units per District per year. Extensive measurement of compaction using less intensive methods. Monitoring of 2 sites per year for foliar and soil nutrient levels. Cooperation with PNW practical research on long-term site productivity.	Annually; 5 Years reports	M/M	Various	District Ranger Range, Wildlife, Fish, and Watershed Staff Officer	\$13,800	Exceedance of regional guidelines for soil compaction, displacement, puddling, and erosion.
RANGE Condition and Trend	Determine if range condition and trend are improving and if areas are in satisfactory condition.	Condition and trend transects (permanent and paced), photopoints and photographs, field exams, stream channel cross sections, streambank condition measurements, water temperature readings	Annually	M/M	Range condition acres by allotment	District Staff Resource Staff Officer	\$9,000	By year 2000, at least 85% of suitable primary and secondary range is in satisfactory condition with no more than 5% of the allotments classified as PD. By year 2000, no more than 5% of allotments are classified as PC indicating riparian problem allotments.
RANGE Allotment Planning	Assure that allotment management plans are completed and improved range management implemented on schedule.	Attainment reporting, annual work planning. Allotment management planning reviews, comparison with Forest Plan standards. Review of budget planning, SAI plans, and annual operating plans, comparison with allotment management plans.	Annually	H/M	Plans	Resource Staff Officer	\$3,500	AMP planning schedule varies by more than 2 years for 10% or more of the plans. Any of the revised and approved AMP's fail to contain objectives and standards that fully implement the Forest Plan. More than 5% of the annual operating plans and budget requests, and KV sale area improvement plans, etc. are not supported by standards or development schedules from allotment management plans.

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RANGE Outputs	Determine if produced outputs are meeting planned outputs for grazing use.	Annual Grazing Statistical Report. Evaluation of permit transactions and adjustments to determine cause.	Annually	H/H	AUM's	Resource Staff	\$500	Annual outputs (AUM's) for permitted domestic livestock increase more than 3% above or fall more than 10% below Forest Plan levels.
RANGE Forage Utilization	Levels of forage utilization in riparian zones, upland area, and transitory range areas of allotment are meeting standards.	Key area measurements, field exams, utilization and distribution studies, photo points. Reviews of AMP's and field reviews of actual utilization with emphasis on riparian utilization. Intensity: Sample at least 20% of allotments annually with emphasis on allotments with riparian problems.	Annually	M/H	Acres	District Resource Staff SO Resource Staff Resource Staff Officer	\$12,000	More than 10% of the allotments reviewed experience utilization by any species of animal exceeding the Forest Plan or allotment plan standards by more than 5% as average of use in key areas of an allotment.
RANGE Noxious Weeds	Control the spread of noxious weed populations, especially onto adjacent private lands.	Review of annual attainment report, annual budget requests, and review treatment plans/EA's and onsite review of problem areas and accomplishment.	Annually	M/M	Acres of new treatment; Acres of retreatment	District Resource Staff SO Resource Staff Resource Staff Officer	\$1,000	Assigned targets are not met by 20% or more.
RANGE Improvement	Assure that range improvements are accomplished as planned	Review annual budget process and annual attainment reports.	Annually	M/M	Acres; Structures	Resource Staff Officer District Resource Staff	\$500	Accomplishment of annual range improvement targets falls more than 10% below the assigned output.
TIMBER Silvicultural Regeneration Method	Assure that harvested areas are regenerating to standard.	Use silvicultural reporting systems such as TRACS	Annually, summary every 5 years	M/H	Acres	District Rangers Timber Staff Officer	\$1650	Variance from planned method of more than 25% on an annual basis, 15% on a decade basis. Compare actual levels by method to Table 4.1 of Plan.
TIMBER Size and Dispersal of Created Openings	Determine if NFMA requirements are being met.	Use TRACS and STARTS to monitor average unit size on a Forestwide basis by two categories: Even-aged units, and uneven-aged units. Note: Monitor and report average unit size by even and uneven-aged categories for management strategies A3, A4, A5, and C5.	Annually Each Decade	M/M	Acres	District Rangers Timber Staff Officer	\$4,150	Average unit size exceeds size standard by more than 10%
TIMBER Stand	Determine if regeneration standards and guidelines	Use TRACS report to determine acres reforested	Annually	M/H	Acres and Years	District Rangers Timber Staff	\$1,650 - \$3,300	> 15% deviation from Plan level for acres treated during a 5-year

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Management – Natural Regeneration	are being met; determine if targets are being accomplished at planned levels.	using natural regeneration. Field reviews and reports from Districts on the length of regeneration lag on natural shelterwood regeneration units.				Officer		period. > than 1 10-year lag between time of harvest and attainment of at least minimum stocking levels.
TIMBER Stand Management – Artificial Regeneration	Determine if regeneration standards and guidelines are being met; determine if targets are being accomplished at planned levels.	Use TRACS report to determine acres reforested using artificial regeneration practices. Use Annual Survival, Stocking, and Growth Report to determine acres successfully stocked after 3 growing seasons.	Annually with check at years 5 and 10	H/H	Acres	District Ranger Timber Staff Officer	\$1,560	> 15% deviation from the Plan level for acres treated during a 5-year period. < 90% of the acres at least minimally stocked after 3 growing seasons.
TIMBER Stand Management – Ponderosa Pine Regeneration	Determine if regeneration efforts are restoring ponderosa pine growing stock to planned levels.	Monitor level of ponderosa pine reforestation using TRACS	Annually with check at years 5 and 10	M/M	Acres	District Rangers Timber Staff Officer	\$1,250	If after 10 years pine is reforested on < 35% of the acres regenerated.
TIMBER Reforestation With Genetically Improved Tree Stock	Determine if targets are being accomplished at planned levels.	Monitor using TRACS report.	Annually	H/H	Acres	District Rangers Timber Staff Officer	\$1,240	More than a 10% reduction from levels assumed in the Plan over a 5-year period.
TIMBER Stand Management – Precommercial Thinning	Determine if targets are being accomplished at planned levels.	Monitor amount of stocking level control using TRACS. Compare stocking level needs vs. stocking level accomplished using TRACS.	Annually with check at years 5 and 10	H/H	Acres	District Rangers Timber Staff Officer	\$1,560	> 20% deviation from planned levels as indicated on Plan Table 4.1. Fewer than 80% of the acres needing stocking level control actually received it.
TIMBER Land Suitability For Timber Management	Meet NFMA requirements for tracking suitable lands.	Silvicultural stand examinations, diagnosis and prescriptions. Review of unsuitable lands which may have been incorrectly typed.	Ongoing	M/M	Acres	District Rangers Timber Staff Officer Planning Staff Officer	\$4,130	More than a 5% change in the suitable land base.
TIMBER Managed Yield Projection	Determine if yield projection assumptions are consistent with actual managed stand growth.	Monitored by managed stand survey conducted on a representative sample of managed stands.	Every 10 years	H/H	MCF/AC	RO Timber Management/ Timber Staff Officer	Periodic cost, every measurement period	Deviations likely to effect timber yields by more than 15%

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TIMBER Empirical Yield Projections	Determine if yield projections portraying actual results are consistent with most recent inventory	Timber inventory will be updated on a 10-year cycle. Empirical yields will be recalculated when new inventory data is available. FORPLAN will be re-run based on new yield tables.	Periodically when inventory completed	H/H	MCF/AC	RO Timber Management/ Forest supervisor	\$3,000	Deviations likely to effect timber yields by more than 15% (Review when data available.
TIMBER Timber Offered For Sale	Determine if planned timber outputs by category (TSPO, ASO, PP ASO) are being offered. Determine if adjustments in planned sales for the remaining years in the decade can reasonably be made to ensure decade compliance.	Use STARS system data base and report. Annually calculate the running average for each category and compare to thresholds.	Annually	H/H	MBF and MCF	District Ranger Timber Staff Officer	\$2,480	TSPO: > 10% $\pm$ deviation from planned cu. Ft. volume ASO: Deviation > + 15% or -20% of planned ASO. Ponderosa pine: >than 25% $\pm$ deviation from planned ponderosa pine sawlogs volume.
FUELWOOD Availability of Firewood	Determine if firewood supply is meeting demand.	Customer surveys and comments, field observations, number of permits issues.	Annually	LM	No. of permits, survey results	District Rangers Timber Staff Officer	\$2,000	Estimated demand exceeds supply by more than 10%
MINERALS Mineral Development and Rehabilitation	Determine if the Standards and Guidelines are being implemented correctly. Evaluate the effectiveness of Standards and Guidelines in meeting goals.	Review and evaluation of 10% of current projects each year.	3 Years	M/M	Subjective	Minerals Staff Officer District Ranger	\$1,000	Selected projects judged to have unacceptable deviation from stated objectives, or projects not in compliance with standards.
MINERALS Accessibility to Claim and Lease Sites	Determine if access to mineral and energy exploration and development meets Forest Plan objectives and proponent needs.	Review EA's, project and Operating Plans. Field observations.	3 Years	M/M	Acres	Minerals Staff Officer	\$1,000	Reduction in lands open to mineral activities is > 2%
TRANSPORTATION Forest Road System	Transportation system meeting established Forest Plan objectives	Review and inspection to determine total Forest road miles, roads open to passenger car use (miles) and roads suitable for high clearance vehicles (miles).	Annually	H/H	Miles	Engineering Staff Officer	\$1,000	Any variance from existing standards and guidelines.
TRANSPORTATION Open Road	Determine if management area direction and Motorized Access	Compare actual densities with projected density and objectives. Conducting area	Annually As projects	H/H	Miles of open road per square mile	Engineering Staff Officer District Rangers	\$150	Any open roads causing a failure in meeting HEI and recreation objectives.

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Density	Management Plan direction is being met (management objectives).	analysis on subwatershed basis.	Identify needs					
TRANSPORTATION Trail System	Trail system meeting user needs and projected demands. Meeting management plans, development, maintenance, and objectives of the trail system. Changes in the system due to projects.	Trails Inventory (RIM-TRIS), condition surveys, RIM-trail use data, activity and onsite reviews, review timber sale and other activity schedule, review trail management plans, review capital improvement project data, management attainment reports, user surveys.	Annually  Summary every 5 years	H/H	Trail miles/ established/ maintained or changes	District Ranger Recreation Staff Officer	\$1,000	< 80% managed at standard service level. < 80% of trail construction/reconstruction target accomplishment. 10% of trails on the system lost to resource development activities.
CULTURAL RESOURCE Protection of Sites	Determine if cultural resource properties (unevaluated or eligible for inclusion to the National Register of Historic Places) are being adequately protected.	Annually visit all unevaluated or eligible cultural resources in active project areas and those subject to natural or human related damage. Monitor all reports of condition of eligible properties and measures taken to repair damage.	Annually	H/H	Sites	Recreation Staff Officer	\$2,000	No acceptable variability. Issue is tied to Federal law and regulation.
SPECIAL INTEREST AREAS - BOTANICAL	Effect of activities on sensitive and unique plan populations and special landforms. Determine if management standards are being met.	Conduct annual examinations of Special Interest Areas.	5 years	M/M	Areas	District Ranger Sensitive Species Coordinator Resource Staff Wildlife Biologist Range Specialist	\$2,000	Any population or landform compromised as a result of Forest Service management activities or public use, any delays in developing management plans for individual areas.
RESEARCH NATURAL AREAS	Effects of management activities on integrity of RNA's (ecosystems).	Onsite examination of Research Natural Areas	5 Years	M/M	Areas	District Ranger Recreation Staff Officer	\$2,000	Any deviation from RNA management objectives and intent.
PROTECTION Fire	Determine effectiveness of prevention, detection, suppression, and fuels management program in meeting NFMA Standards.	Review individual fire reports and annual fire management reports, keeping updated with current and recent fire reports and trends.	Annually	H/H	No. of fires; (\$/acre protected) Acres Burned	District Ranger's Fire Staff Officer	\$1,500	+ 25% increase in most efficient level (MEL) in any year or > 10% increase in MEL of 5-year average. 20% departure from the Fire Management Action Plan.
PROTECTION Fire Effects	Determine ecological effects of prescribed fire on project areas.	Sample one project/district/year, before/after burn. On-site measurements of effect being monitored. Use photographs; involve research PNW.	Annually	H/H	Ecological effect	District Ranger & Staff Officers Forest Staff Officers	\$500/project	Prescriptions not being met by 20% or more of areas.

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PROTECTION Air Quality	Projects meeting smoke management plans and management standards and guidelines.	Data collection on all prescribed burns: Ton/ac by size classes, fuel bed depth and amount of duff, weather observations, post burn survey use of consume program, ER Plan and state reporting forms.	Annually	H/M	Acres burned and particulates produced	District Ranger Fire Staff Officer	\$3,200	Deviations from compliance with state smoke management plans and smoke management measures used to reduce emissions from prescribed burning.
PROTECTION Insect and Disease Control	Meet NFMA requirements for insect and disease monitoring.	Annual aerial survey; pheromone plots as recommended by entomologists; observations by silviculturists and area and Regional forest pest specialists.	Annually	L-M/M-H	Acres	RO Forest Pest Management, District Rangers Silviculturists Area Forest Pest Specialists Regional Forest Pest Specialists	\$1,650	Evidence of insect or disease buildups at or above epidemic levels. (Note: As recommended by forest pest specialists given the agent's intensity and magnitude.)
ECONOMICS Forest Budgets	Assure that annual budgets necessary to implement the Forest Plan are being provided.	Review budgets and programs of work in relationship to the Forest Plan levels. Compare actual budget in preceding 3 years with budget needed for Plan implementation.	Annually	H/H	Dollars	Administrative Officer, Budget and Finance Officer, Planning Staff Officer	\$3,000	Budget more or less than 20% from Forest Plan level. Budget $\pm$ 20% of 3-year average Forest budget.
ECONOMICS Costs and Values of Forest Plan Implementation	Effects of changes in cost and values used in the Forest Plan.	Review project plans (2400-17) reports, PAMARS, Forest attainment reports. Determine average annual costs and values for all major resource activities and outputs.	Annually	H/M	Dollars	Planning Staff Officer	\$500	- 20% difference between actual expenditures and those projected in the Plan. - 20% difference between actual resource values and those projected in the Plan.
ADMINISTRATIVE NEPA NFMA	Project compliance with NFMA	Review all decisions for NEPA adequacy and tiering to and consistency with the Forest Plan.	Annually	M/M	Resource decisions	District Ranger Forest NEPA Coordinator, Planning Staff Officer	\$70,000	Failure to use appropriate procedures (including documentation) or to meet Plan requirements for implementation (100% of projects must meet these requirements).
COMMUNITY EFFECTS Changes in Local Income Levels	Determine if local income levels are changing.	U.S. Census, state publications, county, and local agency reports.	Annually	H/H	Dollars	Forest Planning Staff Officer	\$500	$\pm$ 15% in 3 years
COMMUNITY EFFECTS	Determine if local population is changing.	U.S. Census, state publications, county, and	Annually	H/H	People	Forest Planning Staff Officer	\$500	$\pm$ 15% in 3 years

MONITORING ELEMENT	ISSUES/ACTIONS/EFFECTS TO BE MONITORED	SUGGESTED MONITORING METHODS	REPORTING FREQUENCY	PRECISION/RELIABILITY	UNIT(S) OF MEASURE	MONITORING & EVALUATION RESPONSIBILITY	EST. ANNUAL COST (1982 \$)	THRESHOLD OF VARIABILITY (For action see Figure 5-1)
Changes in Local Employment Populations		local agency reports.						
COMMUNITY EFFECTS Changes in Local Employment Patterns	Determine if local employment pattern is changing.	U.S. Census, state publications, county, and local agency reports.	Annually	H/H	People	Forest Planning Staff Officer	\$500	± 15% in 3 years.
COMMUNITY EFFECTS Changes in Payments to Counties	Determine if there are changes in payments made by Forest Service to local counties.	Review payments to counties reports.	Annually	H/H	Dollars	Forest Planning Staff Officer	\$100	Failure to meet Plan levels.
COMMUNITY EFFECTS Changes in Life Styles, Attitudes, Beliefs, and Values	Determine if local life styles, attitudes, beliefs, or values are changing.	Interviews with key publics and opinion leaders in communities plus observations by Forest personnel.	Annually	H/M	Various	Forest Planning Staff Officer	\$500	Establishment of a trend toward FS – community conflicts or identification of problems.
COMMUNITY EFFECTS Changes in Forest Contributions to Forest Products Ind.	Determine if changes are occurring in levels of Forest contributions to local Forest products industry.	Track flow of raw materials to mills.	Annually	H/H	MMCF per year. % industry distribution	Timber Staff Officer	\$200	Failure to meet plan objectives.



## AMENDMENT AND REVISION

The Forest Plan incorporates legal mandates, professional judgment, and the public's stated concerns into a future vision of the Forest. It charts a path for getting there by developing management goals and objectives and translating them into management direction in the form of standards and guidelines for management areas on the Forest. National Forest planning is a dynamic process, and the products-forest plans-are similarly dynamic. Forest plans can and should be modified if conditions warrant. As management goals are applied on the ground, the goals and objectives, or activities the goals generate, may no longer be appropriate. In such instances, activities may be tailored to fit the resource, or planning objectives as stated in the Plan may be amended. Plans do not apply direction in site-specific management activities. It would be unrealistic and wrong to try to identify, analyze, and schedule the myriad projects or activities that occur on a national forest. Instead, this type of site-specific planning such as range (grazing) allotment management planning occurs at the project-level planning stage.

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the Objectives, standards, and other contents of the Plan, the Forest Supervisor shall determine if a proposed amendment would result in a significant change. 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. 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. Figure 5-1 is a flow diagram that shows how these changes can occur.

The Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It may also be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in Resource Planning Act policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the Interdisciplinary Team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine if conditions or demands of the public have changed significantly.

# Glossary

# GLOSSARY OF ABBREVIATIONS AND TERMS

## ABBREVIATIONS

AC. Or Ac.	Acres	FSH	Forest Service Handbook
ACS	Available, Capable, and Suitable	FSM	Forest Service Manual
AF or Ac. Ft.	Acre feet	GIS	Geographic Information System
ASQ	Allowable Sale Quantity	GPM	Gallons per minute
AMS	Analysis of the Management Situation	GTM	Grass-Tree Mosaic
ATV	All Terrain Vehicle	HEI	Habitat Effectiveness Index
AUM	Animal Unit Month	ICO's	Issues, Concerns, and Opportunities
BF or Bd. Ft.	Board foot	IDT	Interdisciplinary Team
BLM	Bureau of Land Management	IPM	Integrated Pest Management
BM	Benchmark	K-V	Knutson-Vandenberg Act
BMP	Best Management Practices	LAC	Limit of Acceptable Change
CF or Cu. Ft.	Cubic Feet	LMA	Land Management Allocation
CFL	Commercial Forest Land	LTSY	Long-Term Sustained Yield
CFR	Code of Federal Regulations	LTSYC	Long-Term Sustained Yield Capacity
CFS	Cubic feet per second	MIH	Management Information Handbook
C&H	Cattle and Horse allotment	M	Thousand
CMAI	Culmination of Mean Annual Increment	MM	Million
CTUIR	Confederated Tribes of the Umatilla Indian Reservation	MBF, MMBF	Thousand board feet; million board feet
DBH or d.b.h.	Diameter at breast height	MCF, MMCF	Thousand cubic feet; million cubic feet
DEIS	Draft Environmental Impact Statement	MR	Management Requirement
DIB or d.i.b.	Diameter inside bark	NDF	Nondeclining Flow
EIS	Environmental Impact Statement	NEPA	National Environmental Policy Act
FEIS	Final Environmental Impact Statement	NFMA	National Forest Management Act
FMPS	A Linear Programming solution System used in FORPLAN	RM	Roaded Modified
NFS	National Forest System	RN	Roaded Natural
NH	Natural Regeneration and Harvest	RNA	Research Natural Area
NORT	New Oregon Trail	ROS	Recreation Opportunity Spectrum
NPB	Net Public Benefits	RPA	Resource Planning Act
NRT	National Recreation Trails	RVD	Recreation Visitor Day
NTCCH	Natural Regeneration, Precommercial Thin, Two Commercial Thinnings, and Final Harvest	SCORP	State-wide Comprehensive Outdoor Recreation Plan
NTH	Natural Regeneration, Precommercial Thin, and Final Harvest	SHCI	Smolt Habitat Capability Index
		SHPO	State Historic Preservation Office

NTM	No Treatment	SIA	Special Interest Area
ODFW	Oregon Department of Fish and Wildlife	SMU	Streamside Management Unit
OG	Old Growth	SPM	Semi-primitive Motorized
OHV	Off-Highway Vehicle	SPNM	Semi-primitive Non-Motorized
ORV	Off-road Vehicle	SRI	Soil Resource Inventory
PAOT	Persons-at-one-time	T&E	Threatened & Endangered
PGTCCH	Plant Genetically Improved Stock, precommercial Thin, Two Commercial Thinnings, and Final Harvest	T/E/S	Threatened, Endangered, & Sensitive
PL	Public Law	TACS	Tentatively Available, Capable & Suitable
PM	Particulate Matter	TSI	Timber Stand Improvement
PMOA	Programmatic Memorandum of Agreement	TSPQ	Timber Sale Program Quantity
PNV	Present Net Value	USDA	U.S. Department of Agriculture
PNW	Present Net Worth	VMS	Visual Management System
PTCCH	Plant Normal Stock, Precommercial Thin, Two Commercial Thinnings, and Final Harvest	VQL	Visual Quality Level
RARE	Roadless Area Review & Evaluation	VQO	Visual Quality Objective
RIM	Recreation Information Management	WDW	Washington Department of Wildlife
		WFUD	Wildlife/Fish User Days
		WRS	Wilderness Resource Spectrum

## TERMS

### A

Abnormally Heavy Storms	Storms with a 10- to 100-year return period. That is, a 10-year storm occurs on the average of once every 10 years, a 20-year storm occurs on the average of once every 20 years, and so forth.
Access	Usually refers to a road or trail route over which a public agency claims a right-of-way for public use; a way of approach.
Acquired Lands	Lands added to the National Forest System by purchase, transfer, or donation under authority of the Weeks Law or related acts. Also, lands obtained by the Forest Service by exchange for other acquired lands.
Acre-Equivalent	Used to adjust actual acres of habitat improvement or improvement structures to reflect overall habitat benefits derived. It reflects the zone of influence of the habitat improvement for the target species. For example, a single water development for upland game birds has an acre equivalent of 160, whereas a single water structure for big game has a value of 640 because it has a larger zone of influence for the more mobile big game animals.
Acre-foot	A measure of water or sediment volume, equal to the amount which would cover an area of 1 acre to a depth of 1 foot (i.e., 43,560 cubic feet or 325,851 gallons).
Activity	Actions, measures, or treatments undertaken that directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative environmental quality and objectives. Forest Service activity definitions, codes, and units of measure are contained in the Management Information Handbook (FSH 1309.11).
Activity Fuels	Debris generated from management activity such as firewood gathering, precommercial thinning, timber harvesting, and road construction.
Administrative unit	An area under the administration of one line officer, such as a District Ranger, Forest Supervisor, or Regional Forester.
Age Class	An interval, usually 10 to 20 years, into which the age ranges of vegetation are divided for classification or use.
Age Class Distribution	The location and/or proportionate representation of different age classes in a forest
Airshed	A geographic area that, because of topography, meteorology, and climate, shares the same air.
All-Terrain Vehicle (ATV)	A vehicle characterized by its ability to negotiate most kinds of terrain by virtue of traction devices such as wide tracks; large, low-pressure rubber tires; and/or four-wheel drive.
Allocation Zones	Allocation zones are defined two ways. In the FEIS model, allocation zones are equivalent to management areas and parts of management areas. In the DEIS model and for implementation and monitoring, allocation zones are defined on the basis of subwatersheds or groupings of several subwatersheds in the main watershed.
Allotment	An area of land on which grazing may be allowed by permit.
Allotment Classification	Categories of individual range allotments based on what is actually occurring to the resources on the area. Classification is not fixed, it can be raised or lowered by management intensity or other commitments. The definitions of allotment classification are:  QI (Quality Intensive Management) - specific resource use and protection goals are being met, as specified in an approved allotment management plan (AMP). Resource damage is not occurring. Techniques and systems are used to optimize forage production and employed to the extent possible considering multiple use constraints. Grazing use on National Forest System lands may be coordinated with grazing on associated public and private lands. QE (Quality Extensive Management) - specific resource use and protection goals set forth in an approved AMP are being met. Resource damage is not occurring. It is not economically efficient or physically feasible to optimize forage use at the present time. Extensive management can be either an intermediate step, prior to implementation of intensive management, or it may be the

ultimate goal for the allotment.

PA (Vacant) - allotments where forage IS available, but which have no obligation for permitted livestock use as the result of administrative actions such as confirmation of a waiver to the United States.

PB (Underdeveloped) - allotments which have the potential to be managed under a quality management strategy. Forage utilization is less than the maximum allowable due to one or more of the following: (1) lack of grazing permittee interest/participation, (2) lack of total AMP implementation, such as range improvements, (3) poor coordination with timber management activities, (4) lack of reliable range analysis data, (5) lack of an approved AMP, and (6) lack of funding to implement quality management.

PC (Basic Resource Damage) - basic resource damage is occurring. Analysis or evaluation indicates that one or more of the following conditions exist and livestock use on the allotment is or has been a major factor contributing to this condition.

1. Maximum summer water temperatures are elevated above State Standards or other approved criteria on Streamside Management Unit (SMU) class I or II streams and this is largely due to the loss of shade-producing vegetation in the allotment.
2. Management-induced instability (loss of stabilizing streambank vegetation) exceeds 20 percent of the total miles of stream (SMU classes I-IV) in an allotment.
3. Gully development of sufficient size to lower the seasonally saturated zone and change the plant community type is occurring.
4. Soil condition rating on 25 percent or more of Key Areas is rated poor or very poor.

PD (Other Resource Damage) - adverse impacts on resources other than the basic soil and water resources are occurring. These impacts are the result of resource management objectives not being met. An allotment will be classified as PD when 10 percent or more of its area meets this criteria Damage to vegetation is based on use in excess of that planned.

Allotment Management Plan	The document that contains the action program needed to manage the rangeland resource for livestock grazing with consideration given to soil, watershed, wildlife, recreation, timber, and other resources on lands within a range allotment.
Allowable Sale Quantity (ASQ)	The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the 'average annual allowable sale quantity' (36 CFR 219.3)
Alternative Amenity	One of several policies, plans, ways, or projects proposed for decision making. An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses. Amenity value is typically used in land use planning to describe those resource properties for which market values (or proxy values) are not or cannot be established.
Anadromous Fish	Those species of fish that mature in the sea and migrate into streams to spawn. Salmon and steelhead are examples.
Analysis of the Management Situation (AMS)	A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.
Animal Unit Month (AUM)	The unit of measure of the feed required for an animal unit (which is defined as a mature cow weighing 1,000 lbs.) on the range for 1 month. This is further defined as 800 pounds of air-dried forage.
Anomalies	A deviation from the common rule, type, or form. An incongruity or inconsistency.
Appropriated Funds	Monies authorized by an act of Congress which permit Federal agencies to incur obligations and to make payments out of the U S. Treasury for specified purposes.
Appropriate	The planned strategy for Suppression action (in terms of kind, amount, and timing) on a wildfire

Suppression Response	which most efficiently meets fire management direction under current and expected burning condition. The response may range from a strategy of prompt control to one of containment or confinement. The spectrum of responses may be used on one specific incident.
Aquatic Ecosystems	Stream channels, lakes, marshes or ponds, and the plant and animal communities they support.
Aquifer	A geological formation or Structure that contains water in sufficient quantity to supply needs for water development.
Archeology	The scientific study of the physical characteristics of cultural resources undertaken to describe and explain former ways of life.
Artifact	An object made or modified by humans.
Available Forage	Forage which can be reached and utilized by grazing or browsing animals (assumed to be palatable to one class of animal or another).
Available Forest Land	Land which has not been legislatively or administratively withdrawn by the Secretary of Agriculture or Forest Service Chief from timber production.
Average Daily Traffic (ADT)	The average 24-hour volume of traffic, being the total volume of traffic during a Stated period divided by the number of days in that period.
Avoidance Areas	Land areas that pose particular land use or environmental impacts which would be difficult or impossible to mitigate. Establishment and use of corridors conflict with land use or land management objectives. Examples include (1) specially managed areas such as developed recreation sites and Research Natural Areas; (2) environmentally sensitive areas such as special wildlife areas and wetlands; (3) archaeological and historical sites; and (4) areas with specific visual quality objectives which conflict with facility placement.

## B

Background	The distant part of a landscape, picture, etc ; surroundings, especially those behind something and providing harmony or contrast; surrounding area or surface. Area located from 3-5 miles to infinity from the viewer.
Bald Eagle Management Areas (BEMA'S)	Areas managed for the protection of the threatened and endangered bald eagle. BEMA's provide nesting and roosting habitat for the bird on each plot.
Basal Area	The area of the cross-section of a tree stem near the base, generally at breast height and inclusive of bark.
Base Sale	A timber sale schedule formulated on the basis that the quantity of timber planned for Schedule sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained-yield capacity (36 CFR 219.3).
Basic Resource	One of the principal resources; a resource upon which the production of other resources is dependent; e.g., the production of vegetation is dependent upon basic resources such as soils and water.
Benchmark	The analytical basis from which the alternatives were developed. The use of assessed land capability as a basis from which to estimate the effects of alternative patterns of management on the land.
Benchmark	Reference points that define the bounds within which feasible management alternatives can be developed. Benchmarks may be defined by resource output or economic measures.
Benefit (Value)	Inclusive terms used to quantify the results of a proposed activity, project or program expressed or monetary or nonmonetary terms. Also: <ol style="list-style-type: none"> <li>1. <i>Direct benefit</i> - A primary benefit that responds to specified objectives of the policy, program, project, or expenditure.</li> <li>2. <i>Induced benefit</i> - A primary benefit that is incidental to the objectives of the policy, program, project, or expenditure.</li> </ol>

	3. <i>Primary benefit</i> - A benefit accruing to resource owners from a primary output and that may be direct or induced or may be a residual asset. Primary benefits are components of net public benefits.
	4. <i>Secondary benefit</i> - A benefit accruing to parties other than the resource owners, including effects on local, Regional, and national economies and on consumers of outputs Secondary benefits are not necessarily included in net public benefits.
Benefit/Cost Ratio	A measure of economic efficiency computed by dividing total discounted primary benefits by total discounted economic costs.
Best Management Practices (BMP's)	Methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMP's include, but are not limited to, structural and nonstructural controls and operation and maintenance procedures BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2).
Big Game	Large animals that are hunted for sport. On the Umatilla N.F., these include Rocky Mountain elk, mule deer, white-tailed deer, bighorn sheep, and black bear.
Big Game Summer Range	A range, usually at higher elevation, used by deer and elk during the summer. Summer ranges are usually much more extensive than winter ranges.
Big Game Winter Range	A range, usually at lower elevation, used by migratory deer and elk during the winter months: usually more clearly defined and smaller than summer ranges.
Biological Control	A method to control insect populations or tree diseases through the use of applied technology. Also used in noxious plant control.
Biological Growth Potential	The average net growth attainable in a fully stocked natural forest stand.
Biological Potential	The maximum production of a selected organism that can be attained under optimum management.
Biomass	The total quantity (at a given time) of living organisms of one or more species per unit of space (species biomass), or of all the species in a biotic community (community biomass).
Board Foot (BF)	The amount of wood equivalent to a piece of wood 1 foot by 1 foot by 1 inch thick.
Board Foot/Cubic Foot Conversion Ratio	Both board foot and cubic foot volumes can be determined for timber stands. The number of board feet per cubic foot of volume varies with tree species, diameter, height, and form factors A specific factor by species is applied to the cubic foot FORPLAN outputs to give board foot estimates.
Broadcast Burn	A prescribed fire which is allowed to burn over a designated area within well-defined boundaries for reduction of fuel hazard, as a silvicultural treatment, or both.
Browse	Twigs, leaves, and young shoots of trees and shrubs on which animals feed: in particular, those shrubs which are used by big game animals for food
Brush	A growth of shrubs or small trees usually of a type undesirable to livestock or timber management.
Bulk Density	The mass of dry soil per unit volume. Volume is determined before drying to a constant weight at 105°C. This figure is corrected for weight and volume of coarse fragments greater than 2mm in diameter.

## C

Cable Logging	Refers to methods used to skid or pull logs to a central landing or collection area by a cable connected to a remote power source.
Canopy	The more-or-less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.
Canopy Closure	The progressive reduction of space between tree crowns as they spread laterally: a measure of the percent of potential open space occupied by the collective tree crowns in a stand.
Capability	The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of



	management intensity. Capability depends upon current conditions and site conditions, such as climate, slope, landform, soils, and geology, as well as on the application of management practices, such as silviculture or protection from fire, insects, and disease.
Capability Area	Geographic delineations used to describe characteristics of the land and resources in integrated forest planning. Capability areas may be synonymous with ecological land units, ecosystems, or land response units.
Capital Formation	As used in IMPLAN is defined as the value of purchases from sectors both inside and outside the Region used by individuals, governments, and industries in the area as investment (land, plant, and equipment used in production processes).
Capital Investment	An input that increases the stock of natural or manmade resources (assets) needed to maintain or increase the flow of outputs in the future. Benefits resulting from capital investments are normally recouped in a time period in excess of 1 year.
Carrying Capacity	The maximum rate of animal stocking possible without inducing damage to vegetation or related resources. This stocking level may vary from year to year because of fluctuating forage production.
Cavity	The hollow excavated in trees by birds or other natural phenomena; used for roosting and reproduction by many birds and mammals.
Cavity Excavator	An animal that excavates a cavity in wood for nesting or roosting.
Cavity Nesters	Wildlife species that nest in cavities.
Channel or Stream Scour	Erosion of the channel bottom caused by high flows of water, loss of channel stability, or debris torrents.
Characteristic Landscape	The naturally established landscape within a scene or scenes being viewed.
Chargeable Timber Volume	All volume included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity, based on regional utilization standards.
Charred Log	To burn the surface of; scorch; to reduce to charcoal by incomplete combustion (Morris 1976).
Clean Air Act	The 1963 Clean Air Act legislation as adopted by Congress and amended in 1967, 1969, 1974, and 1977.
Clearcutting	The harvesting in one cut of all merchantable trees on an area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, strip, or stand large enough to be mapped or recorded as a separate class in planning for sustained yield. Advanced regeneration may or may not be removed, depending on its condition and management objectives.
Climatic Regimes	A generalized climatic classification which applies to a specific land area; generally that area can be expected to experience that kind of climate in any given year.
Climax	The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition.
Climax Species	Those species that dominate the stand, either in numbers per unit area or in biomass, at climax.
Closure	An administrative order restricting either location, timing, or type of use in a specific area.
Code of Federal Regulations (CFR)	A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.
Commercial Forest Land	See Timber Classification.
Commercial Thinning	Any type of tree thinning that produces merchantable material at least equal in value to the direct costs of harvesting.
Commodity	A transportable resource product with commercial value: all resource products that are articles of commerce.
Common Varieties	Nonmineralized sand, gravel, stone, etc. (see Mineral Materials).
Communication sites	Areas designated for the operation of equipment which transmits and receives radio signals (excluding television aerials and antennas) for individual pickup of programming, and passive reflectors.

Community Cohesion	The degree of unity and cooperation within a community in working toward shared goals and solutions to problems.
Community Stability	A community's capacity to handle change without major hardships or disruptions to component groups or institutions. Measurement of community stability requires identification of the type and rate of proposed change and an assessment of the community's capacity to accommodate that level of change.
Compaction	The packing together of soil particles by forces exerted at the soil surface, resulting in increased soil density.
Concern	A point, matter, or question raised by management that must be addressed in the planning process.
Condition Class	(1) Timber: a grouping of timber strata into size/age/stocking classes for Forest planning. (2) Range: one of a series of arbitrary categories used to classify range conditions, usually expressed as excellent, good, fair, or poor.
Confine (a Fire)	To limit fire spread within a predetermined area principally by use of natural or preconstructed barriers or environmental conditions. Suppression action may be minimal and limited to surveillance under appropriate conditions.
Conflagration	A large destructive wildfire.
Congressionally Classified and Designated Areas	Areas that require Congressional enactment for their establishment, such as national wildernesses, national wild and scenic rivers, and national recreation areas.
Constraint	In FORPLAN, a restriction or limit (either ceiling or floor) which may be placed on the level of inputs to or outputs from a forest.
Consumptive Use	A use of resources that permanently reduces the supply, such as mining (also see Nonconsumptive Use).
Contain (a Fire)	To surround a fire, and any spot fires therefrom, with control line as needed, which can reasonably be expected to check the fires' spread under prevailing and predicted weather conditions.
Control (a Fire)	To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved: burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under foreseeable conditions.
Conversion Period	The duration of a change from one silvicultural system to another or from one tree species to another.
Corridor	A linear strip of land identified for the present location of transportation or utility rights-of-way within its boundaries, which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility routes (see Utility and/or Transmission Corridor).
Corridor Viewshed	The total landscape seen or potentially seen from all or a logical part of a travel route, use area, or water body.
Cost Efficiency	The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values, but are achieved at specified levels in the least costly manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of-return may be appropriate.
Costs	<ol style="list-style-type: none"> <li>1. <i>Direct cost</i> - A cost that directly contributes to the production of the primary outputs of an activity, project, or program.</li> <li>2. <i>Economic cost</i> - Total fixed and variable costs for inputs, including costs incurred by other public parties and, if appropriate, opportunity costs and cost savings.</li> <li>3. <i>Fixed cost</i> - A cost that is committed for the time horizon of planning or the decision being considered. Fixed costs include fixed ownership requirements, fixed protection, short-term maintenance, and long-term planning and inventory costs.</li> </ol>

	4. <i>Investment cost</i> - A cost of creating or enhancing capital assets, including costs of administrative or common-use transport facilities and resource management investments
	5. <i>Joint cost</i> - A cost contributing to the production of more than one type of output.
	6. <i>Non-Forest Service cost</i> - A cost of investment and operating activities paid by cooperators or other non-Forest Service agencies which are part of Forest Service management programs, or which contribute to the outputs included in the analysis.
	7. <i>Opportunity cost</i> - The value of a resource's foregone net benefits in its most economically efficient alternative use.
	8. <i>Unit cost</i> or <i>cost per unit</i> - Total cost of production divided by the number of units produced.
	9. <i>Variable cost</i> - A cost that varies with the level of controlled outputs in the time horizon covered by the planning period or decisions being considered.
Cover	Vegetation used by wildlife for protection from predators, to ameliorate conditions of weather, or in which to reproduce.
Cover-Forage Ratio	The ratio, as a percent, of the amount of area in cover condition to that area in forage condition; the criteria by which potential deer and elk use of an area is judged.
Created Opening	Created opening is an opening in the Forest created by the silvicultural practices of shelterwood regeneration cutting at the final harvest, clearcutting, seed tree cutting, or group selection cutting
Cubic Foot Per Second (cfs or ft <sup>3</sup> /s)	The rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second. This is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute.
Culmination of Mean Annual Increment (CMAI)	The age at which a stand of trees no longer increases in average annual growth.
Cultural Resources	Physical remains of districts, sites, structures, buildings, networks, or objects used by humans in the past. They may be historic or prehistoric, archaeological, or architectural in nature. Cultural resources are land based and are nonrenewable.
Cumulative Effects	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
Cutting Cycle	The planned lapse of time between successive cuttings in a stand while using uneven-aged management practices.

## D

Data	Any recorded measurements, facts, evidence, or observations reduced to written, graphical, tabular, or computer form. The term implies reliability, and therefore provides an explanation of source, type, precision, and accuracy.
Data Recovery	The collection of information through any of a variety of techniques (e.g., photography, mapping, archaeological excavation) for purposes designed to recover representative data from a cultural resource prior to its disturbance or destruction.
Dead and Down Woody Material	All woody material, from whatever source, that is dead and lying on the forest floor.
Decadent (Stands)	Decaying; deteriorating.
Decision Criteria	Essentially the rules or standards used to evaluate alternatives. They are measurements or indicators that are designed to assist a decision maker in identifying a preferred choice from an array of possible alternatives.
Deferred Rotation	Deferred grazing; deferred utilization; withholding livestock from a range to allow the forage to

Demand	reach a certain stage of growth, stocking, and vigor for those species that govern utilization. The amount of an output that users are willing to take at a specified price, time period, and condition of sale.
Demand Analysis	A study of the factors affecting the schedule of demand for an output, including the price-quantity relationship, if applicable.
Departure	A schedule which deviates from the principle of nondeclining flow by exhibiting a planned decrease in the timber sale and harvest schedule at any time in the future.
Dependent Communities	Communities whose social, economic, or political life would change in important respects to market or nonmarket outputs from the national forest were substantially decreased.
Design Standard	Approved design and construction specifications used mainly for recreation facilities and roads- includes specified materials, colors, dimensions, etc.
Designated Area (Air Quality)	Those areas delineated in the Oregon and Washington Smoke Management Plans as principal population centers of air quality concern.
Desirable Residual	The remaining vegetation after application of harvest cutting methods that meets management area objectives. The vegetation may be trees, shrubs, grass, or a combination.
Detrimental Compaction	Compaction of soil increases soil bulk density and decreases porosity as a result of the application of mechanical forces, such as weight and vibration. Detrimental compaction exceeds the limits described below. Because of the unique physical properties and management problems (of volcanic ash and pumice soils), a different criterion for determining detrimental compaction has been established for them. Standards are as follows: 1. Volcanic ash/pumice soils - An increase in soil bulk density of 20 percent or more over the undisturbed level. 2. Other soils - An increase in soil bulk density of 15 percent or more over the undisturbed level, a macropore space reduction of 50 percent or more, and/or a reduction below the 15 percent level as measured by an air permeameter.
Detrimental Displacement	Soil displacement is the removal and horizontal movement of soil from one place to another by mechanical forces, such as blades. Detrimental displacement is the removal of more than 50 percent of the topsoil or humus enriched AI and/or AC horizons from an area of 100 square feet or more which is at least 5 feet in width. Mixing of surface soil layers by discing or disc-plow operations, or removal of surface soil layers by hand scalping is not considered detrimental displacement.
Detrimental Puddling	Soil puddling is a physical change in soil properties due to shearing forces that destroy soil structure and reduce porosity. Detrimental puddling can be observed as vehicle tracks when soil is molded and when depth of rutting has reached 6 inches or more.
Developed Recreation	Recreation that requires facilities that, in turn, result in concentrated use of an area Examples are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts and buildings.
Development Scale	A description of the levels of site modification for developed recreation sites and facilities:  1 -- PRIMITIVE Minimum Site Modification - Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted. 2 -- SEMI-PRIMITIVE (Motorized and Nonmotorized) Little Site Modification - Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads Interpretive services informal, almost subliminal. 3 -- ROADED NATURAL

Site Modification Moderate - Facilities about equal for protection of site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about three family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.

4 -- RURAL

Site Heavily Modified - Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density three-five family units per acre. Plant materials usually native. Interpretive services often formal or structured.

5 URBAN

High degree of site modification. Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density five or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual.

Diameter at Breast Height (d.b.h.)	Tree diameter measured at 4 feet 6 inches above ground on the uphill side of the tree.
Direct Habitat Improvement	Habitat manipulations primarily for the benefit of wildlife and fish.
Discount Rate	An interest rate that represents the cost or time value of money in determining the present value of future costs and benefits. A 'real' discount rate is one adjusted to exclude the effects of inflation.
Discounting	The practice of placing a lesser value (economic or other) on future events than on present events for the purpose of comparison. An item received today is seen to be worth more than an identical item received next year. Discounting refers only to the timing of an event and should not be confused with reduced values based on the uncertainty of future events nor implied quality changes over time.
Dispersed Recreation	A general term referring to recreation use outside a developed recreation site that includes activities such as scenic driving, hunting, backpacking, and any recreation in primitive environments.
Distance Zones	Areas of landscapes denoted by specified distances from the observer. Used as a frame of reference with which to discuss landscape characteristics or activities of man.
District (Cultural)	A group of cultural resources which, based on geographical proximity and shared characteristics, form a distinctive unit relative to nomination to the National Register of Historic Places.
Diversity	The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan (also see Edge).
Drainage Area of a Stream	Measured in a horizontal plane, that area enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above a specified point.
Drainage Basin	Part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.
Duff	Organic matter in various stages of decomposition on the floor of the forest.

## E

Early Forest Succession	The early stage or condition of a plant community that occurs during its development from bare ground to climax.
Economic Efficiency	The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefit that can be identified and valued are included in the computations. Economic efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate.
Economic Growth	Increased economic output in real terms over time.
Economic Impacts	<ol style="list-style-type: none"><li>1. Direct Economic /impact - Effects caused directly by forest product harvest or processing or by forest uses.</li><li>2. Indirect Economic Impact - Effects that occur when supporting industries sell goods or services to directly affected industries.</li><li>3. Induced Economic /impact - Effects that occur when employees or owners of directly or indirectly affected industries spend their income within the economy.</li></ol>
Ecosystem	An interacting system of organisms considered together with their environment; for example, marsh, watershed, and lake ecosystems.
Ecotone	The area influenced by the transition between plant communities or between successional stages or vegetative conditions within a plant community.
Edge	Where plant communities meet or where successional stages or vegetative conditions within plant communities come together.
Effective Ground Cover	All living or dead herbaceous or woody materials and rock fragments, greater than three-fourths of an inch in diameter, in contact with the ground surface. Includes tree or shrub seedlings, grass, forbs, litter, chips, and so forth.
Effects	Environmental consequences resulting from a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place; and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in this statement are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or health whether direct, indirect, or cumulative. Effects also may include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial (40 CFR 1508.8).
Elk Calving Habitat	A habitat used by elk for calving, usually located on spring-fall range in areas of gentle slope, contains forage areas and hiding and thermal cover close to water.
Empirical Yield Table	A table reflecting the existing standing timber volumes today and how they would grow in the future, under various timber management regimes.
Employment	Labor input into a production process, measured in the number of person-years or jobs. A person-year is 2,000 working hours by one person working year-long or by several persons working seasonally.
Endangered Species	Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.
Enhancement	A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.
Environmental Analysis	An analysis of alternative actions and their predictable short- and long-term environmental effects, incorporating the physical, biological, economic, social, and environmental design arts

	and their interactions.
Environmental Assessment	The concise public document required by the regulations for implementing the procedural requirements of the National Environment Policy Act. (40 FR 1508.9, 2)
Environmental Impact Statement (EIS)	A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal.
Erosion	(1) The wearing away of the land surface by running water, wind, ice, or other geologic agents, including such processes as gravitation creep; or (2) detachment and movement of soil or rock fragments by water, wind, ice, or gravity The following terms are used to describe different types of erosion: <i>Accelerated Erosion</i> - Erosion which is much more rapid than natural erosion, with the increase in erosion rate resulting primarily from the influence of human activities, or, in some cases, of other events that expose mineral soil surfaces such as wildfire. <i>Gully Erosion</i> - The erosion process whereby water accumulates in narrow channels, and over short periods, removes the soil from this narrow area to considerable depths, ranging from 4 inches to as much as 75 to 100 feet. <i>Rill Erosion</i> - An erosion process in which numerous small channels less than 4 inches deep and 6 inches wide are formed. <i>Sheet Erosion</i> - The removal of a fairly uniform layer of soil from the land surface by runoff water.
Escaped Fire Situation Analysis	A decision analysis of those factors influencing suppression of an escaped fire from which a plan of action will be developed. The analysis includes the development of alternative suppression strategies and the net effect of each.
Esthetics (Aesthetics)	Generally, the study, science, or philosophy dealing with giving visual pleasure; beauty and with judgments concerning beauty; and the theory of perception or of susceptibility.
Eutrophic Evaluation (Cultural)	Habitats, particularly soils and water, that are rich or adequate in nutrients. Assessment by a professional cultural resource specialist of the scientific, social, and historical significance of a cultural resource undertaken to determine whether or not it meets the criteria for the National Register of Historic Places.
Evapotranspiration	The water which is lost to the atmosphere from a vegetated surface due to evaporation from the soil and water surfaces and transpiration by living vegetation.
Even-Aged Management	The application of a combination of actions that results in the creation of stands of trees of essentially the same age. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore, tree sizes) throughout the forest area. The age difference between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands.
Even-Aged Stands	Stands in which all trees are of about the same age. (A spread of 10 to 20 years is generally considered one age class.) Cutting methods producing even-aged stands are clearcut, shelterwood, or seed tree systems.
Exclusion Areas	Land areas determined to be unavailable for corridor allocation or facility siting. These include only those areas with a legal, congressional mandate that excludes linear facilities (i.e., wilderness).
Extensive Forest Management	A low investment level of management on regulated timberlands that requires initial harvest, regeneration, and final harvest. Some precommercial thinning may be done to prevent stagnation and disease buildup.
Existing Visual	See Visual Condition.

Conditions (EVC)

**F**

- Final Removal Harvest The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood, or seed tree cutting method.
- Fire intensities Rate of heat energy released during combustion, usually expressed in BTU/second per unit length of fire front (foot). Intensity levels: Low, 0-2ft.: moderate, 2 4 ft.; high, 4+ feet.
- Fire Management All activities required for the protection of resources and values from fire, and the use of fire to meet land management goals and objectives.
- Fish Habitat Level Coefficients for anadromous fish in terms of the number of smolts, adult fish, sport fishing use, and commercial harvest are the result of eight (8) levels of investment in habitat enhancement as:

<u>Management Level</u>	<u>1st Decade Investment M\$/Yr.</u>
1	0
2 and 3	177.4
5, 6, and 7	397.2
8	433.2
	537.7

- Fisheries Habitats Streams, lakes, and reservoirs that support fish populations.
- Floodplain The lowland and relatively flat areas adjoining inland and coastal waters (including debris cones and flood-prone areas of offshore islands) including, at a minimum, those areas subject to a 1 percent or greater chance of flooding in any given year (1 00-year recurrence).
- Forage All browse and nonwoody plants available to livestock or wildlife for grazing, or harvested for feed.
- Forage Areas All browse and nonwoody plant areas available to livestock or game in addition to forest stands that do not qualify as either hiding or thermal cover and all natural and manmade openings less than 6 1/2 feet tall.
- Foreground A term used in visual management to describe the visible terrain immediately adjacent to a high-value scenic area, recreation facility, or forest highway (see Background, Middle Ground).
- Forest A forest is an extensive plant community of shrubs and trees in all stages of growth and decay, with a closed canopy, having the quality of self-perpetuation or of development into an ecological climax.
- Forest Land Land at least 10 percent occupied by Forest trees or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential or administrative areas, improved roads by any width, and adjoining road clearings and powerline clearings of any width.
- Forest Program A forest program is the summary or aggregation of project or activity information that makes up an integrated (multifunctional) course of action for a given level of funding on a national forest that is consistent with the Forest Plan.
- Forest Residues (Logging) The unused portions of sawtimber and pole timber trees cut, or trees cut or killed by logging.
- Forest Service Handbook (FSH) For Forest Service use, directives that provide detailed instructions on how to proceed with a specialized phase of a program or activity.
- Forest Service Manual (FSM) A system of manuals which provides direction for Forest Service activities.
- Forest System Roads Roads that are part of the Forest development transportation system, which includes all existing and planned roads as well as other special and terminal facilities and designated as Forest development transportation facilities (also see Roads).
- Forest Types A classification of forest land based upon the tree species presently forming a plurality of basal



	area stocking in live trees.
FORPLAN	A linear programming system used for developing and analyzing forest planning activities.
Four-wheel Drive Way	A forest development road included in the forest development transportation plan and commonly used by four-wheel drive, high-clearance vehicles with a width greater than 40 inches.
Free-to-Grow	A term used by silviculturalists to indicate that trees are free of growth restraints; the most common of which is competing over-topping or competing vegetation.
Fuel Loading	See Residue Loading
Fuel Management	The practice of planning and executing treatment or control of any vegetative material which adversely affects meeting fire protection or resource management goals and objectives.
Fuel Treatment	The rearrangement or disposal of natural or activity fuels (generated by management activity, such as slash left from logging) to reduce fire hazard. Fuels are defined as both living and dead vegetative materials consumable by fire.
Fuels	Wild land vegetative material which can burn.

## G

G-T Permit	Special-use permit issued under the Granger-Thye Act.
Game Species	Any species of wildlife or fish for which seasons and bag limits have been prescribed and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes, and regulations.
Geomorphology	The science that deals with land and submarine relief features of the earth's surface and seeks a genetic interpretation of them, using the principles of physiography in its descriptive aspects and dynamic and structural geology in its explanatory phases.
Geothermal	Of or pertaining to the internal heat of the earth.
Goal	A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.
Goods	<ol style="list-style-type: none"> <li>1. <i>Nonmarket Good</i> - An output that is not normally exchanged for money in a market. Usually no market has evolved because ownership of the good is not clear, exclusive use is not possible under current laws, or it is not possible to consistently define good.</li> <li>2. <i>Pubic Good</i> - An output for which it is impractical to impose a charge, either because it must be supplied to all if it is supplied to one, or the costs of collection and control exceed likely revenue.</li> </ol>
Goods and Services	The various outputs, including on-site uses, produced from forest and rangeland resources.
Grass/Forb Mosaic (GTM)	An early forest successional stage where grasses and forbs are the dominant vegetation. Generally, areas that are a mosaic of forested and nonforested lands ranging from fingers of forested lands alternating with nonforested lands, to small patches of forested lands isolated in large tracts of nonforested land. Large portions of these areas are identified as big game winter ranges which occur on steep shallow soils extending from ridgetops to canyon bottoms, and include forested portions which rarely exceed 200 feet in width.
Group Selection Cutting	An uneven-aged management practice that harvest tree groups ranging in size from a fraction of an acre up to about 2 acres. Area cut is smaller than the minimum feasible under even-aged management for a single stand
Guideline	An indication or outline of policy or conduct that is not a mandatory requirement (as opposed to a standard, which is mandatory).

## H

Habitat	The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.
Habitat Capability	The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish, or plant population. It is measured in terms of potential population numbers.
Habitat Diversity	The distribution and abundance of different plant and animal communities and species within a specific area.
Hardwood	A broad-leaved flowering tree.
Habitat Effectiveness Index (HEI)	A relative value of habitat conditions for Rocky Mountain elk based on the potential of the habitat type to provide cover, the quality of existing cover, and the miles of road open to vehicular traffic.
Hard Snag	A snag composed primarily of sound wood, particularly sound sapwood, that is generally merchantable.
Harvest Cutting Method	A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character. Harvest cutting methods are classified as even-aged and uneven-aged.
Harvest Dispersion (Factor)	The dispersion of cutting units over the land base in order to meet clearcut size limitations, or other resource constraints. An example of a harvest dispersion constraint is that no more than 25 percent of an analysis area may be harvested in one decade.
Hazard	A description of the fuels complex in terms of kind, volume, arrangement, condition, and location of the fuels.
Herbage	Herbs taken collectively. Nonwoody plant materials.
Hiding Cover for Elk	Any vegetation capable of hiding 90 percent of a standing adult elk from the view of a human at a distance of 200 feet or less; generally any vegetation used by elk for security or escape from danger and at least 6 1/2 feet tall (also see Marginal Cover).
Historic	Refers to the period of time for which there are written records (after European contact). In Region 6, the historic era begins at roughly 1800A.D., with the first explorers who kept journals.
Historic Site	Site associated with the history, tradition, or cultural heritage of national, state, or local interest.
Horizontal Diversity	The diversity in an area that results from the number of plant communities or successional stages or both: the greater their number the greater the horizontal diversity; also, the greater the amount of edge the higher the degree of horizontal diversity.
Hydrology	The scientific study of the properties distribution and effects of water in the atmosphere, on the earth's surface, and in soil and rocks.

I

IMPIAN	A computer-based system used by the Forest Service for constructing nonsurvey input/output models to measure economic impact. The system includes a data base for all counties in the U.S. and a set of computer programs to retrieve data and perform the computational tasks for input/output analysis.
Imports	As used in IMPIAN, imports are defined as purchases of products for use in production of other products and for final consumption from outside the impact area. Includes both imports from other areas of the U.S. and international imports. Competitive imports are the same as local domestic products which are not produced in quantities sufficient to meet local demands or which obtain a share of the local market formerly supplied by local producers. Noncompetitive imports are products not produced locally.
Improved Genetic Stock	Group of plants (trees) that have been improved genetically.
Income	Employee compensation, profits, rents, and other payments to households.
Indicator Species	A wildlife species selected for management because its welfare is presumed to indicate the welfare of other species.

Indirect Outputs	Outputs caused by an action, but which are later in time or farther removed in distance, although still reasonably foreseeable (see Effects).
Individual (Single) Tree Selection	See Uneven-aged Silvicultural Systems.
Induced Outputs	Outputs in the private sector induced by the direct outputs produced on the Forest.
Influence Zone	See Zone of Influence.
Input/Output Analysis	A quantitative study of the interdependence of a group of activities, based on the relationship between inputs and outputs of the activities. The basic tool of analysis is an input-output model for a given period that shows simultaneously for each economic sector the value of inputs and outputs, as well as the value of transactions within each economic sector. It has especially been applied to estimate the effects of changes in Forest output levels on local economic activity.
Instream Flows	A prescribed level (or levels) of streamflow, usually expressed as a stipulation in a permit authorizing a dam or water diversion, for the purpose of meeting National Forest System management objectives.
Integrated Pest Management (IPM)	A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics, such as timber stand improvement and selective use of pesticides. A basic principle in the choice of a strategy is that it be ecologically compatible or acceptable.
Intensity of Grazing	The degree of grazing management applied to a piece of land.
Intensive Forest Management	A high investment level of timber management that includes initial harvest, regeneration with genetically improved stock, control of competing vegetation, fill-in planting, precommercial thinning as needed for stocking control, one or more commercial thinnings, and final harvest.
Interdisciplinary Approach	Using the skills of individuals representing two or more areas of knowledge to focus on the same task, problem, or subject.
Interdisciplinary Team (ID Team)	A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem.
Intermediate cutting	Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly applied intermediate cuttings are release, thinning, improvement, and salvage.
Intermingled Ownerships	Lands within the national forest boundaries, or surrounded by national forest lands, that are owned by private interests or other government agencies.
Intermittent Stream	A stream that runs water in most months, but does not run water during the dry season during most years.
Interpretive Services	Visitor information services designed to present educational and recreational values to forest visitors to enhance their understanding, appreciation, and enjoyment of the forest.
Inventory (Cultural)	The process of collecting existing information on known cultural resources and locating and documenting undiscovered cultural resources.
Irretrievable	A term that applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it IS possible to resume timber production.
Irreversible	A term that describes the loss of future options. Applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time.
Issue	A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

## K

**Key Use Area (Wildlife)** The portion of the habitat where use of forage is most pronounced. These areas are essential to the survival and perpetuation of the species as individuals or as a population. Collectively, they are the key to management of the entire range.

## L

**Land Use Allocation** The commitment of a given area of land or a resource to one or more specific uses, for example, to campgrounds or wilderness.

**Landing** Any place where round timber is assembled for further transport, commonly with a change of method.

**Lands Not Appropriate for Timber Production** Includes lands that: (1) Are proposed for resource uses that preclude timber production, such as Wilderness; (2) have other management objectives that limit timber production to the point where management requirements set forth in CFR 219.27 cannot be met; or (3) are not cost efficient over the planning horizon in meeting Forest objectives including timber production.

**Lands Not Suited (Unsuitable) for Timber Production** Includes lands that: (1) are not Forest land as defined in CFR 219.3; (2) are likely, given current technology, to suffer irreversible resource damage to soils productivity, or watershed conditions; (3) cannot be adequately restocked as provided in 36 CFR 21.9.27(c)(3); or (4) have been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service. In addition, Forest lands other than those that have been identified as not suited for timber production shall be reviewed and assessed prior to formulation of alternatives to determine the costs and benefits of a range of management intensities for timber production.

**Lands Suitable for Timber Production** Includes all lands not classified as either not suited or not appropriate for timber production.

**Leasable Minerals** These minerals include oil, gas, oil shale, coal, potassium, sodium, phosphates, sulphur, and geothermal.

**Lifestyle** The characteristic way people live, indicated by consumption patterns, work, leisure, and other activities.

**Linear Programming** A mathematical method used to determine the cost-effective allocation of limited resources between competing demands when both the objective (e.g., maximize profit or minimum cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities.

**Locatable Minerals** These resources include gold, silver, lead, copper, and mercury, which are mined and processed for metals, and some uncommon nonmetallic minerals.

**Log Class** The identification of logs by groups based on their state of decomposition from Class I (recently fallen, bark intact, and solid) to Class V (with advanced decomposition, no bark remaining, and soft).

**Logical Harvest Unit** An area that can be harvested using currently available technology, applied in a prudent manner, while meeting all resource objectives, and is located such that all adjacent timber also falls within logical harvest units.

**Long-Term Sustained-Yield Timber Capacity (LTSYC)** The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity consistent with multiple-use objectives (36 CFR 219.3).

## M

Managed Yield Table	A table showing, for a given species (or species mix) on a given site, the progressive development of managed stand at periodic intervals covering the greater part of its useful life. It usually includes average diameter, basal area, number of trees, standing volume, and harvest volumes for a specific timber management regime.
Management Activity	An activity of man imposed on a landscape for the purpose of harvesting, traversing, transporting, or replenishing natural resources.
Management Area	The land area on which a certain management strategy is applied.
Management Concern	An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.
Management Direction	A statement of multiple-use and other goals and objectives, with the associated management prescriptions, and standards and guidelines for attaining them.
Management Indicator Species	A species selected because its welfare is presumed to be an indicator of the welfare of other species using the same habitat. A species whose condition can be used to assess the impacts of management actions on a particular area.
Management Intensity	A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.
Management Practice	A specific activity, measure, course of action, or treatment.
Management Prescription	See Management Strategy.
Management Requirement (MR)	Minimum standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, and soil and water diversity to be met in accomplishing National Forest System goals and objectives.
Management Strategy	Management practices and intensity selected and scheduled for application on a management area to attain multiple-use and other goals and Objectives.
Marginal Cover	A vegetative stand comprised of trees 10 or more feet high with an average canopy closure of at least 40 percent and generally capable of obscuring at least 90 percent of a standing adult elk from the view of humans at a distance of 200 feet or less.
Market	The processes of exchanging a good or service for money or other goods or services according to a customary procedure. A market may occur in a specific place or throughout an area by individual transactions.
Market Area	The area from which a market draws or to which it distributes its goods or services and for which the same general price structure and price influences prevail.
Market Resources	Products derived from renewable and nonrenewable resources that have a well-established market value; for example, forage, timber, water, and minerals.
Market Value	The unit price of an output normally exchanged in a market after at least one stage of production. Market value is expressed in terms of prices as evidenced by market transactions.
Mature Stage	One of six recognizable successional stages in coniferous forests of the Blue Mountains in which the stand is primarily composed of or dominated by mature trees in vigorous condition; the stage at which a tree or stand best fulfills the purpose for which it was managed.
Maximum Modification	See Visual Quality Level (VQL).
Mean Annual Increment	The total increment up to a given age divided by that age.
Memorandum of Agreement (Cultural)	A three-party agreement (responsible Forest Service official, State Historic Preservation officer, and executive director of the Advisory Council on Historic Preservation) which documents an agreed upon plan to mitigate a proposed undertakings' adverse effect upon cultural resources listed on or eligible for the National Register of Historic Places.
Middle Ground	The visible terrain beyond the foreground where individual trees are still visible, but do not stand out distinctly from the stand (see Foreground and Background).
Migration Route	A travel route used routinely by wildlife in their seasonal movement from one habitat to another.

Mineral Entry	The filing of a mining claim upon public domain or related land to obtain the right to any minerals it may contain.
Mineral Entry Withdrawal	The exclusion of mining locations and mineral development work on areas required for administrative sites by the Forest Service and other areas highly valued by the public.
Mineral Materials Mitigation	Deposits such as sand, stone, gravel, and clay. Mitigation includes: (1) Avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (5) compensating for the impact by replacing or providing substitute resources or environments. (40 CFR Part 1508.20).
Mitigation Measures Model	Actions to avoid, minimize, reduce, eliminate, or rectify adverse impacts of management practices. A representation of, reality used to describe, analyze, or understand a particular concept. A 'model' may be a relatively simple qualitative description of a system or organization, or a highly abstract set of mathematical equations.
Moderate Grazing Use	A comparative term that indicates the grazing use is between heavy and light use. More specifically it refers to the level of grazing which does not result in visually detracting 'beat out' areas in sensitive landscape areas.
Monitoring	A process to collect significant data from defined sources to identify departures or deviations from expected plan outputs.
Monitoring and Evaluation	The periodic evaluation of Forest Plan management practices on a sample basis to determine how well objectives have been met.
Mortality	In wildlife management, the loss in a population from any cause, including hunter kill, poaching, predation, accident, and disease. In forestry, trees in a stand that die of natural causes.
Multi-Layered Canopy	Forest stand with two or more distinct tree layers in the canopy with an understory or overtopped trees are common. None of the canopy layers are necessarily continuous or closed, but tend to be more or less uniformly distributed across the stand.
Multiple Use	The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people: making the most judicious use of the land, for some or all of these resources or related services, over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (36 CFR 219.3).

## N

National Forest System (NFS) Lands	Federal lands that have been designated by Executive Order or statute as National Forest, National Grasslands, Purchase Units, and other lands under the administration of the Forest Service, including Experimental Areas, and Land Utilization Project (Bankhead-Jones Title III) lands.
National Recreation Trails (NRT)	Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses.
National Register of Historical Places	A register of cultural resources of national, state, or local significance maintained by the Department of the Interior.
Natural Forest	The forest that would remain in 50 years if natural processes were allowed to function without

	human influence.
Natural Fuels	Fuels not directly generated or altered by management activities.
Natural Regeneration	Reforestation of a site by natural seeding from the surrounding trees or trees left for seed, or seed stored in the soil or slash. Natural regeneration may or may not be preceded by site preparation.
Net Cash Flow	The difference between the annual receipts of an alternative and costs required to implement that alternative.
Net Public Benefits	An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs), whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.
Net Receipts	Receipts minus costs.
Net Returns to the Treasury, Net Cash Flow	The difference between the total dollar receipts projected for an alternative and the total budget required to implement the alternative.
Nitrogen-Fixing	Conversion of free nitrogen into combined forms useful in nutrient cycles and other functions in the biosphere.
No Surface Occupancy	A clause used in mineral leases to prevent activities in sensitive areas. Sometimes results in closure of an area and sometimes has little impact if directional drilling can tap resources underlying restricted area.
Nonattainment Areas	An area that has been identified in the State Implementation Plan where at least one of the national air-quality standards is violated.
Nonchargeable Timber Volume	All timber volume not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity.
Noncommodity Outputs	Resource outputs that are not normally bought and sold, or cannot be bought and sold, such as air quality or scenic beauty.
Nonconsumptive Use	That use of a resource that does not reduce its supply; for example, nonconsumptive uses of water include hydroelectric power generation, boating, swimming, and fishing.
Nondeclining Flow (NDF)	A policy governing the volume of timber removed from a national forest, which states that the volume planned for removal in each succeeding decade will equal or exceed that volume planned for removal in the previous decade.
Nonforest Land	Lands that never have had or that are incapable of having 10 percent or more of the area occupied by forest trees; or lands previously having such cover and currently developed for nonforest use.
Nongame	Species of animals not hunted for sport.
Nointerchangeable	Noninterchangeable components (NIC's) are defined as increments of the suitable land base and their contribution to the allowable sale quantity (ASQ) that are established to meet Forest Plan objectives. NIC's are identified as parcels of land and the type of timber thereon which are differentiated for the purpose of Forest Plan implementation. The total ASQ is derived from the sum of the timber volumes from all NIC's. The NIC's cannot be substituted for each other in the timber sale program. Some conditions which may characterize a particular NIC are. (1) species marketability, (2) dead or live timber, (3) timber size class, and (4) operability.
Nonmarket Resources	Products derived from national forest resources that do not have a well-established market value; for example, recreation, wilderness, and wildlife.
Nonmarket Value	The unit price of a nonmarket output normally not exchanged in a market at any stage before consumption; it is thus necessary to impute nonmarket value from other economic information.
Nonmarket Valued Outputs	Assessed value of a good or service which is not traded in the market place and has no market value. Because it is not bought and sold, some measure other than price must be used in

	establishing the value.
Nonpoint Source Pollution	Pollution whose source is general rather than specific in location. It is widely used in reference to agricultural and related pollutants-for example, production of sediments by logging operations, agricultural pesticide applications, or automobile exhaust pollution.
Nonpriced outputs	Nonpriced outputs are those for which there is no available market transaction evidence and no reasonable basis for estimating a dollar value. Subjective nondollar values are given to nonpriced outputs.

## O

Objective	A concise, time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.
Off-Highway Vehicle (OHV)	A general term describing all motorized vehicles capable of off-highway travel during winter or summer. Includes 4x4's ATV's, dirt bikes, and snowmobiles.
Off-Road Vehicles (ORV)	Vehicles such as motorcycles, all-terrain vehicles, four-wheel drive vehicles, and snowmobiles. Term superseded by Off-Highway Vehicle (OHV).
Old Growth Habitat (OG)	See Successional Stage.
Old Growth Stand (Old Growth)	Any stand of trees 10 acres or greater generally containing the following characteristics: (1) Contain mature and overmature trees in the overstory and are well into the mature growth stage; (2) will usually contain a multilayered canopy and trees of several age classes; (3) standing dead trees and down material are present; and (4) evidences of man's activities may be present, but do not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand.
Open to Entry Opportunity/Availability	With respect to minerals management, lands available to occupy under the mining laws. Opportunity/availability components are defined as increments of the unsuitable land base which may qualify for future addition to the suitable land base and thereby contribute to an increase in the ASQ, if current conditions relating to the timber resource change. Any such inclusions would be accomplished through a Forest Plan amendment or revision.
Output	The goods, end products, or services that are purchased, consumed, or used directly by people. Goods, services, products, and concerns produced by activities that are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. A broad term for describing any result, product, or service that a process or activity actually produces.
Output, Market	A good, service, or onsite use that can be purchased at a price. (FSM 1905)
Output, Nonmarket	A good, service, or onsite use not normally exchanged in a market. (FSM 1905)
Overmature	The stage at which a tree declines in vigor and soundness, for example, past the period of rapid height growth.
Overstory	That portion of the trees, in a forest or in a stand or more than one story, forming the upper or uppermost canopy.
Overview (Cultural)	A report, based primarily on archival research, that organizes and summarizes cultural resource information from a particular national forest or geographic area.
Overwood Removal	A harvest method that removes the overstory of a multiple-storied stand and leaves the smaller understory for further treatment (thinning or harvesting).

## P

Palatability (of	The relish with which a particular species or plant part is consumed by an animal.
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Herbage and Browse)	Nonpalatable plants are rarely consumed.
Partial Cut	Covers a variety of silvicultural practices where a portion of the stand is removed and a portion is left.
Partial Retention	See Visual Quality Level (VQL).
Particulate Matter (PM)	Any liquid or solid particles suspended in or falling through the atmosphere.
Particulates	Small particles suspended in the air and generally considered pollutants
Perennial Stream	A stream that flows year-round.
Permanent Improvement	In wilderness context: A structural or nonstructural improvement that is to remain at a particular location for more than one field season. Permanent improvements include such items as trails, toilet buildings, cabins, fences, tent frames, fire grills, and instrumentation stations.
Personal Use	Normally used to describe the type of permit issued for removal of wood products (firewood, post, poles, and Christmas trees) from national forest land when the product is for home use and not to be resold for profit.
Persons-At-One-Time (PAOT)	The number of people in an area or using a facility at the same time. Generally used as 'maximum PAOT to indicate the capacity of an area or facility to support peak usage within established user density standards and without degradation to biophysical resources.
Persons-At-One-Time/Days	The number of people times the number of days (PAOT/Days).
Physiographic Province	A region having a particular pattern of relief features or landforms that differs significantly from that of adjacent regions.
Plan of Operations	A document required from any person proposing to conduct mineral-related activities which utilize earth moving equipment and which will cause disturbance to surface resources or involve the cutting of trees (36 CFR 228.4)
Planning Area	The area of the National Forest System covered by a regional guide or forest plan.
Planning Criteria	Criteria prepared to guide the planning process. Criteria applied to collection and use of inventory data and information, analysis of the management situation, and the design, formulation, and evaluation of alternatives.
Planning Horizon	The overall time period considered in the planning process. It spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions In this FEIS and Forest Plan, the planning horizon is considered to be 15 decades.
Planning Period	One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.
Planning Records	The body of information documenting the decisions and activities which result from the process of developing a forest plan, revision, or significant amendment.
Plant Community	A vegetative complex unique in its combination of plants, which occurs in particular locations under particular influences, is a reflection or integration of the environmental influences on the site (such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall), and denotes a general kind of climax vegetation, such as ponderosa pine or bunchgrass, from which several plant community types may be derived on the basis of characteristic lesser vegetation.
Plant Community Type	A site classification that can be recognized on the ground by its plant species grouping and closely related soils or other characteristics. The type has distinct limitations or opportunities for productivity with limited variability from place to place.
Pole/Sapling	A Forest successional stage in which trees between five and nine inches in diameter are the dominant vegetation (also see Size Class).
Pole Timber	Trees of at least five inches in diameter at breast height, but smaller than the minimum utilization standard for sawtimber (also see Size Class).
Potential Yield	The sustainable output level of wood fiber available after deductions for other resource

	needs.
Precommercial Thinning	The practice of removing some of the trees of less than merchantable size from a stand so that the remaining trees will grow faster.
Prehistoric	Relating to the period of time before written records (prior to European contact). In Region 6 before 1800 A.D. or before the advent of written records.
Preparatory Cut	The removal of trees near the end of a rotation, which permanently opens the canopy and enables the crowns of seed bearers to enlarge, to improve conditions for seed production and natural regeneration. Typically done in the shelterwood system.
Prescribed Burning	The skilful application of fire to natural fuels under conditions of weather, fuel moisture, etc. that allows confinement of the fire to a predetermined area and produces the intensity of heat and rate of spread to accomplish planned benefits to one or more objectives of silviculture, wildlife management, grazing, or hazard reduction.
Prescribed Fire	A wildfire burning under specified conditions that will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Use of unplanned ignitions must have prior approval by the Regional Forester.
Prescription	See Management Strategy.
Present Net Value (PNV)	The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.
Preservation	See Visual Quality Level (VOL).
Price	The unit value of an output expressed in dollars.
Price Outputs	Priced outputs are those that are or can be exchanged in the market place. The dollar values for these outputs fall into two categories: market or nonmarket (assigned values).
Price-Quantity Relationship	A schedule of prices that would prevail in a market for various quantities of the output exchanged.
Price Trend Analysis	An analysis done to estimate how a particular FORPLAN solution would change if predicted price trends were increased or decreased.
Primary Cavity Nesters	Wildlife species that excavate cavities in snags.
Primitive	See Recreation Opportunity Spectrum (ROS).
Primitive Recreation	Those types of recreational activities associated with unroaded land-e.g., hiking, backpacking, cross-country travel.
Private Nonindustrial Forest Land	Those forest lands owned by companies or individuals who do not own or operate facilities used for manufacture of wood products.
Production Potential	The capability of the land or water to produce a given resource.
Program	Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments.
Program Budget	A plan that allocates annual funds, work force ceilings, and targets among agencies.
Programmed Harvest Level	Timber scheduled for harvest for a specific year.
Project	An organized effort to achieve an objective identified by location, timing, activities, outputs, effects, and time period and responsibilities for executions.
Project Planning	The second level of planning for site-specific projects relating to the location, timing, activities, and control in accordance with NEPA regulations.
Proper Use (of Forage)	The amount of grazing utilization and/or trampling that an individual plant or species of plants can withstand and still maintain or improve its normal physiological and reproductive processes.
Property (Cultural)	A general term equivalent to 'cultural resource' in some laws and regulations.
Public Issue	A subject or question of widespread public interest relating to management of the National Forest System.
Public Participation	Meetings, conferences, seminars, workshops, tours, written comments, responses to survey

Activities	questionnaires, and similar activities designed and held to obtain involvement or comments from the public about Forest Service planning.
Purchaser Credit	Credit earned by the purchaser of a national forest timber sale by construction of contract-specified roads. Earned purchaser credit may be used by the purchaser as payment for national forest timber removed.

## Q

Quality Extensive Management (QE)	Range management based on low operating and investment costs per acre.
Quality Intensive Management (QI)	Range management to obtain a high production of livestock through the best techniques of range management.

## R

Range Allotment	An area designated for use of a prescribed number and kind of livestock under one management plan.
Range Analysis	Systematic acquisition and evaluation of range resource data for planning allotment management and the overall land and resource management.
Range Condition	<p>An ecological concept used to interpret livestock grazing impacts on vegetation (describe various successional stages of vegetation caused by levels of grazing). The condition rating related some level of past livestock grazing to some potential for improved production and species composition; in this way, It was interpreted as a basis for improving management. Originally developed in the Great Plains, the concept works well in climax grassland communities, not as well in shrub communities, and poorly on forested ranges. More recent interpretations move toward the concept of 'ecological condition which is defined as the degree of departure of the present vegetation from the potential natural community (the cause of the departure is not considered, and is certainly not directly tied to levels of livestock grazing). The classes of range condition are:</p> <p><i>Excellent</i> - Climax vegetation or potential natural community (implies that the current situation is 81-100 percent of that found in an undisturbed or unused condition).</p> <p><i>Good (G)</i> - 61-80 percent of the maximum production or species density and composition possible under existing environment.</p> <p><i>Fair (F)</i> - 41-60 percent of the maximum production or species density and composition.</p> <p><i>Poor (P)</i> - 21-40 percent of the maximum production or species density and composition.</p> <p><i>Very Poor (VP or V)</i> - 1-20 percent of the maximum production or species density and composition. Improvement in species density and composition probably cannot be achieved by natural means.</p> <p><i>Satisfactory Range Condition</i> - On suitable range, forage condition is at least Fair, with stable trend, and the allotment is not classified PC or PD (refer to the definition for Allotment Classification)</p> <p><i>Unsatisfactory Range Condition</i> - The allotment does not meet the criteria for satisfactory condition.</p>
Range Improvement	Any activity or program on or relating to rangelands which is designed to improve production of forage, change vegetative composition, control patterns of use, provide water, stabilize soil and water conditions, and/or provide habitat for livestock and wildlife. The term includes (but is not limited to) structures, treatment projects, and use of mechanical means to accomplish the desired results.
Rangelands	Rangelands are defined as areas with less than 10 percent tree cover where the majority of

Range Management (Strategy) Level	<p>the vegetation is grasses, forbs, and/or shrubs.</p> <p>The grazing management intensity assigned to a grazing area, which can range from no livestock, to some livestock, or to extensive or intensive grazing. This is usually associated with livestock density, degree of investment for range improvement, and intensity of management. The five strategies are</p> <ol style="list-style-type: none"> <li>1. <i>No Livestock Grazing</i>;</li> <li>2. <i>Minimum Grazing</i> - Minimum improvements to maintain the range resource, and use of simple management systems;</li> <li>3. <i>Extensive Grazing</i> - Rotation grazing systems are used, most or all improvements are nonstructural;</li> <li>4. <i>Intensive Grazing</i> - Rotation grazing systems are used, complemented by a wide variety of structural and nonstructural improvements; and</li> <li>5. <i>Exploitative</i> - (Is not used on National Forest System lands)</li> </ol>
Raptors	Any predatory bird-such as a falcon, hawk, eagle, or owl-that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.
Rate of Return	The financial yield per unit cost determined as the rate of interest at which total discounted benefits equal total discounted costs. (Internal rate of return is a similar measure appropriate to the benefits and costs that affect private firms or individuals.)
Real Dollar Value	A monetary value which compensates for the effects of inflation.
Recreation Capacity	The number of people that can take advantage of the supply of a recreation opportunity during an established use period without substantially diminishing the quality of the recreation experience or the biophysical resources.
Recreation Information Management (RIM)	A computer-oriented system for the organization and management of information concerning recreation use, occupancy, and management of national forest lands.
Recreation Opportunity	The availability of choices for user to participate in the recreational activities they prefer within the settings they prefer.
Recreation Opportunity Spectrum (ROS)	<p>Land delineations that identify a variety of recreation experience opportunities categorized into six classes on a continuum from Primitive to Urban. Each class is defined in terms of the degree to which It satisfies certain recreation experience needs, based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area, and the relative density of recreation use. The six of the seven classes dealt with on the Forest are:</p> <ol style="list-style-type: none"> <li>1. <i>Primitive</i> - Area is characterized by an essentially unmodified natural environment of fairly large size Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.</li> <li>2. <i>Semi-primitive Nonmotorized</i> - Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis Use of such roads is restricted to minimize impacts on recreational experience opportunities</li> <li>3. <i>Semi-primitive Motorized</i> - Area is Characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum onsite controls and restrictions may be present, but would be subtle. Motorized recreation use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.</li> <li>4. <i>Roaded Natural</i> - Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of humans. Such evidence usually</li> </ol>

harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

5. *Roaded Modified* - Area is characterized by a considerably modified natural-appearing environment with considerable evidence of the sights and sounds of humans. Such evidence seldom harmonizes with the natural environment. Interaction between users may be low to moderate, but evidence of other users is prevalent. Resource modification and utilization practices are evident and seldom harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities. The area is managed to meet modified and maximum modified visual quality objectives.

6. *Rural* - Area is characterized by a substantially modified natural environment. Sights and sounds of people are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection. (Only a very minor amount on the UNF.)

NOTE The other ROS classification, Urban, IS not applicable to the Umatilla National Forest.

Recreation Visitor Day (RVD)	Twelve visitor-hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons.
Reforestation	The natural or artificial restocking of an area with forest trees: most commonly used in reference to artificial restocking.
Regeneration	The actual seedlings and saplings existing in a stand: or the act of establishing young trees naturally or artificially.
Regeneration Cut	The removal of trees intended for the purpose of assisting regeneration already present, or to make a regeneration of the stand possible.
Regulations	Generally refers to the Code of Federal Regulations (CFR), Title 36, Chapter II, which pertains to management of the Forest Service.
Rehabilitation (Visual Mgmt.)	A short-term management alternative used to return existing visual impacts in the natural landscape to a desired visual quality.
Release	Freeing trees from competition for light, water, and nutrients by removing or reducing the vegetation growth that is overtopping or closely surrounding them.
Removal Cut (Final Cut)	The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood method.
Renewable Resources	Resources that can be used indefinitely, when the use rate does not exceed the ability to renew the supply.
Research Natural Area (RNA)	Designated area of land, usually over 300 acres in size, with ecological characteristics of scientific or educational interest
Residual Stand	The trees that remain standing after some event, typically a harvest cut.
Residue Loading	The quantity of the unwanted accumulation in the forest of living or dead, mostly woody material that is added to and rearranged by human activities, such as forest harvest, cultural operations, and land clearing. Forest residue includes slash materials, excessive litter on the forest floor, unwanted living brush and weed trees, and standing dead trees and snags.
Residue Utilization	Removal and use of forest residue (such as slash, litter, brush, dead trees, and snags) for energy production, home heating, or wood products.
Resource	Anything which is beneficial or useful-be It animal, vegetable, mineral, a location, a labor force, a view, an experience, etc. Resources, in the context of land use planning, thus vary from such commodities as timber and minerals to such amenities as scenery, scenic view points, or recreation opportunities.
Resource Allocation	The action of apportioning the supply of a resource to specific uses or to particular persons or organizations.
Resource Allocation	A mathematical model using linear programming which will allocate land to different

Model (RAM)	management prescriptions and schedule implementation of those prescriptions simultaneously. The purpose of the model is to find a schedule and allocation that meets the goals of the Forest and optimizes some objective function, such as "minimize costs".
Resource Use and Development Opportunities	A possible action, measure, or treatment and corresponding goods and services identified and introduced during the scoping process, which subsequently may be incorporated into and addressed by the Forest Land and Resource Management Plan in terms of a management prescription.
Rest Rotation	An intensive system of range management whereby grazing is deferred on various parts of the range during succeeding years, allowing the deferred part complete rest for one year.
Retention	See Visual Quality Level (VQL).
Returns to Counties	The portion of receipts derived from Forest Service resource management that is distributed to State and county governments such as the Forest Service 25 percent fund payments.
Revegetation	The re-establishment or improvement of vegetation through management practices.
Riparian	Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Streambanks, lake borders, or marshes are typical riparian areas.
Riparian Area	A geographically delineated area with distinctive resource values and characteristics that is comprised of aquatic and riparian ecosystems. This includes floodplains, wetlands, and all areas within a horizontal distance of at least 100 feet from the normal line of high water of a stream channel or from the shoreline of a standing body of water.
Riparian Ecosystem	A transition between the aquatic ecosystem and the adjacent upland terrestrial ecosystem. Identified by soil characteristics and distinctive vegetation communities that require free or unbound water.
Risk (Fire)	Defined as the probability that an ignition will occur.
Roadless Area Review and Evaluation II (RARE II)	A comprehensive process directed by the Secretary of Agriculture to identify roadless and undeveloped land areas in the National Forest System, to determine their uses (for either wilderness or other resource management and development), and to determine areas that would require further planning to make such a decision.
Roads	<i>Arterial</i> - Roads comprising the basic access network for National Forest System administrative and management activities. These roads provide service to large land areas and usually connect with public highways or other primary travel routes. Locations and standards are determined often by a demand for maximum mobility and travel efficiency rather than to serve a specific resource. Usually, those roads are developed and operated for long-term land and resource management purposes and constant service. <i>Collector</i> - These roads serve smaller land areas than do arterials, and are usually connected to a national forest arterial or public highway. They collect traffic from national forest local roads or terminal facilities. Locations and standards are influenced by both long-term multi-resource service needs and some travel efficiency. Collector roads may be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility. <i>Local</i> - Roads constructed and maintained for the activities of a given resource element. However, some use may be made by other resource activities. These roads - connect terminal facilities with national forest collector or arterial roads or public highways. Locations and standards usually are determined by the requirements of a specific resource activity rather than by travel efficiency. National forest local roads may be developed and operated for either long- or short-term service.
Rotation	Planned number of years between the formation of a generation of trees and its final harvest at a specified stage of maturity. Appropriate for even-aged management only.
Rotation Age	The age of a stand when harvested at the end of a rotation.
Roundwood Products	Logs, bolts, or other round sections cut from trees.
Runoff in Inches	The depth in inches to which a drainage area would be covered if all the runoff for a given

time period were uniformly distributed.

## S

Safe Use (of Forage Areas)	The level of grazing and/or trampling that the total forage on a site can withstand, and still maintain or improve the range condition of the site. This includes leaving sufficient litter to protect the soil.
Sale Schedule	The quantity of timber planned for sale by time period, from the area of suitable land covered by a Forest Plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained. For planning purposes, the sale schedule and the allowable sale quantity are synonymous for all periods or decades over the planning horizon.
Salvage	The removal of recently-dead trees.
Salvage Cuttings	Intermediate cuttings made to remove trees that are dead or in imminent danger of being killed by injurious agents.
Sanitation Cuttings	Intermediate cuttings made to remove dead, damaged, or susceptible trees to prevent the spread of pests or pathogens.
Sanitation Salvage	The removal of dead, damaged, or susceptible trees to prevent the spread of pests or pathogens and promote forest hygiene.
Satisfactory Cover	Cover used by animals to ameliorate the effects of weather. For elk, satisfactory thermal cover includes stands of coniferous trees 40 feet or more in height with an average crown closure of 70 percent or more; and for deer, cover may include saplings, shrubs, or trees at least 5 feet tall with 75 percent crown closure. Marginal thermal cover includes coniferous stands of trees 10 feet or more in height with a 40-69 percent crown closure.
Satisfactory Range Condition	On suitable range, forage condition is at least a fair, with stable trend, and allotment is not classified PC (basic resource damage) or PD (other resource damage). PC (Basic Resource Damage) - Allotments will be classified as PC when analysis or evaluation indicates that one or more of the following conditions exist and livestock use on the allotment is or has been a major factor contributing to this condition. 1. Maximum summer water temperatures are elevated above state standards or other approved criteria on SMU class I or II streams and this is largely due to the loss of shade-producing vegetation in the allotment. 2. Management-induced instability exceeds 20 percent of the total miles of stream (SMU classes I-IV) in an allotment. 3. Gully development of sufficient size to lower the seasonally saturated zone and change the plant community type is occurring. 4. Soil condition rating on 25 percent or more of key areas is rated poor or very poor. PD (Other Resource Damage) - These allotments may or may not have approved allotment management plans (AMP's), but adverse impacts on resources other than the basic soil and water resources are occurring. These impacts are the result of resource management objectives not being met. An allotment will be classified as PD when 10 percent or more of its area meets this criteria. Damage to vegetation is based on use in excess of that planned.
Sawtimber	Trees containing at least one 12-foot sawlog or two noncontiguous 8-foot logs, and meeting regional specifications for freedom from defect. Softwood trees must be at least 9 inches in diameter and hardwood trees 11 inches in diameter at breast height.
Scarified	Land in which the topsoil has been broken up or loosened in preparation for regenerating by direct seeding or natural seed fall. Also refers to ripping or loosening road surfaces to a specified depth for obliteration or 'putting a road to bed.'
Scenic Areas	Places of outstanding or matchless beauty which require special management to preserve

	these qualities. They may be established under 36 CFR 294.1 whenever lands possessing outstanding or unique natural beauty warrant this classification.
Scheduled Timber Harvests	Volumes and acres programmed for harvest which are within the allowable sale quantity. This does not include salvage and sanitation harvesting.
Second Growth	Forest growth that has come up naturally after some drastic interference (for example, wholesale cutting, serious fire, or insect attack) with the previous forest growth.
Secondary Cavity Nester	Wildlife that occupies a cavity in a snag that was excavated by another species.
Sediment	Earth material transported, suspended, or deposited by water.
Seed Tree Cutting	Removal in one cut of the mature timber from an area, except for a small number of seed bearers left singly or in small groups.
Seedlings and Saplings	Live trees less than 5 inches in diameter at breast height (also see Size Class).
Selection Cutting	The annual or periodic removal of trees (particularly mature trees), individually or in small groups, from an uneven-aged forest, to realize the yield and establish a new crop of irregular constitution.
Self-sustaining Population	A wildlife population of sufficiently large size to assure its continued existence within the area of concern without introduction of other individuals from outside the area.
Semi-Primitive Motorized ROS Class	See Recreation Opportunity Spectrum (ROS)
Semi-Primitive Nonmotorized ROS Class	See Recreation Opportunity Spectrum (ROS)
Sensitive Species	Those species that have appeared in the Federal Register as proposed for classification and official listing as endangered or threatened species, that are on an official state list, or that are recognized by the Regional Forester as needing special management to prevent their being placed on Federal or State lists.
Sensitivity Analysis	A determination of the effects of varying the level of one or more factors, while holding the other factors constant.
Sensitivity Level	A particular degree or measure of viewer interest in scenic qualities of the landscape.
Separate Suitability Components (SSC Lands)	Those forested lands tentatively suitable for timber production that grow less than 20 cubic feet per acre per year of timber but have greater than 10 percent occupancy (trees cover more than 10 percent of the acre).
Sequential Upper and Lower Bounds	A FORPLAN term referring to the constraint that sets upper and lower limits by which harvest levels can increase or decrease from decade to decade. This constraint constitutes a departure from nondeclining flow and allows the harvest to rise or fall by decade according to the bounds that are set (also see Constraint).
Seral	A biotic community that is in an early developmental, transitory stage in an ecological succession.
Severely Burned	Soils are considered to be severely burned when the top layer of mineral soil has been significantly changed in color, usually to red, and the next one-half inch blackened from organic matter charring by heat conducted through the top layer.
Shade-Intolerant Plants	Plants that do not germinate or grow well in shade.
Shade-Tolerant Plants	Plants that grow well in shade.
Shelterwood	The cutting method that describes the silvicultural system in which, in order to provide a source of seed and/or protection for regeneration, the old crop (the shelterwood) is removed in two or more successive shelterwood cuttings. The first cutting is ordinarily the seed cutting, though it may be preceded by a preparatory cutting, and the last is the final cutting. Any intervening cutting is termed removal cutting. An even-aged stand results.
Shelterwood Cutting	Cutting which leaves enough trees to provide shade and a seed source for the



	establishment of tree regeneration.
Silviculture	The art and science of controlling the establishment, composition, and growth of forests to meet the desired future conditions and management objectives
Silvicultural System	A management process where by forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration, and according to the type of forest thereby produced.
Site Enhancement	Adding to or bringing out the inherent values for the benefit and enjoyment of the public. Enhancement can take many forms, from the National Register nomination of an important site, to the development of a site for public interpretation, or the excavation, analysis, and interpretation of an archaeological site.
Site Preparation	(1) An activity (such as prescribed burning, disking, and tilling) performed on a reforestation area, before introduction of reforestation, to ensure adequate survival and growth of the future crop: or (2) manipulation of the vegetation or soil of an area prior to planting or seeding. The manipulation follows harvest, wildfire, or construction in order to encourage the growth of favored species. Site preparation may include the application of herbicides; burning or cutting of living vegetation that competes with the favored species: tilling the soil: or burning of organic debris (usually logging slash) that makes planting or seeding difficult.
Site Productivity	Production capability of specific areas of land.
Size Class	For the purposes of forest planning, size class refers to the intervals of tree stem diameter used for classification of timber in the Forest Plan data base. seedling/sapling = less than 5-inch diameter pole/sapling or pole timber = 5-inch to 9-inch diameter sawtimber = greater than 9-inch diameter
Skyline Logging	A system of cable logging in which all or part of the weight of the logs is supported during yarding by a suspended cable.
Slash	The residue left on the ground after timber cutting and/or accumulating as a result of storm, fire, or other damage. It includes unused logs, uprooted stumps, small broken trees, branches, twigs, needles and leaves, bark, and chips.
Smolt	A juvenile salmon or steelhead during its migration to the ocean.
Snag	A standing dead tree from which the needles or leaves and most of the limbs have fallen.
Snag Dependent Wildlife	Wildlife species that are dependent on snags for nesting, roosting habitat, or food.
Socioeconomic	Pertaining to or signifying the combination or interaction of social and economic factors.
Softwoods	Coniferous trees, usually evergreen, having needles or scalelike leaves.
Soil Mass Wasting	Soil mass wasting is the detachment and movement of soil or surface mantle material. Some landslides fall in a single mass or single event and move downslope to cause debris slides and avalanches. Other landslides detach and move slowly, over a period of years, downslope. Both these types represent end members of landslide generated impacts. Mass wasting events are classified based on their morphology, water content, type of material involved, and rate of movement.
Soil Productivity	The capacity of a soil to produce a specific crop, such as fiber or forage, under defined levels of management. Productivity is generally dependent on available soil moisture and nutrients, and length of growing season.
Soil Surveys	Systematic examinations of soils in the field and in laboratories: their description and classification: the mapping of kinds of soil; the interpretation according to their adaptability for various crops, grasses, and trees: their behavior under use or treatment for plant production or for other purposes; and their productivity under different management systems.
Special Interest Areas	Areas managed to make recreation opportunities available for the understanding of the earth and its geological, historical, archeological, botanical, and memorial features.

Special Management Areas (SMA)	Areas of unusual public interest or other significance; e.g., wilderness, primitive areas, scenic areas, or archeological areas SMA's do not require formal designation, however, Special Interest Areas do.
Special Use Permit	A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of national forest land for some special purpose.
Stand (Tree Stand)	An aggregation of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition, as to be distinguishable from adjoining forest areas.
Stand Diversity	Any attribute that makes one timber stand biologically or physically different from other stands. This difference can be measured by, but not limited to, different age classes, species, densities, or non-tree floristic composition.
Standards and Guidelines	Principles specifying conditions or levels of environmental quality to be achieved.
Stocking	The degree of occupancy of land by trees as measured by basal area or number of trees and as compared to a stocking standard; that is, the basal area or number of trees required to fully use the growth potential of the land.
Strategy	See Management Strategy and Range Management (Strategy) Level.
Stream Class	Four stream classes are defined by the extent of the perennial or fish bearing portion of the stream. While streams or parts of streams can be classified, one stream may be sectionalized into several classes. <ol style="list-style-type: none"> <li>1. <i>Class I</i> - Streams or segments thereof which are used by anadromous and resident fish (usually perennial).</li> <li>2. <i>Class II</i> - Streams or segments thereof which are used only by resident fish (usually perennial).</li> <li>3. <i>Class III</i> - All other perennial streams or segments thereof not previously classified.</li> <li>4. <i>Class IV</i> - All other intermittent streams or segments thereof not classified above.</li> </ol>
Streamside Management Unit (SMU)	An area of varying width adjacent to a stream where practices that might affect water quality, fish, and other aquatic resources are modified to meet water quality goals, for each class of stream. The width of this area will vary with the management goals for each class of stream, characteristics of the stream and surrounding terrain, and the type and extent of the planned activity.
Stream Structure	The arrangement of logs, boulders, and meanders which modify the flow of water, thereby causing the formation of pools and gravel bars in streams. Generally, there is a direct relationship between complexity of structure and fish habitat. Complex structure is also an indication of watershed stability.
Substantive Comment	A comment that provides factual information, professional opinion, or informed judgment germane to the action being proposed.
Subwatershed	A division or part of a defined watershed.
Succession	The progressive development of vegetation toward its highest ecological expression, the climax community, replacement of one plant community by another.
Successional Stage	A stage or recognizable condition of a plant community which occurs during its development from bare ground to climax. For example, coniferous forests in the Blue Mountains progress through six recognized stages: grass-forb, shrub-seedling, pole-sapling, young, mature, and overmature as described below: <ol style="list-style-type: none"> <li>1. <i>Grass-forb</i> - A successional stage dominated by grasses and forbs.</li> <li>2. <i>Shrubseedling</i> - The vegetation of the stand is dominated by shrubs or tree seedlings or both.</li> <li>3. <i>Pole-sapling</i> - The dominant vegetation is trees that qualify as poles or saplings or both.</li> <li>4. <i>Young</i> - A stand of trees dominated by trees that are no longer poles but have not yet reached maturity.</li> <li>5. <i>Mature</i> - The stand is primarily composed or dominated by mature trees in vigorous condition.</li> </ol>

6. *Overmature* - A stand that is past full maturity and showing decay and deterioration: the last stage in forest succession. The USDA Forest Service's working definition for old growth stands in the Blue Mountains is 37 live trees or more per hectare (15 per acre) over 53-centimeter (21-in) d.b.h., 2 or more snags per hectare (0.5 snag per acre) over 53-centimeter (21-in) d.b.h., two or more canopy levels, heart rot and other signs of stand decadence present and obvious, overstory canopy closure of 1040 percent, usually with a definite shrub-sapling layer with a canopy closure of over 40 percent, with understory and overstory canopy combined exceeding 70 percent, and logs obvious on the ground. Timber type mapping classes and their tie to wildlife habitat successional stages have the following relationship:

<u>Timber Size Class</u>	<u>Successional Stage</u>
No size class (use data from timber Harvest or reforestation records)	I Grass-Forb
Seedling – 6" tall – 0.9" dbh	II Shrub-Seedling
Sapling – 1.0" – 4.9" dbh	III Pole-Sapling
Pole – 5.0" – 8.9" dbh	
Medium sawlog (MS) 9.0" – 20.9" dbh	IV Young
Large sawlog (LS) 21.0"+ dbh	V Mature
	VI Overmature

Suitability	The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.
Suitable Range (for Livestock Use)	Land which produces or has the inherent capability to produce 50 pounds or more of palatable forage per acre, can be grazed on a sustained-yield basis, and is or can feasibly be made accessible for livestock use.
Summer Range	A range, usually at higher elevation, used by deer and elk during the summer. A summer range is usually much more extensive than a winter range.
Supply	The amount of an output that producers are willing to provide at the specified price, time period, and condition of sale.
Supply Schedule (Curve)	A schedule of amounts of an output that producers are willing to provide at a range of prices, at a given point in time and condition of sale (also see Price-Quantity Relationship).
Suppression	All the work and activities connected with fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.
Surface Erosion	The detachment and transport of individual soil particles by wind, water, or gravity. Surface erosion can occur as the loss of soil in a fairly uniform layer across the land surface or in many small rills.
Sustained Yield	The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment to the productivity of the land.

## T

Temporary Structure	In wilderness context: Any structure that is easy to dismantle, that could be removed completely from a site between periods of actual use, and that must be removed at the end of each season of use if the nonuse period is greater than 30 days.
Tentatively Suitable Forest Land	Forest land that is producing or is capable of producing crops of industrial wood and: (1) has not been withdrawn by Congress, the Secretary, or the Chief; (2) existing technology and knowledge are available to ensure timber production without irreversible damage to soils productivity or watershed conditions: (3) existing technology and knowledge, as reflected in

	current research and experience, provides reasonable assurance that it is possible to restock adequately within 5 years after final harvest: and (4) adequate information is available to project responses to timber management activities.
Thinning	A felling made in an immature stand primarily to maintain or accelerate diameter increment and also to improve the average form of the remaining trees without permanently breaking the canopy. An intermediate cutting.
Threatened Species	A plant or wildlife species officially designated by the US. Fish and Wildlife Service as having its existence threatened in a localized area, such as state or province or lesser area, because its habitat is threatened with destruction, drastic modification, or severe curtailment or because of over-exploitation, disease, predation, or other factors.
Tiering	Refers to the coverage of general matters in broader environmental impact statements (such as National program or policy statements) with subsequent narrower statements or environmental assessments (such as regional or basin-wide program statements, or ultimately, site-specific statements) incorporating, by reference, the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. (40 CFR 1508.28)
Timber Classification	Forested land classified according to how it relates to the management of the timber resource as follows: 1. <i>Nonforest</i> - Land that has never supported forests, and land formerly forested where use for timber production is precluded by development or other uses. 2. <i>Forest</i> - Land at least 10 percent stocked (based on crown cover) by forest trees of any size, or formerly having had such tree cover and not currently developed for nonforest use. 3. <i>Suitable</i> - Commercial forest land identified in the Forest planning process as appropriate for timber production. 4. <i>Unsuitable</i> - Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness), or identified in the Forest planning process as not appropriate for timber production. 5. <i>Commercial Forest</i> - Forest land that is tentatively suitable for the production of continuous crops of timber and that has not been withdrawn.
Timber Harvest Schedule	The quantity of timber planned for sale and harvest, by time period, for the Forest. The first period of the selected harvest schedule, usually a decade, provides the allowable sale quantity. Future periods are shown to establish that sustained yield will be achieved and maintained.
Timber Production	The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use other than for fuelwood.
Timber Sale Program Quantity (TSPQ)	The volume of timber planned for saw during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume) and any additional material (nonchargeable volume) planned for sale. Expressed as the average for the first decade.
Timber Stand Improvement	Measures, such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, or poisoning of unwanted trees, aimed at improving growing conditions for the remaining trees.
Total Net Merchantable Sawtimber Tradeoff	Includes the 'Allowable Sale Quantity' and 'Other Sawtimber.' 'Other Sawtimber meets the utilization standards in the Regional Guide, but is not considered 'Chargeable Timber Volume' against the planned 'Allowable Sale Quantity Goals.' The combination of benefits and costs which are gained and lost in switching between alternative courses of action. Tradeoffs include only those portions of benefits and costs which are not common to all alternative courses of action under consideration.
Transitory Range	Land that is suitable for grazing use of a nonenduring nature over a period of time: often found in the openings created by timber harvesting activities. For example, on particularly disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.

Turbidity The degree of opaqueness, or cloudiness, produced in water by suspended particulate matter, either organic or inorganic. Measured by light filtration or transmission and expressed in Jackson Turbidity Units (JTU's).

## U

Understory The trees and other woody species growing under a more-or-less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.

Uneven-Aged Management The application of a combination of actions needed to simultaneously maintain continuous high forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection.

Uneven-Aged Silviculture Systems The combination of actions that result in the creation of forests or stands of trees, in which trees of several or many ages grow together. Cutting methods that develop and maintain uneven-aged stands are individual tree and group selecting cutting methods:

1. Individual Tree Selection Cutting - The removal of selected trees of all size classes on an individual basis.
2. Group Selection Cutting - The removal of all trees in groups for regeneration purposes.

The size the group will be small enough in area that all subsequent regeneration will be influenced by the surrounding uncut stand. Cuts are generally 0.25 - 2.0 acres in size.

Unplanned Ignition Unregulated Timber Management A fire started at random by either natural or human causes, or a deliberate incendiary fire. Timber cut from lands that are not organized to provide sustained yields of timber.

Utility and/or Transmission Corridor A strip of land designated for the transportation of energy, commodities, and communications by railroad, state highway, electrical power transmission (69 kv and above), oil and gas and coal slurry pipelines 10 inches in diameter and larger, and telecommunication cable and electronic sites for interstate use. Transportation of minor amounts of power for short distances, such as short feeder lines from small power projects including geothermal or wind, or to serve customer subservice substations along the line, are not to be treated within the Forest Plan effort (also see Corridor, Avoidance Areas, and Exclusion Areas).

Utilization Standards Standards guiding the use and removal of timber, which is measured in terms of diameter at breast height (d.b.h), top diameter inside the bark (top d.i.b.), and percent 'soundness' of the wood.

## V

Variety Class A particular level of visual variety or diversity of landscape character.

Vegetative Management Activities designed primarily to promote the health of the crop forest cover for multiple-use purposes.

Vegetative Trend The direction of change in vegetative or plant composition which leads from one successional stage to another.

Vertical Diversity The diversity in an area that results from the complexity of the above ground structure of the vegetation; the more tiers of vegetation or the more diverse the species makeup or both, the higher the degree of vertical diversity.

Viable Population The number of individuals of a species required to ensure the long-term existence of the

species in natural, self-sustaining populations adequately distributed throughout a region.

**Viewshed**  
**Visitor**  
 Portion of the forest that is seen from a major travel route or high use location.  
 Temporary inhabitant of an area. Recreation visitor: One who is in an area temporarily for refreshment of body and/or mind, and usually has a significant conscious or subconscious interest in the scenic qualities of an area.

**Visual**  
**Visual Condition**  
 Pertaining to a mental image attained by sight.  
 The visual appearance of a landscape described in terms of the degree of alteration of the natural-appearing landscape (see FSM 2383, 3/84 R-6 Supp 70). The following ratings for existing visual conditions (EVC) have been established

1. *Natural Appearance* - A viewshed in which no more than 5 percent of the area actually seen appears to be visually altered. The altered area may include as much as 1 percent modification, but no maximum modification or unacceptable modification.
2. *Slightly Altered Appearance* - A viewshed in which no more than 10 percent of the area actually seen appears to be visually altered. The altered area may include as much as 5 percent modification, but no more than 3 percent at maximum modification.
3. *Moderately Altered Appearance* - A viewshed in which no more than 20 percent of the area actually seen appears to be visually altered. The altered area may include as much as 10 percent modification or lower, but no more than 5 percent maximum modification or unacceptable modification.
4. *Heavily Altered Appearance* - A viewshed in which more than 20 percent of the area actually seen appears to be visually altered. All the altered areas may be maximum modification or more heavily impacted.

Viewshed condition ratings also serve to describe the appearance which is predicted to exist as a result of implementing VQL's. Equivalent terms are:

<u>Visual Condition</u>	<u>Visual Quality Level (or Objective)</u>
Natural Appearing	Preservation or Retention
Slightly Altered	Partial Retention
Moderately Altered	Partial Retention or Modification
Heavily Altered	Modification or Maximum Modification

**Visual Quality Level (VQL) and Visual Quality Objective (VQO)**  
 A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alteration of the characteristic landscape measured in degrees of deviation from the natural-appearing landscape. Visual Quality Levels (VQL's) become Visual Quality Objectives (VQOs) upon approval of the Forest Land and Resource Management Plan. Levels or objectives are:

1. Preservation - Ecological change only.
2. Retention - Human activities are not evident to the casual forest visitor.
3. Partial Retention - Human activity may dominate the characteristic landscape, but must, at the same time, follow naturally established form, line, color, and texture. It should remain visually subordinate when viewed in foreground or middle ground.
4. Modification - Human activity may dominate the characteristic landscape, but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middle ground.
5. Maximum Modification - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

**Visual Resource**  
 The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

## W

Water Rights	Rights to divert and use water or to use it in place.
Water Yield	The measured output of the Forest streams.
Watershed	One of the 52 delineated major drainage basins to which the Umatilla National Forest contributes runoff waters.
Watershed Impact Area	Areas within a watershed that are being affected by harvesting, road building, etc. Impact areas are limited to a percent of the total watershed area by the Forest-wide Standards and Guidelines in Appendix D of the FEIS.
Wetlands	Areas that are inundated by surface water or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction (Executive Order 11990).
Wilderness	Area designated by congressional action under the 1964 Wilderness Act and other wilderness acts. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wildernesses are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature, with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation: include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.
Wild and Scenic	Those rivers or sections of rivers designated as such by congressional action under the Rivers 1968 Wild and Scenic Rivers Act, as supplemented and amended, or those sections of rivers designated as wild, scenic, or recreational by an act of the Legislature of the state or states through which they flow. Wild and Scenic Rivers may be classified and administered under one or more of the following categories: <ol style="list-style-type: none"><li>1. <i>Wild River</i> - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watershed or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.</li><li>2. <i>Scenic River</i> - Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.</li><li>3. <i>Recreational River</i> - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.</li></ol>
Wildfire	Any wild land fire that is not a prescribed fire. All wildfires require suppression.
Wildlife and Fish User Day	Twelve visitor-hours which may be aggregated continuously, intermittently, or simultaneously by one or more persons.
Wildlife Buffer	A strip or patch of vegetation that is left or managed to reduce the impact of a treatment or action of one area on another.
Window	Usually a short narrow passageway through constrained areas which are the most feasible potential locations for lineal facilities considering engineering and/or environmental factors.
Winter Range	A range, usually at lower elevation, used by migratory deer and elk during the winter months; usually better defined and smaller than summer range.

## X, Y, Z

Yarding	The moving of logs from the stumps where cut to a central concentration area or landing.
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Yield Tables	Tables that estimate the level of outputs that would result from implementing a particular active. Usually referred to in conjunction w2h FORPIAN input or output. Yield tables can be developed for timber volumes, range production, soil and water outputs, and other resources.
Zone of Influence	The geographic area whose social, economic, and/or environmental condition Is significantly affected by changes in forest resource production or management.



United States  
Department of  
Agriculture

Forest Service

Pacific  
Northwest  
Region

1990



# Record of Decision

## Land and Resource Management Plan

### Umatilla National Forest



# **RECORD OF DECISION**

## **Umatilla National Forest**

### **Land and Resource Management Plan Final Environmental Impact Statement**

**Baker, Grant, Morrow, Union, Umatilla, Wallowa,  
and Wheeler Counties in Oregon;  
Asotin, Columbia, Garfield, and Walla Walla Counties in Washington.**

**USDA FOREST SERVICE**

**June 1990**

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## SECTION I. INTRODUCTION

### **BASIS AND NEED FOR DECISION**

This Record of Decision (ROD) documents my decision and rationale for approving the Land and Resource Management Plan (Forest Plan) for the Umatilla National Forest. The Record of Decision also presents my reasons for selecting this particular alternative to be the Forest Plan for the 1.4 million acre area. In making this decision I balanced and considered the estimated environmental, social, and economic consequences of the alternatives described in the Final Environmental Impact Statement (FEIS).

A Draft Environmental Impact Statement (DEIS) and proposed Forest Plan were filed with the Environmental Protection Agency (EPA) on November 20, 1987. Additional details on meetings, notices, and documents preceding the FEIS and Forest Plan are available in the FEIS, Appendix N.

### **AUTHORITY**

The FEIS and Forest Plan were developed under the National Forest Management Act (NFMA) and its implementing regulations (36 CFR 219). The FEIS satisfies requirements of the National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality regulations (40 CFR 1500)

The Forest Plan is part of a framework for long-range planning established by the Forest and Rangeland Renewable Resources Planning Act (RPA). The Forest Plan establishes general direction for the next 50 years and specific direction for the next 10 to 15 but must be revised at least every 15 years [36 CFR 219.10(q)]. The Forest Plan replaces all previous resource management plans for the Umatilla National Forest.

Subject to valid existing rights, all permits, contracts, and other instruments for the use and occupancy of National Forest System land will conform with the Forest Plan at the earliest possible date.

### **AFFECTED AREA**

The Umatilla National Forest is located in the Blue Mountain Range of northeastern Oregon and southeastern Washington. The planning area includes portions of Morrow, Grant, Union, Umatilla, Wallowa, Wheeler, and Baker counties in Oregon, and Asotin, Columbia, Garfield and Walla Walla counties in Washington. The Forest is headquartered in Pendleton, Oregon. Ranger District Offices are in Walla Walla and Pomeroy, Washington; and Heppner and Ukiah, Oregon.

### **PUBLIC INVOLVEMENT**

Pursuant to the intent of NFMA, the Forest conducted a large-scale public involvement program. Formal activities included a Notice of Intent to Prepare an EIS printed in the *Federal Register* and an initial issue identification process. After publishing the DEIS there was a formal public comment period and many meetings, presentations, and information distribution sessions. In addition to formal activities, on numerous occasions Forest employees informally explained the purpose of the Forest Plan and how to effectively participate in the process.

Representatives from many diverse interests met regularly in Heppner and in Walla Walla to review development of the Forest Plan. Forest representatives met often with the Federal plans coordinators from both Washington and Oregon and various other state agency representatives to clarify and correct technical problems with the DEIS. On the basis of public response received on the DEIS, additional public discussion, and states' recommendations, the Forest changed some management emphases in the Preferred Alternative. Forest personnel briefed my staff and me on the public comments, changes in the FEIS, and the draft Forest Plan as these evolved. I have used this information to make my decision.

## ISSUES

Land and resource management planning began with identification of public issues, management concerns, and resource use and development opportunities through contacts with local civic and community organizations; individuals; local, state, and Federal agencies; private industries; adjacent landowners; various interest groups; Native American tribes; and Forest Service employees. Public comments and management concerns were analyzed, and the major issues were identified. The issues, which are described in detail in the FEIS, Chapter I, and Forest Plan, Chapter III, are specifically addressed in this ROD in Section III, Rationale for the Decisions. The issues centered around the following topics:

- Undeveloped area management,
- big game (deer and elk) habitat management,
- timber production,
- socioeconomic effects,
- riparian areas,
- wildlife,
- recreation,
- water and soil, and
- transportation system.

Other decision factors centered around concerns and opportunities identified by the public and Forest managers through the planning process. These are.

- Cultural resources,
- wilderness management,
- fish management,
- range management,
- minerals and energy resource management, and
- pest management.

## WHAT THE FOREST PLAN IS, AND IS NOT

As a long-range strategy for managing the Umatilla National Forest, the Forest Plan and accompanying FEIS are programmatic. The Forest Plan provides management direction to produce goods, services, and uses in a way that maximizes long-term net public benefits. It is not a plan for day-to-day administrative activities of the Forest; it does not address such matters as vehicle and equipment management or organizational structure

The Forest Plan emphasizes application of various management practices to achieve multiple-use goals and objectives in an environmentally sound and economically efficient manner. It does not emphasize site-specific decisions, but through standards and guidelines and management area direction (displayed in the Forest Plan, Chapter 4), it significantly influences design, execution, and monitoring of site-specific activities. Standards and guidelines are principles specifying conditions or levels of environmental quality to be achieved. They are the rules that govern resource management practices (often Forest-wide) and are the key to successful implementation of the Plan. They will not be violated to achieve annual targets. Management areas provide additional multiple-use direction for managing specific areas of the Forest. Each includes expected results and desired future condition statements, area descriptions and locations, and management direction and prescriptions.

If, through monitoring and evaluation, it is determined that management objectives cannot be achieved without violating the standards and guidelines, we will evaluate the need for amending the Plan. If an amendment is needed, one or more of the following could be changed. Projected outputs, land allocations, management prescriptions, or standards and guidelines.

## SECTION II. DECISIONS

### SUMMARY OF THE DECISION

My decision is to approve, adopt, and implement the Forest Plan which accompanies the FEIS. In the FEIS this is Alternative F/M (Preferred Alternative) for management of the Umatilla National Forest. This alternative is a modification of the DEIS Preferred Alternative. The many revisions and adjustments incorporate ideas, opinions, and concepts suggested by the public and are intended to respond to the issues and concerns in meeting the public needs.

The general goal of the Umatilla National Forest Plan is to provide land and resource management that achieves a more healthy and productive forest and assists in supplying lands, resources, uses, and values which meet local, regional, and national social and economic needs.

The revised preferred alternative includes the following objectives for meeting this goal and responding to issues and concerns:

Maintain all or parts of roadless areas that have strong public interest, including those related to most of the grass-tree mosaic (GTM).

Maintain potential big game populations near the Oregon and Washington state management objective through habitat (including GTM) management.

Provide timber harvest levels at or near recent Forest experience (timber offered at 1979-88 levels), while providing livestock production at or near current levels.

Provide for a high level of anadromous fish production, riparian protection, and area fish management in the North Fork John Day River system.

Provide old growth/mature tree habitat above the management requirements level.

✓ Provide for a mix of unroaded, roaded, and closed road dispersed recreation and a moderate level of off-highway vehicle (OHV) opportunities compatible with other resource objectives.

Increase developed recreation opportunities.

✓ Manage Wild and Scenic Rivers and provide for scenic and special areas.

Provide for visual quality management in most viewsheds.

Further, the Forest Plan establishes multiple-use goals and desired future conditions. These are discussed in detail in the Forest Plan, Chapter IV.

**ELEMENTS OF THE DECISION**

The program decisions I make here are accompanied by the necessary supporting NEPA analysis and disclosure required by law and regulation. Additional NEPA analysis for these decisions is neither expected nor required. These decisions *may* be revisited or reassessed during implementation, but they do not have to be. The decisions are as follows:

Forest-wide and management area goals and objectives, desired future conditions, and Standards and Guidelines; management area locations; monitoring program and evaluation process; identification of lands suitable and selected for timber harvesting; establishment of a Forest-wide allowable sale quantity; and incorporation of wilderness plans.

**Intended Activities**

I also intend to carry out certain scheduled activities. Unlike the programmatic decisions listed above, these are *not* accompanied by all supporting NEPA analysis and disclosure required by law and regulation. Additional environmental analysis will be done during implementation of the Forest Plan. These proposed and probable activities are displayed in activity schedules in the Forest Plan Appendix A.

It is important to note that all proposals in the Forest Plan can be accomplished from physical, biological, economic, social, and legal perspectives. It is not certain that these proposals *will* be accomplished. First, outputs specified in the Forest Plan are estimates and projections based on available inventory data and assumptions. When planning assumptions are correct, targets should be obtainable within the standards and guidelines. However, allowable sale quantity and annual targets are secondary to standards and guidelines which will not be violated to achieve annual targets.

Second, all activities, many of which are interdependent, may be affected by annual budgets. The Forest Plan is implemented through various site-specific projects such as timber sales, wildlife habitat improvements, and campground development. Budget allocations for any given year covered by the Forest Plan may cause projects to be rescheduled. The cost of managing the Forest has been and will likely continue to rise. However, the goals and land use allocations described in the Forest Plan would not change unless the Forest Plan itself were changed. If actual budgets are significantly different from those projected over a period of several years, the Forest Plan may have to be amended and, consequently, would reflect different outputs and environmental conditions. The significance of changes related to budgets or other factors is determined in the context of the particular circumstance.

During implementation, when the various projects are designed, site-specific analyses must be performed. These analyses must be disclosed in an environmental document and may lead to an amendment or revision of the Forest Plan. Any resulting documents are to be tiered to the FEIS for the Forest Plan, pursuant to 40 CFR 1508.28.

Recommendations

I am also recommending certain decisions to others with the authority to make those final decisions. Like my final decisions, recommendations are accompanied by all supporting NEPA analysis and disclosure required by law and regulation. However, authority to make a final decision on these issues is not mine. If others with higher authority accept the recommendation, the resulting final decision *will not* ordinarily be revisited or reassessed by the Forest Service during implementation of the Forest Plan. In this Forest Plan, I am recommending six Research Natural Areas to the Chief of the Forest Service in addition to the two that have already been established.

✓  
2 RNA's Exist  
6 Proposed

Further Actions

I am aware that while the Forest was finalizing the Plan, several issues developed that could logically have been handled by the Plan but were not included. The Plan lists many such inventory, information, and research needs that can be considered during Plan implementation. I am also directing the Forest to examine the following for possible eligibility and nomination as Wild and Scenic Rivers: ✓

North  
Rivers

South Fork Walla Walla River,  
North Fork Umatilla River, and  
Desolation Creek.

This does not preclude consideration or classification of additional rivers for the Wild and Scenic Rivers System.



## SECTION III. RATIONALE FOR DECISION

I approached my decisions by first looking at the major issues (and the public comments that addressed them) and then comparing the degrees of response shown by various alternatives to those issues. My rationale for these decisions is built upon this comparison and is presented below.

During the period between the draft and final EIS, Umatilla National Forest employees held numerous meetings with interested members of the public. Initially, Forest employees met with the citizens to hear their concerns and clarify issues. Next, Forest employees looked at ways to address these comments. When viable ways were discerned, they were developed into proposals which were in turn used to develop alternatives for me.

In arriving at my decisions, I reviewed the environmental consequences of the Forest Plan and its alternatives. The following discussions summarize the many important factors which I considered. They explain why I believe Alternative F/M, as described in the FEIS, will maximize net public benefits when compared to the other alternatives, including those offered by non-Forest Service groups.

1. Laws, Federal Regulations, Executive Orders. The Forest Plan, to the best of my knowledge, complies with all legal requirements applicable to the Umatilla National Forest.
2. Issues Concerning Management of the National Forests. The early identification of issues affecting the National Forests is consistent with well-reasoned management of public lands. Regulations to implement NFMA require that one or more alternatives in the EIS for the Forest Plan address each of the major issues. The response of each alternative to the ten major issues was a major consideration in the selection of the Preferred Alternative (EIS, Chapter II). The reasons for choosing this Preferred Alternative, as related to each issue, are discussed below.

### DISCUSSION OF THE MAJOR ISSUES

The degree of response of each alternative to the major issues was a primary consideration in choosing the selected alternative. The way the issues are addressed by the selected alternative is described below. Additional discussion of the issues and the treatment under each of the alternatives may be found in the FEIS, Chapters I and II.

#### UNDEVELOPED AREA MANAGEMENT

There are 22 identified Roadless Areas, including 7 that are shared with the Malheur and Wallowa-Whitman national forests. Together their area totals 311,700 acres, of which about 281,100 are on the Umatilla, 20,700 are on the Malheur, and 9,900 are on the Wallowa-Whitman National Forests.

Public comment on the DEIS reaffirmed roadless areas and their management as a focal point for a number of Forest management issues. In developing the final Forest Plan, roadless areas were reviewed with a variety of individuals and groups. There was general disagreement on the appropriate management for most of these areas. However, this was not the case with management of Mill Creek, Grande Ronde, W-T Three, and Greenhorn Mountain. Boundaries for the various management allocations for the Grande Ronde area remained the subject of strong debate.

It is my decision to proceed with implementation of the alternative that directs that 69 percent (195,000) of the inventoried roadless area acres be maintained in a roadless character and managed under multiple-use for this planning period. The remaining 86,000 acres (31 percent) are allocated to management areas involving various levels of development including roading and production of both market and nonmarket outputs.

In choosing this alternative I am increasing, by 49,000 acres, the area that is allocated to strategies maintaining roadless areas in an unroaded status over that which was allocated in the DEIS preferred alternative. Based on comments on the draft documents and on additional public discussion, review, and comment, the Forest has developed a revised set of allocations (alternative designs) for these areas. Principle uses to be provided are undisturbed big game habitat, semi-primitive recreation, scenic areas, and high quality water and fish habitat. The multiplicity of uses accommodated in these unroaded allocations cannot be provided in designated wilderness. Uses that may occur in these unroaded areas that cannot occur in wilderness included structural wildlife habitat improvements; recreation facility developments such as trail shelters, sanitary facilities, and primitive campsites; and under certain conditions, special uses such as small hydroelectric facilities and electronic sites. In addition, the use of mechanical equipment will be allowed in the maintenance and administration of lands in the unroaded allocations. The option for future management for unroaded or other values will remain on over half of the roadless areas

The table on the following page shows the allocations of the 22 roadless areas and briefly compares the treatments prescribed by the draft and final Forest Plans. To fully understand the objectives of the Plan for the various roadless areas, the reader should refer to the *management area descriptions*. They are defined in the EIS Appendix D and in Chapter 4 of the Forest Plan.

The seven areas shared with adjacent forests are Grande Ronde, Hellhole, North Mt. Emily, South Fork Tower, Squaw, Jumpoff Joe, and Greenhorn Mountain. Management allocations on the Umatilla are consistent with those on the two adjacent forests for contiguous parts of the same roadless areas. Of the 13 roadless areas with highest interest, all or parts of 9 are retained as roadless and 2 others fall in the 2,500 to 5,000 acre category. Allocations that retain roadless status also contribute to resolution of other issues. These include meeting long-term demand for semi-primitive recreation and objectives for visual quality and big game needs.

I propose to maintain seven areas, and portions of nine others, in an unroaded condition. No timber harvest activities will be permitted in the Mill Creek Municipal Watershed (Mill Creek Watershed Roadless Area contains a portion not within the municipal watershed itself) No timber harvest will be scheduled on the roadless part of the Walla Walla River area. This is a change from the DEIS, which would have allocated a larger area to scheduled timber harvest. Since the Walla Walla River area was the subject of much public debate over harvesting, the Forest will examine this allocation at the time of the next plan revision (within 10 to 15 years). The Grande Ronde, Jumpoff Joe, and Greenhorn Mountain roadless areas will be managed as scenic areas. The Jumpoff Joe area will remain in the suitable timber base, but it will not have scheduled harvesting nor will it contribute to the ASQ during the next 10 years.

**UNDEVELOPED AREA MANAGEMENT ALLOCATIONS**

ROADLESS AREAS	TOTAL AREA <sup>1</sup> (Acres)	TO REMAIN ROADLESS		SELECTED ALTERNATIVE PRINCIPAL MANAGEMENT EMPHASES
		DRAFT EIS	FINAL EIS	
Upper Tucannon Willow Springs Asotin Creek	12,600 11,100 16,900	C	P P P	Non Motor Disp Rec./Big Game Mgt Winter Range/Elk-Timber Grass-tree Mosaic (GTM)/Wildlife Hab
Spangler Meadow Creek Wenatchee Creek	5,900 5,000 15,500	C	P C C	OHV Recreation/Viewshed Mgt. Wildlife Habitat Nonmotorized Dispersed Rec.
Mill Cr. Watershed <sup>2</sup> Walla Walla River Jaussaud Corral	26,700 34,500 5,500	P P	P C	Municipal Watershed/Wildlife Habitat Undeveloped - Water/Disp Rec /Others Wildlife Habitat
Grande Ronde W-T Three Lookingglass	12,200 2,000 5,000	C C	C P P	Scenic Area/Wild and Scenic River Wild and Scenic River/Winter Range OHV Recreation/Wildlife Habitat
Hellhole Horseshoe Ridge North Mt. Emily	62,000 6,300 4,600	P C	P C	GTM/Wildlife Hab /Ded Old Growth Grass-tree Mosaic Roaded Natural Visual Management
Texas Butte Skookum Potamus	6,900 7,700 5,400	P C	P C	Wildlife Habitat, Old Growth Grass-tree Mosaic Grass-tree Mosaic
South Fork Tower Squaw Jumpoff Joe <sup>3</sup> Greenhorn Mountain	16,900 4,500 5,500 8,400	C	C C C	Fish Management Area Fish Management Area Scenic Area Scenic Area

P = Portions of the area to remain roadless      C = Area 90% or more unroaded

- 1 Umatilla National Forest area only
- 2 The Mill Creek Watershed Roadless area contains portions not within the Mill Creek Watershed itself
- 3 Jumpoff Joe will remain in the suitable timber base, although it will not have any harvesting scheduled for the first decade or contribute to the allowable sale quantity calculation

Five areas, including Asotin Creek, most of Hellhole, Horseshoe Ridge, Skookum, and Potamus will be managed to protect the grass-tree mosaic on steep, broad, open slopes. Big game winter range and other values are recognized there. The river corridor in the Grande Ronde and W-T Three (Wenaha) areas will be managed for designated Wild and Scenic Rivers. Substantial parts of two areas, Spangler and Lookingglass, will remain unroaded and provide dispersed recreation opportunities, but will not qualify as roadless areas because they will be less than 5,000 acres in size. In the remaining roadless areas, the Wenaha-Tucannon Special Management Area is proposed for part of the Upper Tucannon Area, and the Special Fish Management Area is recognized in the South Fork Tower and Squaw areas. Big game objectives will also be emphasized in these two areas. Viewsheds will be recognized here, while management in the remaining areas will be divided between timber and wildlife objectives.

Where the management strategy is to develop a previously undeveloped area, the Forest will minimize permanently open roads where they are not needed to meet management objectives. Provision is made for removal of trees due to catastrophic events when it meets the area's objectives.

I have decided to initiate a "sunset strategy" in two areas. The approach was developed and recommended by a public group at Walla Walla: (1) to show that through sensitive resource management one resource can be managed while protecting, sustaining, and enhancing other resource values in an area of resource controversy, and (2) to relieve concerns of interested parties that once an area is assigned a management strategy it can never be changed. Timber management advocates offered to test a development approach in the Jaussaud Corral and Horseshoe Ridge roadless areas to show that timber harvesting can be consistent with other values. In the Jaussaud Corral roadless area, timber harvest is scheduled on about 4,000 acres under the wildlife habitat management area (C4) direction. If the results of timber harvest fail to meet management objectives by the year 2000, the area will revert from the C4 direction to the off-highway vehicle recreation (A2) which has no scheduled timber harvesting. In the Horseshoe Ridge roadless area, a test harvest is planned in the grass-tree mosaic management area (C8) which normally has no scheduled harvest. About 2,900 acres is tentatively suitable for harvest in this area. As with the Jaussaud Corral area, the lands will be withdrawn from "scheduled" harvest in the year 2000 if objectives are not met. If objectives are met, the area will be made available for scheduled harvest through appropriate NEPA review process and approval. These two areas provide the opportunity for developing techniques that will support timber harvest while preserving or protecting other amenities, aesthetics, and resources on the same site.

All of the roadless areas on the Forest have been allocated and management activities will proceed in accordance with these allocations. Proposed timber sales scheduled for roadless areas will receive appropriate environmental analysis and documentation before they are carried out.

My decision will provide a balance between development and preservation of the roadless areas. The land use allocations are displayed in the FEIS, MAP PACKET - Alternative F/M.

**BIG GAME  
(Deer and Elk)  
HABITAT  
MANAGEMENT**

One of the most controversial issues on the Forest has been the management of big game, particularly elk. With one of the Nation's largest herds of Rocky Mountain elk, the Umatilla has a reputation for providing recreation for a large number of hunters during the fall months. The subject of elk management enjoys very strong public interest locally and regionally. The States of Oregon and Washington expect the Umatilla to provide a high level of the Rocky Mountain elk hunting; this is reflected in the states' desired elk and deer population levels (state management objectives (SMO)).

The proposed Plan proposed that the majority of the Forest be placed in management areas that are favorable to big game. Timber harvest on the winter ranges was limited. About 50 percent of the Forest roads were to be closed. As a result, elk populations were projected to increase in the first decade and subsequently decline in the following four decades to about 6 percent below the SMO.

Comments on the draft Plan reaffirmed strong differences over appropriate management of big game. In general, reviewers responded in the following ways:

- Most wanted to maintain or increase deer and elk numbers. Some wanted lowered populations in order to reduce adverse impacts on adjacent private agricultural lands.
- The importance of maintaining, protecting, and/or improving the quality of big game habitats on both summer and winter ranges was expressed. Strong differences of opinion were apparent on how this should be done

- Support for a more aggressive Forest road management program to enhance big game habitat values was strong. Support for keeping existing access open was also strong.
- Many wanted to reduce (restrict) timber harvest levels and activities, including road construction, to minimize adverse effects on big game. Many others wanted to allow standard timber management on summer and winter ranges (maintain or increase timber harvest) because of compatibility with big game management.
- Industry was particularly concerned that high cover requirements on the winter ranges would largely preclude harvesting of ponderosa pine.

The Forest responded to these issues by refining the modeling of elk habitat to better define the timber/cover tradeoffs. The sensitivity of the Habitat Effectiveness Index (HEI) to the component values of cover, forage, and roads was also studied. New management strategies were developed to better address the elk habitat issue. Big game management under the Plan was made more specific and objective-driven by new Forest-wide Standards and Guidelines and management area direction. These various management areas contained varying levels of elk habitat provisions. Although there are other management areas with specific provisions for elk habitat, the following table summarizes the principle ones.

#### MANAGEMENT AREA DIRECTION FOR BIG GAME

MANAGEMENT AREA	RESOURCE EMPHASIS	ALLOCATED ACRES	HEI LEVEL 1	MINIMUM COVER REQUIREMENTS	
				SATISFACTORY 2	TOTAL COVER 3
C3	Elk Winter Range	152,800	70	10%	30%
C3A	Sensitive Winter Range	8,200	70	10%	30%
C8	Grass-Tree Mosaic	98,500	70	10%	30%
C4	Wildlife Habitat	258,900	60	15%	30%
C7	Special Fish Management	105,300	45	10%	30%
E2	Timber and Big Game	199,500	45	10%	30%
E1	Timber and Forage	91,400	30	none	none

1 HEI - See following discussion

2 Satisfactory Cover - Forest stands used by big game to ameliorate weather effects, characterized by trees 40 feet or more in height and an average crown closure of 70 percent or more.

3 Total Cover - Forest stands consisting of satisfactory and marginal cover (vegetation at least 10 feet high and at least 40 percent crown closure)

Cover quality (the amounts of satisfactory and marginal cover), cover size and spacing, forage quality and quantity, and road density have been determined to be important elements in managing habitat for big game and make up part of the HEI calculation. As seen above, cover standards are provided in most management areas. Size and spacing of cover patches and cover quality (the relative amount of satisfactory and marginal cover) are also elements of the cover provided.

Forage quality and quantity is important for big game survival and productivity and is a factor in the calculation of HEI. Forage is particularly important on winter ranges.

As an element in the overall calculation of HEI, open roads also represent an important issue with the public. Vehicle use is a factor in harassment and disturbance of big game. Explicit in this Plan is a commitment to address the interests of groups and individuals who are concerned with road densities and access on the Forest. An access management plan is being developed on the North Fork John Day District. Motorized Access and Travel Management Plans will be developed on the remaining districts with the cooperation of the local landowners, state agencies, and other members of the public.

Elk management, other resource objectives, and public needs will "drive" the process. Permanently open local roads not needed to meet management objectives will be minimized on the Forest. The Oregon Governor strongly suggested having no more than 1.0 roaded mile per square mile on winter range and no more than 1.5 roaded miles per square mile on summer range to meet big game goals. His suggestions will be given consideration in this process. The Forest intent is to reduce open road density on a Forest-wide basis to meet elk, recreation, and other objectives in management areas.

Big game winter range habitat conditions will be maintained or improved by using specific directions summarized in the Forest-wide Standards and Guidelines and the management areas (those above and others). On winter ranges, directions provide for high levels of habitat effectiveness through maintenance and growth of satisfactory and marginal cover and through providing fewer open roads. Uneven-aged management is emphasized where timber harvest is permitted. Prescribed burning, a principal program and technique, will be used for winter range habitat maintenance, for forage enhancement, and to assist in keeping big game animals on the Forest during the winter.

The Plan assumes that both timber harvest objectives and elk habitat requirements (standards and guidelines) can be met. However, the particular site conditions, the effects of fire, insects, disease, past harvest, and other natural events may make this difficult. Some management area standards and guidelines contain exceptions to the above direction to help manage these situations; short-term reductions of cover may be allowed to meet the objective of producing long-term increases in cover. This will be done through project analyses, consideration of the site-specific conditions, and with adherence to the principal of achieving good elk habitat as well as producing timber yields. The use of HEI, and in particular the integration of this technique with silvicultural techniques, is still being tested and evaluated. Further testing and evaluation will occur during Plan implementation and monitoring.

The potential populations of elk provided by this alternative are displayed below. All of the planned big game habitat management activities will help to achieve the desired potential elk population level (the SMO).

Decade	DEIS Preferred Alternative	Current Direction (Alt. A)	FEIS Selected Alternative	SMO
1	22,700	20,500	21,200	21,056
2	21,800	19,900	20,600	
5	19,900	20,000	21,500	

Note: Potential population figures for the Current Direction (Alternative A) and the FEIS are based on an updated computer model while the DEIS Preferred Alternative is based on an earlier version.

The elk habitat components will be analyzed on a project basis and monitored on the subwatershed basis. The three Blue Mountain National Forests will develop and implement a coordinated monitoring program to determine the effectiveness of elk habitat management prescriptions and standards and guidelines during Plan implementation. The Oregon and Washington departments of fish and wildlife will be invited to cooperate in the development and execution of the monitoring and evaluation program. This program will be initiated within 1 year of Plan implementation for the three forests, and interim results will be evaluated yearly. Appropriate adjustments to the Forest Plans will be initiated within 3 to 5 years, if warranted.

In addition to the joint monitoring program, the Forest will work with the States of Oregon and Washington and other entities through a Blue Mountain Elk Management Initiative to address questions of public and private land interaction with elk habitat management, and other potential strategies for minimizing impacts on elk habitat during plan implementation, project design and execution, and monitoring. These potential strategies will include habitat improvement through prescribed burning in winter range and other nonstructural as well as structural habitat improvement programs.

During the next 10 years, we expect that studies at the Starkey Experimental Forest and Range will yield new insights into the relationships between management of forestland and elk. New information that becomes available as part of the Starkey studies can be incorporated into the next land management plans, or by amendments to this Plan if considered necessary.

## **TIMBER PRODUCTION**

The issue of timber harvesting levels on the Umatilla National Forest has been a major concern throughout development of the Forest Plan. Conflicts between timber harvesting and other resource values were a focus for some publics, while maintaining a healthy supply of fiber to the local mills concerned others. I carefully considered many arguments and points of view in reviewing the timber harvest issue.

Comments on the timber issue in the draft documents centered on four principal aspects:

- Timber harvest levels (ASQ) - the necessary level of wood fiber to provide to local industry and its relation to the amount of natural unroaded area that is appropriate on the Forest.
- Ponderosa pine harvest level - the appropriate amount of ponderosa pine to harvest. This was an area of wide divergence of opinion on the draft Preferred Alternative.
- Silvicultural systems (even-aged and uneven-aged management) - the management systems to apply, where to apply them, and what their various impacts are.
- Timber harvest effects - what timber harvest effects are and should be on the water, big game, landscape, recreation experiences, and other Forest resources.

Some background information on the timber production on the Forest is useful before describing timber outputs from the selected alternative. The Forest has been operating under an adjusted 1963 Timber Management Plan that allows for a programmed harvest of 147.8 million board feet (MMBF/year). During the period from 1979 through 1988, the forest offered an average of 120.0 MMBF/year, but sold only 108.6 MMBF/year. A major reason for the sell being lower than the offered has to do with the difficulty of selling white-fir, which constitutes over 30 percent of the forest inventory. *Ponderosa pine has been and still is the preferred sale species. Average ponderosa pine sell for the 10 years was about 29 MMBF/year. However, ponderosa pine inventories have declined substantially in the last 2-3 decades. The draft Forest Plan, published in 1987, proposed an ASQ of 154 MMBF/year, with about 18 MMBF of that in ponderosa pine. Most of the harvesting involved even-aged silviculture. The Forest has a steady demand for chip material and firewood, especially since the beginning of the 1980's. That demand is expected to continue.*

The commercial forest land within the roadless areas was included in the calculation of the annual potential yield in the amended 1963 Timber Management Plans. However, *timber on these lands was not available for harvest until passage of the WA/OR State Wilderness Act. As a result, harvest levels between 1963 and 1990 were based on a larger land base than was actually available for harvest. Thus, for more than 25 years, timber harvest on the Forest was concentrated on fewer acres than the land base used to determine the annual potential yield in timber management plans. Approximately 173,100 acres, or nearly 62 percent of the unroaded areas, are tentatively suitable for timber production.*

Many changes were made to the alternatives between the draft and final in order to make the analysis more technically correct, resolve or reduce identified conflicts, and *address issues that were better defined through public involvement after the draft was released. I believe the FEIS better addresses the issues.*

In the DEIS, the Forest considered alternatives with first-decade harvests ranging from 81 to 202 MBF/year, while the FEIS displayed and analyzed alternatives with first-decade harvests ranging from 69 to 168 MBF/year. Much of the drop is explained by a 10.5 percent ASQ reduction for all alternatives resulting from an updated timber inventory information and technical changes in the lodgepole pine yields. A departure alternative was included in the DEIS but was not considered in detail in the FEIS, largely due to its minimal acceptance by the public.

After considering all factors, I selected Alternative F/M with a total average annual chargeable volume, or allowable sale quantity (ASQ), of 22.2 million cubic feet (MMCF/year) or 124 MMBF/year for the first decade. The ponderosa pine harvest volume on the Forest will be about 23.5 MMBF/year in the first decade, tapering to 21 MMBF/year in the second and third decades. In later decades, it will climb to a sustained level of 31 MMBF/year.

The allowable sale quantity (ASQ) is the upper limit of chargeable wood to be sold from suitable forest land during a decade of the planning period. Although it is a 10-year figure, it is most often expressed on an annual basis as the *"average annual allowable sale quantity"*. It is important to note that ASQ is not an actual proposal for timber sale offerings. The annual timber sale offerings include nonchargeable as well as chargeable material and depend on budget appropriations, multiple-use objectives, and market conditions.



**A note on units of measure:** ASQ will be monitored and controlled on the basis of cubic foot measure. The board foot volume associated with the cubic foot volume (i.e., the board foot/cubic foot conversion ratio) varies from stand to stand depending on the size and form of the trees. Both board foot and cubic foot measure are displayed here since board foot measure continues to be a customary unit of measure.

Chargeable volume (ASQ) is composed of categories of timber which were used in making growth and yield projections during the development of the Plan. On the Umatilla National Forest, the ASQ includes mortality salvage. Other nonchargeable volume was not used in yield calculations because it did not meet regional utilization standards or standards for soundness, or because it is to be harvested from lands not suitable for timber production (e.g., salvage from a special interest area). Generally, this is done only if timber harvesting promotes other resource objectives.

The total volume sold (chargeable plus nonchargeable) is referred to as the Annual Timber Sale Program Quantity (TSPQ). The nonchargeable volume, which consists of firewood, posts, poles, and chip material, will be about 35 MMBF. Therefore, the TSPQ will be 159 MMBF/year. To achieve this TSPQ, yearly targets are developed.

Approximately 2.7 MMCF, or 12 percent of the ASQ established in this Plan, depends upon the application of intensive timber management practices, including thinning. Approximately 21.9 MMCF, or 93.5 percent of the ASQ, depends upon the application of even-aged silvicultural practices and approximately 1.5 MMCF, or 6.5 percent of the ASQ, depends on uneven-aged practices. Whether such practices can or should be used is dependent upon budget appropriations and site-specific analyses, both of which could impact the ASQ and could result in plan amendments.

The ASQ is divided into two categories: Volume scheduled from inventoried roadless areas and volume scheduled elsewhere on the Forest. If the volume scheduled from inventoried roadless areas cannot be sold, that volume will not be replaced by volume scheduled elsewhere. Volume scheduled from inventoried roadless areas is estimated to be 238.8 MMBF (10-year total) or 19 percent of the ASQ.

Timber will be managed on about 618,800 acres. Silvicultural systems will normally use even-aged management, but approximately 90,000 acres will be managed by uneven-aged management to meet resource objectives. Uneven-aged management will be encouraged where feasible and will be emphasized in riparian areas, visual areas, winter ranges, and ponderosa pine stands. Actual silviculture methods will be determined on a site-specific project basis. The recommended ASQ and acres of suitable area are consistent with objectives for the big game, roadless, riparian/water, and other issues. The proposed harvest levels will provide adequate supplies of timber near recently offered levels to meet local needs.

Adequate levels of satisfactory and marginal big game cover will be maintained and created under the direction contained in the Forest-wide Standard and Guidelines. Timber harvest may result in short-term degradation of elk habitat where long-term improvement in cover and habitat quality can be achieved.

Concern has been expressed by the State of Oregon that the timber inventory is out of date. The Forest shares this concern and has initiated a new vegetation inventory (including timber). The vegetation mapping phase will be complete in 1990, and managed stand survey data is expected to be available in 1992. These new data will be compared with the inventory used in the Forest Plan and, if significant differences are apparent, adjustments in the projected ASQ will be made and a plan amendment issued.

## **SOCIO-ECONOMIC EFFECTS**

The availability of goods and services such as wood fiber, forage, quality water, and recreation and aesthetic opportunities as provided by the Forest, will affect local economic activity and lifestyles in a 10-county area. About 11 percent of the local employment is attributed to the Forest through timber harvest, wood processing, and related Forest work. A few communities are strongly dependent on wood produced from the Forest. Hunting and other forms of Forest recreation also contribute to local communities' economies.

### **Comments on the DEIS showed:**

There was a general recognition and agreement that the Umatilla National Forest is a tremendous natural and public asset that should be managed for the use and benefit of the general public (the most good for the most people).

Economic, social, and environmental stability appear to be the general public goals. Overall disagreement is apparent on how to achieve these goals.

Disagreements deal primarily with management emphasis: Should the Forest produce more commodity or amenity goods and services in achieving that stability?

The biggest change in terms of economic activity between the draft preferred alternative and the alternative selected is in the level of harvest offered. The draft would have offered a higher level of timber volume, and the selected alternative contains about the level the local industry has been offered during the last 10 years. Other outputs would also increase, and the potential net effect would be a possible slight increase of local jobs and income. The economic analysis is described in the FEIS, Appendix B, and in Chapter IV, Environmental Consequences.

*I believe that this Plan will produce a balance between commodity outputs and amenity values that will contribute to economic and social stability of dependent communities while maintaining the natural character and recreational settings desired by Forest visitors from all areas. County revenues are expected to rise through payments in lieu of taxes as a result of the Plan's outputs. For those concerned about county revenues, it is important to note that these payments are based on receipts rather than on amount of timber sold. If timber value rises, so will county revenues if other factors remain the same. Lifestyles, made up of patterns of work and leisure, customs and traditions, and relationships with family, friends, and others, will generally not be adversely affected by the selected alternative. Overall, the selected alternative will not cause large changes in the socioeconomic environment of the 10-county area.*

Decisions in the Forest Plan may have some effects on communities. The Forest Service will work with the affected communities within the framework of the Pacific Northwest Strategy.

## **RIPARIAN**

Riparian ecosystems are distinctive in an otherwise dry region. These areas amount to only about 5 percent of the Forest (70,743 acres), but are the most productive lands for the full range of resources and uses. Approximately one-third of the riparian area acres are adjacent to anadromous fish streams.

Riparian areas on the north half of the Forest are generally in good condition. Less favorable riparian condition is generally found on the south half of the Forest where the areas have been more heavily impacted in the past by gold dredging, grazing, road building, and timber harvest.

Because of the number and interplay of resources, competition for resource use is focused on these areas and involves most of the Forest interest groups.

- All interests generally agree on the need to protect riparian areas but do not agree on how this should be done.
- Numerous groups and interests advocate a high degree of riparian protection, and most prefer little to no development.
- Other interests have preferences that support use and development of riparian areas within guidelines they feel will afford adequate protection.
- From the management perspective, this issue revolves around utilization of the productive capabilities of riparian areas, while minimizing resource conflicts and potential adverse impacts.

Riparian and fish habitat management interacts with nearly every Forest management activity. Most activities have the potential to impact key fish habitat variables and riparian features. The total effect on fish habitat is dependent upon the intensity, duration, and extent of the affecting activity

Since the Forest has a small but important role in anadromous fish production in the Columbia River Basin, one of my concerns is the way we will manage both anadromous and resident fish habitat. Salmon and steelhead runs of the Columbia River system may be directly affected by management of the Forest.

My decision on actions addressing the water/riparian (and fish) issue includes improved riparian direction in the Forest-wide Standards and Guidelines, including adoption of regional range utilization standards, strengthening use of the Best Management Practices (BMP) process and concepts (particularly as they relate to timber management and road building activities), and incorporating objective-driven management for fish and riparian areas based on discussions with the Columbia Basin Intertribal Fish Commission and others. Specifically, the Forest direction includes the following measures:

- The selected Plan applies Management Area C5 (riparian emphasis/limited harvest) to 27,000 riparian acres. The basic direction includes emphasis on stream shading, streambank stability, and large wood for instream habitat. Uneven-aged management is emphasized in riparian areas where timber harvest is permitted.
- In addition, the Management Area C7 (anadromous fish habitat emphasis) strategy is expanded to 105,000 acres of the North Fork John Day River system (the draft called for 76,000 acres). Scheduled timber harvesting is precluded in stream riparian areas in this and other management areas.
- In addition to the Forest-wide Standards and Guidelines, the Mill Creek and Walla Walla River Watersheds will be managed with special protection measures for the water resource.
- The Forest will continue a successful program of fish habitat enhancement (riparian and instream improvements) projects. This has not changed from the DEIS Preferred Alternative.
- Monitoring programs for water, fish, and riparian areas will be improved and expanded in line with the above direction, with emphasis on the Columbia Basin Intertribal Fish Commission's parameters of concern.
- Range allotment management plans will be improved with focus on meeting riparian objectives. Allotments with riparian problems or potential problems will be the first to be analyzed and revised (schedule appears on Forest Plan pages A-21 to 23).

The Forest is committed to careful and detailed monitoring of these objectives. The riparian, fish, and water monitoring plans easily make up the largest portion of the Forest Plan monitoring program. The Forest will amend the Plan if riparian area values are not being protected or enhanced in accordance with the Plan's desired future condition.

The net result of these management directions is to assure that the Forest fish habitat management program clearly supports and assists with the Northwest Power Planning Council goal of doubling the anadromous fish runs by the year 2000. The Forest Plan will meet Oregon and Washington water quality standards and improve overall riparian conditions.

During the past couple of years, Forests and Regional Offices in Regions 1, 4, and 6 have been working closely with Columbia Basin Indian tribes, the Columbia Basin Intertribal Fish Commission, and others on the issue of anadromous fish habitat management. At this time, a Forest Service draft policy and policy implementation guide has been developed; it is expected to be approved in the near future. Upon approval of the policy and implementation guide, the Forest Plan will be reviewed and amended (if necessary) as soon as it's practicable to do so. I believe this policy will be an important factor in helping to achieve a mutual goal of the Tribes and Forest Service to provide strategies for habitat management and anadromous fish production consistent with fish restoration goals of the Columbia Basin Fish and Wildlife Program.

## WILDLIFE

Presently there are about 191,000 acres of inventoried old growth tree habitat on the Forest (the DEIS reported 165,000 acres), including about 10,000 acres of mature and old growth lodgepole pine. Approximately 69,000 acres of old growth habitat type have been identified in existing wilderness. A variety of wildlife species on the Forest (25 birds and 13 mammals) appear to demonstrate high levels of use of, or dependence on, mature and old growth tree habitat. Past timber harvest activities have removed much of the suitable old growth tree habitat once found on the Forest. The remaining acres are not uniformly distributed. Historically, harvest of old growth/mature tree forests has been the backbone of the local timber industry. The FEIS, in Chapter III, describes the old growth situation on the Forest. The Forest definition of old growth is the one used in the Regional Guide (see FEIS Glossary for definition).

The abundance and distribution of available old growth and mature tree habitat was confirmed as an issue in comments on the draft documents and follow-up discussions with many segments of the public. Various public interests are divided as to the amount of old growth and dead tree habitat to retain on the Forest and on the ways that habitat should be managed.

*Some groups, associations, and agencies support utilization of old growth/mature tree forests and dead trees and see these resources as important to timber production, firewood supply, and long-term forest productivity.*

A number of individuals and groups have expressed concern over the reduction of old growth/mature tree habitat. Their desire is to maintain existing habitat distribution and amounts for dependent species, forest diversity, and aesthetic values.

Under the Plan, Forest-wide Standards and Guidelines, management areas, and alternative design provide direction and allocation for old growth. Old Growth in Management Areas C1 (Dedicated Old Growth) and C2 (Managed Old Growth) total 52,600 acres. Another 38,500 acres are in riparian and roadless allocations, and 68,900 acres in wilderness areas will be protected indirectly. The acres of old growth/mature tree habitat will be well above the management requirements (MR) level of 35,370 acres.

Regardless of the values that are placed on old growth, continued current timber harvest activities will further diminish and fragment the Forest inventory of old growth/mature tree habitat. Insect infestations, wildfire, and other catastrophic events will also continue to impact this resource.

Dead and down tree habitat under the Forest Plan will also be managed under Forest-wide Standards and Guidelines and Management Area direction. The Plan objective is to provide for habitat with the potential to maintain populations of the wildlife indicator species that are 65 percent (52 percent in the draft Plan) of the Forest-wide maximum potential. An average estimated snag density of about 1.5 snags per acre (1.2 in the draft Plan) will be maintained. Future snags will also be provided in harvest areas. Other areas with restricted timber harvest are expected to contain natural levels of dead and down trees.

## **RECREATION**

The Forest provides a variety of recreation opportunities ranging from moderately developed downhill skiing facilities to remote wilderness. Recreation is a popular and widely supported use of the Forest. Although somewhat remote from major population centers, the Forest is well known for its hunting and other dispersed recreation opportunities. A variety of facilities for recreational use is maintained. Developed sites on the Forest can accommodate about 7,000 persons-at-one-time (PAOT). The capacity for the sites is about 569,000 recreation-visitor-days (RVD's) annually. There are about 735 miles of maintained trails on the Forest, 355 miles of which are within wilderness. There are about 170 miles of groomed snowmobile trails and more are planned.

Comments on the DEIS identified several aspects of this issue.

- A principal aspect of the roadless issue is the provision for a future supply of primitive and semi-primitive recreation opportunity on the Forest
- Concerns expressed about the need for additional trails and road access reflect other aspects of the recreation opportunity that people want the Forest to provide.
- Off-highway vehicle (OHV) opportunities on the Forest have declined. OHV users and clubs want more opportunity to enjoy their pursuits.
- Past reductions in OHV opportunities have caused an increase in conflicts between recreation uses.
- Many people expressed concern about the scenic qualities of the Forest. Most desire little noticeable change in the landscape, while some of these people worry that the amount of protection given scenic resources could hinder production and reduce future supplies of forest products.

It is my decision to proceed with the preferred alternative that will provide semi-primitive recreation opportunities in roadless areas as follows:

- Three roadless areas, totalling about 21,000 acres, will be managed as scenic areas and involve the Grande Ronde River, Vinegar Hill-Indian Rock, and Jumpoff Joe areas;
- four areas are to be managed for their dispersed recreation opportunities, totalling about 27,000 acres;

- six other areas will continue to be managed in an unroaded condition and total about 119,300 acres; and
- the Mill Creek Watershed is a municipal watershed and recreation entry is limited to protect water quality. Thus, the area is not counted as a dispersed recreation opportunity.

A total of about 75 miles and about 7,600 acres (outside of wilderness) of 3 rivers within Forest boundaries (Grande Ronde, North Fork John Day, and Wenaha rivers) will be managed as part of the Wild and Scenic River System. New trails will be constructed and substandard existing trails reconstructed at the rate of 30 miles per year.

OHV opportunities will increase above current levels with the development of loop trail and road systems; however, use may be limited to certain times or areas to minimize impacts on big game. An estimated 307,000 acres will be available for OHV use, including 200 miles of trails for trail bike use.

Visual quality management is emphasized on 23 viewsheds including state highways, key forest travel routes, and major water related areas. About 46 percent of the Forest (includes wilderness) will be managed to meet a high visual quality objective (partial retention or higher).

Many other recreation opportunities are addressed in the Forest Plan. Developed sites will remain at current levels; however, if demand rises, provisions are made so key sites may be expanded. Winter sports will be enhanced, but may be modified if conflicts with big game winter range arise. A variety of special areas, including three Wild and Scenic Rivers (Grande Ronde, Wenaha, and North Fork John Day), six botanical areas, eight Research Natural areas, two historic sites, one geologic area, and two scenic areas will contribute to the diversity of recreation.

## **WATER AND SOIL**

The Forest currently produces almost 2.5 million acre-feet of water runoff annually. Quality of water flowing from the Forest is currently well above minimum state standards. Analysis shows that the Forest has little opportunity to increase water yields or increase late season low flows through management practices.

- Maintaining adequate quantities of high quality water is an objective of many diverse interests. Many developmental activities and uses are thought by these groups to cause pollution and sedimentation. They suggest limiting developmental activities.
- The timber, livestock, and mining industries feel that developmental activities can be successfully accomplished while protecting water supplies and quality.
- Many people felt that Mill Creek should receive maximum protection. A good number of people were concerned about adequate water supplies from the Walla Walla River for irrigation. Many specifically advocated maximum protection (very limited timber harvest or none at all) and many others supported the higher level of harvesting shown in the proposed Plan.

Water and soil protection and management receive emphasis in the selected alternative primarily through Forest-wide Standards and Guidelines (including Best Management Practices (BMP's)) and application of certain management areas (also see Riparian issue). The following are ways the Forest Plan responds to the issues:

- The Forest-wide Standards and Guidelines provide objectives and direction for protection and management of water (based on BMP's), for dispersion of harvest activities, for riparian areas, and for all soil-disturbing activities in order to maintain soil productivity.
- As noted in the Riparian issue discussion, no scheduled timber harvest is permitted in the Mill Creek Municipal Watershed (Management Area F2), most of the Walla Walla River, or in some tributaries of the North Fork John Day, Umatilla, and Grande Ronde River systems (under a variety of management area direction).
- Limited timber harvest is permitted on other major streams under C5 (Riparian/Fish and Wildlife).
- Management Area C7 (Special Fish Management) is applied to parts of the North Fork John Day River system, limiting harvest activities in the watershed.

Overall, sediment production resulting from management of the Forest in the first decade is expected to be 8 percent below current direction (Alternative A) levels but will increase above background levels by about 15 percent. Although an increase in sediment is expected above natural levels, water quality will be in an excellent condition and will not be changed significantly by management activities. Based on barometer watershed results, water quantity, including peak flows and low flows, is not expected to change significantly due to management activities.

Changes from the DEIS are primarily clarifications of long-term effects of timber management on water yields and timing of flows. Sediment yields have been analyzed by major basin. Changes have been made in the standards and guidelines governing activities in riparian areas, emphasizing riparian values

## TRANSPOR- TATION

The transportation system is an aspect of the timber, big game, and recreation issues. Two elements were identified in the transportation issue; both were areas of strong differences of opinion.

- Road system development and its associated impacts drew many concerned comments.
- Road (access) management and its effects on big game and other forest resources was a worry to many commenters.

Since the transportation system is integrally linked to other issues, the response to this issue is primarily through alternative design and falls under outputs and effects (objectives) of planned management. Both construction and reconstruction of the road system in this Plan respond primarily to the planned timber management program. The alternative I have selected includes construction of about 925 miles of road in the first decade. The final Plan will keep about half the Forest roads open.

Access and travel management plans are being developed under the Forest Plan. All districts will eventually have such plans (see discussion in the Big Game section). Across the Forest, closures will be used to maintain suitable elk habitat and to meet recreation, soil, water, and economic criteria. Open road density will vary greatly between management areas and subwatersheds (allocation zones), depending on the resource objectives being achieved. All of the arterial roads, about half of the collector roads, and some local roads will be managed for passenger cars. The remainder of the collectors and open local roads will be managed for high-clearance vehicles. Most main roads and some secondary roads will remain open for passenger cars. Some of the remaining secondary Forest roads will be kept open only for high clearance vehicles.

The process of developing access and travel management plans will continue to be an open one involving the public. This process will take into consideration the recommendation of the State of Oregon for no more than 1.0 mile per square mile of open road in elk winter range and no more than 1.5 miles per square mile in summer range, unless these limits do not allow the achievement of Forest Plan objectives.

#### **OTHER DECISION FACTORS – CONCERNS AND OPPORTUNITIES**

The following discussion includes six areas of concern or opportunity identified in the planning process. They were considered in addition to the issues on the previous pages in developing the alternatives. They are extremely important and will be considered in all project proposals. Two other areas are concerns I have regarding management of the Forest. The follow discussion highlights my rationale for dealing with these eight factors.

#### **CULTURAL RESOURCES**

Federal law requires protection of significant cultural and historical resources on public lands for future generations.

My decision involves activities which have a moderate to high likelihood of both discovering and impacting cultural resources. Timber harvesting, road building, and on certain sites, fish, wildlife, and recreation improvement projects may have high potential to impact the Forest cultural resources.

The Forest Service cultural resource compliance process is designed to minimize disturbance to significant cultural resources and is incorporated into Forest-wide Standards and Guidelines. In brief, a cultural resource inventory will be undertaken prior to any potentially ground-disturbing Forest Service authorized activity. The Forest will develop a consultation memorandum of agreement with the affected Native American tribes to coordinate efforts in this area.

Sites will be evaluated for their potential to be nominated to the National Register of Historic Places. Eligible sites will be nominated to the Register and management plans prepared to ensure protection. Ineligible sites will be evaluated for the potential research or interpretive values. Interpretive plans will be prepared for sites selected for public use.

Specific mitigating measures are provided in the Forest-wide Standards and Guidelines. They will be used to eliminate undesirable effects or recover values of the properties prior to their alteration. As additional sites are discovered, opportunities for enhancement and interpretation will be considered. Mitigation measures will be designed and implemented in consultation and coordination with the State Historic Preservation Office and the Advisory Council on Historic Preservation.

#### **WILDERNESS MANAGEMENT**

The Forest has three wildernesses: Wenaha-Tucannon, North Fork John Day, and North Fork Umatilla.

My decision will require administrative emphasis on protecting and, in some cases, rehabilitating the natural environment. Implementation of the selected alternative will substantially increase the amount of primitive wilderness recreation opportunities over the current situation. Management actions will be tempered by Congressional intent for classifying the wildernesses, when they do not conflict with the 1964 Wilderness Act.



Wilderness management plans will be implemented for each wilderness. Visitor information and education will be used to minimize impacts. Indirect methods will be favored over direct methods to influence visitors so that management actions are subtle and unobtrusive. The Limits of Acceptable Change (LAC) process will be fully implemented to provide the framework for establishing acceptable and appropriate resource and social conditions (especially the amount and type of use) in wilderness settings

Fire will be considered an inherent part of the general wilderness ecosystem. My intent is to use planned and unplanned ignitions to: (1) Reduce the risks and consequences of wildfire within the wilderness, or escapes from the wilderness, and (2) allow fire to play its natural ecological role in wildernesses. The decision to allow naturally caused fires to burn will only be done within constraints detailed in the fire management section of the wilderness management plans. Fire management direction will spell out circumstances which must occur before a naturally caused fire will be allowed to burn. If, after close monitoring, the fire threatens to exceed these parameters, then immediate steps to suppress the fires will be taken.

**RANGE  
MANAGEMENT**

The Forest has two types of range. One is called "rangeland", defined as areas with less than 10 percent tree cover. About 302,000 acres (22 percent of the Forest) are classified as "rangelands." Most of the Forest acreage are "transitory range," which produces forage on forested or partially forested land as a result of some activity. About 60 percent of the Forest forage is produced on transitory range. With the exception of several small areas, the Forest has allotment plans on all allotments. Range allotments cover 77 percent of the Forest acreage.

My decision will provide a potential to increase use of available transitory range with some minor reductions of livestock use on certain winter ranges and added protection measures for riparian areas. The additional transitory range results from timber management activity which creates additional available forage. Protection measures for riparian areas will reduce some range use capacity. The net result will be a potential to increase permitted livestock use capacity by 6 percent. Management will be intensified and there will be an increase in range improvements over current levels. Condition and diversity are maintained at or above current levels.

An update of the Forest range allotment management plans will be completed which will implement the forage use objectives. As noted earlier, planning emphasis will be on allotments with riparian problems or potential problems. Allotment plans will continue to implement improved management systems on about 76 percent of the Forest (5 percent receives only extensive use and 19 percent is not available for livestock use) and continue the trends toward improved rangeland and riparian conditions. Key big game winter ranges will be re-analyzed to determine total forage production and to assure that the allocation of that forage between big game and livestock is correct.

**FISH  
MANAGEMENT**

The environmental consequences of management activities on fish are interwoven with those of riparian and water (see earlier discussion of issues). The Forest has determined that the limiting factors for fish are high summer water temperatures, adequate rearing habitat, and summer low flows.

The Forest fish habitat enhancement and riparian management are designed to ameliorate the first two conditions. Fish habitat improvements are designed to promote long-term bank stability, in-stream habitat, and water quality. Construction will be timed to avoid periods of high stream flow, anadromous fish spawning, and egg incubation in the gravel

The selected alternative has one of the highest potentials (when compared to the other alternatives) to increase anadromous fish production through fish habitat enhancement and riparian management. Planned fish habitat enhancement is at the highest level of the alternatives, accounting for the major share of improved fish habitat capability and increased fish populations. Increases are expected in anadromous and resident fish production above the 1980 base. In the knowledge that downstream user actions will have an effect on fish populations, the Forest is assisting in meeting the goal of doubling fish runs in the Columbia River Basin.

**MINERALS  
AND ENERGY  
MANAGEMENT**

The Forest has potential for oil and gas development and extraction of common variety minerals such as gravel. A small area near Ukiah has minimum potential for geothermal reserves. Deposits of coal are located north of Elgin. The south end of the Forest has historically been mined for nonenergy minerals like gold, silver, and nickel. Forest Service management is concerned about, and committed to, maintaining access to the Forest for mineral exploration and development.

My decision will coordinate other management work to assure that the mineral and energy resources are available to potential developers without undue restrictions evolving from other Forest management activities. Only restrictions to protect surface resources and improvements will be placed on mineral/energy activities.

All mineral activities are controlled by either the Federal Land and Policy Management Act of 1976 or by existing laws and regulations governing leasable and locatable minerals.

**PEST  
MANAGEMENT**

The Forest has historically experienced large-scale insect infestations of forested areas. It is doing so currently. The attacks have created large stands of dead and dying trees. These large-scale pest epidemics have major impacts on wildlife habitats, recreation opportunities, timber growth and yield, visual resources, fire hazards, and other resources. A number of groups, agencies, and individuals are concerned about the damage and commensurate losses.

Under the Forest-wide Standards and Guidelines and other direction, cost-effective, integrated pest management approaches are used to prevent and control forest pests. The principal approach in preventing the spread is through vegetation management activities. When prevention fails, early detection and aggressive control action may assist in alleviating large pest outbreaks. The appropriate control method for forest pests will continue to be determined through separate environmental analyses.

About 86 percent of the harvest acres would be managed under even-aged silvicultural methods, resulting in a potential for high control effectiveness. The risk of losses from insects and diseases should be reduced because of acres receiving thinning and other cultural practices. The selected alternative would result in approximately 42 percent of the total forested area in an older forest condition which may have a higher risk for insect and disease damage.

My decision has the potential to reduce insects and diseases and possible losses from these pests in the long run.

**WILD AND  
SCENIC  
RIVERS**

Since the DEIS was published in 1987, three rivers — Grande Ronde, North Fork John Day, and Wenaha — have been designated as Wild and Scenic Rivers under the Omnibus Oregon Wild and Scenic Rivers Act of 1988. Actual corridor boundaries and joint multiagency management plans are to be completed by October 1991 by an ad hoc task group representing the Umatilla and Wallowa-Whitman National Forests, BLM, and others. Interim river management will follow direction in Management Area A7 and the land along those rivers will be managed to maintain and protect the identified outstandingly remarkable values. The rivers that the Forest will be studying in the future (see Section II. DECISIONS, Further Actions) will also be protected. The Forest Plan will be amended to incorporate each river management plan when completed. Please refer to the Forest Plan on page 4-22 for river segment classifications.

The Forest studied the Tucannon River and found it to be ineligible for consideration further for Wild and Scenic River designation. However, due to public concern about protection of the values along the upper two segments, I have decided to preclude harvest activities for this planning period.

**AMERICAN  
INDIAN  
TREATY  
RIGHTS**

The Forest worked closely with the local Native American people to consider their needs and their rights under the treaties of 1855. Specifically, Confederated Tribes of the Umatilla Indian Reservation and Nez Perce Tribe representatives were consulted during the Forest Plan development process. The tribes assisted by reviewing and commenting on various parts of the Plan during the DEIS review period and have continued to provide additional consultation. I greatly appreciate this assistance.

Three of these treaty-protected rights that are considered in the selected alternative are fishing, hunting, and root and berry gathering. Anadromous fish are a resource having subsistence, ceremonial, and commercial value to tribal members. The selected alternative would have the greatest effect of increasing fisheries and would contribute to the goal of restoring fish habitat in the area. The Forest will contribute to a doubling of the fishery by the year 2000.

In addition, the selected alternative will promote elk populations, which are important to tribes for both subsistence and ceremonial purposes. The Forest Plan Standards and Guidelines also require identification, inventory, and protection and management of Native American traditional food sources; among these are roots and berries that are collected for their cultural and ceremonial values. Livestock grazing and protection of Native archaeological sites are also provided for by the Plan.

I expect the Forest to continue close coordination with the tribes in the future on implementation and monitoring of the Forest Plan.

**ALTERNATIVES CONSIDERED**

A series of eight multiple-use Forest Plan alternatives were developed and analyzed. Each provided a unique means of resolving the issues that were identified in the planning process. One or more of the issues are emphasized in each alternative. For example, some alternatives emphasize maintaining roadless areas while others emphasize timber production. The issues are listed in Section I of this document and are described in detail in Chapter I of the Final Environmental Impact Statement.

Several additional alternatives were suggested by the public during the DEIS review period. In addition, the State of Oregon provided a draft State Alternative just prior to publication of the FEIS. A "Citizens Multiple Use and Resource Conservation Alternative" that emphasized commodity outputs from the Forest and a "Citizen's Alternative E" which promoted noncommodity and amenity goods and services were considered but eliminated from detailed analysis because they were close approximations of other alternatives. Concepts and suggestions from the two public alternatives and the State of Oregon draft proposal were used in developing the final Plan and modifying several other alternatives. While they were developed and tested, several departure alternatives and three other alternatives were included in the DEIS analysis but were not presented in detail because their resource objectives could be met with other alternatives and because they lacked public support.

Each of the fully developed alternatives, and the basis for each, are detailed in Chapter II of the FEIS. Chapters II and IV of the EIS disclose the tradeoffs and environmental effects, respectively, of all alternatives considered in detail. The alternatives are very briefly described here as follows:

**ALTERNATIVE A (Current Direction)** Alternative A continues management direction as prescribed in the existing six unit plans and resource plans and policies, standards, and guidelines. This is the "No Action" alternative required by the National Environmental Policy Act and the National Forest Management Act and represents the existing situation insofar as possible. All of the management requirements (MR's) and other requirements defined in the National Forest Management Act are incorporated.

Current direction emphasizes commodity production and represents a combination of intensive timber management and big game habitat management with roaded dispersed recreation opportunities. Current direction also calls for visual management on most viewsheds and for maintaining two scenic areas while providing a moderate level of range outputs. Commercial fisheries enhancement at moderate levels is planned.

**ALTERNATIVE D** The goal of this alternative is to emphasize habitat quality for high populations of wildlife, big game, and fish while producing timber harvest at or near current timber offered levels (1979-88) and providing moderate levels of unroaded recreation opportunities and visual management. The alternative focuses on the identified issues and concerns related to wildlife, timber, and other forest resources.

**ALTERNATIVE E/M** The natural biological, ecological, and aesthetic values of the Forest are emphasized in this alternative by promoting noncommodity resources and services (those without established market prices). Vegetation management, including timber harvest, is relatively low and directed at economically and environmentally feasible levels that maintain or improve noncommodity resources. The alternative was formulated to resolve a range of issues and concerns related to amenity and aesthetic values.

This alternative in the FEIS is a modification of Alternative E in the DEIS that incorporates suggestions proposed in Citizens Alternative E (as summarized in FEIS Appendix N).

**ALTERNATIVE F/M (Selected)** Alternative F/M provides a mix of resources including timber, livestock grazing, big game, roadless, fish, and recreation opportunities in a way that provides some issue resolution for each. The alternative also provides for application of management area direction specifically designed for areas of high public interest and management concern. It is modified from the DEIS Alternative F in order to better address public comments.

- ALTERNATIVE G** Providing a "maximum response" to increasing potential big game populations is the principal goal of the alternative. It also emphasizes associated benefits including quality water, commercial fisheries, and dispersed recreation in closed-road settings.
- ALTERNATIVE H/M** The alternative emphasizes production of commodity outputs (those with established market prices) blended with elk management to produce potential elk populations near state management objective. It also provides some issue resolution for amenity resources. Increasing receipts to local governments is an important goal.
- This alternative is a modification of "H" in the DEIS that includes several suggestions proposed in the Citizens for Multiple Use Alternative (as summarized in FEIS Appendix N).
- ALTERNATIVE I** Goods and services having established market prices are emphasized in the alternative with focus on production of timber, wood fiber, and forage on a high percentage of the tentatively suitable forest lands. High returns to local governments are again an important goal.
- ALTERNATIVE J** Alternative J combines a high emphasis on noncommodity (nonmarket) resources with the need for commodity production. The alternative also emphasizes management for a variety of Forest dispersed recreation opportunities. Timber is emphasized on key suitable areas and where compatible with achievement of other resource objectives.

#### **ALTERNATIVES WITH HIGHER PRESENT NET VALUES**

Present Net Value (PNV) is the primary quantitative measure of economic efficiency for the alternatives. It provides a partial estimation of net public benefits (NPB's). PNV is defined as the difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area for the period extending to the planning horizon. A higher PNV often means a greater total PNB, unless modified by net nonpriced outputs.

The table below summarizes the PNV's associated with the eight alternatives. Differences in PNV between successional ranked alternatives can be seen. The data provide an estimate of the net economic value of priced resource outputs to be foregone if a lower ranked alternative is selected over a preceding one.

Three alternatives (I, H/M, and A) have higher Present Net Value's than does the alternative I have selected. The principal factor which influences differences in priced benefits, costs, and PNV is the timber harvest. Since timber harvest has relatively large investment costs and dollar returns, the extent of harvest is the primary determinant of the magnitude of the economic variables in each alternative. The progressive decline in PNV from Alternative I to Alternative E/M is due to a greater decline in timber production benefits than in costs of the timber program and road development. Benefits and costs for other resources are relatively stable among the alternatives and have only a relatively small influence on changes in PNV. Recreation benefits have an influence on the overall magnitude of PNV, but have a minor effect on changes between alternatives because they are relatively the same for each.

Alternative	PNV (MM\$)
I	1,076
H/M	1,049
A (Cur. Dir.)	1,022
F/M (Selected)	1,000
D	977
G	918
J	861
E/M	817

Alternative I would emphasize the production of commodity outputs and has the highest PNV. It has the highest output of timber with an average annual allowable sale quantity (ASQ) of 168 million board feet per year. About 94 percent of the tentatively suitable land would be managed for timber production, the highest of all the alternatives. It would also provide the lowest level of primitive and semi-primitive recreation opportunities, all of which would occur in dedicated wilderness.

Alternative H/M would emphasize commodity outputs blended with elk habitat management. A small decline in PNV is accounted for by a slightly lower level of timber production and range benefits. Other benefits from priced resources would increase. Discounted costs are only slightly lower than those in Alternative I.

Alternative A (Current Direction) is similar to Alternative H/M in that both would emphasize commodity outputs blended with elk habitat management. Most priced benefits, including timber and recreation, are lower than in H/M or A. The alternative provides fewer acres of primitive and semi-primitive recreation opportunity than Alternative H/M by about 10 percent.

The preferred alternative (F/M) has a PNV slightly less than Alternative A. The principal change is that the total discounted benefits from the timber resource diminish substantially. The timber benefits decrease by roughly \$156 million due to a reduction in the ASQ of 37 million board feet per year. Benefits from recreation and fish increase above A, which helps to offset some of the differences in PNV.

Alternative F/M achieves a better balance with respect to the issues than any of the three alternatives which have higher PNV's. F/M provides a much higher level of area remaining in an unroaded condition than any of the other high PNV alternatives and it utilizes a smaller amount of suitable land for timber harvesting. Sediment yields are lower for F/M than for any of these other alternatives as well. These added resource provisions in the alternative I have selected increase the cost of resource management, lowering the PNV with respect to these other alternatives.

#### **ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

The environmentally preferable alternative is defined by the Council on Environmental Quality as the alternative causing the least impact to the biological and physical environment. This alternative would have the lowest level of ground and vegetation disturbing activities and would best protect, preserve, and enhance historic, cultural and natural resources.

The environmentally preferable alternative, based on the above definition, is Alternative E/M. It provides the highest levels of old growth and dead and down habitat and would potentially provide the highest elk populations in part because it has the highest level of prescribed burning on winter ranges. This alternative schedules the lowest level of timber production and would program much less ground-disturbing activities during the next 10 to 15 years than does the alternative I have selected. Alternative E/M would emphasize amenity resources and maintain all of the 22 roadless areas in an undeveloped condition. Vegetation management is relatively low and natural conditions are also given emphasis. Grazing lands are reduced in this alternative as well.

Alternative J would combine a high level of noncommodity outputs with the need for commodity production. It would maintain 77 percent of the roadless acres in an undeveloped condition and would hold grazing at the current level. Alternative J is also preferred over Alternative F/M from an environmental impact standpoint.

I did not select one of the more environmentally preferred alternatives because I do not believe they provide the balance between economic benefits and environmental concerns provided by the selected alternative. Selecting Alternatives E/M or J would not adequately respond to my concern for the needs of the local economies in northeastern Oregon and southeastern Washington in terms of timber harvesting, grazing, or fish enhancement.

Additional information on the environmentally preferable alternatives and other alternatives considered is found in the FEIS, Chapters II and IV. For a comprehensive display of the major environmental factors of the each of the alternatives, the reader should refer to Table II-6 (Outputs and Effects) and II-8 (Comparison of Issues by Alternative), which can be found in the FEIS starting on page II-87.

Numerous efforts were made to ensure that the selected alternative considered the goals of the States of Washington and Oregon, other Federal agencies, Native American tribes, and local agencies. Comments and letters from agencies were reviewed and analyzed extensively; numerous meetings and field trips were conducted with officials from other agencies (see the FEIS, Appendix N), and actions were taken to address their concerns.

I believe Alternative F/M is compatible with, and complementary to, the goals of other agencies and Native American tribes. Coordination with many agencies, groups, and individuals will continue as projects are implemented.

I have selected Alternative F/M because, in my judgment, it maximizes net the public benefit of the Forest. The term "net public benefit" is necessarily subjective. Many people may disagree with this evaluation, and in fact, therein lie the controversies surrounding these decisions. Due to the controversial nature of the decisions I am making, I have shared with you, the reader, the factors considered. I compared the selected alternative to the "environmentally preferable alternative" and to alternatives with higher present net values, (note that "Environmentally preferable" is also a subjective term) and I have explained the basis for my necessarily subjective conclusion.

## SECTION IV. IMPLEMENTATION

### SCHEDULES

The Forest Plan will be implemented through identification, selection, and scheduling of projects to meet its management goals and objectives. These projects are displayed in the Forest Plan, Appendices A and B. Implementation will begin no earlier than 30 days after the Notice of Availability of the Final Environmental Impact Statement appears in the Federal Register (36 CFR 219.10(c)(1)).

Project schedules will be available for review at the Ranger District Offices and Supervisor's Office. Schedules of possible projects will routinely change as projects are implemented or removed from the lists for other reasons and as new projects take their place. Adjustments to schedules may occur based on results of monitoring, budgets, and unforeseen events.

The Forest Plan provides direction in the form of goals and objectives, standards and guidelines, monitoring requirements, and probable scheduling of management practices. It does not cover projects on specific sites except in a broad manner. Each proposed project will be subject to site-specific analysis in compliance with NEPA. This process may result in a decision not to proceed with a proposed project, even though the project is compatible with the Forest Plan.

The Forest Plan's scheduled projects are translated into multi-year program budget proposals. The schedule is used for requesting and allocating funds needed to carry out planned management direction. Upon approval of a final budget for the Forest, the annual work program will be updated and carried out.

The Forest program of work will implement management direction of the Forest Plan. Outputs and activities in individual years may differ significantly from those shown in Forest Plan, Chapter IV, depending on final budgets, new information derived from updated inventories and monitoring, and any future amendments or revisions of the Forest Plan.

All timber sales offered after issuance of the Forest Plan will comply with direction contained in it. Timber Sales now under contract will be administered under provisions of existing contracts. Changes to existing timber sale contracts may be proposed on a case-by-case basis where overriding resource considerations are present.

The Forest Plan incorporates the Pacific Northwest Region's EIS for Managing Competing and Unwanted Vegetation. In implementing the Forest Plan project activities, the Forest will comply with the Record of Decision issued by the Regional Forester on December 8, 1988, and the mediated agreement of August 1989. Use of all vegetation management techniques is allowed, but the use of herbicides is allowed only when other methods are ineffective or will unreasonably increase project costs. Emphasis must be placed on prevention and early treatment of unwanted vegetation and on public involvement in all aspects of project planning and implementation. Information about the vegetation management EIS, its Record of Decision, and the mediated agreement is available for review at Forest Service offices throughout Washington and Oregon.

Decisions contained in the Forest Plan will affect communities. The Forest Service will work with communities to address these effects within the framework of the Pacific Northwest Strategy.



## **MONITORING AND EVALUATION**

The Monitoring and Evaluation Program is the management control system for the Forest Plan. It will be used to provide information on progress and results of implementation. One result of monitoring will be an assessment of needs for amending or revising the Plan. Monitoring and evaluation are discussed in more detail in the Forest Plan, Chapter 5. The necessary funding for monitoring is also provided there and as part of the Forest budget presented in the Plan Appendix A.

Monitoring is intended to keep the Forest Plan current and responsive to change. Monitoring and evaluation each have a distinctly different purpose and scope. Monitoring consists of gathering data, observations, and information. During evaluation, the data and information are analyzed and interpreted. This process allows determination of whether conditions are within the bounds and intent of Plan direction. Forest Plan monitoring program supplements existing monitoring activities. Many activities are currently being monitored on the Forest to comply with administrative and legal responsibilities. (FSM - Admin. Review Procedures).

Monitoring and evaluation will provide information to:

- Compare planned with applied management standards and guidelines to determine if objectives are achieved [36 CFR 219.12(k)];
- Quantitatively compare planned versus actual outputs and services [36 CFR 219.12(k)(1)];
- Measure effects of prescriptions, including significant changes in land productivity [36 CFR 219.12(k)(2)];
- Determine planned costs versus actual costs associated with carrying out prescriptions [36 CFR 219.12(k)(3)];
- Determine population trends of the management indicator species and relationship to habitat changes [36 CFR 219.19(a)(6)];
- Evaluate effects of National Forest management on adjacent land, resources, and communities [36 CFR 219.7(f)];
- Identify research needs to support or improve National Forest management [36 CFR 219.28];
- Determine if lands are adequately restocked [36 CFR 219.12(k)(5)(i)];
- Determine, at least every 10 years, if lands identified as unsuitable for timber production have become suitable [36 CFR 219.12(k)(5)(ii)];
- Determine whether maximum size limits for harvest areas should be continued [36 CFR 219.12(k)(5)(iii)]; and
- Ensure that destructive insects and disease organisms do not increase to potentially damaging levels following management activities [36 CFR 219.12(k)(5)(iv)]

Results of evaluations will lead to the following types of decisions:

- Continue practice, no change necessary.
- Refer the problem to the appropriate Forest officer for corrective action.
- Modify the management practice through Plan amendments.
- Modify land designation through Plan amendments.
- Revise output schedules.
- Revise unit output costs.
- Revise the Plan.

Three types of monitoring and evaluation will be conducted:

- IMPLEMENTATION MONITORING - will determine if plans, prescriptions, projects, and activities are implemented as designed and in compliance with Forest Plan objectives and Standards and Guidelines.
- EFFECTIVENESS MONITORING - will determine if plans, prescriptions, projects, and activities are effective in meeting management direction, objectives, and the Standards and Guidelines.
- VALIDATION MONITORING - will determine whether initial data, assumptions, and coefficients used to develop the Plan are correct, or if there is a better way to meet Forest planning regulations, policies, goals, and objectives.

Evaluation of results of the site-specific monitoring program will be documented in an annual evaluation by the Forest Interdisciplinary Team. Any need for further action is recommended to the Forest Supervisor.

Actions directed by the Forest Supervisor could include one or more of the following:

- A determination that no action is needed.
- District Ranger(s) may be directed to improve application of management direction.
- Management direction for a particular piece of land may be modified as a Forest Plan amendment.
- The standards and guidelines may be modified as a Forest Plan amendment.
- The projected schedule of outputs may be modified as a Forest Plan amendment.
- The needed action may singly or cumulatively be so significant as to cause the Forest Supervisor to initiate revision of the Forest Plan.

If, through monitoring and evaluation, it is determined that management objectives cannot be achieved without violating the Standards and Guidelines, the plan will be amended. In amending the plan, one or more of the following can be changed: Allocations, management prescriptions, projected outputs, or Standards and Guidelines.

**MITIGATION MEASURES**

Mitigation measures constitute a general category of actions that may be undertaken to avoid, minimize, reduce, rectify, or compensate for the effects of human-based activities on the Forest. The mitigation measures that can and will be taken on the Forest are many and varied. All alternatives have built-in mitigation measures in varying degrees through standards and guidelines, Best Management Practices, management requirements, management area directions, and other resource direction and practices, as follows:

- The Forest-wide Standards and Guidelines represent, in part, the necessary mitigation and resource coordination measures required by existing laws, regulations, and policies to deal with potential adverse environmental effects; they also provide direction on how activities (management areas) will be implemented on the ground.
- Best Management Practices (BMP's) are included in the Forest-wide Standards and Guidelines to protect and enhance water quality. BMP's will be selected and tailored for site-specific conditions to arrive at project-level BMP's for the protection of water quality.
- Management requirements (MR's) were the starting point for mitigation, since the measures were identified as mitigation in the implementing regulations for NFMA (36 CFR 219.27). MR's were incorporated into the Forest-wide Standards and Guidelines
- Within each management area, a set of management practices is designed to create or perpetuate a desired condition, develop or protect some combinations of resources, and mitigate potential adverse impacts.
- Each alternative varies in amount and location of management areas and associated constraints in responding to the ICO's. Therefore, the contribution toward, and magnitude of, mitigation also varies. Each of the various mitigation forms is used in the alternatives, although emphasis tends to be on pre-activity and during-activity approaches.
- Most site-specific consequences will be addressed, within the framework of the preferred alternative, in subsequent project analyses and in plans in which the physical settings are known. Additional mitigation measures will be provided and implemented through operating permits, plans, and contracts for the projects.
- Activities and their effects, including effectiveness of mitigation, will be monitored, as shown in the Forest Plan.

**AMENDMENT AND REVISION PROCESS**

This Forest Plan may be changed either by an amendment or a revision. Such changes may be made as a result of monitoring or project analysis (see Forest Plan, Chapter 5). An amendment may become necessary as a result of situations such as;

- Recommendations of the Interdisciplinary Team based on their review of monitoring results;
- Determination that an existing or proposed permit, contract, cooperative agreement, or other instrument authorizing occupancy and use is not consistent with the Forest Plan but should be approved, based on project level analysis;
- Adjustment of management area boundaries or prescriptions;

- Changes necessitated by resolution of administrative appeals;
- Changes needed to improve monitoring plans or information and assumptions used in the Plan; or
- Changes made necessary by altered physical, biological, social, or economic conditions.

Based on an analysis of the objectives, guidelines, and other aspects of the Forest Plan, the Umatilla National Forest Supervisor shall determine whether a proposed amendment would result in a significant change to the Forest Plan. If the change is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of the Forest Plan. If the change is not determined to be significant, the Forest Supervisor may implement the amendment after appropriate public notice and compliance with NEPA. The procedure is described by 36 CFR 219.10(e) and (f), 36 CFR 219.12(k), FSM 1922.51-52 and FSH 1909.12.

As Regional Forester, I will approve significant amendments and the Forest Supervisor will approve "non-significant" amendments. The determination of significance must be documented in a decision notice and would be appealable under 36 CFR 217. A mailing list will be maintained to provide notification and invitation to comment on proposed amendments.

The amendment documentation will include as a minimum:

- A statement of why the Forest Plan is being amended (some possible reasons are mentioned above);
- The actual amendment will be described;
- Rationale for the amendment;
- A statement of significance related to FSM 1922.51; this is the NFMA significance and relates to changes to the Forest Plan;
- A statement of NEPA compliance (40 CFR 1500-1508, FSM 1950, and FSH 1909.15) regarding effects on the environment, and how effects disclosed in the Plan EIS may change as a result of the amendment; and
- A statement of appeal rights.

NFMA requires revision of the Forest Plan at least every 15 years. However, it may be revised sooner if physical conditions or demands on the land and resources have changed sufficiently to affect overall goals or uses for the entire Forest. If an early revision becomes necessary, procedures described in 36 CFR 219.12 will be followed.

## SECTION V. APPEAL RIGHTS

This decision may be appealed in accordance with the provisions of 36 CFR 217 by filing a written notice of appeal within 90 days of the date specified in the published legal notice. The appeal must be filed with the Reviewing Officer:

**F. Dale Robertson, Chief**  
USDA Forest Service  
P.O. Box 96090  
Washington, D.C. 20090-6090

A copy must be sent simultaneously to the Deciding Officer:

**John F. Butrulle**  
Pacific Northwest Region  
USDA Forest Service  
319 S.W. Pine  
P.O. Box 3623  
Portland, OR 97208-3623

The notice of appeal must include sufficient narrative evidence and argument to show why this decision should be changed or reversed (36 CFR 217.9).

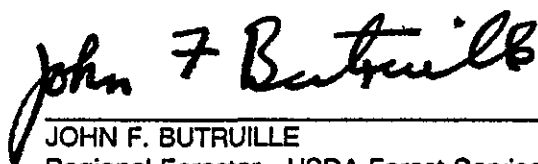
Requests to stay the approval of this Land and Resource Management Plan shall not be granted [36 CFR 217.10(a)].

For a period not to exceed 20 days following the filing of a first level notice of appeal, the Reviewing Officer shall accept requests to intervene in the appeal from any interested or potentially affected person or organization [36 CFR 217.14(a)].

Decisions on site-specific projects are not made in this document.

The schedule of proposed and probable projects for the first decade is included in the appendices to the plan. Final decisions on these proposed projects will be made after site-specific analysis and documentation in compliance with NEPA.

I encourage anyone concerned about the Plan or Environmental Impact Statement to contact the Forest Supervisor or the Planning Staff Officer in Pendleton, Oregon, 503-276-3811; or one of the Umatilla District Rangers before submitting an appeal. It may be possible to resolve the concern or misunderstanding in a less formal manner.



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JOHN F. BUTRUILLE  
Regional Forester - USDA Forest Service  
Pacific Northwest Region  
319 SW Pine, P.O. Box 3623  
Portland, OR 97204-3623

JUNE 11, 1990

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Date