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Baker RD*

United States  
Department of  
Agriculture

Forest Service

Pacific  
Northwest  
Region

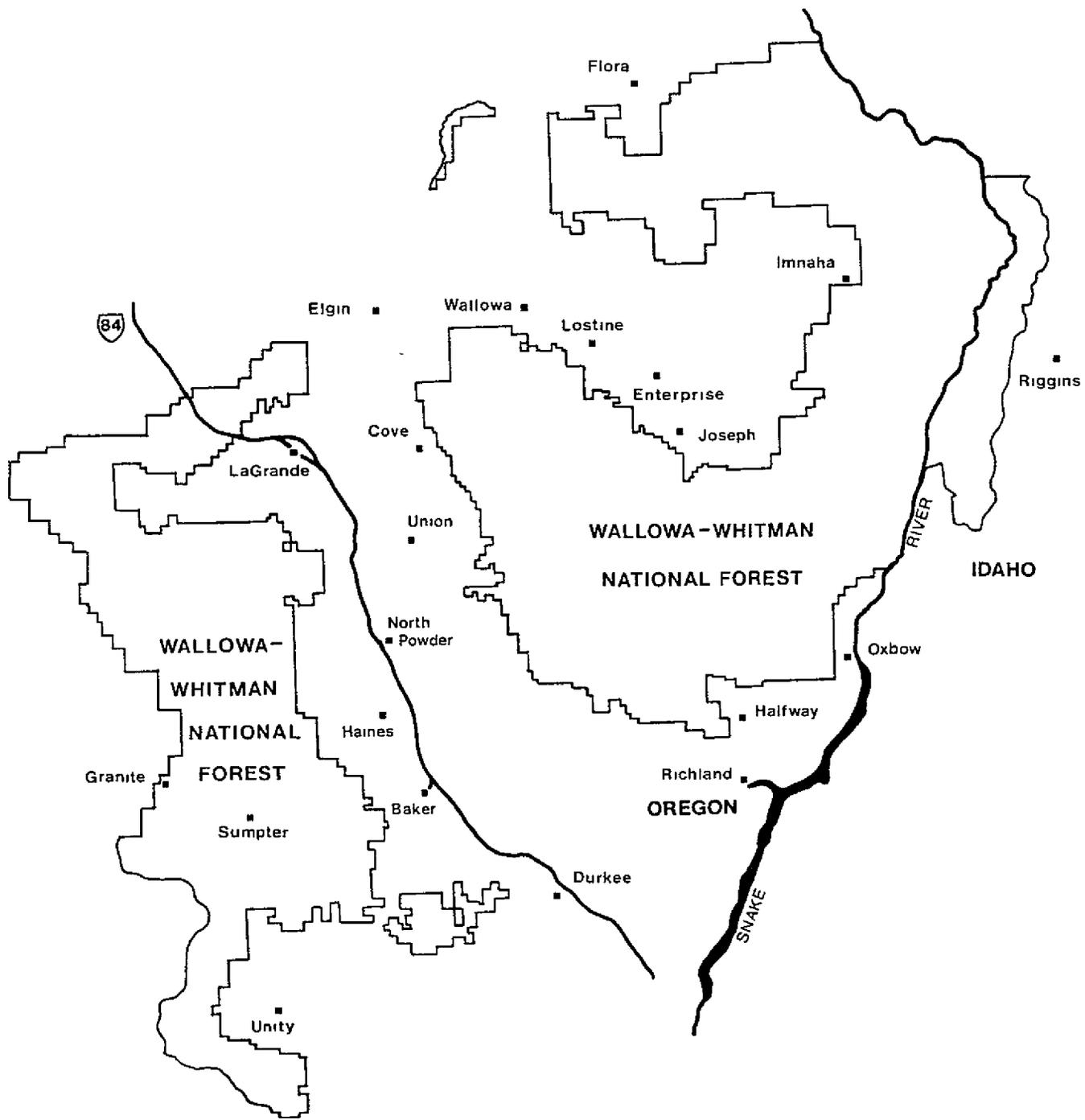
1990



# Land and Resource Management Plan

## Wallowa-Whitman National Forest





Wallowa-Whitman  
National Forest

P. O. Box 907  
Baker City, OR 97814

1920

April, 1990

Dear Reviewer:

I am pleased to be able to present to you the Land and Resource Management Plan for the Wallowa-Whitman National Forest. It will be the plan which will guide our resource management activities through the decade of the 1990's. The purpose of the plan is to provide direction for multiple use management and sustained yield of goods and services from the Forest in an environmentally sound manner.

Because the plan is not site specific, on-the-ground implementation will be accomplished through project level planning. I encourage your continued involvement as we work together to develop projects which carry out the intent of the plan.

Throughout the coming years, we will monitor the plan and revise or amend it as necessary in recognition of better resource inventories or changes in conditions. We intend to keep you informed of such changes and will be seeking your advice.

Sincerely,

A handwritten signature in cursive script that reads "R. M. Richmond". The signature is written in black ink and is positioned above the typed name.

R. M. RICHMOND  
Forest Supervisor

## ERRATA

As discussed in the Record of Decision, it was necessary to reduce timber harvest along important streams. This resulted in the annual first decade allowable sale quantity being reduced from 144 MMBF to 141 MMBF, and the timber sale program quantity being reduced from approximately 210 MMBF to 207 MMBF. Although the standards and guidelines in this Plan (Chapter 4) have been changed to reflect the Record of Decision, numbers found throughout this document have not been changed.

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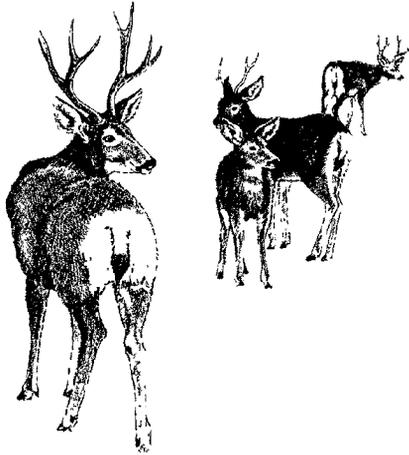
# ACRONYMS AND ABBREVIATIONS USED IN THIS DOCUMENT

Those listed with an asterisk are further explained in the Glossary

AC - Acres	MR - Management Requirement
AMP - Allotment Management Plan *	MRVD - Thousand Recreation Visitor Days
AMS - Analysis of the Management Situation *	MS - Management Strategy(ies)
ASQ - Allowable Sale Quantity *	MWFUD - Thousand Wildlife/Fish User Day
ATV - All Terrain Vehicle *	NA - No Action
AU - Animal Unit *	NAS - National Activity Structure
AUM - Animal Unit Month *	NC - No Change
BAP - Benzo (A) Pyrene	NDF - Nondeclining Flow *
BCR - Benefit Cost Ratio	NEPA - National Environmental Policy Act
BF - Board Foot *	NFMA - National Forest Management Act
BIA - Bureau of Indian Affairs	NFMAS - National Fire Management Analysis System
BLM - Bureau of Land Management *	NPB - Net Public Benefits
BMP - Best Management Practice *	NRA - National Recreation Area (HCNRA)
BTU - British Thermal Unit *	NRT - National Recreation Trail *
CCC - Civilian Conservation Corps	O&M - Operation and Maintenance
CEQ - Council on Environmental Quality *	OBERS - Office of Business Economics - Economic Research Service
CFL - Commercial Forest Land *	ODFW - Oregon Department of Fish and Wildlife
CFR - Code of Federal Regulations *	ONRC - Oregon Natural Resources Council
CI - Capital Investment	ORV - Off Road Vehicle
CMAI - Culmination of Mean Annual Increment *	PAOT - Persons At One Time
CMP - Comprehensive Management Plan (HCNRA)	P&M - Protection and Management Funds
CRITFC - Columbia River Inter-tribal Fish Commission	PILOT - Payment in Lieu of Taxes
DBH - Diameter at Breast Height *	PL - Public Law
DEIS - Draft EIS *	PNV - Present Net Value
DEP - Departure *	PNW - Pacific Northwest
EA - Environmental Assessment *	POM - Polycyclic Organic Matter
EHF - Earned Harvest Factor	PVB - Present Value of Benefits
EIS - Environmental Impact Statement *	PVC - Present Value of Costs
EO - Executive Order	R-6 - Region 6
EPA - Environmental Protection Agency *	RARE II - Roadless Area Review and Evaluation *
FEIS - Final EIS *	RIM - Recreation Information Management *
FERC - Federal Energy Regulatory Commission	RNA - Research Natural Area *
FIL - Fire Intensity Level *	ROD - Record of Decision
FORPLAN *	ROS - Recreation Opportunity Spectrum *
FPFO - Forestry Program for Oregon	RPA - Forest and Rangeland Renewable Resources Planning Act of 1974 *
FRES - Forest Range Environmental Study *	RVD - Recreation Visitor Day *
FS - Forest Service	SAF - Society of American Foresters
FSH - Forest Service Handbook	S&G - Standards and Guidelines
FSM - Forest Service Manual	SCORP - Statewide Comprehensive Outdoor Recreation Plan
FVB - Future Value of Benefits	SHCI - Smolt Habitat Capability Index
FVC - Future Value of Costs	SHPO - State Historical Preservation Officer (Office)
FY - Fiscal Year	SIC - Standard Industrial Classification
GIS - Geographic Information System	SMA - Special Management Area
GNP - Gross National Product	SMU - Streamside Management Unit *
HCNRA - Hells Canyon National Recreation Area	SPM - Semiprimitive, Motorized
HCRS - Heritage Conservation and Recreation Service	SPNM - Semiprimitive, Nonmotorized
HEI - Habitat Effectiveness Index	T&E - Threatened and Endangered *
ICO's - Issues, concerns, and Opportunities	TRI - Total Resource Inventory *
I&DC - Insect and Disease Control	TSI - Timber Stand Improvement *
ID - Interdisciplinary	TSPIRS - Timber Sale Program Information Reporting System
IPM - Integrated Pest Management *	TSPQ - Timber Sale Program Quantity *
IMPLAN *	TSP - Total Suspended Particulates *
INTEGER *	USGS - United States Geological Survey
K-V Act - Knutson-Vandenberg Act *	US - United States
KV - Kilovolt	USDA - United States Department of Agriculture
LRMP - Land and Resource Management Plan	USDI - United States Department of Interior
LTSY - Long Term Sustained Yield *	VAC - Visual Absorption Capacity *
MA - Management Area	VMS - Visual Management System
MAUM - Thousand Animal Unit Month	VQO - Visual Quality Objective *
MBF - Thousand Board Feet	WFUD - Wildlife and Fish User Day *
MCF - Thousand Cubic Feet	WRC - Water Resources Council
MIH - Management Information Handbook	WRS - Wilderness Recreation Spectrum *
MIS - Management Indicator Species	
MM\$ - Million Dollars	
MMBF - Million Board Feet	
MMCF - Million Cubic Feet	
MOU - Memorandum of Understanding	

# *CHAPTER 1*

## Forest Plan Introduction



## **CHAPTER 1**

### **FOREST PLAN INTRODUCTION**

#### **PURPOSE OF THE FOREST PLAN**

The Forest Land and Resource Management Plan (Forest Plan) guides all natural resource management activities and establishes management standards and guidelines for the Wallowa-Whitman National Forest, those portions of the Nez Perce and Payette National Forests that are administered by the Wallowa-Whitman National Forest Supervisor, and other lands within the Hells Canyon National Recreation Area (HCNRA). It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

The Forest Plan:

1. Establishes Forest-wide multiple-use goals and objectives,
2. Establishes Forest-wide standards and guidelines applying to future activities,
3. Establishes management area direction including management area prescriptions and standards and guidelines applying to future management activities in that management area,
4. Establishes the allowable sale quantity for timber and identifies land suitable for timber management, also sets timber sale program quantity;
5. Establishes monitoring and evaluation requirements.

The Forest Plan embodies the provisions of the National Forest Management Act, the implementing regulations, and other guiding documents. Land use determinations, prescriptions, and standards and guidelines constitute a statement of the Plan's management direction, however, the projected outputs, services, and rates of implementation are dependent on the annual budgeting process. The plan will be revised on a 10-year cycle or at least every 15 years.

Upon implementation this plan will guide Forest Service programs and activities on the Wallowa-Whitman National Forest.

#### **RELATIONSHIP OF THE FOREST PLAN TO THE EIS AND RECORD OF DECISION**

This Forest Plan sets forth the direction for managing the land and resources of the Wallowa-Whitman National Forest. The Plan results from extensive analysis and considerations addressed in the accompanying Environmental Impact Statement (EIS) and Record of Decision. The planning process and the analysis procedures used to develop this Plan are described or referred to in the EIS. The EIS also describes other alternatives considered in the planning process. Specific activities and projects will be planned and implemented to carry out the direction in this Plan. The Forest will

perform environmental analysis on these projects and activities. This subsequent environmental analysis will use the data and evaluations in the Plan and Environmental Impact Statement as its basis. Environmental analysis of projects will be tiered to the EIS accompanying this Forest Plan.

## **RELATIONSHIP OF THE FOREST PLAN TO THE REGIONAL GUIDE**

The Regional Guide for the Pacific Northwest Region, as amended December 8, 1988, provides direction for National Forest Plans. It includes standards and guidelines addressing the major issues and management concerns considered at the Regional level, to facilitate Forest planning. The Regional Guide provided Regional standards and guidelines and tentative Forest resource objectives from the 1980 RPA Program for the Forest. These were used in formulating this Plan.

## **RELATIONSHIP TO SPECIAL AREA PLANS**

Public Law 94-199 required that a separate plan be developed for the Hells Canyon National Recreation Area. Such a plan was developed and was approved on April 30, 1982. The regulations guiding the development of Forest Plans (36 CFR 219.2(b)) state that, "(if, in a particular case, special area authorities require the preparation of a separate special area plan, the direction of any such plan may be incorporated without modification in plans prepared under (these regulations) ". For the following reasons the Hells Canyon Comprehensive Management Plan is incorporated into this Forest Plan: (1) the analysis completed during development of the Hells Canyon Comprehensive Management Plan is still valid; i.e., the issues and concerns identified as being important in management of the area along with the preferred alternative for resolving those issues are unchanged, (2) the process for amending or revising the Hells Canyon Comprehensive Management Plan was established by the Assistant Agriculture Secretary's appeal decision of April 27, 1984 (see further discussion below), and (3) the National Forest Management Act implementing regulations require that, "a 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 RPA policies, goals, or objectives would have a significant effect on Forest level programs ". Revision of the Forest Plan will include new planning for the Hells Canyon NRA. If the Forest Plan is amended this may include replanning for the NRA.

In his April 27, 1984 decision on appeals of the NRA Comprehensive Management Plan, the Assistant Secretary of Agriculture for Natural Resources directed that

"The plan shall be revised or amended whenever (1) the Forest Supervisor determines that conditions or demands of the public in the area covered by the plan have changed significantly or (2) when any Forest Plan or Forest Plans adopted for the Wallowa-Whitman, Nez Perce or Payette National Forests sets a timber harvest level or any other output level which alone or in combination with the Forest Plan for one or more of those Forests might have a significantly adverse effect on the economy of Wallowa County or Baker County in Oregon or Adams County, Idaho County, or Nez Perce County in Idaho. If revision or amendment occurs because of the second of the above-described conditions, every reasonable effort will be made to eliminate or mitigate the significantly adverse effect on the economy of the affected county or counties by revising or amending the Comprehensive Management Plan."

There is no indication that the first condition has occurred. Following implementation of Forest Plans for the Nez Perce, Payette, and Wallowa-Whitman National Forests an analysis of the combined economic effects of these Forests on Baker, Wallowa, Adams, Idaho, and Nez Perce Counties will be

made. If it is determined that a significantly adverse effect will result, the Hells Canyon Comprehensive Management Plan will be revised or amended

## **RELATIONSHIP OF THE FOREST PLAN TO OTHER PLANS**

This Forest Plan, including the incorporated Comprehensive Management Plan for the Hells Canyon National Recreation Areas, serves as the single land management plan for the area administered by the Forest Supervisor of the Wallowa-Whitman National Forest. All other land management plans are replaced by the direction in this plan.

Several documents designed to give further guidance to management activities have been or will be tiered to this Forest Plan

Examples of such documents are:

- Forest Travel Plan
- Livestock Grazing Allotment Management Plans
- Fire Management Action Plans
- Wilderness Management Plans
- Cultural Resource Management Plans
- Phillips Lake Recreation Area Management Plan
- Oregon Trail Management Plan
- Forest Development Transportation Plan
- Wild and Scenic River Management Plans
- Bald Eagle and Peregrine Falcon Recovery Plans
- Corridor Viewshed Plans

The Landownership Plan and the 10-year Timber Sale Action Plan, are presented as appendices to the plan. Other plans are available at the Forest Supervisor's Office, Wallowa-Whitman National Forest, P. O. Box 907, Baker City, Oregon 97814.

## **RELATIONSHIP OF THE FOREST PLAN TO PROJECT PLANNING**

The management direction provided by this Forest Plan comprises the framework within which project planning and activities take place. It defines management area goals and management standards that guide project activities toward achieving a desired future condition for the management area and, collectively, for the Forest. It specifies a schedule for project activities (management practices). It provides guidance concerning potential landtype and habitat type limitations, including assumptions about the appropriate vegetation management practices for timber sales and other projects. (See Chapter 5.)

## **PLAN STRUCTURE**

The plan is presented in several sections, each briefly described as follows:

Chapter 1 is the introduction which describes the purpose of the plan, summarizes the content, establishes the area covered by the plan, and illustrates the geographic location.

## Chapter 1

Chapter 2 provides a summary of the Analysis of the Management Situation. It includes brief descriptions of resource management situations and as appropriate, demand and supply conditions for various commodities and services, productivity potentials, and use and development opportunities.

Chapter 3 summarizes the major public issues and management concerns, explaining how each was resolved in the planning process.

Chapter 4 describes the goals, standards, and guidelines established for the period of the plan. Included is a section describing multiple resource prescriptions (management area direction) that are specific to each management area.

Chapter 5 includes implementation direction, a plan for monitoring and evaluating Forest Plan implementation, and a description of the process for plan amendment and revision.

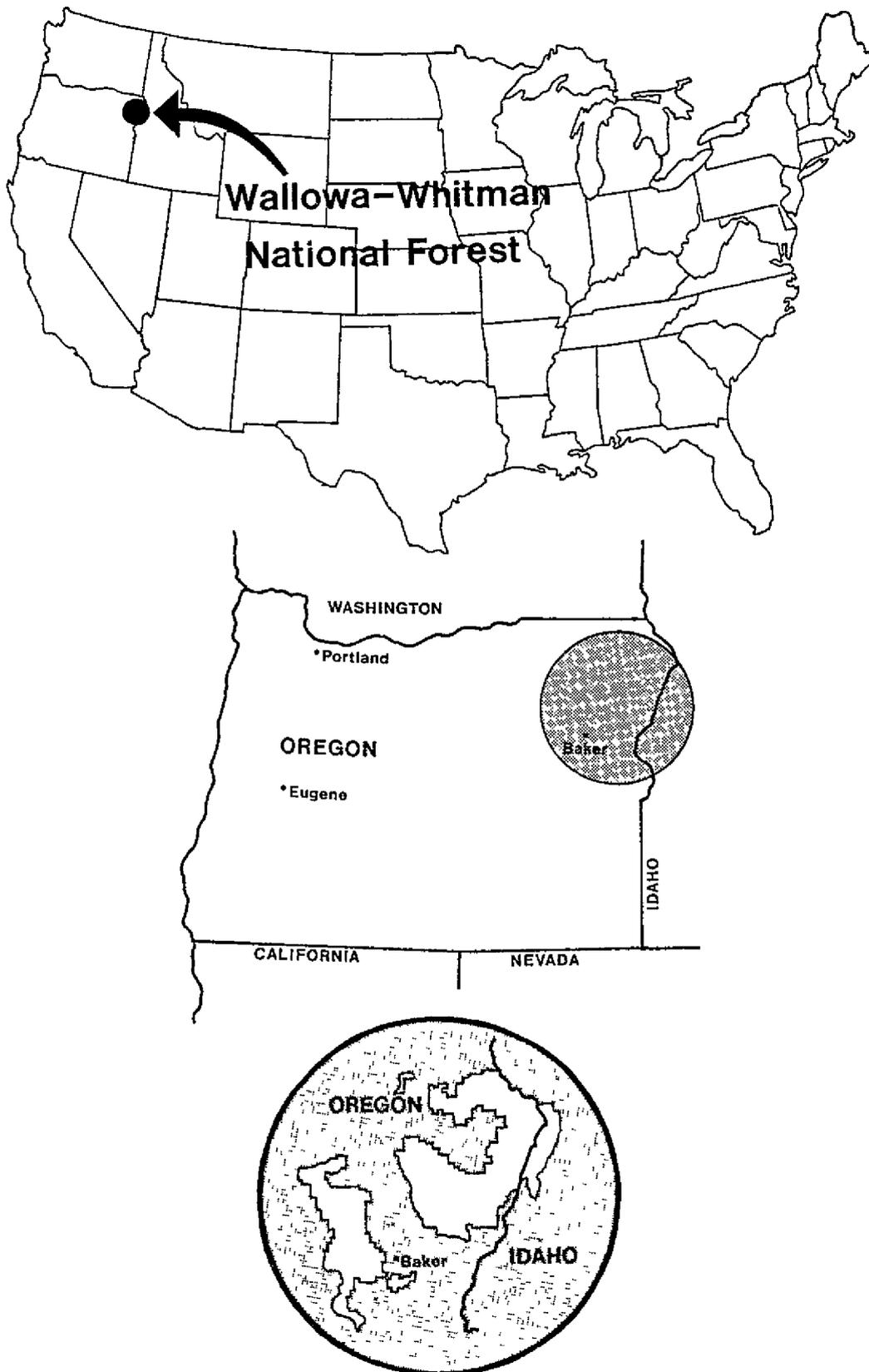
Following Chapter 5 is a glossary of terms used in this document, a schedule of projected activities, a landownership plan, and a ten-year timber sale action plan.

## **FOREST DESCRIPTION**

The Forest is in the northeast corner of Oregon and the west central edge of Idaho as shown on the vicinity map (Figure 1-1). It lies within Wallowa, Union, Baker, Malheur, Umatilla, and Grant Counties in Oregon and Adams, Idaho, and Nez Perce Counties in Idaho. It contains over 2.3 million acres of Federal land.

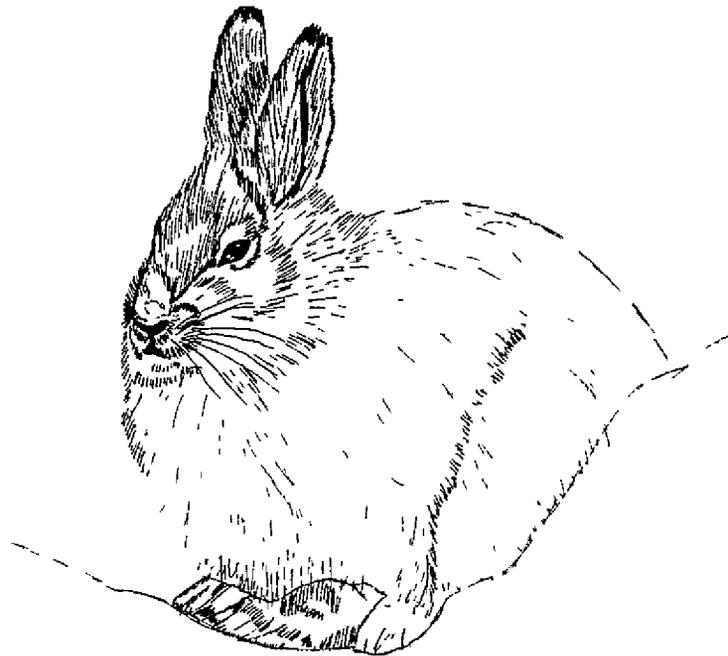
The Forest Supervisor's Office is in Baker City, Oregon, with Ranger Stations for the seven Ranger Districts (including the Hells Canyon National Recreation Area) located in the towns of Unity, Halfway, Baker City, La Grande, Joseph, and Enterprise (all in Oregon) with the Hells Canyon National Recreation Area Office also in Enterprise.

### VICINITY MAP



# CHAPTER 2

## Summary of The Analysis of The Management Situation



## CHAPTER 2

### SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION (AMS)

#### CURRENT MANAGEMENT SITUATION

Throughout this document the Wallowa-Whitman National Forest refers to the area administered by the Wallowa-Whitman Forest Supervisor. It includes the Wallowa and the Whitman National Forests and those portions of the Nez Perce and Payette National Forests that lie within the Hells Canyon National Recreation Area with the exception of the Rapid River Corridor.

#### MANAGEMENT SITUATION BY RESOURCE

This section provides a summary of the management situation for the Forest programs. Included for comparison purposes is Table 2-1 showing projected Forest outputs (targets) and activities as displayed in the Regional Guide for the Pacific Northwest Region (May 1984).

##### Recreation

The Forest offers a wide range of outdoor recreation opportunities varying from primitive hiking and horseback riding experiences within wilderness and the Hells Canyon National Recreation Area to the relatively developed atmosphere found at Anthony Lakes, Phillips Lake and a number of other recreation sites. Although recreation is concentrated in the late spring, summer and fall when most of the Forest is accessible by wheeled vehicle, opportunities for winter recreation are abundant for those interested in downhill or cross-country skiing, snowshoeing or snowmobiling.

The Forest has a general surplus of supply over existing and projected recreation demand. It will maintain the surplus through 2030 though changes will occur in recreation use by Recreation Opportunity Spectrum (ROS) class, especially as more land in the semiprimitive recreation classes is converted to the roaded recreation classes. The challenge to management will be dispersing use from the popular focal points to other available areas. Some recreational sites near lakes and streams are now at capacity during summer months.

Historical and projected dispersed and developed recreation are displayed in Tables 2-2 through 2-4 along with Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) estimates, as amended, as identified in the Regional Guide.

To identify the recreation resource environment, the Forest is classified into various categories of the Recreation Opportunity Spectrum (ROS). The ROS is a categorization of land according to a range of recreation experience opportunities.

Table 2-1  
RPA PROGRAM OUTPUTS, ACTIVITIES AND COSTS FOR THE  
WALLOWA-WHITMAN NATIONAL FOREST

Output/Activity	Unit of Measure	Annual Units		
		1990	2000	2030
<b>Recreation</b>				
Developed Recreation Use (Includes IS)	MRVD's	407	410	430
Dispersed Recreation Use (Includes Wildlife and Fish)	MRVD's	1,180	1,260	1,450
Trail Construction/Reconstruction	Miles	70	73	80
<b>Wildlife and Fish</b>				
Wildlife Habitat Improvement	Thousand acres	10 917	9 293	4 602
Anadromous Fish Improvement	Thousand pounds	52 500	108 000	144 000
<b>Range</b>				
Grazing Use (Livestock)	Thousand AUM's	206	208	220
<b>Timber</b>				
Programmed Sales Offered	Million board feet	220	-	-
	Million cubic feet	41	41	41
Reforestation	Thousand acres	3 200	3 670	4 500
Timber Stand Improvement	Thousand acres	4 160	4 280	4 480
<b>Water</b>				
Meeting Water Quality Goals	Million acre feet	2 670	2 850	2 970
<b>Minerals</b>				
Minerals Leases and Permits	Operating Plan	380	425	500
<b>Human and Community Development</b>				
Human Resources Programs 1/	Enrollee years	4	4	4
<b>Protection</b>				
Fire Management	Dollars/			
Effectiveness Index	thousand acres	1,214	1,214	1,184
Fuelbreaks and Fuel Treatment	Acres	2,838	2,838	2,838
<b>Lands</b>				
Land Purchase and Acquisition (Excludes Exchange)	Thousand acres	400	0	050
<b>Soils</b>				
Soil and Water Resource Improvement (Improved Watershed Condition)	Thousand acres	1 000	0 900	0 600
<b>Facilities</b>				
Returns to Government	Million Dollars 2/	10 0	13 0	27 1
Road Construction/Reconstruction (Arterial, Collector)	Miles	4 7	5 4	7 2
<b>Total Forest Costs</b>	Million dollars	25 1	26 3	26 8

1/ Human resource programs whose funds are allocated to the Forest Service are not included

2/ All costs and returns are shown in constant 1978 dollars

The six spectrum categories range from primitive to urban. They describe a variety of recreation situations a visitor can experience ranging from presence in an undisturbed, natural environment with little contact with other humans to a highly modified, altered environment with a maximum of varied contacts with others. The current situation by ROS classification for the Forest is shown in Table 2-5.

(See the Glossary for a more detailed description of the ROS classes.)

The creation of the 655,000-acre Hells Canyon National Recreation Area (HCNRA) in 1975 (P. L. 94-199) has had a significant impact on the Forest. Management of the HCNRA is pursuant to its own Comprehensive Management Plan. This plan proposes construction of a number of additional recreation sites including campgrounds at Pittsburg Landing, the Upper Imnaha River area, Hells Canyon Reservoir, Dug Bar, near Hat Point and Low Saddle, and in the vicinity of Seven Devils Guard Station. This is expected to increase developed recreation capacity by approximately 78,000 RVD's. Substantial road and trail improvements to complement the site development is also specified by the CMP.

Comparing recreation site capacity (587 MRVD's) with current use (367 MRVD's) the Forest would seem to have an oversupply of developed sites. However, the oversupply is seasonal rather than total. In summer, sites near water are fully used. In fall, sites near hunting areas are fully used. Unused capacity is related to locations that are seasonally unattractive, to midweek periods and to inclement weather. Many developed sites have facilities that are in a deteriorated condition. Latest statistics show a need to invest \$200,000 in facility replacements.

### Wilderness

The Forest contains two complete wildernesses plus portions of two others, for total designated wilderness of 582,700 acres. Wilderness acreage, present use, capacity, and predicted use are shown in Table 2-5.

Table 2-2  
RECREATION USE  
(Recreation Visitor Days by Fiscal Year)\*

	1981	1982	1983	1984	Average 1981-1984
Developed	394,300	406,500	349,500	316,400	366,700
Dispersed	978,700	1,370,900	1,114,700	1,113,000	1,144,300
Total	1,373,000	1,777,400	1,464,200	1,429,400	1,511,000

\*Forest Recreation Information Management (RIM) reports. Includes HCNRA in its entirety.

The Eagle Cap Wilderness was created in 1940. Subsequent legislation added to the original acreage in 1972 and most recently in 1984. The Hells Canyon Wilderness was established by the Hells Canyon National Recreation Area legislation. An addition was made in 1984. The Monument Rock and the North Fork John Day Wildernesses were established in 1984. The majority of each of these areas lies on the adjacent Malheur and Umatilla National Forests which have primary responsibility for their planning.

With the 1984 wilderness additions, virtually all of the primitive and about 40 percent of the semiprimitive acres on the Forest have been designated wilderness. If present trends continue, the primitive and the semiprimitive acreage outside wilderness will continue to shrink and those seeking the recreational experiences these areas provide will find them in short supply. Primitive wilderness recreation will also reach capacity sometime around the fourth decade of plan implementation. The Forest has no land fitting the category of trailless wilderness, though there are opportunities for off-trail recreation in the Eagle Cap Wilderness.

Due to its relatively low level of use, there are few conflicts between public use and maintenance of wilderness character. Some areas around lakes in the Eagle Cap Wilderness do receive intense use during July and August; popular hunting areas are heavily used during October and November.

### **Landscape Appearance**

*Much of the 2.3 million acre National Forest retains a near-natural appearance when viewed by the casual observer from its many broad valley viewsheds. The past management practices causing the most disturbance include the clearcutting of dead and dying lodgepole pine. Activities which resulted in modification to the landscape include roads, clearcuts and other harvests, utility corridors, mining dredge tailings, other mining operations, numerous rock quarries, and water impoundments. To date, approximately 132,000 acres have been physically altered. The timber harvest program can be expected to maintain or increase the incidence of clearcuts. This is the result of clearcut harvest systems and other harvest systems such as shelterwoods which remove the overwood some ten years after the shelterwood harvest. Likewise, utility corridors, mine tailings, and quarries will be long-term modifications.*

Table 2-3  
DEVELOPED RECREATION USE (PROJECTED)  
(Recreation Visitor Days by Fiscal Year)

	Base (1981-1984)	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
RPA TARGETS 1/ PROJECTED USE 2/	366,700	407,000 399,000	410,000 464,000	410,000 523,000	410,000 571,000	430,000 621,000

TABLE 2-4  
DISPERSED RECREATION USE (PROJECTED)  
(Recreation Visitor Days by Fiscal Year)

	Base (1981-1984)	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
RPA TARGETS 1/ PROJECTED USE 2/	1,144,300	1,180,000 1,244,000	1,260,000 1,445,000	1,310,000 1,572,000	1,350,000 1,659,000	1,450,000 1,726,000

1/ Regional Guide, Table 3-24.

2/ Projections are based on the population growth rates contained in the 1980 OBERS projections. Decadal increases from Vol 1, p 117 OBERS is an acronym for the joint effort of the Office of Business Economics (OBE), now the Bureau of Economic Analysis (BEA), U. S Department of Commerce, and the Economic Research Service (ERS) of the U S Department of Agriculture

3/ Beginning with Decade 2, dispersed use is limited by capacity in some ROS classes.

Table 2-5  
 FOREST CAPACITY AND USE BY RECREATION OPPORTUNITY SPECTRUM CLASS (RECREATION VISITOR DAYS)

ROS Class	Acres	Current 1/ Capacity RVD'S & WFUD'S)	Projected Capacity (RVD's) Decade 5	Projected Demand (RVD's & WFUD's)			
				Decade 2	Decade 3	Decade 4	Decade 5
<b>Nonwilderness</b>							
Rural	1,500	172,700	172,700	136,000	156,000	174,000 2/	187,000 2/
Roaded Modified	242,100	1,209,800	6,932,000 3/	1,139,000 3/	1,307,000 3/	1,456,000 3/	1,568,000 3/
Roaded Natural	985,600	4,925,000	3/	3/	3/	3/	3/
Semiprimitive Motorized	260,200	573,700	339,000	344,000	395,000	440,000	474,000
Semiprimitive Nonmotorized	269,000	322,800	200,200	157,000	180,000	200,000	216,000
Primitive	8,115	7,000	7,000	8,000	9,000	10,000	11,000
Subtotal	1,766,515	7,211,000	7,650,700	1,784,000	2,047,000	2,280,000	2,456,000
<b>Wilderness</b>							
Primitive (Trailed)	515,200	276,400	300,200	248,000	284,000	316,000	341,000
Semiprimitive	67,500	56,400	32,600	9,000 4/	11,000	12,000	13,000
Subtotal	582,700	332,800	332,800	257,000	295,000	328,000	354,000
<b>Total</b>	<b>2,349,215</b>	<b>7,543,800</b>	<b>7,983,500</b>	<b>2,041,000</b>	<b>2,342,000</b>	<b>2,608,000</b>	<b>2,810,000</b>

1/ Under current land management plans, capacity for semiprimitive recreation will decrease and capacity for roaded recreation will increase as existing roadless areas are developed  
 2/ Demand for developed recreation within the rural ROS class will exceed capacity by 2020. There is adequate developed recreation capacity within other ROS classes to make up for this shortfall

3/ Roaded Natural and Roaded Modified identified as Roaded Modified

4/ Reflects changes in Wilderness Recreation Opportunity Spectrum categories

The visual resource has been inventoried according to the National Forest Visual Management System. This provides an inventory of the existing visual condition as well as the desired visual quality levels. The desired visual quality levels are based on a purely visual management value system. The actual visual quality objectives of the various management alternatives may or may not be the same as the desired levels. Current land management direction from unit plans requires that these objectives be met to the extent practicable at all management activities. At present, there are 617,274 acres in sensitivity level 1 viewsheds. (See map in map packet.)

### **National Wild and Scenic Rivers**

The Omnibus Oregon Wild and Scenic Rivers Act, which was signed into law on October 28, 1988 added nine streams within the Forest to the system. They are all or portions of the North Powder, North Fork John Day, Grande Ronde, Minam, Lostine, Joseph Creek, Imnaha, South Fork Imnaha, and Eagle Creek. These additions, plus the Snake River which was added to the system in 1975, account for ten wild and scenic rivers on the Forest -- a total of 269 miles. As required by the Wild and Scenic Rivers Act, river corridor boundaries and river management plans will be established via separate NEPA analyses tiered to the Forest Plan.

### **Wildlife**

There are 379 species of terrestrial vertebrate wildlife within the geographic area of the Wallowa-Whitman National Forest. These species include 10 amphibians, 16 reptiles, 263 birds and 90 mammals. Fifty-one of the bird species are migrant or incidental visitors only. More complete descriptions of species and their habitats are found in *Wildlife Habitats in Managed Forests*.\* The Wallowa-Whitman is noted for Rocky Mountain elk and mule deer and the hunting these species provide. Bear, cougar, mountain sheep, grouse and chukar partridge are also hunted.

The Forest provides habitat for a number of primary cavity excavators (species which excavate nesting sites in dead or live trees). These include such species as pileated woodpecker, yellow-bellied sapsucker, hairy woodpecker, downy woodpecker, black-capped chickadee, mountain chickadee, and chestnut-backed chickadee. These species, plus secondary cavity nesters (species which nest in the cavities excavated by other animals) are important to the Forest for a variety of reasons, including their beneficial effects on insect populations. There is evidence that, through the consumption of insects which are destructive to the forest, these birds may contribute significantly to the prevention or reduction of insect outbreaks.

Although the relationships between insectivorous bird populations and populations of forest-damaging insects are not fully understood, there is ample evidence to support maintaining higher than minimum population levels of these species.\*

Many species of wildlife are adaptable to use of the Forest by humans. Some are not, or are not capable of sustaining as high a population level as is possible in a forest with little human influence. The numbers of cougars, bobcats, pine martens and numerous other species have declined as public use of the Forest has increased. Historically, these species were not valued to the same extent as game animals which provided food and a high degree of hunting recreation, so their decline did not arouse great alarm.

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\*Thomas, Jack W. and Others. *Wildlife Habitats in Managed Forests of the Blue Mountains of Oregon and Washington*. Agriculture Handbook No. 553. Portland, OR. U. S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 1979

Deer, and to a lesser extent elk, are relatively adaptable to human activities, elk are probably present in greater numbers today than at any time in recorded history. However, because of their importance to the recreational hunter and the steady increase in hunters, there is a desire for more animals to hunt. Since deer and elk utilize the coniferous forest for cover, and eat many of the same plants which livestock eat, conflicts can occur.

While the Forest Service has the responsibility for managing wildlife habitat on National Forest lands, the States are responsible for managing the wildlife species on all lands. In Oregon this responsibility is assumed by the Oregon Department of Fish and Wildlife (ODF&W). In Idaho the programs are managed by the Idaho Fish and Game Department. These wildlife management agencies are pressured by the hunting public to increase elk numbers, the habitat of which is on public and private lands which have competing uses. In recognition that big-game numbers cannot continue to increase indefinitely, the States have established elk and deer population objective levels by game management unit. At present most units on the Wallowa-Whitman have reached these target levels. Big-game numbers on the Idaho portion of the HCNRA are below recent historical levels and State management objectives.

Unlike such Forest outputs as timber, domestic livestock grazing, and water, the relationship between the available quantity of big game and its use is not direct. In the case of big game, the benefit is in the recreation provided. Deer and elk support a high level of recreational activity since hunters (especially elk hunters) tend to tolerate a low rate of success.

The eating habits of elk are much closer to those of domestic livestock than are those of deer. It is recognized that there is a level of competition for forage between elk and domestic livestock where dual use by these animals occurs. However, the actual amount or level of competition is highly variable between areas and seasons of the year and is not well understood.

Deer and elk which summer on the Forest also impact area ranchers, especially where the ranches lie within the natural winter range of the game animals. This problem has been lessened by State feeding programs.

The Regional Guide provides RPA targets for wildlife habitat improvement. These targets are shown in Table 2-6.

Table 2-6  
WILDLIFE HABITAT IMPROVEMENT  
(Acres)

	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
RPA Levels *	2,183	1,859	1,498	938	920

\*Regional Guide, Table 3-24, adjusted to reflect acres rather than acre equivalents

### Management Indicator Species

The NFMA Regulations require that "...fish and wildlife habitat be managed to maintain viable populations of existing species in the planning area." To insure this, the regulations direct that (1) "Habitat must be provided to support, at least, a minimum number of reproductive individuals," and (2) "Habitat must be well-distributed so that those individuals can interact with others in the planning area." The key concepts in these two items are adequate numbers of reproductive individuals, and assurance that these numbers will continue to exist through interaction of individuals within the population.

To assure that these viable populations are maintained, the Pacific Northwest Region of the Forest Service has identified management requirements (MR's) for a number of wildlife species within the Region. These species are emphasized either because they are threatened or endangered (such as the bald eagle or American peregrine falcon) or because their populations can be used as an indicator of the health of a specific type of habitat. For example, the pileated woodpecker is highly dependent on snag habitat. If good habitat is provided for pileated woodpeckers and their population is maintained at some desired level, it is assumed that adequate habitat is also being provided for other snag-dependent species. Species used to indicate the suitability of specific types of habitat are called management indicator species.

The management indicator species on the Wallowa-Whitman are the Rocky Mountain elk (a species commonly hunted and also an indicator for mule deer habitat); the pileated woodpecker, goshawk, pine marten, and primary cavity excavators (indicators of snag habitat and old-growth forest stands) and steelhead and resident trout (indicators of riparian and aquatic habitats). The rationale for selection of these indicator species is discussed in Appendix G of the Environmental Impact Statement.

### Fish

Chinook salmon and steelhead trout comprise the great bulk of the anadromous species spawned on the Forest. Anadromous fish from spawning grounds on the Wallowa-Whitman play a role not only as commercial and sport fish, but also in the culture of the Indian tribes who retain certain fishing rights to them by treaty.

Prior to the 1950's, the spawning streams of the Wallowa-Whitman played a significant role in the salmon and steelhead anadromous fisheries of the Columbia River System. However, beginning with Bonneville Dam in the mid-30's, a total of 11 dams have been constructed on the Columbia and the Lower Snake Rivers which have either totally blocked anadromous fish runs or have significantly contributed to their decline. Presently, the Imnaha and the Grande Ronde drainages are the highest upstream spawning streams on the Snake River in Oregon. Combined, they provide about 640 miles of spawning and rearing habitat for salmon and steelhead. Fish from these two streams must pass eight dams on the Lower Snake and the Columbia Rivers in their round trip to and from the ocean. An additional 45 miles of spawning and rearing habitat exist on the upper North Fork John Day River on the Wallowa-Whitman. Fish from these streams pass three Columbia River dams.

Juvenile fish (smolt) suffer heavy losses during downstream passage over or through these dams. The estimated survival rate for smolt making their way to the ocean in recent years is 0.2 to 0.7% on the Imnaha and the Grande Ronde, 2.5 to 4.0% on the North Fork John Day.

If this low rate of spawning escapement to the ocean were allowed to continue, the fish runs would soon disappear, particularly on the Imnaha and the Grande Ronde Systems. It is estimated that steelhead and salmon production from the National Forest streams could increase from about 73,000 pounds to about 1,380,000 pounds if full escapement were effected.

State, Federal and tribal agencies are presently investing millions of dollars in projects to provide better escapement. The Bonneville Power Administration is providing much of the funding. Additional facilities and improvements are in various stages of planning and construction to increase anadromous fish runs. Projects such as barge transportation of smolt, improving passage facilities of dams, and increasing river flows during out-migration are all designed to increase escapement. These efforts have begun to show results with much higher spawning redd counts inventoried during the 1985 spawning season. Fishery biologists are optimistic that anadromous fish runs in the Columbia and Snake Rivers can be restored to near the 1950 level.

In addition to production increases resulting from escapement of migratory fish past the dams, it is estimated that 221,000 pounds of steelhead and salmon can be produced from Forest streams through habitat enhancement work. This is well above the final RPA goal of 144,000 pounds. Fish habitat improvement often involves increasing vegetation along streams. This often benefits other wildlife as well as fish.

### Range

The Forest provides a diverse setting for range resources. Most of the Forest supports herbaceous or shrubby vegetation that provides forage and habitat for wildlife, protection for soils, water production and a visually pleasing diversity. Range vegetation on the Forest varies from riparian meadow bottoms to grass and shrubs under conifer overstories, grasslands and high alpine lands characterized by harsh conditions and short growing seasons.

Of the 2.3 million acres of the Forest, approximately 1.3 million are classified as suitable for livestock grazing under controlled management conditions that will maintain or improve the range resource. Many of the Forest resources were severely damaged by uncontrolled grazing early in the century. The effects of the historical problems are still evident in some areas today. In addition, current management is not always adequate to provide for rehabilitation of existing problem areas or to consistently prevent the occurrence of new problems.

Many of the conflicts associated with the range resource occur in the riparian areas where cattle have traditionally concentrated. Much work has been done to reduce the impact to acceptable levels but much remains to be done. Allotment management planning emphasizes riparian values, where they exist, as the top priority for management improvement.

Although complete information does not exist, preliminary information indicates that few riparian areas of the Forest are in good condition.

The Forest annually provides 186,000 animal unit months (AUM's) of livestock grazing use. However, all of this capacity is seldom used, either at the choice of the permittees or because of the need to defer grazing to protect new grass seedlings or other temporary restriction. In 1988 grazing use amounted to 150,000 AUM's by 21,700 cattle and 5,600 sheep. For this use grazing permittees paid over \$161,000 at a rate of \$1.54 per AUM. In 1989 the rate increased to \$1.89 per AUM.

There is a desire on the part of the local livestock industry to maintain and increase National Forest grazing. This coincides with RPA projections of increases in our National population and in our total demand for beef. Complicating the matter are concerns about streamside damage to soil, vegetation and water quality from livestock grazing, and the cost of improvements needed to alleviate such concerns.

Particular problems occur in the steep canyon areas where cattle tend to concentrate along stream bottoms, overutilizing the forage and damaging other riparian vegetation. This situation has improved in recent years as Forest Service managers and permittees have worked together to find ways to

alleviate it. However, problem areas persist and some 29 allotments are recognized as having need for improvement measures or grazing adjustments.

Hells Canyon presents particular problems in that the rugged terrain, suitable only for sheep grazing, has proven to be unprofitable for several operators in recent years. Future use apparently depends on an upturn in market conditions.

Noxious weeds are a continuing problem on the Forest and on adjacent lands. Control of these pests requires close cooperation between the Forest Service, county governments and private landowners.

### Timber

About 1.09 million acres (46 percent of the Forest) are classified as suitable forest land. This is land at least 10 percent forested which is available for timber management activities and which can be managed with existing technology. See Table 2-7 for a summary of the forest land use classification and a comparison with the previous land classification. (For additional discussion see EIS Appendix E.)

The great majority of the Forest's receipts accrue from timber sales. Local governments rely on their returned share of these Forest receipts for a large part of their budgets for roads and schools. Roughly one-half of the timber processed locally comes from the Wallowa-Whitman National Forest, making the Forest responsible for many jobs in the local communities.

Personal use of fuelwood is reducing a backlog of dead and down material left from timber sales and the mountain pine beetle epidemic. It appears that by the end of the century, fuelwood will mainly be available from thinning live trees in overstocked stands and from logging residue.

Based on aerial survey data, the mountain pine beetle and Douglas-fir tussock moth killed in excess of 66 million board feet annually in the 1970's. They have now returned to endemic levels but the western spruce budworm, larch casebearer and spruce bark beetles are causing serious losses. The mountain pine beetle outbreak on the west side of the Forest has collapsed because most of the susceptible host has been killed. Salvage of the dead and the dying pine timber is continuing in accessible areas under a multi-year rehabilitation program for the outbreak area.

The Forest's annual programmed timber harvest is based on the 1962 Timber Management Plan as amended. The Timber Management Plan estimates the potential yield from the Forest to be 183 MMBF/yr. Actual timber offerings during the 1979-83 base period averaged 159 MMBF. A significant outcome of the analysis of timber production potential was the realization that recent timber harvest levels under this timber plan were higher than the nondeclining flow level, given land management direction from the unit plans. This was caused by a variety of factors. The more significant of these were: (1) the failure of the timber management plan to fully\* recognize unit plan direction, (2) accelerated harvest of lodgepole pine in addition to the evenflow of other species, (3) losses due to insect epidemics, and (4) a more precise (though reduced) estimate of standing timber volume.

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\*Amendment No. 7 to the Timber Management Plan accounted for some of the Unit Plan direction by eliminating from the timber base certain dispersed recreation lands—lands from which timber harvest can occur for other resource improvement purposes or to salvage catastrophic losses. These lands are not, therefore, within the regulated timber harvest base. Not accounted for by Amendment No. 7 were the reductions in yields due to provisions for wildlife and other resources which may reduce potential timber yield by as much as 10 percent or more on some lands.

Table 2-7  
 LAND USE CLASSIFICATION - COMPARISON OF 1962 TIMBER MANAGEMENT PLAN  
 TO FOREST PLAN

Land Category 1/	Forest Plan Total Acres	Forest Plan Idaho Acres	Forest Plan Oregon Acres	1962 TM Plan Acres	Difference Between Forest Plan and 1962 TM Plan 2/
<b>Net National Forest Land</b>	2,349,215	142,534	2,206,681	2,206,681	
Water	5,386	631	4,755		
Existing Roads	10,686	102	10,584		
Other Non-forest Land	921,218	90,038	831,180		
Non-forest Land	937,290	90,771	846,519	474,681	+ 371,838
<b>Total Forested Land</b>	1,411,925	51,763	1,360,162	1,732,000	- 371,838
Not Capable (Not Productive 3/)				206,300	
Capable but not Available (Reserved)	231,623	34,388	197,235	178,174	+ 19,061
Available and Capable (Commercial Forest Land)	1,180,302	17,375	1,162,927	1,347,526	- 184,599
Technologically Not Suited	90,230	386	89,844		
Available, Capable, and Tentatively Suitable	1,090,072	16,989	1,073,083	1,347,526	- 274,443

1/ Current terminology, with terminology of previous plans in parentheses.

2/ Differences noted are between the 1962 TM Plan (9th Amendment) and the Oregon portion of the proposed plan

3/ Term not used in current planning efforts.

It was intended that upon completion of land management (unit) plans, a new timber management plan would be prepared which would calculate the Forest's allowable harvest levels based on the management direction provided in the unit plans. Due to NFMA direction to undertake a new round of planning a timber management plan based on the unit plans was never completed. Therefore, although the Forest has been managed according to direction in the unit plans, the allowable harvest has not reflected all of the direction from those plans.

The maximum implementable level of timber harvest, under a nondeclining flow schedule is shown in Table 2-8 along with RPA targets as identified in the Regional Guide. These figures are taken from Alternative B of the EIS and are not achievable under this plan which is based on Alternative C.

The current RPA timber target is based on data from the 1962 Timber Management Plan, as amended. Therefore it does not accurately reflect the current land base, the current inventory or present timber yield tables. The timber outputs displayed in Table 2-8 include significant amounts of salvage (principally lodgepole pine) and cull material added to the base harvest schedule for green volume.

Table 2-8  
RPA TIMBER TARGETS AND POTENTIAL TIMBER OUTPUTS UNDER NONDECLINING FLOW\*  
(Million Cubic Feet)

	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Sawtimber	39.1	39.1	39.1	39.1	39.1
Roundwood	8.8	7.4	5.8	5.8	5.8
Charge Personal-Use Fuelwood	5.0	5.0	5.0	5.0	5.0
Total	52.9	51.5	49.9	49.9	49.9
RPA Target	41	41	41	41	41

\*Cubic feet rather than board feet are shown here and elsewhere in the plan because the Scribner board foot rule is outmoded in view of the increasing component of smaller trees and better utilization of today's forest. Scribner was developed to estimate the sawn products which could be derived from the large trees comprising northwest forests early in the century.

The Scribner rule, one of the many used in the United States, is a diagram rule. That is, it was formulated by portraying dimension lumber which could be retrieved from the cylinder of the tree but ignored the wood fiber in the taper of the tree that would not make a board. This worked well for large trees when lumber was the primary product sought. However, Scribner becomes less accurate as the average tree size comprising the managed forest is reduced and as utilization of the tree is increased through more efficient milling and a wider range of products. We expect that within 10 years board foot measure will seldom be used.

Cubic measure more accurately estimates the total wood fiber volume of the tree to established utilization standards. All forest volume measurements are estimates because the shape and taper of trees vary.

## Water

The production of water volume is rarely in conflict with other resource uses. Water quality, however, may be affected by other activities and the supply of water during some time periods may fall short of demand. Either of these two occurrences may result in controversy and conflict between users

During the public participation process, substantial comment was received pertaining to water and watershed management. In most instances respondents were concerned about maintenance or improvement of water quality. Other potential issues which surfaced related to maintenance of streamflows and runoff timing, dam construction, the use of herbicides, and the development of hydropower.

Management concerns emphasized erosion control and the effects of recreational and livestock use on domestic water quality. Other concerns included flood occurrence, water storage and transportation facilities, fuels and fire management, and mining.

The major users of surface water in the planning area are agriculture, industry, municipal supply, and other domestic use. Agriculture is by far the largest user of water with use increasing as more lands come under irrigation. Fish, both resident and anadromous, depend on water quality and quantity.

The cities of Baker and La Grande have Memoranda of Agreement with the Secretary of Agriculture establishing municipal supply watersheds. The Baker City Watershed includes 8,763 acres of National Forest land, providing water for a population near 10,000. The La Grande Municipal Watershed includes 15,500 acres of National Forest land supplying a population of over 11,000.

Both cities experienced water shortages in recent years and now rely on wells to supplement stream flows. Opportunities exist for increased supply if facilities are improved, increased storage is provided, or additional sources are tapped.

Several other communities rely on the Forest for municipal water. Sumpter obtains its water from the McCully Fork of the Powder River, Granite from a spring located on National Forest land, and Union utilizes water from Catherine Creek. In addition, Wallowa and Joseph receive all or part of their domestic water supplies from streams originating on National Forest land.

The City of Halfway possesses a special use permit for use of Leep Springs as a domestic source, although it currently is not using this supply.

The National Forest has 1,462 identified water uses on its most recent water uses inventory. There are 27 Forest Service campgrounds and two picnic areas with piped-in water. Two uses for irrigation (pastures) have been identified. The remaining 1,431 uses are associated with stock watering. The Forest is presently reviewing these uses to determine those which require water rights.

Total water rights exceed total annual runoff on a number of streams across the Forest. Nearly all streams are seasonally overappropriated. The State, which regulates water use, allocates water on a first-come basis with the oldest water rights taking priority over more recent rights.

The Forest has the opportunity to increase the quality of water flowing from National Forest land. The opportunity exists to improve or correct many of the water quality problems caused by ungulate damage in riparian areas, local stream bottom roads, and other areas of reduced watershed condition. There are some water quality problems, such as sediment from poorly located roads, or stream temperature increases due to depleted flows which, while they may be improved, cannot realistically be eliminated in the foreseeable future.

## Minerals

The Forest is in the heart of what has been historically the most productive gold/silver region within the State of Oregon. Both lode and placer mines have had sizable production in the past and many are presently being reactivated. In 1942 War Production Board Order L-208 closed all precious metals mines. Increased operating costs and a fixed gold price precluded the reopening of all but a few mines after World War II. Only with the increase in gold and silver prices has the area re-emerged as a focus of mining interest. Currently thousands of lode and placer mining claims exist in the mineral belt of northeastern Oregon and western Idaho. Past and present mineral activity is concentrated in older, pre-Tertiary rocks, usually within and around the margins of intrusives.\*

While the timber industry and agriculture comprise the great bulk of the area's basic industry, the considerable undeveloped mineral resource of the region provides a significant potential employment opportunity.

Numerous mining companies are exploring and developing properties in the Forest vicinity. High precious metals prices plus improved mining and metallurgical techniques make many of the old deposits attractive. In addition, exploration in recent years has also been directed toward large-tonnage, low-grade copper-molybdenum deposits. At least two such deposits are currently being explored within the Forest boundaries. Figure 2-2 is a map outlining Forest areas in which nonenergy minerals are found. (For a description of the numbered mineral areas, see Appendix J of the EIS.)

A continuing concern of Forest managers is mining law compliance. Under existing law the holder of a valid claim may erect structures necessary to work the claim. There have been instances of structures being built, perhaps unknowingly, on invalid claims and later being used solely for purposes unrelated to mining. Abuses of this sort on the Forest have been reduced in recent years. Effort is still underway to correct them.

Forest managers must also be sure that mining does not substantially degrade long-term water quality during operation and that rehabilitation is achieved.

The Forest has not historically been considered favorable for oil and gas exploration. Only recently has there been interest shown in obtaining leases in the vicinity.

Although a few hot springs are known to occur in and near the Forest, there does not presently appear to be a high potential for geothermal resource development. There currently are no geothermal leases or lease applications for lands within the Forest boundaries.

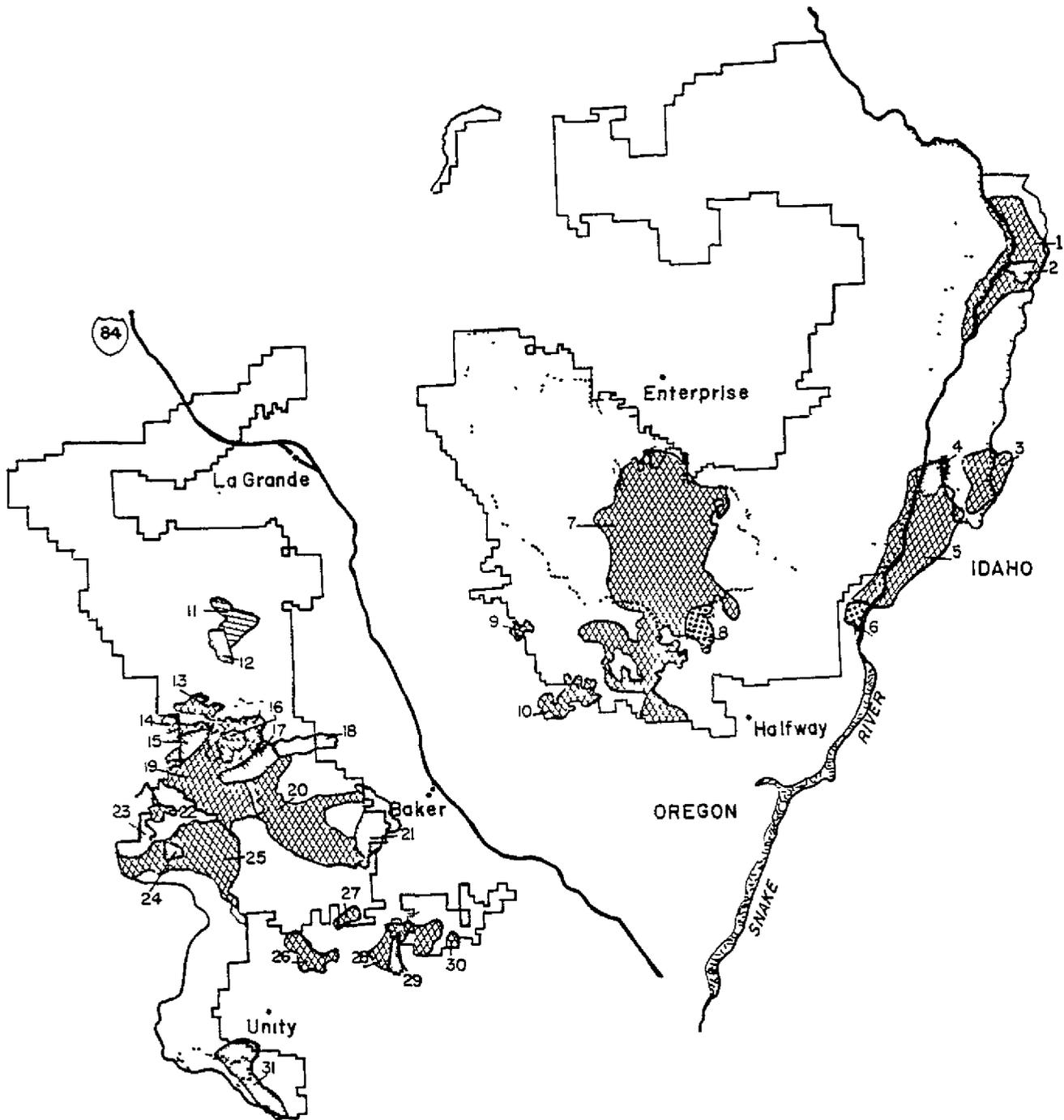
A new, possibly extensive, coal field lies near the communities of Flora and Paradise in northern Wallowa County. Lignite seams occur between basalt flows. Most of the coal-bearing layers have been found outside National Forest boundaries. A program of exploratory drilling, sampling, analysis and geologic mapping is necessary before any assessment can be made as to the feasibility of extracting the coal. Given a marketable deposit, environmental concerns of aquifer disruption and loss of topsoil productivity would then be addressed.

Sand, gravel, crushed rock, building stone and limestone occur within the Forest boundaries. These are all low-unit-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 region has a history of producing large amounts of cement.

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\*See glossary

**FIGURE 2-1  
NONENERGY MINERAL AREAS**



**NONENERGY MINERAL AREAS**

-  CATEGORY I
-  CATEGORY II
-  CATEGORY III
-  CATEGORY IV
-  WILDERNESS BNDY.

## Old-Growth Forest

During the past ten years there has been a growing interest in old-growth forest, apparently brought about by an awareness that unaltered old-growth stands are diminishing. The reason most often given for retaining old-growth forest is to meet wildlife needs but the desire apparently goes beyond this. On the Wallowa-Whitman National Forest there are no wildlife species that have been identified as requiring solely old-growth forest, although some species require conditions that are best represented in old-growth stands. People also want old-growth for the recreational enjoyment it provides, for aesthetic and other qualities such as the size and age of its trees. Those opposed to the retention of old-growth conditions cite their concern for the loss of wood production and would prefer that land be converted to rapidly growing timber stands. These conflicting desires are the basis of the old-growth issue. (For further discussion of the issue, see the Regional Guide or Forest Plan EIS.)

Because the term "old-growth" means different things to different people, any definition is subject to criticism. Old-growth definitions for forest types found on the Wallowa-Whitman are shown in the description of Management Area 15, Section 4 of this document.

At present there are some 173,000 acres on the Wallowa-Whitman that meet the definition of old-growth. These acres are generally well distributed over the Forest. Included are some 67,000 acres in classified wilderness.

Under present land management direction from the Burnt Powder, Grande Ronde and Wallowa Valley Unit Plans, there are 131 specifically defined areas varying in size from 100 to 3,000 acres that are to be managed for old-growth forest. This land management allocation totals 76,000 acres. Approximately 28,000 acres currently meet the definition of old growth. In addition, a minimum of ten percent of lands in the Dispersed Recreation/Timber Management allocation in the Hells Canyon National Recreation Area are to be managed as old-growth and all the forest in the Forage Management allocation, also within the NRA, is to be managed as old growth. Within Land Management Strategies 6 and 19 of the Desolation Planning Unit, sufficient old-growth is to be retained to ensure viable populations of wildlife species. In certain other land allocations timber cutting is not permitted or is permitted at a very low rate. Therefore old-growth conditions persist in those areas which include the Dispersed Recreation/Native Vegetation and Forage allocations in the Hells Canyon NRA, the Dispersed Recreation Emphasis (Strategy 5) areas and the Special Management Units in Upper Five Points Creek and on Castle Ridge.

There are still relatively large acreages of old-growth forest available, but options for resolving the issue of how much should be retained are dwindling.

## Soils

No individual public issues relating to soils were developed during the planning process. However, soils management was a facet of a number of issues including transportation system management, timber production, minerals, livestock production, and water.

Management concerns center around maintaining soil productivity. Activities which can affect soil productivity include timber harvesting, site preparation for reforestation, fuels treatment, road construction, grazing by domestic livestock and wildlife, some forms of recreational use, and fire. Since soil is a nonrenewable resource, its loss is irretrievable.

Forest soils reflect wide variations in climate, topography, parent materials, vegetation, and the length of time soils have been developing. Since most of the soils have developed from volcanic ash, fine to medium textured soils dominate the Forest.

Subsoils which developed from volcanic rock, sediments and metasedimentary materials have very fine to fine textures. Acreages of coarse textured soils, derived from granodiorite, are found in the central Wallowa Mountains, along the Elkhorn Ridge, and in the Seven Devils Mountains in Idaho. The southern portion of the Forest includes fine textured soils derived from pyroclastic rocks. Numerous localized inclusions and variations in geology and soil type occur across the Forest.

Volcanic ash, deposited as a result of volcanic eruptions on Mount Mazama and Glacier Peak more than 6000 years ago, still influences soils of the Forest. This ash, which is capable of absorbing and holding large quantities of water, has contributed positively to the productivity of most sites where it is found.

Management of the soil resource as a part of overall Forest management is in a state of rapid change. Traditionally, soil management efforts have concentrated on reducing soil losses due to erosion. Strides have been made in controlling losses following timber harvest activities and in reducing erosion from rangelands; however, areas with accelerated erosion persist. Research now indicates that changes in soil structure, particularly those associated with soil compaction, can have long-term effects on productivity even though soil loss from the site may not occur. Recent efforts on the Forest have been directed toward reducing and mitigating damage to soil structure through improved timber harvest techniques. In some instances this has included ripping previously damaged soils.

In addition to areas compacted by tractor activity, some areas of the Forest suffer from reduced watershed condition. These are primarily areas of accelerated surface or streambank erosion in need of erosion control or streambank stabilization, many resulting from past timber harvest, road construction and grazing activities.

Timber management requires the existence of roads, skid trails, landings, and other facilities which either reduce site productivity or remove land from the productive base. These same activities expose soils to erosive forces and increase the probability of mass soil movement. Through the direction in the Forest Plan and Forest Service Manual, the extent and severity of these impacts will be limited and guidelines are provided for mitigating problems which already exist.

The Regional Guide provides a target of 1,000 acres of soil and water resource improvement annually through 1990 tapering to 600 acres annually by 2030. Since watershed improvement is primarily dependent upon funding and manpower, these levels of accomplishment are feasible. These activities may include erosion control through grass seeding or other means, stabilization of stream banks through the use of structures or establishment of vegetation; obliteration and rehabilitation of unneeded roads or wheel tracks, and mitigation of compacted soils.

Several other management concerns have been expressed although the degree and extent of their impact are unknown. Soil compaction due to grazing by ungulates has been measured in the upper soil layers in numerous areas across the Forest. It is not known how much effect this compaction has on forage production, how long this compaction would last if ungulate traffic were removed, or what the effects are on hydrology, timber production, or wildlife. Concern has also surfaced over the effects of management on soil wettability, soil chemistry, and soil nutrient levels. The answers to these questions must be developed through research.

### **Threatened, Endangered, and Sensitive Species**

The Endangered Species Act of 1973 (P. L. 93-205), as amended, declared that Federal agencies shall seek to conserve endangered and threatened species of plants and animals. In order to meet the intent of this direction the Forest Service has established objectives and policies for inventorying the species, determining habitat or environmental needs, and protecting critical habitat and/or conditions necessary to preserve the plants or animals. Section 5 of the Endangered Species Act directs the Secretary of Agriculture to establish and implement a program to conserve fish, wildlife,

and plants, including federally listed species (FSM 2670.1) included is direction to protect certain sensitive species to ensure that they do not become threatened or endangered. The U. S. Fish and Wildlife Service, USDI, has primary responsibility for administering the Endangered Species Act. When the Forest Service proposes an activity that may affect a species listed or proposed for listing as threatened or endangered, the Fish and Wildlife Service is consulted.

The threatened, endangered, and sensitive species on the Wallowa-Whitman are listed in the EIS.

### **Land Adjustments and Special Uses**

Because of the pattern of land ownership within and around the National Forest, there is a constant need for adjustment to improve National Forest administration as well as for the effectiveness of private land management. Most land adjustment occurs through land exchange. At present, the Forest Service is responding to proposals from adjacent landowners and many acres have been exchanged in recent years as a result of these contacts. This has resulted in consolidating ownership of many lands, to the benefit of both parties.

Although rights of way on most major travel routes have been acquired, there is a continuing program for the purchase of road and trail rights-of-way in order to insure public access to National Forest land.

It is in the public interest to occasionally purchase private lands. The need for such purchases in future years will depend largely on the success of local counties in administering their land use regulations within the Hells Canyon National Recreation Area. Where it proves futile to gain landowner compliance with regulations, purchase of the lands by the federal government may be the only recourse. Consolidation of ownership through land exchange will be the primary direction for land adjustment.

The Forest is working with public agencies and private parties to achieve a more efficient pattern of land ownership. The Land Adjustment Plan (Appendix D) serves as a basis for land adjustment.

In addition to providing natural resources and recreation, the National Forest also provides lands for a wide variety of special uses for private and public agencies. Such uses are authorized by special use provisions, mining laws and withdrawal authority of other agencies. By far the most common are those permitted by special use provisions and covered by special use permit. Table 2-9 displays the special uses permitted on the Forest.

These permits are periodically inspected to insure compliance with conditions of use and to evaluate the appropriateness of continuing such use. Permittees pay for the right to use National Forest lands for these purposes. Of these receipts, 25 percent is ultimately returned to the local governments.

Table 2-9  
SUMMARY OF SPECIAL USES - 1985

Uses	Total Cases	Total Miles of Right-of-way	Total Acres Permitted Area
Boat dock & wharf	1	.0	.1
Organization camp	1	.0	2.0
Cabin (recreation)	7	.0	14.1
Recreation residence	43	0	20.2
Resort	3	.0	65.2
Camp & picnic	2	.0	179.0
Target range	2	.0	39.9
Tramway	1	.0	7.0
Outfitting & guiding	63	.0	.0
Winter sports resort	1	0	22.5
Ski slope, trail	1	20.1	243.3
Cultivation, hay production	3	0	25.7
Pasture	27	0	4,098.2
Non-recreation residence	2	0	24.0
Range facility	4	.0	40.1
Cemetery	1	.0	1.6
Solid waste disposal area	1	0	4
Community residence	3	0	3.6
Service building	1	0	.1
Camp (industrial)	1	.0	.2
Fish hatchery	1	.0	.4
Warehouse, storage yard	16	.0	18.2
Weighing station	1	.0	.2
Experimental, demonstration	1	0	.1
Education center	1	0	15.0
Airport, beacon	2	1.0	1.4
Class D road permit	13	13.6	14.9
Class E road permit	5	4.4	16.1
Powerline	20	80.3	547.9
Powerplant	1	0	1.4
Buried powerline	1	1.9	3.2
Antenna system (receiving)	2	1.6	.8
Electronic site	33	.0	10.8
Telephone, telegraph	7	39.4	145.0
Telephone buried cable	4	145.2	57.8
Water transmission	55	233.3	263.5
Dam, reservoir	16	.0	463.6
Water diversion, weir	6	.2	3.5
Well spring, windmill	15	1.0	4.9
Stock water	1	.0	7
System, supply	4	3	.9

## Research

The Starkey Experimental Forest and Range occupies 27,051 acres of the Forest, 20 miles west of the city of La Grande. This area is devoted primarily to range and wildlife research purposes and is administered by the Project Leader of the Forest Service Range and Wildlife Laboratory in La Grande. Scientists working at this laboratory are the primary users of the area for research purposes. Research has first priority on the experimental forest. When other uses, such as the occasional sale of timber, do not conflict with research, they are carried out in coordination with the Forest Supervisor and the La Grande District Ranger.

There is a recognized need to establish tracts of undisturbed land for scientific and educational purposes on National Forest as well as other lands. Such areas, when maintained in an undisturbed state, serve as a baseline for comparison with areas influenced by management. At present, there are four Federal Research Natural Areas (RNA's) established within the Blue Mountain Province which includes the Ochoco, Umatilla, Malheur and Wallowa-Whitman National Forests. There is one on the Wallowa-Whitman, the 990-acre Indian Creek area, about five miles east of the town of Cove in Union County. There is a need for at least 18 more for minimal representation of the identified ecological cells within the province. The potential appears to be primarily on National Forest land. The most suitable sites for 12 of the areas appear to be on the Wallowa-Whitman.

## Human Resource Program

The history of this effort on the Forest is a long one, dating back to the days of the Civilian Conservation Corps during the Great Depression. That effort ended with World War II and there was no further involvement on the part of the Forest until the 1960's when various programs were instituted.

Today the Forest numbers in its Human Resource Program (HRP) the Senior Community Services Employment Program (SCSEP), the Youth Conservation Corp (YCC), volunteer and hosted programs. In various ways these programs attempt to focus the resources of the individual on Forest activities to the benefit of both the Forest and the individual. Recent Forest involvement is summarized in Table 2-10.

Table 2-10  
HUMAN RESOURCE PROGRAM ENROLLEE POSITIONS

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
SCSEP	7	12	15	16	15	18	18	18	19	20	20	17
YCC	48	84	32	25	10	24	20	15	21	25	21	18
YACC	-	60	44	39	23*	-	-	-	-	-	-	-
VOLUNTEERS									87	96	167	102
HOSTED								43	37	34	27	14

\* Last year of program

From 1977 through 1981 the Forest operated from one to three YCC camps per year. Some were residential and others were nonresidential. Camps were located at various locations throughout the Forest and in local towns.

Human resource programs fluctuate with the political-economic climate. During periods of high unemployment or the presence of an administration supportive of the programs' philosophy, funding for human resource programs often increases. Since the Forest can provide work in both urban and rural areas, agencies responsible for administering these programs look to the Forest to host them. The only influence the Forest has in securing these programs is that which results from its past performance on similar activities. Ultimately its participation is determined by other government agencies.

Because funding levels change so dramatically, long-term human resource program planning is difficult. Appropriated funds are often used to support human resource programs for such costs as travel, living expenses, tools and equipment. Any time a program is not continuous, management must take time to learn or re-learn the administrative processes and gain proficiency in their exercise. Short lead times resulting from the political nature of these programs make the situation more difficult both for starting up the programs and phasing them out. Recruiting and retaining highly qualified work supervisors for uncertain programs is difficult. Effective management is critical because enrollees come from varied cultural backgrounds and require sensitivity on the part of their managers.

There exists on the Forest a cadre of personnel familiar with these types of programs by virtue of their experience. The Forest thus does have the basic ability to accommodate the needs of these programs as they arise.

### **Energy Management and Utility Corridors**

The Forest's main contribution to date has come in the use of land for hydropower generation facilities. Use of dead timber for home heating is important in the Forest vicinity, displacing sizable amounts of more commonly used fuels.

Local wood products firms use wood residue as a source of heat to generate electricity for plant operations. Efforts are underway to use the large amount of cull wood material resulting from the mountain pine beetle infestation to generate electrical power. Twelve hydropower withdrawals exist on the Forest, totally about 60,000 acres.

Techniques currently being developed include low head and run-of-stream hydroelectric projects. The Forest has numerous reservoirs and ditches that could generate power with minor modifications. One of the main advantages of this type of project is that the water can be utilized for power generation without significantly affecting other uses such as irrigation and recreation. A discussion of the Forest's potential for geothermal, gas, oil and coal resources is contained in the Minerals section hereof.

The Forest plays an important role in energy transmission by providing rights-of-way for power transmission lines. A group of major facilities crosses the Forest between Pendleton and La Grande. Included are an interstate highway, a railway, a major electric transmission line, a petroleum products pipeline and two large natural gas pipelines. An additional electric transmission line is proposed. Additional power facilities cross at various points, making over 80 miles of power transmission rights-of-way on the Forest.

## Air Quality

Forest management activities, particularly timber slash burning, can contribute significantly to short-term air quality problems. Adverse effects, however, can often be adjusted by avoiding periods of poor smoke dispersal

The Forest lies in the Eastern Oregon Intrastate Air Quality Region, the Idaho Intrastate Air Quality Region (No. 62) and the Eastern Washington-Northern Idaho Interstate Air Quality Region No. 63). In accordance with the Clean Air Act (P.L. 88-206) as amended, these regions are classified according to the amount of air degradation that could be permitted. The Eastern Oregon Air Quality Region has been classified Priority 2 (moderate degradation permitted) for suspended particulates and Priority 3 (fairly heavy degradation permitted) for other pollutants. The two Idaho regions are classed as Priority 1 (virtually no degradation permitted) for particulates. However, Region 62 is classed Priority 1 for pollutants whereas Region 63 is classed as Priority 3. A further complication is the fact that the *Eagle Cap and Hells Canyon Wilderness areas have each been classified as Priority 1 for both measures, regardless of the air quality region in which they lie.*

Despite the complex jurisdictions within which the Forest lies, it is unlikely that air quality will become an issue in the near future as long as laws controlling industrial activities outside the Forest are enforced.

For more discussion on this subject as it relates to the Wallowa-Whitman National Forest, see Air Quality, Hells Canyon National Recreation Area USDA, Forest Service, 1980, the Regional Guide, and the accompanying Forest Plan EIS

## Fire and Fuels Management

*The changes caused by humans have had a significant influence on the role of fire. Fire exclusion policies since the turn of the century have resulted in changes in vegetation which have, in turn, caused an increase in fire-susceptible species in areas of high fire occurrence. The general timber stand conditions are changing from seral to climax (True firs are increasing while ponderosa pine and western larch are decreasing). As the stands move toward climax conditions more ground and ladder fuels exist, increasing the probability of high intensity fires. True fir and mixed conifer stands will generally be killed or damaged even by low intensity fires. Timber management activities may add dry fuel accumulations to these stands, increasing the risk that they cannot be managed to maturity. Treatment of these accumulations reduces the hazard.*

More than 70 percent of the wildfires that occurred from 1970 to 1983 were started by lightning. Management activities will not have a major impact on reducing these ignitions, although we can affect the fuel conditions in which they burn. Lightning fires typically occur from mid-June through mid-August, normally burning at low intensities except for exceptionally dry years when extreme burning conditions occur.

A major management concern is whether treatment of precommercial thinning slash is advisable in previously unmanaged stands, given the tree size, high fuel treatment costs and a species composition shift to less fire-tolerant species. Besides the option of treating the slash, management must also consider the possibilities of eliminating precommercial thinning altogether, or living with the increased hazard for five to ten years. Precommercial thinning at smaller tree sizes may help mitigate this hazard.

Fire management area plans have been approved for the Eagle Cap and Hells Canyon Wildernesses which allow ignitions from lightning to burn as prescribed fires. An approved plan for the Elkhorn Fire Management Area permits lightning fires to burn as prescribed fire within the Baldy Creek portion of the North Fork John Day Wilderness. In other parts of the Elkhorn Fire Management Area (essentially

the remainder of the Elkhorn Mountains) planned ignitions as well as lightning-caused fires may be allowed to burn as prescribed fires in order to achieve resource objectives

The addition of 142,500 acres of Idaho lands to the HCNRA under Wallowa-Whitman administration has resulted in a proportional increase in reportable fires that had been charged to the Nez Perce and Payette National Forests in years past

The La Grande Fire Center serves as a shared resource base for the Wallowa-Whitman, Malheur and Umatilla Forests as well as providing assistance to the Nez Perce and Payette Forests in Idaho. A retardant tanker, two interagency crews and a Regional fire cache are all based at La Grande; these forces are an integral part of the Wallowa-Whitman suppression forces.

Fuel reduction programs have increased, along with timber harvest and precommercial thinning over the past ten years. Prescribed burning offers excellent opportunities for fuel reduction on the Wallowa-Whitman, but it remains an unrealized potential. Prescribed burning increased from 800 acres in 1978 to 3,500 acres recently and has the potential for substantially larger acreages in the future. It is being used increasingly for the furtherance of natural regeneration following timber harvests, as well as for range and wildlife habitat improvement.

### Transportation

Transportation facilities for the Forest include 9,300 miles of road (7,000 miles of which are open for use) 1,750 miles of trail and five landing strips. In addition, the Snake River provides 68 miles of river that are a part of the transportation network. The transportation system is established and is likely, with certain construction and reconstruction projects, to be satisfactory for serving most future management scenarios. Exceptions are the relatively few undeveloped areas (not including wilderness) that will require additional roads if they are to be managed for timber production.

The present trail system primarily serves the four wilderness areas, unroaded areas in the Hells Canyon National Recreation Area and the Elkhorn Range. Whereas the trails once served many administrative purposes, there is now management concern that the trail system needs to be brought more in line with recreation needs. The Elkhorn Crest Trail (Trail No. 1611); the Snake River Trail (Trail No. 102), the High Wallowa Trail (Trail No. 1813), and the Nee Mee Poo Trail (Trail No. 1727) are National Recreation Trails. The Nee Mee Poo Trail (Trail No. 1727) is also a National Historic Trail.

Problems associated with the trail system frequently arise because the trail was poorly located -- resulting in problems with slides, washouts, and mud bogs. Such trails cannot be maintained effectively and are placed on the capital investment program on a Forest priority basis for construction or reconstruction. Setbacks also occur due to funding limitations which can ultimately turn maintenance work into reconstruction. Many trails on the Forest have no legal access to trailheads because the roads leading to the trailheads are on private land with no right-of-way.\*

Of all the various transportation facilities, roads usually have the most significant positive and negative impacts. Additional road construction in unroaded areas, and the number of miles of roads that are open to unrestricted public use, have been identified as issues to be dealt with in the Forest Plan. A brief history of the road system on the Wallowa-Whitman is helpful in understanding the current situation.

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\*See the Forest Trail Management Plan for more complete information.

Much of the National Forest was logged by railroad in the early part of the 20th century, but since the 1930's roads have become the primary method of accessing timberlands. Although some roads were built in connection with mining activities, timber harvesting was the reason behind construction of the large majority of the existing roads on the Forest. Most roads were built to remove timber, provide for other uses such as recreation and fire access, and to establish a basic system that could be used for future management activities.

By the end of the 1960's, most of the basic road system had been constructed into the Forest's timbered areas. The emphasis then began shifting from accessing new areas to reconstructing older roads to meet more stringent environmental concerns, to serve an increasing public recreation traffic; and to better meet the needs of different, and sometimes larger, logging equipment. By the mid-1970's, construction of new roads on the Forest was averaging 100 miles per year, but reconstruction was averaging about 200 miles per year. Most reconstruction was to improve roads which had been built 20-40 years before, and consisted of upgrading to higher standards for reasons of safety, reduced maintenance, reduced timber haul costs, and to a large extent to extend the logging season. Logging on the Wallowa-Whitman is limited to a short, dry summer period, plus a few areas where winter logging is feasible, but improved roads (particularly placing rock surfacing on the roads) can extend that season significantly. This extension of the logging season was considered to be beneficial to the local economy by allowing a longer period of employment.

As the 1970's drew to a close, the public and the Forest Service became increasingly concerned about the high cost of road construction and reconstruction activities. Standards were reanalyzed and new guidelines developed which were much more flexible than had been the case. The Forest Service land managers began to look much more closely at the benefits and the costs associated with roads, and written objectives were used to document the minimum criteria for which roads were to be designed. As a result of this increased cost-consciousness, both construction and reconstruction were reduced and brought in line with actual needs. The effects of these changes are shown in Table 2-11, where the cost of construction and reconstruction shows a significant drop in 1982 and 1983.

Haul and maintenance appraisal allowances have approximately doubled over the last ten-year period. There are many reasons for this. Haul costs have gone up because of increases in fuel costs and other vehicle-related costs. Maintenance costs have risen because of increased costs for oil used in dust abatement. There is also some slight increase in haul and maintenance costs due to decreases in reconstruction expenditures. As the condition of the road system deteriorates, more and more funds will need to be spent for road maintenance.

In addition to the costs associated with timber road construction, haul, and maintenance, the Forest Service incurs costs associated with maintaining the transportation system for public use and for administrative purposes. These maintenance costs average approximately \$900,000 per year for roads and \$150,000 per year for trails.

Reductions in the cost of road construction were not made without impact. Many of the decisions on limited road access were based on strict control of use, including public access, to allow roads to be built for single purposes only and to be closed to all uses during long periods between projects.

Table 2-11  
 TIMBER TRANSPORTATION COSTS REFLECTED IN LOWER STUMPAGE VALUES  
 (Figures Shown in 1982 Dollars)

	Haul and Road Maintenance 1/	Purchaser Credits for Road Construction and Reconstruction 2/
1983	\$7,162,900	\$2,720,800
1982	7,130,400	2,726,600
1981	9,447,700	5,913,300
1980	6,455,100	3,851,900
1979	8,572,600	6,465,600
1978	6,736,100	4,691,700
1977	7,515,900	2,546,300
1976	4,798,300	3,694,200
1975	5,927,200	6,186,500
1974	3,351,700	3,316,300
1973	5,592,500	4,627,200
1972	3,931,300	4,712,400
1979-1983 Average	7,753,700	4,335,600

1/ The costs of hauling timber and of maintaining Forest system roads over which the timber is hauled  
 2/ The cost of road work necessary to harvest the timber for which the timber purchaser pays (as a payment in kind) in partial payment for the timber.

Although placing restrictions on access is considered in a negative light by many users, there are others who favor such actions. Those recreationists who favor more solitude, less crowding, and more primitive conditions in the National Forests favor reduced access and lower standard roads. Wildlife managers are also faced with contradictory feelings regarding access. While roads allow better dispersal of hunters and easier harvesting of game, they can also reduce the quality of the habitat as the impact of users increases.

To deal with this problem, the Forest Service and the State of Oregon (Department of Fish and Wildlife) have been involved in cooperative efforts aimed at balancing the number of open and closed roads based on habitat and hunter needs. Many areas of the Forest have roads that are closed either seasonally or year-round in an effort to deal with this situation.

In an effort to provide some consistency across the Forest in dealing with road closures, the Wallowa-Whitman developed a general guideline in the late 1970's which was aimed at managing for an open road density of no more than 2.5 miles per square mile in roaded areas of the Forest. This guideline was intended to provide some balance between the needs of those wanting roads closed and those wanting more open roads (such as fuelwood cutters, berry pickers, hunters, and others).

Roads which are located too close to streams can also be contributors of stream sedimentation. Indications are that much of the sediment from forest lands that reaches stream channels originates on roads. Many miles of roads on the Wallowa-Whitman are located adjacent to streams, as these "water grades" were a natural location as access was spreading into the Forest. Many of these streamside roads have been closed during timber sales and other project work over the years, but many more still exist. Most of the roads served only short, local purposes (spur roads), and as such can be closed without much impact. However, several major roads also parallel streams, and the cost of closing these or constructing new roads in their place can be prohibitive. Therefore these major roads are usually left in place and their effects mitigated by using improved drainage and reducing surface erosion by paving or other methods.

The Forest recently completed an inventory of all roads that exist (including "wheel tracks") so that management decisions can be made on which roads should be retained as part of the permanent system and which can be closed off and returned to resource production. Table 2-12 shows the present condition class of the roads on the Forest

While Forest recreation users once favored more roads because of the access they provided to the Forest, some now see roads as degrading their recreation experience. Wood gathering, wildlife habitat, aesthetics and hunting are just some of the many Forest considerations affected by roads -- positively or negatively, depending on personal values

The Wallowa-Whitman National Forest Development Transportation Plan provides the basis for administering the road system. This plan consists of many individual documents ranging from basic data such as inventories and maps to more detailed information which document management decisions.

Table 2-12  
CURRENT TRANSPORTATION SYSTEM  
(Miles of Roads)

	Arterial	Collector	Local	Total
Primitive (wheel track)	9	90	2,651	2,750
Graded, Drained, Unsurfaced	180	830	4,110	5,120
Graded, Drained, Surfaced	178	593	525	1,296
Paved	118	11	9	138
Total on Forest	485	1,524	7,295	9,304
National Forest Roads Outside Forest Boundary	47	99	136	282

Included in the Forest Development Transportation Plan are road management objectives for each road on the Forest. These objectives are identified through project-level environmental analyses or other interdisciplinary, objective-setting processes. The objectives include road standards and maintenance needs and they determine whether a road will be closed or left open for the rest of the Forest Transportation Development Plan. Annual maintenance plans, road closure plans and long-range capital investment plans all stem from these road management objectives.

### **Cultural Resources**

The cultural resource program was developed as a result of public interest in protection of nonrenewable National heritage resources. In the Pacific Northwest Region the program is a formal effort to organize the stewardship of the extensive, nonurban cultural heritage resource base (Wildesen 1980:1). The management of cultural resources benefits the public by protecting and providing knowledge of past lifeways. Public participation in the form of visitor days has not been measured but some part of recreation visitation relates to heritage sites.

The cultural resource base of the Forest includes a diverse range of historic and prehistoric artifacts and sites. These include 1) historic cabins, trails, mines and related flumes, adits, ditches and other structures, railroad grades, immigrant roads, mills and homesteads, 2) historic Forest Service structures including guard stations, lookout towers, corrals, camps, administrative centers, and CCC campgrounds and buildings; 3) prehistoric (Native American) campsites, villages, graves, quarries, workshops, trails, caves, shelters and religious sites. All of these have historic and cultural value to the general public as well as research value for the scientific community

One important cultural feature on the Forest is the Blue Mountain segment of the Oregon Trail. This trail, which spans the 2000 miles from Independence, Missouri to Oregon City, Oregon, contributed significantly to the settlement of the Pacific Northwest during the period 1841-1848. It was designated as a National Historic Trail in 1970.

The Blue Mountain Segment of the trail is 16 miles in length, of which six miles are on National Forest lands with the remainder being on private lands. This segment contains some of the best remaining examples of intact trail. The Forest is the lead agency for managing this segment and has developed a management plan to assure that its historic value is preserved.

Key concepts of cultural resource management are the inventory and evaluation of all resources. The major goals are the protection and enhancement of all eligible resources for the advancement of public knowledge and enjoyment. Cultural resource management is guided by statutes and their implementing regulations as well as Forest Service policy expressed in the Forest Service manuals. The Wallowa-Whitman employs two full-time archaeologists, one of whom directs the Forest program and one who works primarily in the Hells Canyon National Recreation Area. Cultural resource technicians are assigned to each Ranger District and spend a part of their time in this capacity.

An overview of historical and archaeological resources for the Forest (excluding Hells Canyon NRA) was completed in 1978. The Hells Canyon NRA historical overview was also completed in 1978 while the archaeological overview is underway.

Since the completion of the overviews, some 800,000 acres on the Forest have been sampled for cultural resources (through 1984). Over 4,400 cultural resource sites were found and recorded during this process.

## Law Enforcement

Compliance with nonfederal statutes on the Forest is the responsibility of State and local government officials. Violations cover a wide range including speeding and exceeding gross vehicle weight limitations, game violations, cannabis cultivation, and assault. Nonfederal law enforcement officials are precluded from enforcing federal law, however Federal and nonfederal officials therefore exchange information and assistance.

There is one full-time federal law enforcement official (Special Agent) on the Forest. Three other Forest Service employees are Law Enforcement Officers, having received training at the Federal Law Enforcement Training Academy. Twenty-eight others have successfully completed training that qualifies them to issue notices of violation.

Timber theft and recreation-related violations comprise the great bulk of federal law enforcement activity on the Forest. To date, the timber theft problem is basically in fuelwood, posts and poles. Good timber sale contract administration will be continued to insure that timber harvests are conducted properly and that true value is returned to the government. Care must also be taken to insure that laws governing log export are followed.

Illegal outfitter guides are a major concern on the Forest. They pay no permit fees, carry no insurance and thus are able to undercut the fees charged by legitimate operators. The insurance required of legitimate operators affords protection not only to the recreationists and the operator but also to the United States Government. Prosecution of these cases is difficult because participants are usually uncooperative, having established a friendship with the outfitter during the outing. The normal process involves booking and completing a trip with the outfitter by law enforcement personnel, which involves expenditure of Forest Service funds. After a successful prosecution, fines are returned to the U. S. Treasury General Fund.

Other federal concerns include unauthorized use of range, mining claim violations and archaeological trespass.

## SUMMARY OF RESOURCE SUPPLY AND DEMAND PROJECTIONS

This section summarizes anticipated supply and demand conditions for Forest goods and services for the RPA time period. The great bulk of the Forest outputs and activities identified in the RPA program are intermediate in nature—they do not represent final outputs. To speak of supply-demand relationships for precommercial thinning or miles of road constructed, for instance, would be inappropriate. The appropriate consideration in the former case is sawtimber production, in the latter instance, roaded versus nonroaded recreation. Precommercial thinning, road construction, local area impacts, and so on are effects and are, therefore, not discussed here.

As used in this section of the document, "demand" identifies a particular point or instant on a demand schedule. As such, it reflects 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).

Table 2-13 depicts those intersection points over time for those Forest outputs for which such a display is meaningful. As such, they assume a continuation into the future of those factors 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

Table 2-13  
SUMMARY OF PROJECTED SUPPLY AND ANTICIPATED DEMAND

	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5	
<b>Recreation</b>						
Developed Recreation						
Including Visitor Information Service (MRVD's & MWFUD's)						
Projected Supply						
No Action	587	595	603	610	618	
Maximum Developed Recreation 1/	661	661	661	661	661	
Preferred	661	661	661	661	661	
Anticipated Demand 2/	399	464	523	572	621	
Dispersed Recreation Including Wildlife and Fish Use (MRVD's & MWFUD's)						
Projected Supply						
No Action	7,067	7,379	7,621	7,614	7,606	
Maximum Dispersed Recreation 3/	6,957	7,213	7,380	7,380	7,380	
Preferred	6,995	7,183	7,304	7,304	7,304	
Anticipated Demand 2/	1,427	1,577	1,819	2,037	2,189	
Projected Supply of Roaded Recreation 4/						
No Action	6,492	6,983	7,351	7,351	7,351	
Maximum Roaded Recreation 5/	6,553	7,228	7,657	7,657	7,657	
Preferred	6,492	6,860	7,105	7,105	7,105	
Anticipated Demand 2/	1,141	1,275	1,463	1,630	1,755	
Projected Supply of Nonroaded Recreation 4/						
No Action	575	396	270	263	255	
Maximum Nonroaded Recreation 3/	1,188	1,075	997	997	997	
Preferred	503	323	199	199	199	
Anticipated Demand 2/	286	302	356	407	434	
<b>Timber</b>						
Sawtimber MMCF (MMBF in parentheses)						
Projected Supply						
No Action	(134)	27 1	27 3	27 6	27 0	27 2
Maximum Timber Benchmark	(184)	39 1 8/	39 1 8/	39 1 8/	39 1 8/	39 1 8/
Preferred	(144)	27 7	27 3	28 1	27 5	27 3
Anticipated Demand 6/	(250)	50 0	50 0	50 0	50 0	50 0
Roundwood (MMCF)						
Projected Supply						
No Action	7 8	6 5	5 2	5 2	5 2	
Maximum Timber Benchmark	10 9	9 1	7 2	7 2	7 2	
Preferred	7 9	6 6	5 2	5 2	5 2	
Anticipated Demand 7/	12	12	12	12	12	

SEE END OF TABLE FOR FOOTNOTES

Table 2-13 (Continued)  
SUMMARY OF PROJECTED SUPPLY AND ANTICIPATED DEMAND

	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
<b>Livestock Grazing (MAUM's)</b>					
Projected Supply					
No Action	186	186	186	186	186
Maximum Livestock Benchmark	227	227	227	227	227
Preferred	186	160	160	160	160
Anticipated Demand	227	227	227	227	227

- 1/ All alternatives except A, which is a budget-constrained alternative
- 2/ Based on recent historical experience, OBERS population projections for the State of Oregon, and Forest recreational opportunities
- 3/ Alternative E
- 4/ Inclusive of WFLUD's and recreational experience occurring in wilderness. Roaded recreation is the sum of rural, roaded natural, and roaded modified recreation. Nonroaded recreation is all other ROS categories.
- 5/ Alternative B
- 6/ Based on mill capacity depicted on pp 25 and 53 of James O. Howard's Oregon's Forest Products Industry 1982, Resource Bulletin PNW-118, October 1984, USDA Forest Service. Projections of demand entail projections of a myriad of interconnected factors—some of which can reasonably be estimated (population, for instance) and some of which cannot (technological breakthrough, shifts in appraisal methods, etc.) It is reasonable to assume that installed mill capacity could be maintained for 2 decades, and that mill capacity beyond that time would be sufficient to process Forest offerings. Cubic foot figures were generated using a 5:1 ratio.
- 7/ Anticipated demand levels are basically an expression of mill capacity continued into the future. Arguments might be made that population pressures would tend to increase overall National demand, assuming a relatively stable price structure. No increase was shown however because of the opportunities available to substitute other products for wood and because, as an expression of local demand, expanded mill capacity would be contrary logic when raw material supply levels are not expected to increase.
- 8/ Assumes a 5:1 board foot cubic foot ratio.

MFVD's = Thousands of recreation visitor days  
 MWFUD's = Thousands of wildlife and fish user days  
 MMCF = Million cubic feet  
 MMBF = Million board feet  
 MAUM's = Thousands of animal unit months

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.

Many associations are not shown in the table. They include such considerations as old-growth tree stands, roadless area acreage, and deer and elk numbers. The supply and demand intersection points for these factors are determined in alternative ways. Minimum levels of old growth have been determined by first determining the minimum amount of that habitat necessary for species associated with it.

Proceeding from that basis, alternatives have been developed which affect different levels of old growth to reflect concerns that old growth be preserved for its own sake or to allow for unexpected losses to the old-growth base. Selecting a particular old-growth level is in itself a determination that that level is an approximation of a supply-demand intersect.

In similar fashion, the selection of a particular level of roadless area or managing big game habitat for a particular level of numbers reflects the decisionmaker's view that that particular approximates the supply-demand intercept: what the American people are willing to "spend" in order to achieve a certain output level.

## **INFORMATION NEEDS**

This section lists the information, inventory and research needs that have been identified for the Wallowa-Whitman National Forest. This recognizes gaps in data or scientific knowledge that would be desirable to fill prior to preparation of the next Wallowa-Whitman National Forest Land and Resource Management Plan. The concept used to organize and develop these needs recognizes that biological, physical and social ecosystems are the foundation for the planning process.

This ecosystem perspective has been used to develop a comprehensive framework for identifying and organizing information, inventory, and research needs. This framework is intended to encourage integrated research approaches that address interdisciplinary needs rather than the traditional functional approach. The ecosystem approach has been taken to meet planning needs, this approach should also help the public understand information needs in the final plans.

Of the many ecosystems found in wildlands, several were identified as having particular current importance in forest planning. Old growth, riparian/aquatic and upper-slope ecosystems are examples where more information would be desirable to test planning assumptions as future plans are developed. Human visitors in the forest are an integral part of these ecosystems. People's needs and expectations of the Forest should be considered in Forest Planning.

Information needed to address these concerns falls into six general categories:

### **Interactions/Processes**

This category includes information leading to a better understanding of interactions within and between ecosystems, effects of one resource on others, and the physical, biological, social, and political processes that influence these interactions and resources.

Examples.

Clarify the relationships between recreation settings, use, and opportunities and other resource uses.

- Determine wildlife and fish species reactions to pattern of habitat created or altered by management and natural succession
- Assess the relationships among hydrologic recovery, peak discharge, channel response as a result of rain-on-snow flood events, and late-summer low flows
- Evaluate the effects of insects and pathogens on forest composition and the influence of forest composition on the population dynamics of insects and pathogens
- Understand the relationships among old growth characteristics and ecological and visual diversity, associated plant and wildlife species, and the maintenance of natural gene pools
- Identify the ecological conditions required for growth of unwanted trees and brush to provide basic information for the effective control of these species
- Determine the response of management indicator species to patterns of habitat created by management and natural succession
- Determine the effects of vertebrate species on other ecosystem components (e.g., effects of bears on plantations; effects of insectivorous birds on forest insect populations)
- Evaluate the roles of disturbance processes in the maintenance and succession of natural systems.
- Determine the mechanisms of plant and animal dependence on fire
- Assess the effects of landscape patterns of timber harvest and road construction on biological diversity (including management indicator species) and stability of special habitat areas such as Research Natural Areas.
- Increase knowledge of site/moisture relationships in harvested areas (microwatersheds)
- Improve knowledge of the distribution and habitat requirements of wildlife associated with old-growth forests.
- Develop a riparian habitat classification and determine productivity, succession, and recovery rates for riparian areas
- Develop site specific animal unit equivalencies for deer, elk and livestock
- Determine responses of deer and elk to intensive forest management practices
- Determine elk and deer responses to varying traffic levels on Forest roads
- Determine the short and the long-term effects of intensive timber management activities on
  1. Each class of raptors
  2. Pine martens
  3. Forest owls

### **Long-Term Productivity**

This section includes studies leading to better understanding of ecosystem needs in order to maintain various aspects of long-term productivity

Examples:

- Determine the amount of in-stream woody debris necessary to maintain the productivity of fish habitat.
- Evaluate the effects of soil compaction on long-term productivity
- Assess the effects of certain harvest practices and residue treatments on long-term productivity
- Determine the effects of removing various levels of biomass on soil productivity
- Identify the current productivity levels of resources such as timber, wildlife forage, and fish habitat to establish baseline levels of productivity
- Establish baseline information on nutrient levels and distribution in soils and vegetation for major soil groups and forest associations
- Understand the role of fire in the nitrogen and carbon cycles that maintain long-term productivity
- Determine the effects of management practices on the incidence and severity of pathogens and insects as they affect long-term productivity
- Determine the effects of forest fragmentation on ecosystem integrity and function, including viability of vertebrate species.
- Fertilization Study Only one study exists regarding fertilization on the Wallowa-Whitman and it is only applicable to ponderosa pine sites. We need a study on growth response to fertilization in the mixed conifer and grand fir sites which make up a major portion of our community types.
- Prognosis Variant for the Blue Mountains We have access to an eastern Oregon/Washington variant developed by the University of Idaho but it does not include height growth predictive equations from local data or local plant associations. We need a Blue Mountain variant based on local diameter and height growth data and local plant associations
- Identify better techniques for the identification of lands suitable for timber production

### **Cumulative Effects**

This section includes studies to examine the cumulative effects of naturally occurring and human-induced activities on various aspects of selected ecosystems and resources.

**Examples:**

- Understand the cumulative effects of various management practices on resource outputs.
- Determine the cumulative effects of timber management activities (timber harvest, road construction, and site preparation) on water quality and stream stability.
- Identify the effects of changing habitat patterns on selected management indicator species
- Evaluate the cumulative effects on soil productivity of ground-based timber harvest equipment under unevenaged and evenaged management.
- Develop indicators or criteria to predict when recreation user patterns may change as a result of intensive forestry practices
- Evaluate the effects of fire exclusion on the structure and function of ecosystems.
- Determine the effects of human disturbance and livestock competition on wildlife species.
- Determine ways of incorporating integrated pest management research into future planning efforts, e.g., effects of tree thinning on spruce budworm populations, effects of management on insect predators such as birds and ants.

**Management Strategies and Techniques**

Studies are identified that are needed to improve understanding of resource responses to prescribed management actions, to develop or improve inventories and monitoring techniques, and to enhance resource protection. Information is also needed to evaluate effects of certain management strategies for a variety of resources.

**Examples:**

- Develop strategies that minimize soil disturbance and compaction during harvesting
- Evaluate the effects of planting genetically-selected stock on stand growth and yield, pathogen and insect population dynamics, forage nutritional quality for wildlife, etc.
- Develop effective methods of unevenaged management to produce optimized resource benefits.
- Determine the results of alternative timber management strategies on transitory range production, water runoff amounts and quality, recreational use patterns, public perception of landscape quality, insect and pathogen population dynamics, soil mass-movement potential, etc
- Assess the relationship of human presence in recreation areas and wilderness on habitat use by wildlife
- Assess the results of stream rehabilitation projects on fish population dynamics, public perception of landscape and recreation quality, stream hydrology, etc
- Develop short- and long-term pest population monitoring techniques for integrated pest management decision systems.

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- Develop silvicultural techniques for managing pathogen and insect populations
- Predict the changes in air quality that will result from alternative management strategies.
- Evaluate decision processes that can compare market and nonmarket benefits
- Improve the efficacy of fire use for vegetation management and as an alternative to herbicide use
- Evaluate the costs and benefits (both monetary and nonmonetary) of alternative logging residue treatments
- Develop market area strategy for small diameter material. Explore alternatives for utilization including biomass for energy production, small product, wood chipping, etc. Define market area, and identify barriers to effective use of forest resources (ex: transportation, manufacturing facilities, labor pool, capital availability, etc ) and identify possible solutions
- Integrate insect and disease models into forest planning models
- Develop effective techniques for reforesting areas with harsh climates, steep terrains, and/or competing vegetation.
- Evaluate alternatives for managing old-growth forests and for maintaining habitat characteristics (e.g., snags and logs) in young, managed forests.
- Develop and refine monitoring techniques, including techniques used to assess habitat conditions and trends, methods of assessing population density and reproductive success, procedures for using habitat information to make inferences about populations, cost-effective sampling designs that provide information about both habitats and populations with appropriate reliability
- Determine the short- and long-range term effects on various winter range plant communities in the Imnaha, the Grande Ronde, and the Snake River Canyon areas from use of prescribed fire with followup aerial seeding.
- Develop efficient methods for achieving regeneration within five years. Includes consideration of all nonlodgepole pine stands. Some particular problems include those encountered on south and west slope ponderosa pine sites and sites with heavy pinegrass cover of steep slopes where mechanical site prep is impractical

# CHAPTER 3

Response to Issues, Concerns  
and Opportunities



## CHAPTER 3

### RESPONSE TO ISSUES, CONCERNS, AND OPPORTUNITIES

#### OVERVIEW

A major step in the development of this plan was the identification of issues and concerns related to management of the Forest. Through a scoping process\* ten primary issues and concerns were identified. In this section these issues are summarized and a brief description of their disposition in this proposed plan is provided. The reader is encouraged to read Chapter I and Appendix A of the Environmental Impact Statement for a more detailed description of the issues and concerns. The issues are listed as follows:

- Transportation System
- Timber Production
- Local Economy
- Management of Nonwilderness Roadless Areas
- Old-Growth Tree Stands
- Wildlife Habitat: Deer and Elk
- Recreation Diversity
- Livestock Grazing
- Minerals
- Fish Habitat/Water Quality

#### TRANSPORTATION SYSTEM

The public concerns varied with this issue with many people expressing that there were too many roads and an excessive number open to vehicular traffic. However, many felt otherwise, believing that roads should be provided into presently undeveloped areas for recreational access and fuelwood cutting. Closures of roads, while apparently popular with many Forest users, also have many critics as evidenced by the public controversy over the Forest Travel Management Plan.

This plan responds to the issue by providing a variety of conditions, some of which should satisfy every Forest visitor. Some 354,000 acres of roadless area are to remain undeveloped except for the "jeep trails" that are now present. These roads will continue to provide limited access to motor vehicles as determined on a year-to-year basis through the Forest Travel Management Plan.

The plan provides for 109,000 acres of Management Area 3 on summer ranges. This limits open road mileage to 1.5 miles per square mile. These are generally areas where road mileage is currently low and which are important summer big-game habitat. On winter ranges that are in Management Area 1, and within the North Fork John Day drainage (MA 18) the intent is to limit open road mileage to 1.5 miles per square mile.

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\*See glossary

The open road density of the remainder of the Forest outside wilderness is limited to 2.5 miles per square mile. Where current density exceeds this amount, it is intended that the desired density will usually be achieved over time as roads are closed following future timber harvests.

The standards and guidelines are found in Chapter 4 They provide the overall goals and direction for transportation planning and management on the Forest.

The trail system will be managed with emphasis on recreational use within Management Area 6, Management Area 7, wilderness and the Hells Canyon National Recreation Area.

## **TIMBER PRODUCTION**

This issue relates primarily to (1) concern for maintaining or increasing levels of timber production from the National Forest and (2) interest in maintaining relatively high levels of species, other than lodgepole pine, from which lumber can be sawn or plywood veneer can be peeled (sawtimber)

The sustainable level of timber production was determined through a series of steps

1. Identification of available, capable and suitable timber land.
2. Development of timber yield tables for existing timber stands and future stands
3. Allocation of lands to various management areas considering the number of possible uses for those lands and the compromises involved.
4. Calculation of timber harvest levels from lands having a scheduled timber harvest.

The plan schedules timber harvest on 836,790 acres which includes 77 percent of all lands identified as available, capable, and suitable for timber production. From these acres, timber harvests (allowable sale quantity) are planned averaging 27.7 million cubic feet (144 million board feet) annually during the first decade.

Compared to recent levels, this plan will achieve approximately 94 percent of the total volume (all species and materials) and 97 percent of the sawtimber volume in the first decade (cubic measure). In the second decade the sawtimber volume slips to 95 percent of recent levels. By the third decade, 98 percent of recent levels of sawtimber production is achieved and 89 percent of total volumes

While these amounts are lower than recent levels, which were established by the 1962 Timber Management Plan as amended, they are somewhat higher than the amount suggested by the most recent land management plans (unit plans). (See Alternative A, the No Action Alternative, of the Environmental Impact Statement )

Under this plan the Forest will harvest ponderosa pine at a rate averaging approximately 34 million board feet per year in the first decade. This level is higher than what is sustainable in the long term. This higher level of ponderosa pine harvest in the first decade is intended to help timber industry make the transition from the high historical ponderosa pine levels to lower future levels

## MANAGEMENT OF UNDEVELOPED AREAS

The issue has to do with how much roadless area and which of the inventoried roadless areas should be retained in an undeveloped state. Of the 484,000 acres of inventoried roadless areas, 390,000 acres will remain undeveloped with this plan at the year 2000. This includes Management Area 6, wild rivers, research natural areas, and several management areas within the Hells Canyon National Recreation Area. Those areas that will remain roadless include most of the Twin Mountain roadless area (in the Elkhorn Mountain Range) and portions of several roadless areas which surround the Eagle Cap Wilderness. In addition, approximately 25,000 roadless acres are likely to remain unroaded due to economic conditions for the next 15 years even though they are allocated to management areas that permit development. This includes major portions of the Tope Creek, Joseph Canyon and Deadhorse roadless areas.

## LOCAL ECONOMY

Employment and receipts generated by National Forest uses and products are important to local economies. This issue is closely related to the timber production issue since timber production has greater influence on the local economy than any other National Forest resource.

The indicators used to evaluate the effects of Forest management on the local economy are jobs, personal income and payments to counties. It is estimated that during the first decade of implementation this plan will provide Forest-related jobs at 100 percent of recent historical levels (1979-1983). Personal income will drop to 99 percent and payments to counties will be 99 percent of recent historical levels.

## RECREATION DIVERSITY

An issue identified in the planning process had to do with the mix of Forest conditions that will provide the optimum recreation opportunity. This requires a variety of conditions.

There is adequate capacity to meet projected recreation demand in all Recreation Opportunity Spectrum (ROS) classes until the year 2000. After 2000, shortages appear and gradually increase in most primitive and semiprimitive ROS classes, due to development of presently unroaded areas and gradual increases in demand. The total shortfall is expected to amount to about 229,000 visitor days (about 8% of total demand) by the year 2030. A large surplus in capacity exists in roaded natural and modified ROS classes throughout the planning period. There is a possibility of satisfying some of the unmet demand for semiprimitive motorized recreation by closing roads to conventional vehicles in these areas. However, in most instances, the surplus of roaded capacity will not take the place of shortages in more primitive settings.

Developed recreation opportunities will increase and will exceed demand even in 2025 by approximately 18 percent. This increase in supplies is due to the development of sites in the Hells Canyon National Recreation Area. This is an over-supply in theory only. Developed sites are normally not used to full capacity because of less than full use on weekdays, early and late season and during inclement weather.

## **LIVESTOCK GRAZING**

Many area ranchers depend on National forest grazing, and would like to see permitted grazing levels maintained or increased. At the same time, there is growing concern by others about the effects of grazing. Some groups and individuals are suggesting that use be reduced and some are encouraging removal of all livestock from National forests.

Herbaceous and woody plants serve a variety of purposes including wildlife cover and forage, soil protection, and water runoff control. Under conditions of controlled management, forage production which exceeds that needed for the maintenance or improvement of the forage resource and meets the needs of other resources such as wildlife and soil protection, can and will be made available for harvest by domestic livestock.

As allotment management plans are developed that are designed to implement the utilization standards and to meet the objectives outlined in this Forest Plan, it is anticipated that adjustments on some allotments will be needed. Current conditions and estimates indicate that it may be difficult to meet the planned level of 186,000 permitted AUM's. Stocking of some vacant allotments and improvements in management are likely to offset to some degree reductions resulting from implementation of utilization standards and resolution of resource conflicts. In addition, economic conditions have resulted in actual use levels significantly below permitted levels. For example, in 1988, only 150,000 of the 186,000 permitted AUM's were actually used. This situation is likely to continue.

## **OLD-GROWTH TREE STANDS**

Maintaining some amount of old-growth tree stands is important for recreation values and wildlife habitat. Retaining old-growth forests is controversial since it affects the timber production levels of the Forest.

Of the 173,000 acres of old-growth timber currently in existence, over 160,000 acres will be retained in the long term (50 years). This includes old-growth within wilderness and other allocations which preclude scheduled timber harvest and unsuited lands. It is provided in groves throughout the Forest in such a manner as to provide mature and overmature timber within no more than three miles from any point in the Forest.

## **MINERALS**

The Forest contains important mineralized areas as evidenced by numerous mines and claims. Approximately 194,000 acres with mineral potential have been closed to mineral entry by wilderness or Hells Canyon National Recreation Area legislation. The amount that remains open to unrestricted exploration and mining is an important issue.

Of the 229,400 acres of known mineral potential that are not closed to further entry, 195,000 (85 percent) are available for mineral entry with only normal coordination requirements. The remaining 34,400 acres are all available but lie within undeveloped areas or areas with special environmental constraints which may make exploration more difficult.

### **WILDLIFE HABITAT: DEER AND ELK**

The level of deer and elk habitat that should be provided on the Wallowa- Whitman is an important recreational as well as economic issue. The issue has to do with the amount of timber land where deer and elk habitat management will be emphasized.

Outside of the Hells Canyon National Recreation Area, big-game habitat will be emphasized on winter ranges totalling 290,000 acres with an additional 168,000 acres managed to provide near-optimum summer range. Allocation of forage to big game will provide for approximately 100 percent of the National Forest contribution to the State's big-game objective levels.

### **FISH HABITAT/WATER QUALITY**

The importance of maintaining the high quality water for anadromous fish as well as other uses can hardly be overemphasized. The Standards and Guidelines described in Chapter 4 address this issue from several approaches including riparian ecosystem protection, watershed protection, mitigation of timber management activities, and control of livestock grazing. Included is direction to manage more than 60,000 acres within the North Fork John Day Drainage emphasizing fish habitat, achieve near optimum riparian conditions on the other riparian areas of the Forest, utilize Best Management Practices (BMP's), and monitor activities to ensure BMP's are followed and that mitigation measures are effective.

# CHAPTER 4

## Forest Management Direction



## **CHAPTER 4**

### **FOREST MANAGEMENT DIRECTION**

#### **OVERVIEW**

This chapter presents the management goals, objectives, standards and guidelines that constitute direction for Resource Management. The distribution of management areas across the Forest can be seen on the Alternative C map. A control map showing detailed management area boundaries is available for review at the National Forest Headquarters.

#### **FOREST MANAGEMENT GOALS**

The goals for the Wallowa-Whitman National Forest by resource area are:

##### **Human Rights**

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

##### **Cultural**

To provide for the identification, protection, preservation, enhancement and interpretation of prehistoric and historic sites, buildings, objects, and antiquities of local, regional, or National significance so as to preserve their historical, cultural, and scientific values for the benefit of the public.

##### **Soil and Water**

To maintain and enhance soil productivity, water quality and water quantity and to meet or exceed State water quality standards, and to acquire water rights for water uses under State law.

##### **Municipal Watersheds**

All domestic supply watersheds will be managed to maintain or improve water quality and streamflows so that, with adequate treatment by the purveyor, it will result in a safe and satisfactory water supply.

##### **Air**

To maintain air quality at a level that is adequate for the protection and use of National Forest resources, and that meets or exceeds applicable Federal and State standards and regulations.

##### **Diversity**

Maintain native and desirable introduced or historic plant and animal species and communities. Provide for all seral stages of terrestrial and aquatic plant associations in a distribution.

and abundance to accomplish this goal. Maintain or enhance ecosystem function to provide for long-term integrity and productivity of biological communities.

### **Wildlife**

To maintain or enhance the unique and valuable characteristics of riparian areas and to maintain or improve water quality, wildlife habitat, and fish habitat near or within riparian ecosystems.

To protect and manage habitat for the perpetuation and recovery of plants, animals, and invertebrates which are listed as threatened, endangered, or sensitive

To provide habitat for viable populations of all existing native and desired nonnative vertebrate wildlife species and to maintain or enhance the overall quality of wildlife habitat across the Forest

To provide near-optimum hiding cover, thermal cover and forage conditions on big-game winter ranges and selected summer ranges

To protect and enhance anadromous fish habitat, particularly within the John Day River drainage

### **Recreation**

In coordination with and awareness of recreational opportunities on other lands, provide a wide variety of recreational opportunities in an attractive setting, and make those opportunities available to all segments of society.

### **Landownership**

To provide for well-planned adjustments to landownership that are responsive to Forest management objectives

### **Wilderness**

To preserve the natural conditions and outstanding opportunities for solitude represented in the four wildernesses on the Forest.

### **Energy**

To provide for exploration, development, and production of energy resources on the Forest in coordination with other resource values and environmental considerations. Also to provide for energy transmission facilities on National Forest lands

To encourage and assist, whenever possible, in the continuation of regional geologic mapping and mineral resource studies on the Forest in cooperation with other natural resource agencies

### **Minerals**

To provide for exploration, development, and production of a variety of minerals on the Forest in coordination with other resource objectives, environmental considerations, and mining laws

To encourage and assist, whenever possible, in the continuation of regional geologic mapping and mineral resource studies on the Forest in cooperation with other natural resource agencies.

### **Transportation**

To plan, design, operate and maintain a safe and economical transportation system providing efficient access for the movement of people and materials involved in the use and protection of the National Forest System lands

### **Protection**

To provide well-planned and executed fire protection and fire use programs that are cost efficient and responsive to land and resource management goals and objectives.

To control Forest pests to levels that are compatible with resource objectives.

### **Timber**

To provide for production of wood fiber to satisfy National needs and benefit local economies consistent with multiple resource objectives, environmental constraints, and economic efficiency.

To provide fuelwood for personal and commercial uses.

### **Range**

To manage range vegetation and related resources in a manner insuring that the basic needs of the forage and browse plants and the soil resource are met To make available for harvest, forage production that is excess to the basic needs of the plants and soil resource, for wildlife (within agreed upon management objectives) and domestic livestock (within Forest Plan utilization standards).

## **FOREST MANAGEMENT OBJECTIVES AND RESOURCE SUMMARIES**

Table 4-1 shows outputs and activities by resource. These outputs and activities are resource management objectives for the Forest. Actual achievement of the levels of outputs and activities depends on funding. Appendix A includes a list of probable projects for the first decade of plan implementation. A listing of timber sales planned for the first five years of plan implementation is found in Appendix E.

The following is a narrative description by resource.

### **Soil and Water**

Soil and water restoration work is at significantly higher levels (1,000 acres per year) than has occurred in recent years Standards and guidelines place high priority on the protection of soil and water.

### **Timber**

Timber harvest is scheduled from 837,000 acres on a nondeclining flow basis Areas not scheduled for timber harvest include alpine and subalpine areas around the perimeter of the Eagle Cap Wilderness and in the Elkhorn Mountains, much of the Hells Canyon National Recreation Area, and selected groves of old growth forest. Timber management is constrained on winter ranges and some summer ranges to provide better big game habitat

The sawtimber volume to be sold in the first decade is 144 MMBF annually. Figure 4-1 displays the long-term sustained yield capacity (42.3 MMCF/yr) and the allowable sale quantity. Salvage of cull material and dead lodgepole pine is projected to add 7.8 MMCF per year. This level of timber production will require considerable investment in fuel treatment, tree planting, and timber stand improvement. Approximately 5 million cubic feet of personal-use firewood may be removed from the Forest each year.

### **Range Vegetation**

Range vegetation is managed at levels that meet the basic needs of the plants and soils, the forage needs for wildlife at management objective population levels, and to provide forage for permitted domestic livestock. Beginning plan outputs for permitted livestock AUM's will be 186,000 (current level). As allotment management plans (AMP's) are developed and implement the utilization standards, adjustments on an allotment specific basis will be necessary. It is anticipated that filling of vacant allotments and management improvements resulting from the Forest Plan funding levels will offset downward adjustments to some degree. However, until the actual AMP's are implemented, the deviation from the planned output of 186,000 AUM's will not be known.

### **Recreation**

Primitive and semiprimitive recreation opportunities are provided in wilderness, portions of the Hells Canyon National Recreation Area and in alpine and subalpine areas in the Elkhorn and Wallowa Mountains. Portions of the Monument Rock and Grande Ronde roadless areas also provide semiprimitive recreation opportunities. The remainder of the Forest is managed to provide recreation opportunities in a roaded setting. Some big-game summer ranges (selected primarily because of their importance to big-game hunters) are managed to provide a more challenging hunting experience and higher quality big-game habitat than is normally found in roaded settings.

Recreation site construction and reconstruction for the first decade are directed at completing the development specified in the Hells Canyon National Recreation Area Comprehensive Management Plan, addressing the backlog of deteriorated facilities in existing sites, and improving the distribution of sites throughout the Forest.

### **Landownership**

Landownership will be adjusted, as opportunities arise, where this would serve to consolidate National Forest System lands, result in a net reduction in property lines, acquire lands in Federally-designated areas, obtain lands needed for administrative or research purposes, improve resource conservation and production, resolve landownership conflicts, or otherwise be clearly in the public interest. Land ownership objectives for each management area are found in the Landownership Plan in Appendix D.

### **Wilderness**

The Eagle Cap Wilderness is managed under Alternative C of the Eagle Cap Environmental Assessment which emphasizes rehabilitation, enhancement of opportunities for solitude, and provides a wide range of primitive and unconfined recreation opportunities. The Monument Rock and North Fork John Day Wilderness management direction will be written by the Malheur and Umatilla National Forests, respectively. The Hells Canyon Wilderness will be managed as described herein and in the Hells Canyon NRA Comprehensive Management Plan.

Table 4-1  
RESOURCE OUTPUTS AND ACTIVITIES  
- TIMBER -

Output/Activity	Unit of Measure	NAS Code	MIH Code	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Lands Suitable for Timber Production 1/ Management Intensities 2/	M Acres	NA	NA	836.8				
PLTPCH	M Acres	NA	NA	40.1				
PLT PH	M Acres	NA	NA	149.8				
PLT CH	M Acres	NA	NA	20.4				
PLT H	M Acres	NA	NA	114.7				
NATPCH	M Acres	NA	NA	51.1				
NAT PH	M Acres	NA	NA	135.7				
NAT H	M Acres	NA	NA	218.0				
SELECT	M Acres	NA	NA	107.0				
Timber Harvested by Commercial Thinning	M Acres/Year	NA	NA	3.9	2.2	0	0	1.1
Clearcut	M Acres/Year	NA	NA	4.4	4.4	3.2	4.5	3.3
Shelterwood	M Acres/Year	NA	NA	8.4	6.3	5.7	5.9	4.5
Overwood Removal	M Acres/Year	NA	NA	1.2	6.8	9.7	7.4	8.5
Selection	M Acres/Year	NA	NA	6.5	2.5	5.4	4.3	8.5
				24.4	22.2	24.0	22.1	25.6
Allowable Sale Quantity								
Sawlog Volume	Million CF/Year	NA	X06	27.7	27.3	28.1	27.5	27.3
	Million BF/Year			144	-----Not Estimated-----			
Unregulated Timber 3/	Million CF/Year	NA	X07	7.9	6.6	5.2	5.2	5.2
Personal Use Fuelwood	Million CF/Year	NA	X08	5.0	5.0	5.0	5.0	5.0
Fuel Treatment	M Acres/Year	PF2	P11	22.4	19.2	20.9	21.0	22.7
Reforestation 4/ Planting	M Acres/Year	ET24	X36	4.7	4.0	2.7	3.9	2.4
Natural				9.6	8.7	5.1	7.9	5.2
Total				14.3	12.7	7.8	11.8	7.6
Timber Stand Improvement	M Acres/Year	ET25	X41	7.4	9.1	8.4	2.5	6.6
Fire Management Effectiveness Index	\$/M Protected Acres/Year	NA	Y79	948	934	918	918	918

NA Not Applicable

1/ Suitable for timber production given the multiple use objectives of this plan (36 CFR 219.14 (d))

2/ PLTPCH = Plant, precommercially thin, commercially thin and harvest; PLT PH = Plant, precommercially thin and harvest, PLT CH = Plant, commercially thin and harvest, PLT H = Plant and harvest, NATPCH = Natural regeneration, precommercially thin, commercially thin and harvest, NAT PH = Natural regeneration, precommercially thin and harvest, and NAT H = Natural regeneration and harvest

3/ Salvage of cull, dead lodgepole pine, and small diameter (less than 5 inches) material which is not part of the allowable sale quantity

4/ Includes all lands where activities to aid in tree reestablishment are employed

Table 4-1  
RESOURCE OUTPUTS AND ACTIVITIES  
- RECREATION -

Output/Activity	Unit of Measure	NAS Code	MIH Code	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Developed Recreation Use	M RVD's/Year	NA	W09, W10	399	464	523	571	621
Nonwilderness Dispersed Recreation Use 1/ Roaded 2/ Unroaded 3/	M RVD's/Year M RVD's/Year	NA NA	W07, W08 W03, W05	373 423	433 491			507 575
Wilderness Use 1/	M RVD's/Year	NA	W33	78	91	108	128	152
Wildlife and Fish Recreation Use	M WFUD's/Year 4/	NA	W41-W48, W50, W51, W55	370	370	370	370	370
Trail Construction and Reconstruction	Miles/Year	AT22	A10, A11	4	5	5	5	5
Developed Site Construction and Reconstruction	PAOT/Year 5/	NA	A05, A06	750	50	50	50	50
Visual Quality Objectives								
Preservation	M Acres	NA	W18	582 7	582 7	582 7	582 7	582 7
Retention	M Acres	NA	W19	211 2	211 2	211 2	211 2	211 2
Partial Retention	M Acres	NA	W20	325 9	325 9	325 9	325 9	325 9
Modification/Max Mod	M Acres	NA	W21, W22	1,229 4	1,229 4	1,229 4	1,229 4	1,229 4
Unroaded Areas Remaining	M Acres	NA	A01	410	390	374	374	374
Developed Recreation Capacity	MRVD's	AN23	NA	661	661	661	661	661
Wilderness Management	M Acres	AW	NA	583	583	583	583	583 583
Cultural Resource Management	M Acres	AC	NA	10,000	10,000	5,000	5,000	5,000
Land Exchange or Transfer	Acres/Year	JL263,JL264	J13,J14,J17	250	250	250	250	250
Range Vegetation Management 6/	M Acres	NA	NA	2,307	2,307	2,307	2,307	2,307
Noxious Weed Control	M Acres/Year	DN24	D12	0 400	0 450	0 450	0 450	0 450
Trail Maintenance	Miles	AT23	A12	2,250	2,250	2,250	2,250	2,250
Land Line Location	Miles/Year	JL24	J06	100	100	100	100	100

NA Not applicable

NE Not estimated

1/ Figures are exclusive of wildlife and fish recreation user days (WFUD's)

2/ Includes roaded natural, roaded modified, rural, and urban recreation opportunity spectrum classes

3/ Includes primitive, semiprimitive nonmotorized, and semiprimitive motorized recreation opportunity spectrum classes

4/ Wildlife and fish user days (hunting and fishing)

5/ Persons at one time, capacity increased or improved per year

6/ All Forest acreage except for that assigned to Management Areas 15 and 16

**Table 4-1  
RESOURCE OUTPUTS AND ACTIVITIES  
- WILDLIFE, RANGE, WATERSHED -**

Output/Activity	Unit of Measure	NAS Code	MIH Code	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Old Growth	M Acres	NA	NA	164	162	161	161	161
Management Indicator Species 1/ Pileated Woodpecker	Pairs	NA	W47	346	330	323	323	323
Goshawk		NA	W47	2/	2/	2/	2/	2/
Primary Cavity Excavators		NA	W47	2/	2/	2/	2/	2/
Resident Trout		NA	W54	2/	2/	2/	2/	2/
Steelhead		NA	W54	2/	2/	2/	2/	2/
Pine Marten 3/	Pairs	NA	W45	2/	2/	2/	2/	2/
Rocky Mountain Elk 4/	M Elk Summering	NA	W42	21 0	20 0	19 2	19 8	19 8
Fish Habitat Improvement	Acres		C05	250	200	0	0	0
	Structures		C07	500	400	0	0	0
Wildlife Habitat Improvement	Acres	CW222	C02	1,000	1,000	1,000	1,000	1,000
Wildlife Habitat Improvement	Acre Equivalents	CW222	C02	5,000	5,000	5,000	5,000	5,000
Water Yield	Million Acre Feet	NA	X81	2 73	2 73	2 73	2 73	2 73
Sediment	% of Natural	NA	NA	119	119	120	120	120
Watershed Improvement Work	Acres/Year	FW22	FO5,KO5	1,000	1,000	1,000	1,000	1,000
Range--Permitted Grazing 5/	M AUM's/Year	NA	W66	186	160	160	160	160
Allotment Management Planning	Plans/Year	NA	NA	15	15	15	15	15

NA Not applicable

1/ Numbers of management indicator species are index values only, based upon acres of available habitat

2/ Actual numbers to be generated during monitoring

3/ Population trend not estimated, but expected to parallel pileated woodpecker

4/ Index number of elk summering on the Forest

5/ Levels shown are estimated for the Forest as a whole, based on available forage and investments by livestock permittees and the Forest Service. Levels for individual grazing allotments will depend on allotment-specific analysis

**Table 4-1  
RESOURCE OUTPUTS AND ACTIVITIES  
- ROADS, MINERALS, LOCAL ECONOMY, COSTS AND RETURNS -**

Output/Activity	Unit of Measure	NAS CODE	MIH Code	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Arterial and Collector Road Construction and Reconstruction	Miles/Year	NA	L04, L08	69	59	68	68	76
Timber Purchaser Road Construction and Reconstruction	Miles/Year	NA	L14, L29	180	123	125	125	128
Roads Suitable for Public (Passenger Car)	Miles 1/	NA	L19 (749)	900	930	930	930	930
Roads Suitable for Public (High Clearance Vehicle)	Miles 1/	NA	L19 (747)	4,630	4,975	5,180	5,180	5,180
Roads Requiring User Maintenance (High Clearance Vehicle)	Miles 1/	NA	L19 (748)	750	750	750	750	750
Closed Roads	Miles 1/	NA	L19 (746)	4,475	4,620	4,705	4,705	4,705
Minerals Produced 2/	Million \$/Year	NA	Y01	13.5	54.2	71.6	94.6	125.0
Mineral Operating Plans	Number Active/Year	NA	001-008	354	397	419	442	466
Human Resource Program	Person Years/Year	NA	Z56	4	4	4	4	4
Changes in Forest-Related Jobs	Number	NA	NA	+19	NE	NE	NE	NE
Changes in Forest-Related Personal Income	Million \$/Year	NA	NA	-0.6	NE	NE	NE	NE
Payments to Counties	Million \$/Year	NA	NA	4.3	NE	NE	NE	NE
Operational Costs	Million \$/Year	NA	NA	12.8	12.1	11.9	11.9	12.0
Capital Investment Costs	Million \$/Year	NA	NA	9.4	8.2	7.6	7.8	7.6
Total National Forest Allocated	Million \$/Year	NA	NA	7.3	6.3	5.7	5.9	5.7
Appropriated	Million \$/Year	NA	NA	14.9	14.0	13.8	13.9	13.9
Returns to Government	Million \$/Year	NA	G01-G08	16.4	16.2	19.9	15.4	14.7

NA Not applicable

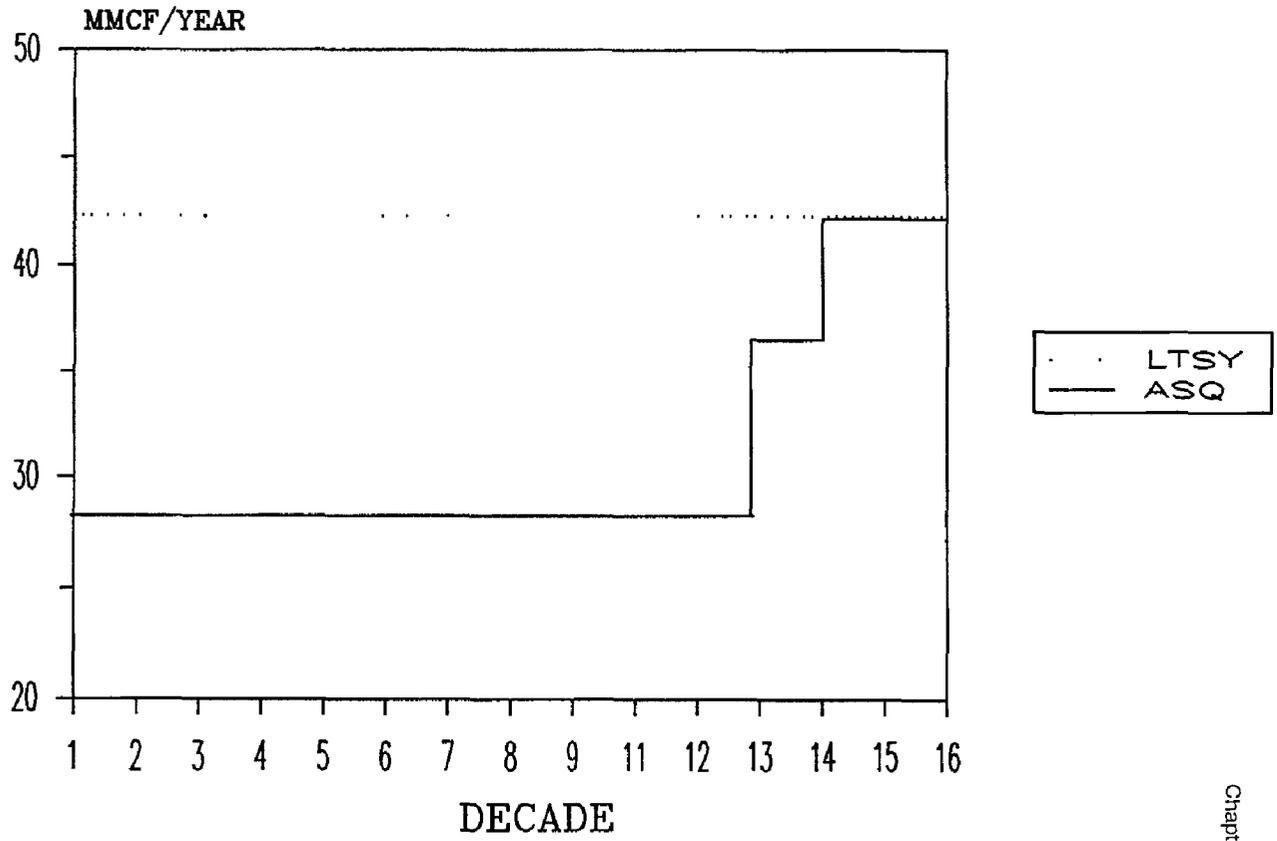
NE Not estimated

1/ At end of decade

2/ Gross metal values, including costs of extraction and processing. Therefore not directly comparable with other resource values contained in this analysis.

FIGURE 4-1

LONG-TERM SUSTAINED YIELD CAPACITY AND ALLOWABLE SALE QUANTITY



### **Landscapes**

The visual quality objectives summarized in Table 4-1 will maintain the natural appearance of landscapes seen from major travel routes and recreation sites. Other lands outside of wilderness will appear somewhat modified to heavily modified by timber management activities (See Tables IV-6 and IV-7 of the FEIS for a list of viewsheds and expected visual condition resulting from plan implementation).

### **Roadless Areas**

Of the 251,980 acres of inventoried roadless area outside the Hells Canyon National Recreation area none are recommended for wilderness, 121,470 acres are retained in a roadless condition and 130,510 acres are available for development (Only the Dunns Bluff Roadless Area was considered for wilderness in the analysis for this plan.)

The Homestead Roadless Area is currently being considered for wilderness in an environmental analysis conducted by the Bureau of Land Management (BLM). (The BLM manages the larger portion of this area) The results of that analysis will be incorporated into this plan.

Although timber harvesting will occur within the Joseph Canyon roadless area in this alternative, the area will be managed to retain its essentially roadless condition. Logging systems will be utilized which will not require significant new road construction.

### **Transportation**

Twenty-eight percent of the total existing roadless area of the Forest is accessed for timber harvest under this alternative. It is estimated that road construction in areas which are currently roadless will total 359 miles in the first decade, 271 miles in the second decade, and 73 miles in the third decade. No significant additions to the road system are anticipated after the third decade.

The Five Points drainage will not be made more accessible for motorized use than it is at present, except as necessary to carry out timber sale projects. All new roads will be closed or blocked to public motorized use (except that all-terrain vehicles and over-snow vehicles may be used where not restricted by the annual Forest Travel Management Plan).

Other portions of the Forest are currently roaded but do not have access to some timber stands. Completion of the Forest's road system will require about an additional 2,000 miles of road. The use of the transportation system on winter ranges is restricted so that only 1.5 miles of road per square mile are open to motorized use during the winter months. In areas where undeveloped dispersed recreation is emphasized, road density is maintained at current levels. On selected summer ranges and within the North Fork John Day Drainage open roads will be limited to not more than 1.5 miles per square mile year long. Elsewhere on the Forest the goal for road density is not to exceed 2.5 miles per square mile. To achieve the specified open-road densities will require closure of approximately 2,150 miles of existing road.

The development, maintenance, and management of the Forest development road system is to be continued as needed to respond to resource management objectives. Many road-related activities will occur in support of the timber management program, with additional activities undertaken to facilitate recreation use, Forest administration, and resource protection.

The Forest Service Road Management System includes five levels of roads, briefly defined as follows (for more complete definitions, see Forest Service Handbook 7709.15).

- Level 1 - Roads which are normally closed or blocked to all standard motor vehicles until they are needed for some specific project or purpose.
- Level 2 - Roads which are open but which may not be suitable for vehicles other than high clearance types
- Levels 3, 4, and 5 - Roads which are open and maintained for all types of vehicles, including passenger cars

An objective of road system management on the Wallowa-Whitman National Forest is to have a mixture of all different levels of roads necessary to provide for the use and protection of the National Forest. Each road on the National Forest Transportation System is guided by a written "Road Management Objective," which states the purpose and need for the road. This objective determines which level of road is appropriate. The anticipated mix of roads is shown in the chart below.

The projected operational status of the Forest development road system is shown in Table 4-2 (NOTE: Mileages shown in this table are estimates, and may vary once the plan is implemented and densities are calculated on the ground)

Table 4-2  
Current and Projected Road Miles by Operational Status

Decade	Open & Maint For Pass Car		Open & Maint for High Clear- ance Vehicles		Seasonally Closed to All Vehicles		Long-Term Closure		Total Forest Mileage Mile
	Mi.	%	Mi.	%	Mi.	%	Mi.	%	
Current	835	9	6470	67	(1400)	(15)	2281	24	9586
1st	900	8	5378	50	(1000)	(10)	4475	42	10755
5th	930	8	5930	51	( 300)	( 3)	4705	41	11565

Direction detailing construction, reconstruction, operational management, and environmental protection requirements for the Forest development road system are further described in the Forest-wide standards and guidelines and throughout the Management Area Prescriptions detailed in this chapter.

**Research**

In addition to the one existing research natural area, 18 areas, as displayed in Table 4-3, are recommended for inclusion into the Research Natural Area System

**Table 4-3  
Proposed and Existing Research Natural Areas**

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Lightning Creek Alum Beds Horse Pasture Ridge West Razz Pond and Razz Lake Bills Creek Duck Lake Indian Creek (existing RNA) Point Prominence Bob Creek	Pleasant Valley Little Granite Craig Mountain Lake Mt Joseph Vance Knoll Basin Creek Haystack Rock Lake Fork Cougar Meadow Government Draw
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**Old Growth**

Old-growth forest is provided at a level higher than necessary to satisfy the management requirements (MR's) for pileated woodpecker, pine marten and three-toed woodpecker on available, capable Forest lands. This distribution of old-growth is expected to help satisfy needs of goshawk and Townsend's warbler, with many existing goshawk territories included in the old-growth allocation. Fourteen thousand acres of subalpine forest unsuited for timber management and 53,000 acres of uneconomic lodgepole pine augment this old-growth habitat for pine marten and three-toed woodpeckers. Old-growth habitat will total approximately 161,500 acres over the long term, including large reserves of old-growth in wilderness, the HCNRA, and unsuited lands.

**Fish and Wildlife**

The Forest will participate in establishing eight pairs of bald eagle and four pairs of peregrine falcon. These are the recovery objective levels described in Chapter III of the EIS

Timber managed without thinnings, totalling 333,000 acres, ensure the future development of pole thickets and dense young-to-mature forest stands to the benefit of sharp-shinned hawks and Cooper's hawks

Habitat for those primary cavity excavators relying on smaller snags is expected to exceed the 40 percent level of effectiveness, partially through natural mortality, in managed stands. Habitat effectiveness for all cavity nesters will be managed at or above the 60 percent level in riparian zones and throughout the Hells Canyon National Recreation Area. High snag levels on 568,000 acres of unsuitable lands (including wilderness and old-growth) will occur to the benefit of all primary cavity excavators.

Most big-game winter ranges are managed to provide high quality cover and forage conditions. Some summer ranges, because of their importance to elk, are also managed to provide high quality habitat. The remaining summer ranges are managed emphasizing production of commodities, although a

level of elk (big-game) habitat protection is provided through application of Regional harvest dispersion constraints

Riparian habitat will be maintained or enhanced through more stringent livestock management requirements to the benefit of wildlife and salmonid fishes. High emphasis is placed on anadromous fish habitat improvement, with about 600 acres per year of habitat improvement targeted. Timber harvest in the John Day River drainage, and elsewhere, will be scheduled so to maintain water flows within desired limits for the protection of anadromous fish habitat

### **Municipal Watersheds**

Timber harvest occurs at a reduced level within the Baker and La Grande domestic supply watersheds. Within the overall objective of providing quality water, management within the Sumpter and Wallowa watersheds emphasizes timber production.

### **Minerals**

Of the areas of known mineral potential 195,000 acres are open to mineral entry with normal coordination requirements, 34,400 acres have restricted entry, mineral rights are privately held on 13,860 acres, and 194,000 acres are closed to new mineral entry

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

*It is likely to be more than four decades before effects of management, as directed by this plan, are evident over the entire Forest. Through future plans, the direction may change. The following remarks describe the Forest after ten and fifty years, assuming the direction from this plan remains constant.*

### **The Forest in Ten Years**

Although in some areas the Forest will have a more managed appearance, it will generally have retained its present character. Many of the lodgepole pine sites on Baker and La Grande Districts which were clearcut in the 1980's as a result of the mountain pine beetle epidemic will be occupied by thrifty young stands. There will be newer clearcuts but these will have been blended into the landscape so as to not be readily apparent from major travel routes and viewpoints.

The discerning eye will notice that there has been a reduction in large trees in those portions of the Forest managed emphasizing timber production. Quality stands of old-growth timber will be dispersed across the landscape. Large blocks of old growth will continue to exist in wilderness and other areas not managed for timber production. Of the current 173,000 acres of old-growth trees on the Forest, 164,000 are expected to remain.

Portions of some roadless areas will have been entered for timber harvest although those which are the most important for recreational purposes will remain unchanged. Of the 484,443 acres of roadless area existing today, 410,000 acres are expected to remain roadless in ten years.

In general, providing for recreational users of the forest will receive increased emphasis as compared to the current situation. The range of recreation opportunities currently available on the Forest will be still available, although there will be changes in the amount and location of some opportunities.

Some semiprimitive recreation opportunities will have been lost to development, but quality semiprimitive areas will remain and will be adequate to meet demand.

Construction, reconstruction, and maintenance of the Forest trail system will be tailored to recreation demands and protecting other resources. Trails will be emphasized in wilderness, the HCNRA, and semiprimitive areas, but opportunities for trail-related recreation within other management areas will be available.

Development within the Hells Canyon National Recreation Area will have substantially increased recreation site capacity in the area and improved recreational access. Major changes will include improvement of the road to Hat Point, construction of a new campground and improved access to Pittsburg Landing, and a new viewpoint near McGraw Creek. Other developed sites on the Forest will have been maintained or improved, with capacity added as needed.

Dispersed recreation sites, such as hunter camps, will retain their desired character although surrounding lands will often have changed significantly as a result of management activities.

Providing fuelwood to Forest users will be a major consideration in decisions such as road management and slash treatment. Although substantial quantities of wood will continue to be available, competition is likely to make it more difficult to obtain. Fuelwood is likely to be of poorer quality.

The principal access roads will be readily identifiable. They will have paved or gravelled surfaces and look suitable for passenger car use. Signs assist the travelers in finding their destinations. The other roads appear less inviting for use. They look rough or primitive, but many of these will be available for use. Some roads will be closed or blocked to standard vehicle use by physical barricades, gates, or signs.

Most traffic management will be accomplished by physical barricades, rather than more restrictive measures such as promulgated closures. Promulgated closures will be used primarily to accomplish seasonal closures, or where total prohibition of traffic is essential to accomplishment of objectives.

Range resources will show noticeable improvement as allotment management plans are developed and implemented. Implementation of Forest Plan utilization standards will have resulted in reduced use levels in riparian areas so that many of the riparian systems show definite signs of recovery. Permitted numbers of livestock and/or seasons of use will have declined slightly in response to the utilization standards and resolution of resource conflicts.

Anadromous and resident fish populations will have climbed, both as a result of investments in fish habitat improvements and because of improved overall riparian condition.

Bald eagle and peregrine falcon populations will have increased. Elk populations will have stabilized at the State management objective levels, while deer numbers will have increased substantially from previous lows.

### **The Forest in Fifty Years**

This plan will be reviewed every 5 years and normally revised every 10-15 years. The following describes the Forest in 50 years as it is expected to be if the management described in this plan continues to that time.

Of the 484,000 acres of roadless area existing today, 380,000 acres are expected to remain roadless in fifty years. Wilderness and roadless recreation areas (Management Area 6) will be unchanged from the present except for subtle vegetational changes. The same will be true of Management Areas 8, 9, and 10 within the Hells Canyon National Recreation Area. Management Area 11 in Hells Canyon NRA will appear managed to the discerning eye, but will retain a high degree of naturalness. Research natural areas will appear relatively unchanged, as will utility corridors. Many developed recreation sites will have high quality facilities, providing a large variety of recreational opportunities. There will

be private sector participation in the operation of many sites. Environmental education and interpretive opportunities are evident.

Most of the principal road system is completed. These roads will have paved or improved surfaces. A few may have State Highway designations. Most other roads are either visually inviting only to high clearance type vehicles used by the more seasoned forest traveler, or are closed or blocked to standard vehicle use. A total of 11,500 miles of road are expected to exist.

Most traffic management is accomplished by physical barricades, rather than more restrictive measures such as promulgated closures. Promulgated closures will be used primarily to accomplish seasonal closures, or where total prohibition of traffic is essential to accomplishment of objectives.

Nontimbered areas will remain unchanged in appearance, and where forest and openings are interspersed, the general character, as seen from a distance, will be similar to today.

The most noticeable changes will occur in the areas designated for timber management outside the Hells Canyon NRA (Management Areas 1, and 3 and 18), especially in areas where no harvest has previously occurred. It will be apparent that many areas are being managed for high levels of timber production; e.g., tree stands of different ages; trees within stands the same size and spaced for rapid growth, the forest floor relatively free of fallen trees; and few large dead trees (snags). Stand ages will vary from 0 to 90 years with regeneration units (recent clearcuts, shelterwood, or seed tree harvest units) more evident than at present.

The foregoing tends to give the picture of a mosaic pattern of even-aged stands in Management Areas 1, 3 and 18; a "tree farmed" appearance. There will, however, be many conditions that will disrupt this mosaic, and the managed Forest will still contain many of its present characteristics. These conditions include 36,750 acres of designated old-growth groves, dispersed through Management Areas 1, 3, and 18, and ranging size from 30 to 600 acres. Nearly 100,000 acres of timbered land unsuitable for timber production will be interspersed in patches of several acres to hundreds of acres in size. An additional 19,000 acres of riparian vegetation (along live and intermittent streams) and 49,000 acres of particularly sensitive visual management areas (visual foreground) are intermixed through the intensively managed lands. The riparian and visual management objectives will retain or emphasize their special resource values, and will result in their retaining a natural appearance even when viewed from close distances. The proximity of old-growth groves, unsuited lands, riparian zones, and key visual management areas to intensively managed areas will create variety over the area as a whole. Of the 173,000 acres of old-growth forest existing today, 161,000 acres are expected to remain.

Within Management Areas 3 and 18, conversion of timbered areas to a managed condition will have taken place more slowly. Some lands considered suitable for timber production will not have been entered by the year 2030, being maintained as mature timber stands for wildlife cover.

In summary, the forested areas where timber management occurs (approximately one-half of the forest) will appear more dominated by human activities than at present, but there will also be many similarities to today's conditions.

The range of recreation opportunities currently available will still be available, but competition for each will be much greater. Opportunity for recreation in a primitive (wilderness-like) setting will be similar to the present. Opportunities for motorized and nonmotorized recreation in a semiprimitive ("back-country") setting will be reduced, while opportunities for recreation in a roaded modified setting will increase.

Fuelwood from the Forest will no longer be available as a primary source of home heating for most local area homes.

Range resources will show a dramatic improvement with areas of resource conflict being small in size and few in number. To accomplish this, it is likely that livestock numbers will be lower. All allotments will be operating under approved allotment management plans. Both upland and riparian soils and vegetation are at or nearing natural potential conditions as improvements in management and implementation of utilization standards maintain livestock use at acceptable levels and insure adequate control over timing and duration of use.

Whereas sightings of bald eagles are now a rarity on the Forest, there will be more sightings, especially near large lakes and streams. Salmon will be present in the Grande Ronde River system in much higher numbers than today and will be slightly increased in the North Fork John Day River system. Elk will remain near present levels, deer will recover from recent lows.

A description of each management area is provided in a subsequent section of this chapter.

### Proposed and Possible Management Activities by Management Area

Tables 4-4 and 4-5 display the acreages of the various management areas (described later in this chapter) and the proposed and probable management practices to occur within each management area. Details of timber management activities for each management area are found in Appendix C, the Ten-Year Timber Sale Action Plan.

Table 4-4  
MANAGEMENT AREA ACREAGES

Management Area	Acres
1 Timber Emphasis	716,245
3,3a Big Game Habitat Emphasis	382,113
4 Wilderness	582,700 3/
5 Phillips Lake Area	4,967
6 Roadless Recreation (backcountry)	122,788
7 Wild and Scenic River	26,909 4/
8 HCNRA Snake River Corridor	14,355
9 HCNRA Disp Rec /Nat Veg	161,078
10 HCNRA Forage	123,029
11 HCNRA Disp Rec/Tmbr. Mgt.	70,706
12 Research Natural Areas	15,160 2/
13 Homestead Further Planning Area 1/	5,733
14 Starkey Exp For & Range	27,051
15 Old-Growth Forest	36,750
16 Administrative and Recreation Sites	5,744
17 Utility Corridors	6,594
18	59,743
Total	2,349,215

1/ If the Homestead Further Planning Area does not become wilderness, 3,708 acres would become part of Management Area 10 with the remaining acres being within Management Areas 1 and 3.

2/ 12,450 acres within wilderness, Snake River Corridor, Dispersed Recreation/Native Vegetation, or further planning allocation.

3/ Includes 23,760 within wilderness that have been designated in the Oregon Omnibus Wild and Scenic Rivers Act of 1988.

4/ Includes 9,140 acres along the Imnaha River within the Hells Canyon National Recreation Area.

TABLE 4-5

PROPOSED AND PROBABLE MANAGEMENT PRACTICES BY MANAGEMENT AREA 1/  
(Annual Values by Decade)

Management Practice of Activity	Units	Total Proposed (Decade 1)	Total Probable (Decade 2)	MA 1	MA 3	MA 4	MA 5	MA 6	MA 7	MA 8	MA 9	MA 10	MA 11	MA 12	MA 13	MA 14	MA 15	MA 16	MA 17	MA 18
Recreation Site Construction	PAOT	700	0							X	X	X	X						X	
Recreation Site Reconstruction	PAOT	50	50				X			X	X	X	X						X	
Primitive Recreation Use	MRVDs	7	7							X	X	X	X							
Semiprimitive Nonmotorized Recreation Use	MRVDs	140	157					X		X	X	X			X					
Semiprimitive Motorized Recreation Use	MRVDs	308	344				X			X	X	X								
Roaded Recreation Use	MRVDs	1,019	1,139	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rural Recreation Use	MRVDs	122	136				X												X	
Wilderness Recreation Use	MRVDs	140	153				X													
Trail Construction & Reconstruction	Miles	4	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Wildlife Habitat Improvement	Acres	1,000	1,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Timber Harvest 2/																				
Commercial Thinning	MAcres	39	22	X	X		X		X							X				X
Clearcutting	MAcres	44	44	X	X				X							X				X
Shelterwood	MAcres	84	63	X	X		X		X				X			X				X
Selection	MAcres	65	25	X	X		X		X				X			X				X
Overwood Removal	MAcres	12	68	X	X		X	X					X			X	X			X
Reforestation (Planting)	MAcres	47	40	X	X		X		X				X			X				X
Timber Stand Improvement	MAcres	74	91	X	X		X		X				X			X				X
Arterial & Collector Road Construction and Reconstruction	Miles	69	59	X	X			X	X	X	X	X	X			X	X	X	X	X
Local Road Construction and Reconstruction	Miles	180	123	X	X		X	X	X	X	X	X	X			X	X	X	X	X
Temporary Road Construction	Miles	100	107	X	X		X		X				X			X				X
Treatment of Activity Fuels	MAcres	224	192	X	X		X		X				X			X				X
Watershed Improvement	Acres	1,000	1,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Permitted Grazing Use	MAUMs	186	160	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1/ "X" indicates that activity is likely to occur within this management area

2/ Also see Appendix C

## FOREST-WIDE STANDARDS AND GUIDELINES

The following standards, guidelines, and management area direction are to be used in conjunction with direction from Forest Service Manuals and Handbooks and the Regional Guide for the Pacific Northwest Region. It is not intended that they conflict with applicable State and Federal laws. Except as noted, the standards and guidelines are common to all management areas. Where direction for a specific management area differs from the Forest-wide standards and guidelines, this direction is specified in the direction for that management area. Each category is preceded by a Forest-wide goal for that resource or activity.

The appropriate setting for each Management Area is determined by the area goals, desired conditions and suitability of the area to achieve these conditions. When an allowable project would result in conditions that do not meet the setting criteria, the need for changing the designated setting will be addressed as part of the environmental analysis process. This would include evaluation of factors such as activity extent, duration of impact, season of operation, sight or sound impacts and feasibility of rehabilitation.

Following are the categories of Standards and Guidelines and Management Area descriptions.

### CIVIL RIGHTS

#### Goal

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

#### Standards and Guidelines

- 1 **Barriers.** Manage the Forest to minimize social and administrative barriers to its use.
- 2 **Affirmative Action.** Maintain and implement an affirmative action plan for hiring, supervisory, and contracting procedures.
- 3 **Employing the Handicapped.** Actively pursue the employment of the handicapped and ensure that the needs of the handicapped are considered in the design of Forest facilities.
- 4 **Compliance Reviews.** Conduct compliance reviews as required by Title VI of the Civil Rights Act of 1964, within standards established by the Forest Service.
- 5 **Informing the Public.** Inform the general public, including minorities and the underprivileged, of benefits they are eligible to receive from Forest programs. Techniques and the media best suited to increase awareness and participation will be used.

6. **Ceded Lands.** Consider and appropriately provide for the ceded land rights and privileges of the Walla Walla, Cayuse, Umatilla, and Nez Perce Indian Tribes, under the treaties of 1855 in all Forest activities \*
7. **Access.** Provide all Native American Indians access to sites, 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. 95-341). Appropriate management consideration of these areas will be coordinated with the leaders of the Nez Perce Tribe, and the Confederated Tribes of the Umatilla Indian Reservation, the Northern Paiute Tribe, and the Shoshone Tribe.
8. **Coordination.** Coordinate with American Indians whenever a site that is sacred to any Native American group may be affected by management activities.
9. **Site Protection.** Meet the standards of 36 CFR 296.7. If an activity of the agency will harm or destroy a prehistoric site, the appropriate Indian tribe must be notified at least 30 days before.
10. Complete the Section 106 process (of the National Historic Preservation Act) for every potentially impacting Forest Service undertaking. This includes notification of interested Native American groups and tribes (36 CFR 800.1 (j) III)

## CULTURAL RESOURCES

### Goal

To provide for the identification, protection, preservation, enhancement and interpretation of prehistoric and historic sites, buildings, objects, and antiquities of local, regional or National significance so as to preserve their historical, cultural, and scientific values for the benefit of the public.

### Standards and Guidelines

1. **Overview** Maintain a Forest-wide cultural resources overview that summarizes and compiles known cultural resource information
2. **Research Design** Maintain a Forest research design to guide cultural resource surveys, establish site significance, and establish priorities for scientific investigation and opportunities for interpretation

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\*Certain rights and privileges are afforded members of the Nez Perce and the Umatilla Confederated Indian Tribes by virtue of the treaties of 1855. These treaties resulted in cession by the Indians to the United States of a large territory which includes approximately two-thirds of what is now the Wallowa-Whitman National Forest. The treaties provide that the Indians will continue to have the rights of taking fish in streams running through and bordering the reservations and at all other usual and accustomed stations in common with other citizens of the United States and of erecting suitable buildings for fish curing, the privilege of hunting, gathering roots and berries, and pasturing stock on unclaimed lands. These rights will be considered through the management of appropriate resources such as fish, wildlife, and riparian areas.

- 3 **Inventory** Conduct Forest-wide cultural resource inventories (survey and site recordation) according to strategies and consultation procedures established on the Forest. Emphasize areas where ground disturbing activities are planned, to ensure discovery of all reasonably locatable cultural resources. Inventories of other areas (e.g., wilderness and National Recreation Area) will be accomplished as needed to protect resources in high use areas. These inventories will be designed and supervised by a cultural resource professional.
- 4 **Evaluation** Evaluate cultural resources that may be affected by project activities. Evaluate against the criteria for eligibility to the National Register of Historic Places. Develop a plan to evaluate all other cultural resources by theme groups, agreements, or other cost-effective means as Forest-wide inventory nears completion.
- 5 **Nomination** Nominate cultural resources that meet the appropriate criteria to the National Register of Historic Places. Nominations will be scheduled incidentally until completion of the Forest-wide inventory of cultural resources.
- 6 **Protection.** Protect the resources considered eligible for the National Register of Historic Places by making reasonable efforts to avoid adverse impacts to the resources or develop a procedure to conserve the values through proper scientific methods and study.
- 7 Consider the effects of all Forest Service undertakings on significant cultural resources and avoid or mitigate any adverse effects.
8. Protect eligible cultural resources from human depredation and natural destruction. Protection plans may include physical protection such as fences and barriers, scientific study and collection, patrol and site monitoring, proper use or removal of signs, maintaining site anonymity, and gaining public understanding and support through education.
- 9 Protect and maintain eligible historic sites and structures based on an analysis of utility, interpretive value, and public interest, existing site or area allocation, funding sources, existing agreements, etc.
10. **Resource Enhancement** Interpret suitable cultural resource properties for the recreational use and educational benefit of the general public. The measure of suitability should be based on accessibility to the public, with other resource management activities within or adjacent to the area, thematic representation, and value to public groups. Interpretive service and facilities should be compatible with the nature, qualities, and integrity of the cultural sites selected for enhancement. Preferred methods include brochures, signs, and self-guided tours. Handicapped access to interpreted sites will be provided wherever practicable.
- 11 Provide opportunities for scholarly/scientific use of designated historic and prehistoric sites, after coordinating selection of appropriate prehistoric sites with the relevant Native American groups. This may require "banking" of sites for future use, processing of antiquities permits for testing, and excavation of sites by qualified professionals.
- 12 Protect, enhance, and interpret both archaeological and historic resources, for the public benefit and knowledge, insofar as it is compatible with protection, in accordance with PL 94-199, the act establishing the Hells Canyon National Recreation Area.
- 13 **Conflicts with Other Activities.** When other resource management activities conflict with the protection and management of cultural resource properties, the sites will be evaluated to determine their significance. Depending on the nature of the project, the activity may be redesigned to avoid damage or disturbance to a significant site, or damage otherwise mitigat-

ed In instances where avoidance is not possible, the value of the property may be conserved through a professionally-acceptable data recovery program

- 14 **Coordination** Coordinate management of cultural resources with other agencies including the State Historic Preservation Offices and the Advisory Council on Historic Preservation, as required by Federal and State historic preservation laws and regulations
15. Management of traditional religious sites will be coordinated with American Indian groups.
16. Present information about planned project activities to American Indian groups for coordination about effects on traditional religious sites
- 17 **Site Developing.** Develop cultural resources for educational, scientific, or recreational purposes including interpretation, as long as the integrity of the resource is maintained where appropriate.
- 18 Ensure that cultural resource properties and their records are protected to prevent unauthorized uses and degradation.
- 19 **Monitoring** Monitor public use of cultural properties to prevent degradation or as specified in a management plan for the property

## SOILS

### Goal

To maintain or enhance soil productivity.

### Standards and Guidelines

1. **Conflicts with Other Uses.** Give maintenance of soil productivity and stability priority over uses described or implied in all other management direction, standards, or guidelines. Exceptions may occur for such things as campgrounds or transportation facilities when it is determined, through environmental analysis, to be in the public interest.
2. **Protection.** Minimize detrimental soil conditions with total acreage detrimentally impacted not to exceed 20 percent of the total acreage within the activity area including landings and system roads. Where detrimental conditions (see glossary) affect 20 percent or more of the activity area, restoration treatments will be considered. Detrimental soil conditions include compaction, puddling, displacement, and severe burning
- 3 Give special consideration to scablands or other lands having shallow soils during project analysis Such analysis will especially consider the fragile nature of the soils involved and, as necessary, provide protection and other mitigation measures.
4. Use approved skid trails, logging over snow or frozen ground, or some equivalent system for limiting the impact and areal extent of skid trails and landings and to prevent cumulative increases from multiple entries in tractor logging areas.
5. Re-establish vegetation following wild fire or management activities where necessary to prevent excessive erosion.

**WATERSHED, (INCLUDING RIPARIAN ECOSYSTEMS, STREAMSIDE MANAGEMENT UNITS, FLOODPLAINS, WETLANDS, WATER RIGHTS, AND FISH HABITAT)**

**Goal**

To maintain or enhance the unique and valuable characteristics of riparian areas and to maintain or improve water quality, streamflows, wildlife habitat, and fish habitat. Design and conduct all management activities in all streamside management units to maintain or improve water quality and associated beneficial uses in SMU Class I and II streams. Management indicator species for riparian habitat include steelhead and resident trout.

**Standards and Guidelines**

1. **Conflicts With Other Uses.** Give management and enhancement of water quality, protection of watercourses and streamside management units, and fish habitat priority over uses described or implied in all other management standards or guidelines.
2. **Water Quality Standards and BMP's** Meet Water Quality Standards for waters of the States of Oregon (Oregon Administrative Rules, Chapter 340-41) and Idaho through planning, application, and monitoring of Best Management Practices (BMP's) in conformance with the Clean Water Act, regulations, and federal guidance issued thereto.
3. Use the following process in cooperation with the States of Oregon and Idaho
  - a. Select and design BMP's based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for those waters potentially impacted (See Watershed Management Practices Guide for Achieving Soil and Water Objectives, Wallowa-Whitman NF )
  - b. Implement and enforce BMP's
  - c. Monitor to ensure that practices are correctly applied as designed
  - d. Monitor to determine the effectiveness of practices in meeting design expectations and in attaining water quality standards
  - e. Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMP's do not perform as expected
  - f. Adjust BMP design standards and application when it is found 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. Where appropriate, consider recommending adjustment of water quality standards
4. **State Water Quality Management Plans.** Implement (Oregon) State Water Quality Management Plans on lands administered by the USDA Forest Service as described in Memoranda of Understanding between 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)

5. **Mitigation.** Mitigate negative impacts causing reduction in water quality to return water quality to previous levels in as short a time as possible (It is recognized that short-term reductions in water quality may result from some activities. For example, turbidity may increase for several days following bridge or culvert installation.)
6. **Timber Management.** Harvest will not occur, on a scheduled basis, within 100 feet of the high water line on either side of Class I and II streams. Harvest may occur along these streams, for other than timber management purposes, when doing so would maintain or enhance water quality, fish habitat, and wildlife habitat. Along Class III and IV streams, manage tree stands to maintain the vegetative characteristics needed for water quality protection or improvement and to maintain or enhance stream channel stability. Only those treatments that maintain or enhance water and riparian quality and are consistent with riparian management and fish habitat goals will be applied. Actual harvest levels will be determined on a site-specific basis and will be governed by needs to protect and improve the riparian-dependent resources.
7. **Stream Temperatures.** Prevent measurable temperature increases in Class I Streams (less than a 0.5 degree Fahrenheit change). Temperature increases on SMU Class II (and fish-bearing SMU Class III) streams will be limited to the criteria in State standards. Temperatures on other streams may be increased only to the extent that water quality goals on downstream, fish-bearing streams will still be met. Normally stream shade management on Class III streams will differ little from treatment on Class II streams.
8. **Channel Stability.** Maintain natural large woody debris, plus trees needed for a future supply, to protect or enhance stream channel and bank structure, enhance water quality, and provide structural fish habitat within all SMU classes. Quantities and sizes will be determined on a case-by-case basis.
9. Enhance streambank vegetation and/or large woody debris where it can be effective in improving channel stability or fish habitat.
10. Give areas in which water quality or channel stability are being adversely impacted high priority for treatment to minimize the effects of the impact or to correct the impacting activity.
11. **Conduct Cumulative Effects Analyses.** When project scoping identifies an issue or concern regarding the cumulative effects of activities on water quality, stream channels, or fish habitat a cumulative effects assessment of these effects will be made. This will include land in all ownerships in the watershed. Activities on National Forest System lands in these watersheds should be dispersed in time and space to the extent practicable, and at least to the extent necessary to meet management requirements. On intermingled ownerships, coordinate scheduling efforts to the extent practicable.

NOTE: Individual, general Best Management Practices are described in *General Water Quality Best Management Practices*, Pacific Northwest Region, 11/88. This provides guidance but is not a direction document. Also included in this document is a description of the process and limitations and use of these BMP's. Each BMP listed includes the Title, Objectives, Explanation, Implementation and Responsibility, and Monitoring. Evaluations of ability to implement and estimate effectiveness are made at the project level. Not all of the general BMP's listed will normally apply to a given project, and there may be specific BMP's which are not represented by a general BMP in this document. The sensitivity of the project determines whether the site-specific BMP prescriptions are included in the environmental assessment, environmental impact statement or in the sale/project plan, or in the analysis files. For a more complete explanation of the above, refer to Appendix O in the FEIS, "Best Management Practices."

- 12 Alter watershed conditions only to the extent that aquatic and riparian goals will still be met and other valid water uses, such as irrigation, will not be adversely affected. When planned projects are likely to adversely affect watershed conditions, a hydrologic analysis will be conducted considering past, present, and future activities. If the results of this analysis indicate that the proposed project would adversely affect watershed condition, the project will be altered. This may include such things as deleting or rearranging harvest units in timber sales, selecting different silvicultural prescriptions, or delaying activities for one or more decades.
- 13 **Groundwater.** All projects or activities (including but not limited to pesticide application, fertilizer application, or storage of potentially hazardous volumes of fuels and other chemicals on National Forest System land) with the potential to adversely affect surface or ground waters, will include constraints and/or mitigation measures designed to prevent contamination, and will include a plan for dealing with accidental spills.
- 14 **Floodplains.** Address in all project environmental analyses the presence of, and potential impacts, to any floodplain within the project area.
- 15 Invest in major structures, roads, or other facilities within floodplains only if no feasible alternative site outside the floodplain exists.
- 16 Permit short-term adverse impacts on floodplains only in conjunction with specific mitigation measures designed to minimize the impacts. Where activities adversely affect natural floodplains, the floodplains will be restored, to the extent practicable, shortly after the activity has ceased.
- 17 **Wetlands.** Address in all project environmental analyses the presence of, and potential impacts to, any wetlands within the project area. Particular attention will be paid to protection of springs during road location, timber sale plans, and range allotment management plans. Adverse impacts to wetlands will be avoided or mitigated.
- 18 **Roads and Skid Trails.** Do not construct roads through the length of riparian areas. Roads crossing riparian areas will not alter stream or ground water flow characteristics to a degree which will impact the riparian characteristics.
- 19 Design and maintain road drainage to prevent the influx of significant amounts of road sediment runoff into streamcourses.
- 20 Manage roads currently located in riparian areas or streamside management units to minimize impacts to water quality and wildlife habitat. In some instances, this will require higher levels of maintenance, road surfacing, or drainage than would normally be justified on the basis of road use alone. Roads may be closed, obliterated, and rehabilitated when it is determined, through an environmental analysis considering all resources, to be the best alternative.
- 21 Locate skid trails and roads to avoid paralleling stream channels in streamside management units. Log landings will not be placed in riparian areas. Skidding logs down streamcourses or ephemeral draws will not occur.
- 22 Avoid the use of heavy equipment (such as crawler tractors and skidders) within riparian ecosystems. When such use is unavoidable (as in the construction of bridges or other stream crossing devices or during the construction of stream channel improvements) the activity will include mitigation measures designed to minimize adverse effects on the riparian zone and downstream values. Ground disturbing activities will normally be limited to 10 percent exposed soil or less within riparian ecosystems.

23. Manage recreation activities to prevent site deterioration within riparian areas. Trails will be designed and maintained to minimize riparian impacts
24. **Fuel Treatment.** Remove slash created as the result of an activity within the normal high water zone of Class I and II streams unless needed for soil protection or other purposes. Slash removal from other streams may be required where resource damage would otherwise result. Slash piles normally will not be located within riparian areas
25. **Sewage Disposal.** Dispose of sewage effluent from campgrounds, administrative sites, and other developed areas in a manner which will prevent the contamination of surface or subsurface water. Sewage disposal practices will comply with State of Oregon requirements for sites in Oregon and State of Idaho requirements for sites in Idaho
26. **Mining Activities.** Protect watershed values to the fullest extent possible under existing laws in evaluating and developing mineral operating plans
27. When areas within 100 feet of Class I, II, or III streams or other perennial water bodies are disturbed by mining activities, they shall later be restored by the operator to equal or comparable condition. This restoration will occur whenever the operator is finished with an area that is large enough to logically restore. An inventory of existing conditions should be performed by Forest Service before approval of the operating plan is given. If this is not possible, then the inventory shall be performed before mining operations begin, with an amendment made to the operating plan. This inventory will determine
- (a) Densities of trees, riparian brush (alders, willows, etc.), nonriparian brush, and herbaceous vegetation.
  - (b) Fish habitat suitability (expressed as percent of habitat optimum). The inventory method used will be Cow-Fish 1/ or a similar one
28. Require the mining operator, as part of the restoration process to
- (a) Plant trees and riparian brush at spacings that will achieve the original densities of these types. This spacing will at least be equal to what existed originally, except when the original densities were too great for good growth
  - (b) Plant grass to achieve a density equal to or greater than the total of the original herbaceous plus nonriparian brush types--greater densities may be required if needed for erosion control
29. Require the mining operator, as part of the restoration process, to (where appropriate):
- (a) Construct a temporary fence to exclude livestock from the planted area if needed for protection from livestock grazing.
  - (b) Place whole trees, construct habitat enhancement structures, or perform comparable improvements within the stream channel at a density required to bring the fish habitat suitability index up to the same value that existed before the mining operations began. This is needed if instream work has disrupted the fish habitat suitability index by five or more percentage units.

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1/Lloyd, James R. Cow-Fish Habitat Capability Model. USDA Forest Service, Northern Region, Box 7669, Missoula, Montana 59807. June 1986

The estimated costs of the above operator requirements shall be incorporated into the value of the operator performance bond

- 30 Evaluate and restore all other surface areas impacted by mining as in the previous paragraphs except for those items dealing with fish habitat
- 31 **Water Rights and Instream Flows** File for water rights in accord with State law and FSM 2500
- 32 Protect instream flow on National Forest System lands through critical analysis (via NEPA) of proposed water uses, diversions, and transmission applications and renewal of permits. Protection 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, inserting protection measures into special use permits, or reaching formal agreements over use. Purchase of water rights and impoundments are other means for reducing these impacts (Also see Standards and Guidelines for Livestock Grazing and Wildlife).

## MUNICIPAL WATERSHEDS

### Goal

All domestic supply watersheds will be managed to maintain or improve water quality and stream-flows so that with adequate treatment by the purveyor a safe and satisfactory water supply will result

### Standards and Guidelines Applicable to All Domestic Supply Watersheds

- 1 **Logging and Transportation Systems.** Design and develop logging and transportation systems to protect water quality
- 2 **Project Analysis.** Site-specific analysis under the Forest Service NEPA process will be completed for all projects and activities proposed within the watersheds having the potential to affect water quantity or quality. This analysis will include consultation with the city served by the watershed. In the case of vegetation manipulation, this analysis may include evaluation of opportunities for improving streamflow volume and timing
- 3 **Monitoring.** Monitor activities having the potential to affect water quality to determine if objectives are met. If not, on-site corrective measures within the municipal watershed, will be immediately initiated by the Forest Service.
- 4 **Use of Chemicals.** Use fertilizers and pesticides (chemical or biological) within the watersheds only in emergency situations, and then only following close coordination with the City.
- 5 Avoid use of fire retardants within domestic supply watersheds when other effective measures of fire control are available. When the use of fire retardants within domestic supply watersheds is necessary, all reasonable efforts will be made to avoid direct application into live streams. Only fertilizer-based retardants will be used
- 6 **Fire Camps and Timber Sale Operations.** Locate fire camps only outside of municipal supply watersheds. When timber sales or other operations are located within a municipal watershed, wastes (including domestic, human, oil from machinery, etc ) will be transported outside the watershed for disposal

- 7 **Other Practices.** Where practices other than those specified in management area direction better serve the multi-resource objectives of the watersheds, and these practices will serve to protect or enhance water quality, quantity, or timing, these practices may be used

#### Standards and Guidelines Specific to the Baker City Watershed

- 8 **Secretary of Agriculture Agreement.** Comply with the 1912 Cooperative Agreement between the Secretary of Agriculture and the City of Baker as supplemented. The agreement between the City of Baker and the Secretary of Agriculture requires that use of land within the domestic supply watershed will not be permitted without the approval of the City of Baker except for measures necessary for the proper protection and care of the forests. These measures include timber management activities which are not detrimental to the water supply, construction activities consistent with the objectives of the agreement and rights-of-way acquired under Acts of Congress
9. **Roads.** Analyze the existing road system in Elk Creek drainage at the project level to determine future use
10. Construct timber harvest roads to minimize impacts to water quality. This will include prompt seeding of stabilizing vegetation on cuts and fills and upon closure of the roads, stabilization seeding on the roadbed, unless otherwise agreed to with the City of Baker. Selected roads may be gated to provide access for wildfire control and other administrative purposes.
11. Marble Creek Road (Road 6510) will normally remain open to public use
12. **Monitoring.** Monitor all activities having the potential to affect water quality to determine if objectives are met
- 13 **Livestock.** Limit grazing of domestic livestock to pack stock associated with recreation. Use of recreational livestock will be limited to Forest Service trails
- 14 **Additional Development.** Approve proposals for development, expansion and improvement of domestic supply facilities subject to site-specific analysis

#### Standards and Guidelines Specific to the La Grande Watershed

- 15 **Secretary of Agriculture Agreement.** Comply with the 1935 Cooperative Agreement between the Secretary of Agriculture and the City of La Grande as supplemented, until such time as the agreement is amended or terminated under the stipulations found therein. The agreement with the City of La Grande includes the following requirements.
- (1) That before entering into any agreement for the cutting of timber or removal of other forest products from National Forest lands within the area, the officials of the City of La Grande will be consulted and full consideration will be given to any requirements the City of La Grande may desire to impose as necessary for the safeguarding of the water supply.
  - (2) That in permitting the use of said lands for timber cutting or other purposes, full consideration shall be given to the preservation of the volume and purity of the city water supply, and if the proper State or Federal agencies shall determine, after due study and investigation, that the city water supply is being or will be diminished, contaminated or polluted through permitted operations upon said lands, and there is no other more practicable remedy for the situation, the Secretary, so far as he has the legal authority

to do so, will cause such permitted operations to be restricted, modified or discontinued.

- (3) Grazing of livestock on National Forest lands in the watershed will not be authorized by the Forest Service except with the consent of the officials of the City of La Grande. Any fencing or other improvements found necessary to effectively exclude livestock from the watershed or to aid in safeguarding the water supply will be constructed and maintained by the City under special use permit to be issued by the Forest Supervisor.
  - (4) So far as practicable with the means at his disposal, the Secretary of Agriculture will extend and improve the forests upon these lands by seeding and planting, and by the most approved methods of silviculture and forest management
  - (5) The Forest Service will administer and protect the area in connection with adjoining National Forest lands. Should the City of La Grande desire any special measures not provided by the regular Forest Service administration, they may be obtained at the expense of the City of La Grande by the appointment of additional employees to be appointed by and to be directly responsible to the Forest Supervisor of the Whitman National Forest, but their compensation will be paid by the said City at the same rate as men employed by the Forest Service on similar duties
16. **Roads.** Manage the watershed to provide water of a quality which is consistent with current levels of purity. Activities will be designed with the objective to maintain or improve water quality and streamflows. Maintaining the water quality and quantity will be the major factors in designing and developing logging and transportation systems
  17. **Project Analysis.** All projects and activities proposed within the watershed, having the potential to affect water quantity or quality, will receive site-specific environmental analysis under the Forest Service NEPA process. This analysis will include consultation with the City and consideration of any constraints or mitigation measures the city proposes
  18. **Monitoring.** Monitor activities having the potential to affect water quality and quantity to determine if objectives are met.
  19. **Access.** Continue closure to camping of the area immediately adjacent to the reservoir and domestic supply intakes, consisting of approximately 3,500 acres. If the City desires to further limit use and access to the watershed, a written request to the Forest Service will be acted upon under the Forest Service NEPA process.
  20. Manage roads within the watershed to limit public access, provide for fire prevention and suppression, to facilitate Forest management by the USDA Forest Service, and administration by the City
  21. **Access.** Close the watershed to off-road vehicle use except for over-snow vehicles operating on 18 or more inches of snow in designated areas
  22. Keep the entire watershed open to nonmotorized types of dispersed recreation including hiking and hunting.
  23. Continue closure of the Beaver Creek Reservoir and intakes to fishing, swimming, wading or other activities which include substantial contact with the water
  24. Continue access by the City to the reservoir area and other facilities as has been established or as approved by agreement with the Forest Service in order to maintain, repair, replace, or

otherwise maintain the caretaker facility, reservoir, intakes, pipelines, and other water facility structures.

### Standards and Guidelines Specific to the Sumpter Watershed

- 25 **Roads.** Keep Road 7300900 (McCully Fork Road) closed to public motorized vehicle use within the watershed but open to administrative use by the Forest Service and the city officials.

## AIR QUALITY

### Goal

To maintain air quality at a level that is adequate for the protection and use of National Forest resources, and that meets or exceeds applicable Federal and State standards and regulations

### Standards and Guidelines

- 1 **Wilderness.** Minimize the impact of prescribed burning on smoke-sensitive areas as designated in State smoke management plans and meet the air quality related requirements of Federal Class I areas (Also see Memorandum of Understanding between USDA Forest Service and Idaho Department of Health and Welfare dated February 5, 1988.)
2. Manage visibility factors to the extent possible to keep them within limits of acceptable change (L.A.C.)
3. Manage areas designated as wilderness by the Oregon Wilderness Act of 1984 as Class II areas until formal studies are completed.
- 4 **Prescribed Burning.** Use the following prescribed burning techniques, where appropriate, to minimize smoke emissions and assure that emission objectives are met:
  - (a) *Avoid burning when air stagnation advisories are in effect, during pollution episodes, or when temperature inversions exist*
  - (b) Design burning activities to utilize climatic conditions which favor rapid smoke dispersion.
  - (c) Burn under favorable moisture conditions, utilizing guides developed by Pacific Northwest Forest Fire Science Laboratory
  - (d) Accomplish mop-up quickly to reduce residual smoke

NOTE: Mandatory Class I areas were established by the Environmental Protection Agency on November 30, 1979. On the Wallowa-Whitman Class I areas include the Eagle Cap and Hells Canyon Wildernesses as they existed on that date. No intrusions of smoke from prescribed burning into Class I areas will occur during the period between July 4 and Labor Day. By law, the Hells Canyon National Recreation Area cannot be designated for Management below Class II, although State Implementation Plans may specify that it be managed as Class I. Smoke from all wildfires and from naturally-occurring prescribed fires within wilderness areas will not be considered a violation of class I air quality standards.

- (e) Design ignition method and firing technique to aid dispersion
- (f) Use smoke models to predict impacts including plume trajectory
- (g) Use rake-type dozer blades to keep soil out of piles and windrows
- (h) Keep fire from spreading into decks of cull logs

## **DIVERSITY**

### **Goal**

Maintain native and desirable introduced or historic plant and animal species and communities Provide for all seral stages of terrestrial and aquatic plant associations in a distribution and abundance to accomplish this goal Maintain or enhance ecosystem function to provide for long-term integrity and productivity of biological communities.

### **Standards and Guidelines**

1. **Project Analysis.** Develop, during project planning, site-specific management prescriptions the goals for diversity and ecosystem function
2. **Vegetation Manipulation.** Provide and maintain developing an ecologically sound distribution and abundance of plant and animal communities and species at the forest stand, basin, and Forest level. This distribution should contribute to the goal of maintaining all native and desirable introduced species and communities (see discussion in EIS Appendix G).
3. Base tree species used in planting harvest units on the potential of the site as indicated by plant associations Consideration should be given to regenerating and maintaining a mixture of tree species, where appropriate for the site
4. Retain, through precommercial and commercial thinning, a diversity of tree species based on site potential
5. Allow for all natural species to function following vegetation manipulation. None should be eliminated from the site

## **THREATENED, ENDANGERED AND SENSITIVE SPECIES**

### **Goal**

To protect and manage habitat for the perpetuation and recovery of plants and animals which are listed as threatened, endangered, or sensitive. (A list of these species can be found in the Forest Plan EIS ) To assure that management activities do not jeopardize the continued existence of sensitive species or result in adverse modification of their essential habitat

### **Standards and Guidelines**

- 1 **Reviews/Biological Evaluations.** Review all actions and programs, authorized, funded, or carried out by the Forest Service, to determine their potential effects on threatened, endan-

- gered, and sensitive species. Conduct these reviews, including biological evaluations, per direction in FSM 2670 and appropriate R-6 manual supplements
2. Prepare a biological evaluation during the environmental analysis of each project to determine possible effects of the proposed activity on threatened, endangered, and sensitive species
  3. **Other Activities.** Restrict or prohibit other activities (e.g., off road vehicles impacting plants or habitats) and monitor activities where necessary to protect threatened, endangered, or sensitive species
  4. **Cooperation With Other Agencies.** Cooperate with the States of Oregon, Washington, and Idaho in all aspects of sensitive plant management under the auspices of the Master Memoranda of Understanding. The Oregon Natural Heritage Data Base and the Washington Natural Heritage Program will be contacted regarding sensitive species information
  5. Cooperate with the U.S. Fish and Wildlife Service, the States of Oregon, Washington, and Idaho and the Oregon Natural Heritage Data Base and the Washington Natural Heritage Program in the development of Species Management Guides for sensitive species adversely affected by standard management practices
  6. Cooperate with the same agencies/organizations in the development and implementation of recovery plans for threatened and endangered species. Where such plans conflict with other management direction, the recovery plans will take precedence
  7. **Inventory** Inventory, by 1991, areas on the Forest identified in any existing recovery plans as having high potential as habitat for threatened or endangered species will be inventoried by 1991, or within three years of the publication of such plan. Features of habitat necessary to support the objective number of individuals will be identified. Corrective measures to avoid possible adverse effects on recovery of populations will be implemented
  8. **Collection.** Allow collection of threatened, endangered, and sensitive species only under permit in accordance with FSM 2673.
  9. **Data Bases.** Maintain the Forest data base for threatened, endangered, or sensitive plant sitings and inventory information at the Supervisor's Office in Baker. In addition, all sitings will be documented and provided to the Natural Heritage Program managers and to the U.S. Fish and Wildlife Service as appropriate
  10. **Monitoring.** Monitor known populations of sensitive species and their habitats in accordance with the Forest Monitoring Plan.

## SPECIAL USES

### Goal

To provide for the use and occupancy of the National Forest by private individuals or Federal, State, and local governments when such use is consistent with Forest management objectives and is in the public interest.

### Standards and Guidelines

- 1 **Private Development.** Make National Forest land available for support facilities for private development when suitable private land is not available for such needs
- 2 **Hydrometeorological Sites.** Manage and protect snow survey and other hydrometeorological sites in accord with the Memorandum of Understanding between the Forest Service and the Soil Conservation Service
- 3 **Recreation Residences.** Recreation residence permits will neither be issued for currently unoccupied lots nor will they be issued for lots which become vacant during the period this plan is in effect. Current recreation residences are under permit through 1999. Extensions beyond that time will be considered in the next Forest Land and Resource Management Plan.
- 4 **Crop Production.** Deny permits for crop production unless granting such permits is clearly in the public interest. Existing permits which are not within this intent will be terminated as the opportunity arises
- 5 **Outfitters and Guides.** Authorize and permit outfitter and guide operations where FSM 2720 criteria are met and when supported by an environmental analysis.
- 6 **Priority.** Give the needs of the general public priority over those of the applicant in considering special use applications
7. **Permit Process.** Special use evaluation, permit issuance, and administration will be in accordance with Forest Service Manual 2700

## ENERGY RESOURCES (OIL, GAS, GEOTHERMAL) AND POWER TRANSMISSION FACILITIES

### Goal

To provide for exploration, development, and production of energy resources on the Forest in coordination with other resource values and environmental considerations. To encourage and assist, whenever possible, in the continuation of regional geologic mapping and mineral resource studies on the Forest, in cooperation with other natural resource agencies. Also to provide for utility facilities on National Forest lands.

### Standards and Guidelines

1. **Mineral Leasing.** Recommend, based on environmental analyses, minerals leasing in management areas where the activity is compatible with management area goals and where mitigation will provide a reasonable degree of compatibility.
- 2 Apply appropriate special stipulations to leases when necessary to protect surface resources
- 3 In accordance with interagency agreements, post-leasing activity will include joint review by the Forest Service and Bureau of Land Management of detailed operating plans concerning activities in a site-specific area
- 4 **Hydropower.** Recognize existing water power withdrawals to the extent required by law.
- 5 Encourage hydroelectric production unless precluded or further limited by specific management area direction. Planning, construction, and operation of hydroelectric projects will be

consistent with the Federal Power Act and requirements of the Federal Energy Regulatory Commission.

- 6 **Utility Corridors** When applications for rights-of-way for utilities are received, the Forest's first priority will be to utilize residual capacity in existing rights-of-way

Remove utility facilities which are presently in avoidance or exclusion areas as it becomes practical to do so

## MINERALS

### Goal

To provide for exploration, development, and production of a variety of minerals on the Forest in coordination with other resource objectives, environmental considerations and mining laws To encourage and assist, whenever possible, the continuation of regional geologic mapping and mineral resource studies on the Forest in cooperation with other natural resource agencies.

### Standards and Guidelines

- 1 **Access.** Permit claimants reasonable access to their claims as specified in United States Mining Laws.
- 2 **Operating Plans.** Require operating plans, in accordance with 36 CFR 228 Subpart A, when operations are proposed which involve significant disturbance of the surface resources.
- 3 Operating plans will include reasonable and operationally feasible requirements to minimize adverse environmental impacts on surface resources
4. Analyze operating plan proposals and alternatives, including alternatives for access, reclamation, and mitigation, using the Forest Service NEPA process.
5. **Reclamation.** Develop reclamation standards using an interdisciplinary process to ensure lands are in productive condition to the extent reasonable and operationally feasible Reasonable opportunities to enhance other resources will be considered Concurrent reclamation will be stressed. Reclamation bonds will be based on actual reclamation costs and formulated using technical and other resource input (Also see Standards and Guidelines for Watershed )
- 6 **Withdrawals.** Review all existing withdrawals by 1991 in accord with Section 204(1) of the Federal Land Policy and Management Act (FLPMA) of 1976, except as provided otherwise by law.
- 7 Recommend areas with minerals potential for mineral withdrawal only when mitigation measures would not adequately protect other resource values which are of greater public benefit.
- 8 Conform with Section 204 of FLPMA in withdrawals from entry under general mining laws.
- 9 **Common Minerals.** Give priority to use of currently developed common mineral (natural gravel and hard rock) material sources 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.

10. Development of mineral material sites will be done in accordance with 36 CFR 228, Subpart C

## TRANSPORTATION SYSTEM

### Goal

To provide safe, efficient, environmentally sound access for the movement of people and materials involved in the use and management of the National Forest lands

### Standards and Guidelines

- 1 **Planning and Development.** Plan and develop the transportation system to serve long-term multiple resource needs rather than short-term individual project proposals.
- 2 Provide the minimum system necessary for the specific activities authorized under the management area direction.
- 3 Where appropriate, develop the system in stages as various resource activities occur.
4. Design, construct, operate and maintain roads and trails of the Forest transportation system based on resource objectives and intended uses, considering safety, total cost of transportation, and impacts on the land
- 5 All road designs and management actions will be based on specific road management objectives that document the need for and planned uses of a road. These objectives will state whether or not there is a need for the road to be open for use by the public or others between project activities
- 6 Manage road and trail uses to protect resources, accommodate or restrict conflicting uses, provide reasonable safety, and prevent damage to the facilities Roads and trails may be made available for different user groups at different times, or otherwise restricted through the Forest Travel Management Plan Closed roads may be converted to other uses such as special purpose trails
- 7 **Protecting Water Quality.** Protect water quality in all aspects of road and trail system management Use practices which will avoid or minimize sediment production from new road construction and will correct existing sediment sources
- 8 **Safety.** Conform with Forest Service manuals and handbooks regarding adequacy and safety of the transportation system
- 9 **Access Management.** Accept or encourage access to historical dispersed recreation sites by standard vehicles when this is compatible with management area direction and overall road management objectives Some recreation traffic may be discouraged or eliminated on logging roads during timber hauling operations
- 10 If a road is not at an adequate and safe standard for the traffic expected to use it, reconstruct the road or restrict traffic to a level for which the existing road is adequate
11. Manage traffic as needed due to structural limitations of the road or limitations imposed by other resources, such as wildlife or recreation

- 12 **Trails and Helispots.** Construct and maintain trails to provide a recreation experience as well as a transportation route Provide trails to meet specific management objectives and to achieve prescribed difficulty levels
- 13 Trails and helispots may be constructed in all management areas unless excluded or constrained by management area direction.
- 14 Manage National Recreation Trails according to the direction in their individual management plans
- 15 Emphasize trail retention, maintenance and improvement (and additions where there is a valid need) in Management Areas 4-11,13, 15 and 16
- 16 Evaluate the need for trails within the other management areas and perpetuate, or move to a new location, those trails which will serve a continuing purpose and which appear likely to be used 1/
- 17 **Open-Road Density** Meet the specific open-road density guidelines found in the direction for individual management areas unless a specific exception is determined, through the Forest Service NEPA process, to be needed to meet management objectives 2/ 3/

1/ The following trails appear likely to be retained

- trails in Joseph Canyon,
- much of the Lake Fork Trail System,
- trails that lead into the Elkhorn Ridge area and the North Fork John Day Wilderness,
- most of the Bear Creek Trail accessing the Eagle Cap Wilderness from the north, and
- the Five Points Trail on the La Grande Ranger District

This direction provides for retaining approximately 50 miles of trail in Management Areas 1,3, & 18 leaving a total of approximately 124 miles that may be eliminated by project activities

2/ Total road density (closed and open roads) is not restricted except as stated in the standards and guidelines for soils

3/ The method used for calculating open road densities is an important factor The average road density is calculated by dividing an area by the number of miles of open roads within that specific area If the area is too large, the average becomes meaningless, conversely, if the area is too small, the resulting figures may not provide useful information For the purpose of implementing this direction, open road density will normally be calculated on the basis of subwatersheds. The area of each Management Area contained in each subwatershed will be calculated, and the open roads within that management area/subwatershed will also be calculated to determine the open road density The acreage and road mileage included in the calculation will include all acres (NF and private) within the major proclaimed boundaries of the National Forest, but will exclude private land acreage outside the major proclaimed boundaries "Islands" of proclaimed National Forest which are outside the major proclaimed boundaries will be included in the calculations if they are still under National Forest management Decisions to leave open road densities greater than the guidelines are expected be the exception rather than the rule

- 18 Implement open road density guidelines as opportunities arise. Normally this will be following a timber sale project, but may also include special projects aimed at reducing open road densities in key areas
19. Analyze projects which will require construction of new roads or which require opening old roads, with the intent of meeting specific management area road density guidelines during the activity. If the analysis indicates that meeting these guidelines during project activity is important in meeting the resource management objectives, and if the project will require an open road density in excess of the guideline, then mitigation of the effects of adding open roads will take place where practical. Mitigation may include efforts such as closing other roads in the analysis area, scheduling projects and activities to minimize impacts, or managing timber sale activities so activity is limited to part of the sale at one time. The practicability of mitigation will be analyzed and decisions documented as part of the project decision.
- 20 Although the open road densities prescribed for each management area will normally be sufficient for management purposes, the guidelines are not intended to place restrictions on emergency uses such as wildfire control, search and rescue, etc
21. **All-Terrain and Off-Road Vehicles.** Permit all-terrain vehicle (ATV) use and over-the-snow vehicle use on blocked or closed roads unless this use is found to be incompatible with resource management objectives. These types of uses are generally felt to be an acceptable form of recreation except where site specific analysis shows them to be incompatible due to resource management problems. This determination will be made through the Forest Travel Management Plan
- 22 **Forest Access and Travel Management Plan.** A plan will be maintained identifying road, trail and off-road vehicle (ORV) restrictions for wildlife protection, recreation, and other purposes. This travel plan will be consistent with management direction for individual management areas and with other standards and guidelines herein (See also standards and guidelines for Recreation )
- 23 **Road Obliteration.** Obliterate roads not needed for future management (as determined by resource management objectives) at the end of project use and return them to resource production based on management area direction. Complete obliteration of roads within ten years after termination of the contracts, leases or permits.
24. Reestablish vegetative cover on obliterated roads by natural processes, where possible, or supplement by such means as scarifying, ditching, contouring, and seeding
- 25 **Special Areas.** Manage the Joseph Canyon Roadless Area (as described in Appendix C of the FEIS) so as to retain an "essentially roadless" character
- 26 Block or close to standard vehicles all new roads constructed within the Upper Five Points Creek drainage following project completion. New logging roads will be closed to public use during all project activities. Specific areas may be opened to the public for purposes of firewood removal for a period of 1-3 years following completion of a timber sale

## FIRE AND FUELS MANAGEMENT

### Goal

To provide well-planned and executed fire protection and fire use programs that are cost-efficient and responsive to land and resource management goals and objectives

### Standards and Guidelines

(Also see Forest-wide standards and guidelines for air quality.)

1. **Wildfire Control Priorities.** Give wildfires that threaten life, private property, public safety, improvements, or investments the highest priority for aggressive suppression action.
2. **Escaped Fire Situation Analysis.** Prepare an escaped fire situation analysis if a wildfire escapes initial action and threatens to exceed established limits for individual management areas.
3. **Prescribed Fire.** In meeting the total resource objectives of Forest management, the role and potential of fire as an integral part of the forest and rangeland will be considered where it furthers the management objectives of the various management areas
4. Prepare burning plans in advance of ignitions for each prescribed fire. The prescribed burning will conform to air quality guidelines. Burning plans will define what an escaped fire is, when it will be declared a wildfire, and when an escaped fire situation analysis will be prepared
5. Unplanned ignitions from both natural and human causes may be used for prescribed fires outside of wilderness if a prescribed fire plan has been approved and a fire is burning within prescription. Exceptions will be noted for specific management areas.
6. **Fuel Treatment.** Use resource objectives to guide levels and methods of fuel treatment within each management area, using the most cost-efficient method
7. **Fire Prevention.** Emphasize the difference between unwanted human-caused fires and prescribed fires which help meet management objectives in fire prevention efforts.
8. Target cost-effective plans for the prevention of human-caused fires at specific risks determined by ongoing monitoring of current and recent fire reports
9. **Fire Detection.** Review the mix of aerial and ground detection activities periodically to maintain the most cost-efficient combination.

## FUELWOOD

### Goal

To provide fuelwood of all species as a renewable energy resource for personal and commercial uses

### Standards and Guidelines

- 1 **Providing Fuelwood Opportunities.** Make fuelwood available to the public in a manner which is compatible with other resource values. The following will be considered
  - a Providing access to potential fuelwood or bringing the fuelwood to convenient points in timber sale or thinning areas through the utilization of appropriate timber sale contract clauses or the modification of fuels management prescriptions
  - b. Using commercial fuelwood contracts or personal use permits for slash disposal, thinning, and site preparation.
  - c Managing timber sales so that timber sale operators can be relieved of obligations in sale subdivisions as soon as possible in order to make the fuelwood within them available
  - d Opening certain slash areas to fuelwood gathering prior to traditional disposal
  - e Leaving slash as a fuelwood source for several seasons after it has been piled or rearranged to break the fuel continuity.
  - f Maintenance of adequate numbers and distribution of standing dead trees for snag-dependent wildlife species.
- 2 Consider season of year, access, and responsiveness to public needs when implementing a fuelwood program
- 3 **Controlling Use.** Cutting or removal of ponderosa pine wood for fuelwood will generally be prohibited. Exceptions will be by special permit or as specified in personal-use fuelwood permits
- 4 Control fuelwood cutting as necessary to meet resource objectives. Fuelwood cutting may be controlled by a variety of methods including signing, encouraging fuelwood cutters to cut in specific area, and closing some areas to cutting

## RECREATION

### Goal

In coordination with and awareness of recreational opportunities on other lands, provide a wide variety of recreation opportunities in an attractive setting, and make those opportunities available to all segments of society

### Standards and Guidelines

- 1 **Recreation Opportunity Spectrum.** Provide a full range of recreation opportunities, except urban, as described in the Recreation Opportunity Spectrum (ROS) and outlined in the National Recreation Strategy
- 2 Provide for interpretation and environmental education as an important part of outdoor recreation in all ROS classes. Promote a better understanding of the long-term compatibility of people living in harmony with nature as well as our natural and cultural history resources.

3. Encourage innovation, creativity, and partnership arrangements will be in all ROS settings to establish and sustain a balanced range of recreational services and facilities that are responsive to changing recreation demands on the Wallowa-Whitman National Forest.
4. Meet the goals for setting and experience opportunities for each ROS class as outlined below.

**Primitive.** *Timber harvest is not appropriate. Access must be nonmotorized with high to moderate degrees of challenge and risk to the pedestrian or equestrian user through a matching variety of trailless areas and different levels of trails.\* Site development scale is Level 1 or less.*

Restrictions and controls on the user are not evident after entry. Use densities of PAOT (persons at one time) per acre should range from .001 to .025 depending on the landscape's ability to absorb the sights and sounds of humans. Road management objectives are to prohibit use of any existing primitive roads by any motorized user. No roads may be built. Any existing primitive roads will be regraded and/or revegetated to natural-appearing conditions. The compatible visual quality level is preservation. Interpretation is through self-discovery, possibly augmented by books or guides, with no on-site facilities.

**Semiprimitive Nonmotorized.** *Unscheduled timber harvest may occur for salvage of dead timber resulting from catastrophic events or to improve and maintain a healthy, attractive, semiprimitive setting. No new roads may be built. Motorized harvesting and mineral exploration should be done in the low public use season and in not more than half of any decade. All activities must meet "foreground retention" visual quality objectives. Road management objectives are to eliminate or prohibit public motorized use of any existing primitive roads or trails. No facilities except for trail shelters, limited signing, sanitary and safety needs will be installed. All facilities will be made from native-like, rustic materials. Site development scale is level 2 or less. Use densities of PAOT per acre should range between .004 and .08 depending on the landscape's ability to absorb the sights and sounds of humans. Interpretation is through self-discovery, augmented by books, guides and maps, with no on-site facilities.*

**Semiprimitive Motorized.** *Vegetation management may range from no timber harvest to limited unscheduled regeneration cutting and sanitation salvage for the purpose of maintaining a healthy, attractive semiprimitive setting. Harvest units must meet "foreground partial retention" visual quality objectives.*

Motorized harvesting and mineral exploration may be done over "primitive" road systems primarily in the low public use season. Public access is by trails and primitive roads ranging in challenge from most difficult to easiest.\* Road management objectives are to encourage high clearance 4-wheel drive vehicles and trail bikes, but discourage highway vehicles. Primitive roads are maintained at Level II. Site development scale is Level 2 or less. Interpretation is through very limited on-site facilities, maps, brochures, guides, and other portable media.

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\*See Trails Handbook (FSH 2309 18) for definition of difficulty levels.

Facilities are limited to shelters, signs, sanitary, and safety needs in native-like, rustic materials. Use densities of PAOT per acre should range between .004 and .08 depending on the landscape's ability to absorb the sights and sounds of humans.

**Roaded Natural** Timber harvest may be scheduled (see VQO direction under Visual Resource Management) and should meet "retention" or partial retention" as seen from roads and trails. Access is generally single- or double-lane dirt or gravel roads. Road management objectives are to generally accept or encourage use by dispersed recreationists in highway vehicles. On some logging spurs or other single-purpose roads, this use may be discouraged or eliminated. Dispersed area facilities should be level 2 or less and may include shelters, boat ramps, sanitary facilities, interpretive facilities, and safety needs in native, rustic materials. Use densities of PAOT per acre should range between .04 and 2.5 depending on the landscape's ability to absorb the sights and sounds of humans. Density range includes averaging in developed sites. The norm for developed sites should be development scale 3. Mineral exploration and extraction may be appropriate but meeting adopted VQO. Interpretation is through signs and other structures, such as overlooks, decks and boardwalks, using native-like materials with some refinement in design, printed and other portable materials, and limited interpretation by Forest staff.

**Roaded Modified** Timber harvest is dominant but carried out within the NFMA regulation of being shaped and blended with the terrain. Stumps, skid roads, landings, and clearcut forms all may be dominant to the user. Road management objectives for local roads would often provide a complete mix of opportunities. Access to recreation campsites, berry fields, wood gathering areas, etc., is encouraged. Some roads will be managed to permit use by high-clearance vehicles and trail bikes while discouraging use by highway vehicles. Use on others by all vehicles may be restricted or prohibited to meet wildlife, safety, or other objectives. User-established sites will be recognized and prescriptions for timber harvest, slash cleanup, site preparation and other silvicultural practices will consider the environmental setting and recreational attractions. The attempt will be made to retain a significant measure of this character after treatment. Such sites will also be considered in grazing plans and the timing of when livestock are on the sites.

Interpretation is through simple on-site facilities such as signs or numbered posts made of native-like rustic materials, printed or other portable material. Facilities may include shelters for winter use by ski tourers or snowmobiles. Use densities of PAOT per acre should range between .008 and 1.2.

**Rural** Management directions for the small area of rural ROS on the Forest are included under Management Areas 5 and 16.

- 5 Discourage use where actual use densities exceed desirable levels or encourage use in other areas. These actions may include such things as recommending little-used areas to the public, limiting or increasing trailhead parking, maintaining or increasing difficult access, or separating uses (e.g., motorized and nonmotorized, or pedestrian and equestrian).
- 6 **Winter Recreation.** Develop and maintain opportunities for winter recreation where needed.
- 7 Provide networks of marked groomed snowmobile routes through agreement with snowmobile clubs.

8. Develop Nordic ski routes where there is an identified need. Grooming may be provided by cooperating groups.
9. Provide parking through cooperative arrangement with the State and counties
10. Mark snowmobile and Nordic ski routes to minimize the likelihood of conflict.
11. **Recreation Site Development.** Develop recreation sites, by ROS class, using the descriptions found in Table 4-6.
12. Encourage users and the general public to volunteer their efforts toward cleanup, maintenance, and development of recreation sites and facilities.

Table 4-6  
 APPROPRIATE RECREATION SITE DEVELOPMENT  
 BY RECREATION OPPORTUNITY SPECTRUM CLASS

Recreation Opportunity Spectrum Class	Development Scale	Description
Primitive	1	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.
Semiprimitive	2	Little site modification. Rustic or rudimentary site rather than for 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.
Roaded Natural	3	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 3 family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.

Rural	4	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 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.
Urban	5	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 5 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.

- 13 **Outfitters and Guide.** Outfitter guide activities may be considered within any management area, although outfitter camps will not be located within research natural areas.
- 14 **Special Areas.** Protect special places on the Wallowa-Whitman National Forest; e.g., dispersed recreation sites, water features, rock or unique landform features, areas of unique vegetation, historic sites, or other places which are special to Forest users commensurate with other Forest management objectives.
- 15 **Road, Trail, and Area Closures.** Road, trail, and area closures and off-road vehicle use will be in accordance with the Forest Travel Management Plan and 36 CFR 295. This plan will be reviewed annually and revised as necessary, considering management needs and public desires.

## LANDSCAPE MANAGEMENT

### Goal

To manage all National Forest lands to obtain the highest possible visual quality, commensurate with other appropriate public uses, costs and benefits.

### Standards and Guidelines

- 1 **VQO's.** Meet visual quality objectives through management techniques described in National Forest Landscape Management, Volumes 1 and 2, and the Wallowa-Whitman National Forest Visual Management Plan - Desired Visual Model (maps showing visual objectives are available at the Forest Headquarters in Baker). See also maps of Level I and Level II viewsheds in the FEIS.

- 2 **Retention Foreground.** In retention foregrounds the area regenerated per decade should not exceed 7 percent\* or be less than 3 percent\* of the suitable forest land within the viewshed. Maximum seen area disturbed at any one time should not exceed 10 percent\* within any viewshed. Limit regeneration unit size to that which meets retention and desired character including consideration of future entries and regrowth. The approximate range of sizes necessary to accomplish this is 1/2 to 2 acres in the immediate foreground (less than 500 feet) and 3 to 5 acres in the foreground greater than 500 feet from the road or trail. Units against road or trail edges should be shelterwoods or selection cuts rather than clearcuts. Target tree size is 36 inches where biologically feasible.
  
- 3 **Partial Retention Foreground and Retention Middleground.** In partial retention foreground and retention middleground, the area regenerated per decade should not exceed 9 percent\* or be less than 5 percent\* of the suitable forest land within any viewshed. The maximum seen area disturbed at any one time should not exceed 14 percent\* of any viewshed. Limit regeneration unit size to that which meets partial retention and desired character including consideration of future entries and regrowth. The approximate range of sizes necessary to accomplish this is 1/2 to 2 acres in the immediate foreground (less than 500 feet) and 3 to 5 acres in the foreground greater than 500 feet from the road or trail. Target size tree in foreground is 26 inches, where biologically feasible.

**FIGURE 4-2**  
**VISUAL QUALITY OBJECTIVES**

		Sensitivity Level						
		fg1	mg1	bg1	fg 2	mg 2	bg2	3
Variety Class	class A	R	R	R	PR	PR	PR	PR
	class B	R	PR	PR	PR	M	M	M <sup>1/</sup>
								MM
class C	PR	PR	M	M	M	MM	MM	

1/ If a 3B area is adjacent to RETENTION or PARTIAL RETENTION visual quality objective, select the MODIFICATION visual quality objective. If adjacent to MODIFICATION or MAXIMUM MODIFICATION objective areas, select MAXIMUM MODIFICATION.

\* Applies to regeneration harvest. Not applicable to intermediate cuts, overstory removals, or individual tree selection harvest.

4. **Partial Retention Middleground.** In partial retention middlegrounds, the area regenerated per decade should range between 8 and 10 percent\*. Limit maximum regeneration unit size to 10 acres. Maximum area disturbed at any one time should not exceed 20 percent\*
5. **Created Openings.** Consider a created opening is to no longer be an opening, visually, when trees reach 20 feet in height. Rotation periods will be sufficient to grow large tree character in viewshed foregrounds
6. **Resolving Conflicts.** Where conflicts develop between visual quality objectives and timber or range management objectives, these conflicts will be resolved in favor of meeting the visual objectives. Where conflicts occur between old-growth objectives and visual objectives, old-growth will have priority.
7. **Viewshed Plans.** Plans will be prepared for all Level I viewsheds that will refine boundaries, establish project design criteria, identify opportunities for scenic enhancement, and set entry priorities and timing

## WILDLIFE

### Goal

To provide habitat for viable populations of all existing native and desired nonnative vertebrate wildlife species and to maintain or enhance the overall quality of wildlife habitat across the Forest

### Standards and Guidelines

1. **Riparian.** Manage riparian habitat consistent with Forest Service Manuals 2500 and 2600. Where natural stream characteristics permit, the management (as described in Managing Riparian Ecosystem (Zones) for Fish and Wildlife in Eastern Oregon and Eastern Washington 1/) will provide for 60-100 percent shade on live streams, 80 percent or more of the total lineal distance of streambank in a stable condition, limiting fine inorganic sediment covering stream substrate to 15 percent, and 80 percent or more of the potential grass-forb, shrub and tree cover.
2. Give preferential consideration to resources such as fish, certain wildlife and vegetation, and water which are dependent upon riparian areas over other resources in actions within or affecting riparian areas
3. Where timber is managed in riparian areas, and in other parts of the SMU directly affecting riparian conditions, harvest will generally be by selection or by group selection techniques. These areas will normally require a longer timber stand rotation than is used on areas managed more intensely for timber. In situations where even-aged silviculture will better meet riparian area objectives, its application is acceptable. (Also see direction under Watershed Standards and Guidelines)

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1/ Riparian habitat subcommittee of the Oregon/Washington Interagency Committee. Managing Riparian Ecosystems (Zones) for Fish and Wildlife in Eastern Oregon and Washington, March 1979

\* Applies to regeneration harvest. Not applicable to intermediate cuts, overstory removals, or individual tree selection harvest

- 4 Manage timber stands in riparian areas to provide habitat for snag-dependent wildlife species at not less than the 60 percent level of the optimum habitat (including snags of all sizes) as described in Wildlife Habitats in Managed Forests (Thomas, 1979)
5. Manage existing and proposed populations of wild bighorn sheep according to Wild Bighorn Sheep Conflicts with Domestic Livestock and other Wildlife Ungulates on the Wallowa-Whitman Forest - A Summary Status Report and Interim Program Direction (January 1982 - on file at Forest Headquarters)
- 6 Consider introductions of other native or nonnative wildlife species, such as the Rocky Mountain goat, on a case-by-case basis through the NEPA process
- 7 **Snag Management.** Maintain at least the 20 percent level (the management requirement level) of snags 10 to 20 inches in diameter wherever higher levels are not specified and where doing so would not conflict with the primary management area objective. Exceptions include
  - a. Management Area 16 (Administrative and Recreation Sites),
  - b. Management Area 17 (Utility Corridors) if use of the corridor for its designated purpose requires clearing of vegetation
  - c. Areas where safe use of helicopter and other systems for log yarding will require snag falling. Short-term snag shortages may occur following these harvest activities. Sufficient green trees will be left in these situations so that adequate numbers of snags can be created
  - d. Areas where catastrophic mortality such as from fire, disease, or insect epidemic precludes the leaving of green replacement trees.
  - e. Areas where harvest is occurring to treat an insect or disease situation (such as dwarf mistletoe or root rot) and leaving green replacement trees would significantly reduce the effectiveness of the treatment
- 8 Provide specified snag levels within land areas that are generally no larger than a normal harvest unit (40 acres), the intent being not to average snag levels over large areas
- 9 Where adequate numbers of snags are not present and cannot be created, higher snag levels may be managed in adjacent areas and averaged with the low levels in deficient areas to meet the specified levels. However, averaging should be done over a small an area as possible, and replacement snags should be planned for the deficient areas to meet the distribution requirements as soon as possible
- 10 Provide snags either in patches or distributed across the landscape, reflecting safety, biological effectiveness, and operational feasibility
- 11 Retain existing and naturally-occurring snags at the 40 percent level unless higher levels are established in specific management area direction
- 12 Leave green replacement trees, where needed, to assure that the 20 percent snag level is met through time (i.e., at all times during a stands rotation). Do not leave additional green trees to provide for levels higher than 20 percent (except in riparian) unless established by specific management area direction

- 13 **Dead and Down Material.** Provide dead and down woody material to meet habitat requirements for those species of wildlife, insects, fungi, and other microscopic plant and animal species associated with this type of habitat. Actions to provide this habitat may include such things as leaving one or more concentrations of slash per acre of small mammals and ground-nesting birds, leaving unmerchantable logs on-site in various stages of decay, and activities needed to protect this debris to prescribed fire and fuelwood cutting.
14. **Raptor Nest Sites.** Protect all raptor nest sites in use. Protect other nesting sites, important roosting, or special foraging habitats where it can be accomplished without adversely affecting long-term timber production or unreasonably complicating timber sale preparation and related activities. Such means could include adjustments in unit boundaries, operating seasons, of harvest scheduling.
- 15 **Managing Bald Eagle and Peregrine Falcon Habitat.** Manage northern bald eagle and peregrine falcon habitat as described in the section of this chapter entitled "Threatened, Endangered, and Sensitive Species"
- 16 **Pileated Woodpecker Feeding Areas.** Provide a 300-acre pileated woodpecker feeding area within 0.7 miles of any designated old-growth patch (MA 15) approximately 300 acres or larger. This will normally be a contiguous block although it may be arranged in blocks of 50 acres or larger nor more than 0.25 miles apart. Within these feeding areas, maintain at least two hard snags ten inches in d b h or larger.
- 17 Locate pileated feeding areas in areas such as wilderness, MA 6, or other areas without scheduled timber harvest, when available.
- 18 **Unique Habitats.** Avoid alteration of unique habitats such as cliffs and talus slopes. Decisions to alter or disturb these habitats will only be made following site-specific NEPA analysis including identification of suitable mitigation measures.
19. **Coordination.** Coordinate activities that affect fish or wildlife resources with the appropriate State wildlife management agency in accordance with formal agreement. This may include State involvement during scoping and at other stages of decision making under the Forest Service NEPA process.
- 20 **Indian Treaty Rights.** Recognize the hunting and fishing rights of the Indian tribes in habitat management activities.
- 21 **Predator Control.** Permit predator control as necessary to achieve management objectives in coordination and cooperation with the Animal and Plant Health Inspection Service (APHIS), the Oregon Department of Fish and Wildlife, and the Idaho Fish and Game Department. Such control will be in accordance with Forest Service Manuals 2600 and 2300.

## CAVE MANAGEMENT

To secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment and benefit of all people. To foster increased cooperation and exchange of information between land managers and those who use caves located on Federal lands for scientific, educational, or recreational purposes. (Also see Public Law 100-691, the Federal Cave Resources Protection Act of 1988.)

## Standards and Guidelines

1. **Inventory and Classification.** Complete a Forest-wide, comprehensive cave inventory including a cultural resource inventory, as described in the Federal Cave Resources Protection Act of 1988 (FCRPA) and subsequent regulations. Evaluate and propose significant caves for listing on the National Significant Caves List. Unless otherwise directed in regulations subsequent to the FCRPA, caves will be classified and managed as follows:

Class 1: Sensitive Caves - Caves considered unsuitable for exploration by the general public either because of their pristine condition, unique natural features, significant cultural resources, or extreme safety hazards. They may contain natural or cultural features that would be impacted by low levels of visitation. These caves are not shown on maps or discussed in publications intended for general public use such as guides, brochures and magazines.

Class 2: Undeveloped Caves - Caves that are undeveloped or contain unmaintained or minimal developments and that are suitable for exploration by persons who are properly prepared. Although these caves contain features that generally resist degradation by recreational use, public use will not be directed toward them.

Class 3: Directed Access Caves - Caves with directed public access and developed for public use. These caves are shown on maps or have signs directing visitor access; frequently have guided tours and artificial lighting. Regardless of the level of development, public visitation is encouraged. The caves may have sensitive features that are protected.

2. Manage newly-discovered caves as Class 1 until an analysis of natural and cultural values is made.
3. **Management Plans.** Prepare individual cave management plans for caves with high natural, cultural, educational or recreational values, caves with hazardous conditions, or caves which receive heavy use. Cave management planning will be coordinated with non-Forest Service organizations and individuals. (Also see Memorandum of Understanding between the USDA Forest Service and the National Speleological Society, September 29, 1988.) The public will be encouraged to help in cave management planning.
4. **Protection and Management.** Protect significant caves from activities which would adversely affect their recreational, biological, geological, hydrological, mineralogical, paleontological, or cultural values. Protection will be based on the classification and natural and cultural values.
5. Restrict logging, road construction, and other uses of heavy equipment above or in the vicinity of a cave with a thin roof, or the course of such a cave, if there is a potential for damage.
6. Retain vegetation in the vicinity of a cave or cave course if it is required to protect the cave's microenvironment.
7. Fell trees away from the cave and its course if timber harvesting is permitted in the vicinity of a cave.
8. Cave entrances will not be altered or used as disposal sites for slash, spoils, or other refuse and no action will be taken to prevent or hinder ingress or egress of cave-dependent wildlife.
9. Management activities will not be permitted within any area draining into a cave if they are likely to affect the cave ecosystem through sedimentation, soil sterilization, the addition of nutrients or other chemicals (including pesticides, herbicides, and fertilizers) or through change the cave's natural hydrology.

- 10 Surface drainage will not be diverted into caves.
- 11 **Public Access.** Limit public access if required to prevent damage to cave features. Access may also be limited if there are safety hazards. (Specific location information of Significant Caves is exempt from disclosure to the general public.)
12. Action will be taken to inform the public of the values of caves, actions being taken to protect cave values, and opportunities for public use
- 13 **Scientific or Educational Use.** Scientific or educational use of caves may be allowed under permit

## TIMBER MANAGEMENT

### Goal

To provide for production of wood fiber consistent with various resource objectives, environmental requirements and economic efficiency

### Standards and Guidelines

1. **Soil Stabilization.** Stabilize lands disturbed as a result of timber management activities or road construction to control soil erosion and enhance forage and browse production, where appropriate. Stabilization methods and timing will recognize site-specific needs and objectives and will be decided through the NEPA process for individual projects or activities. (Also see Standards and Guidelines for Soils and Watershed.)
2. **Silvicultural Systems.** Prepare silvicultural prescriptions prior to all harvest activities. These prescriptions will be reviewed by a certified silviculturist.
3. Select silvicultural systems which will, to the extent possible and within the intent of the land management objectives:
  - a. Permit the production of a volume of marketable trees sufficient to utilize all trees that meet utilization standards and are designated for harvest.
  - b. Permit the use of an available and acceptable logging method that can remove logs and other products without excessive damage to the identified desirable residual vegetation.
  - c. Be capable of providing special conditions, such as a continuous canopy or continuous high density live root mats, when required by critical soil conditions or as needed to achieve particular management objectives, such as streamside protection, wildlife needs, and visual enhancement
  - d. Permit control of vegetation to establish desired numbers and rates of growth of trees, as well as vegetation needed to achieve other management objectives identified in site-specific silvicultural prescriptions
  - e. Promote a stand structure and species composition that minimizes serious risk of damage caused by mammals, insects, disease, or wildfire, and will allow treatment of existing insect, disease, or fuel conditions

- f Be capable of achieving management objectives such as those for streamside protection, wildlife needs, and visual resources
  - g. Develop manageable stands of at least five acres in size having a single future cultural treatment.
  - h Consider dispersion of future regeneration harvest units in the treatment of existing stands. Where appropriate to achieving dispersion objectives for other resources, prescriptions will provide for regeneration harvest of portions of large stands which might otherwise be treated with a single commercial thinning
  - i Include consideration of fuel treatment commensurate with resource needs
  - j. Be the most economical system to meet the desired objectives
4. Use clearcutting only where analysis by a certified silviculturist shows that it is clearly preferable to other cutting methods for achieving management objectives Selection of cutting methods will be made as a part of protect-level analysis
  - 5 Make waste wood residue from timber harvesting available for fuelwood gathering. Where this is impractical, residues in excess of those needed on-site will be disposed of by burying, broadcast burning, crushing, or other means, depending upon site-specific analysis. Economic and resource conditions may dictate several methods within one timber sale area
  - 6 Limit forest openings created by the application of even-aged harvest methods to a maximum size of 40 acres Exceptions are permitted for natural catastrophic events (such as fires, windstorms, or insect and disease attacks) or on an individual basis after a 60-day public notice period and review by the Regional Forester. In addition, the limits may be exceeded by as much as 50 percent without necessitating review by the Regional Forester or 60 days public notice when exceeding the limit will produce a more desirable combination of net public benefits and when any one of the following four criteria is met
    - a When a larger created opening will enable the use of an economically feasible logging system that will lessen the disturbance to soil, water, fish, riparian resources, or residual vegetation Such lessening is to be achieved by reducing landing or road construction, by enabling such construction away from unstable soil, or by reducing soil and vegetation disturbance caused by dragging logs
    - b. When created openings cannot be centered around groups of trees infected with dwarfmistletoe or root rot and therefore need to be expanded to include these trees in order to avoid infection of susceptible adjacent conifers
    - c. When visual quality objectives require openings to be shaped and blended to fit the landform
    - d When larger openings are needed to achieve regeneration objectives in harvest areas being cut by the shelterwood method and where destruction of the newly created stand would occur as a result of delayed removal of shelter trees This exception applies only to existing shelterwood units and to shelterwood units under contract prior to approval of the Forest Plan.
  7. Separate created openings by blocks of land that generally are not classed as created openings and that contain one or more logical harvest units These areas shall be large enough and contain a stand structure appropriate to meet resource requirements of the Forest

Plan Resource requirements may include wildlife habitat, watershed, landscape management, and others. Contiguous harvest units (cornering or otherwise touching) are not precluded, but together must be considered as a single opening which must be created within requirements for size, exception procedures, and justification

- 8 The total area of created openings contiguous to 30-acre or larger natural openings should normally be limited to an area not exceeding one-third the size of the natural opening and not occupying more than one-third of the natural opening perimeter. Openings should not be created adjacent to any natural openings (regardless of size) unless adequate vegetation along the edge can be developed or retained in sufficient density to protect wildlife values and visual quality objectives. The determination of adequate vegetation will be made by an appropriate interdisciplinary team.
- 9 A harvested area of commercial forest land will no longer be considered a created opening for silvicultural purposes when stocking surveys, carried out in accordance with Regional instructions, indicate prescribed tree stocking that is at least 4 1/2 feet high and free to grow. When other resource management considerations (such as wildlife habitat, watershed needs, or visual requirements) prevail, a created opening will no longer be considered an opening when the vegetation in it meets a particular management objective stated in the applicable management strategy.
- 10 Any harvests (regeneration or intermediate cuttings) which reduce stocking below the minimum crop tree stocking level will be considered a regeneration harvest. They will, therefore, require provisions for establishing new stands and be subject to created-opening spacing constraints
- 11 Slopes 30 percent or less will normally be harvested using ground-based logging equipment (tractors, rubber-tired skidders, low ground pressure equipment, etc.). Slopes greater than 30 percent will normally be harvested using short-reach cable systems, long-reach cable systems, or aerial systems
- 12 Precommercial thinning in future regenerated stands will normally be accomplished before cut stems exceed two inches in diameter at ground level in order to avoid the need for slash disposal.
- 13 In some instances, notably naturally-regenerated ponderosa pine and Douglas-fir, the timber volume remaining following a shelterwood or seed tree regeneration harvest may not be adequate to cover the expense of a subsequent overstory removal. Where this occurs the remaining overstory may be harvested at the time of the next commercial entry.
- 14 **Reforestation.** Selection of reforestation methods will be made on a site-by-site basis during project-level analysis. This analysis will always consider the option of natural regeneration. Design harvest and regeneration practices so that there is reasonable assurance of adequate restocking within five years after final harvest
- 15 **Re-evaluation of Unsited Lands.** Re-evaluate areas which were identified during the Forest planning process as unproductive or technically unsited for timber management during site-specific analysis of adjoining lands. When this analysis shows these lands to be suitable for timber management they will be managed with the adjoining lands, consistent with the applicable management area direction. Conversely, when site-specific analyses show additional lands to be unproductive or unsuitable, timber management on these lands will not occur.

- 16 **Harvest on Unsuitable Lands.** Permit commercial timber harvest on lands identified as technically unsuitable or unproductive (within management areas where harvest is not precluded) only for the following purposes.
- a Salvage or sanitation harvesting of trees or stands substantially damaged by fire, windthrow, or other catastrophe or which are in imminent danger from insect or disease attack.
  - b Cutting of individual trees or stands to test logging systems, to conduct experiments, or for the purpose of gathering information about tree growth, insect or disease organisms, or the effect of such harvesting on other resources.
  - c Cutting of trees to promote the safety of Forest users. This includes hazard tree removal in camp and picnic grounds, in administrative sites, and along roads open to the public.
  - d Harvesting to meet habitat objectives for threatened or endangered animal or plant species or to maintain or improve habitat for other wildlife or fish management indicator species.
  - e Harvesting to improve the scenic resource by opening scenic vistas or by improving visual variety.
  - f Harvesting of fuelwood and Christmas trees
  - g Harvesting to provide for access; for example road construction
  - h To permit the construction of recreation or administrative sites, roads, trails, or other facilities needed for the management of the Forest
17. **Utilization Standards.** Use timber utilization standards specified in the Regional Guide.
- 18 **Culmination of Mean Annual Increment.** Even-aged stands scheduled for regeneration harvest will generally have achieved culmination of mean annual increment on a cubic foot basis
19. **Harvest of Catastrophic Mortality.** In cases of catastrophic timber mortality such as from fire, insect epidemic, or windthrow, efforts will be made to salvage the affected timber as quickly as possible within the objectives of the affected management areas

## RANGE

### Goal

To manage range ecosystems to ensure that the basic needs of the forage and soil resources are met. To make available forage production, above that needed for maintenance or improvement of the basic resources, to wildlife (within Management Objective levels) and permitted domestic livestock under standards and guidelines that will assure continued maintenance or improvement of the resource

### Standards and Guidelines

- 1 **Forage Allocation.** Allocate forage resources on an allotment and/or management area specific basis to meet the basic plant and soils needs as the first priority. Forage production

above that needed for basic resource needs may be allocated to wildlife (as provided for in agreed upon Management Objectives) and permitted livestock.

- 2 **Utilization Standards.** Apply utilization standards to all management areas as shown in Tables 4-7 and 4-8. These standards provide for maximum utilization levels regardless of which species of animal uses the forage or browse.

TABLE 4-7  
Allowable Use of Available Forage  
in Riparian Areas 1/

Range Resource Management Level	Maximum annual utilization (percent)				
	Grass & Grasslike 2/		Shrubs 3/		
	Sat. Cond. 4/	Unsat. Cond. 5/	Sat Cond. 4/	Unsat Cond. 5/	Con 5/
Livestock use managed within current grazing capacity by riding, herding, and salting. Cost-effective improvements used only to maintain stewardship of range	40	0-30	30		0-25
Livestock managed to achieve full utilization of allocated forage. Management systems designed to obtain distribution and maintain plant vigor include fencing and water development	45	0-35	40		0-30
Livestock managed to optimize forage production and utilization. Cost-effectiveness culture practices improving forage supply, forage use and livestock distribution may be combined with fencing and water development to implement complex grazing systems.	50	0-40	50		0-35

1/ This will be incorporated in allotment management plans and will be implemented in accordance with the Allotment Management Planning Schedule. Allotment management plans may include utilization standards which vary from the above guidelines when associated with management systems and integrated resource objectives which will meet desired future condition objectives of the riparian dependent resources, Includes cumulative annual use by big game and livestock.

2/ Utilization is based on percent of annual production removed by weight

3/ Utilization based on measurement of weight and/or twig length of current available leader growth.

4/ Satisfactory Range Condition - see glossary (satisfactory range condition is determined by allotment classification and/or forage condition).

5/ Unsatisfactory Range Condition - see glossary (anything not "satisfactory")

Table 4-8

Allowable Use of Available Forage  
on Suitable Ranges other than Riparian 1/

Range Resource Management Level	Maximum annual utilization (percent) 2/					
	Forest		Grassland		Shrubland	
	Sat.	Unsat	Sat	Unsat	Sat.	Unsat.
	3/ 3/	Cond 4/	Sat 3/	Cond 4/	Sat. 3/	Cond. 4/
Livestock use managed within current grazing capacity by riding, herding and salting. Cost-effective improvements used only to maintain stewardship of range	40	0-30	50	0-30	40	0-25
Livestock managed to achieve full utilization of allocated forage. Management systems designed to obtain distribution and maintain plant vigor include fencing and water development	45	0-35	55	0-35	45	0-30
Livestock managed to optimize forage production and utilization. cost-effective culture practices improving forage supply, forage use and livestock distribution may be combined with fencing and water development to implement complex grazing systems.	50	0-40	60	0-40	50	0-35

1/ This will be incorporated in allotment management plans and will be implemented in accordance with the Allotment Management Planning Schedule. Allotment management plans may include utilization standards which vary from the above guidelines when associated with management systems and integrated resource objectives which will meet desired future condition objectives for the riparian dependent resources. Includes cumulative annual use by big game and livestock

2/ Utilization based on percent removed by weight for grass, grasslike, and forbs and by twig length, weight measurements, or incidence of use, for shrubs

3/ Satisfactory Range Condition - See glossary (satisfactory condition is determined by allotment classification and/or forage condition).

4/ Unsatisfactory Range Condition - see glossary (anything not "satisfactory")

- 3 **Allotment Management Planning.** Include in range allotment management plans 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
- 4 Identify management actions needed to meet riparian objectives within the specific time frame. Measurable objectives will be set for key parameters, such as stream surface shaded, stream-bank stability, and shrub cover. This process is described in "Managing Riparian Ecosystems (Zones) for Fish and Wildlife in Eastern Oregon and Eastern Washington" (1979)
5. Address the monitoring needed to determine if the desired rate of improvement is occurring. Allotment management plans currently not consistent with this direction will be developed or revised on a priority basis under a schedule established by the Forest Supervisor (see Appendix C). Some grazing allotments with riparian areas in unsatisfactory range condition (see glossary), and which do not have approved or functioning management plans, have been identified and are displayed in Table 4-9 This list may be supplemented as additional areas are identified
- 6 Identify suitable lands in unsatisfactory range condition (see glossary). Allotment plans with specific objectives for these lands will be developed on a priority basis under a schedule established by the Forest Supervisor. These objectives will define a desired future condition based on existing and potential values for all resources
7. The allotment plan will include, (a) a time schedule for improvement, (b) activities needed to meet forage objectives, and (c) a range project effectiveness analysis

Table 4-9  
Range Allotments With Identified Riparian Problems

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Log Creek	Hells Canyon NRA
Grouseline	Hells Canyon NRA
Marr Flat	Wallowa Valley Ranger District
Chesnimnus	Wallowa Valley Ranger District
Doe Creek	Wallowa Valley Ranger District
Swamp Creek	Wallowa Valley Ranger District
Lockhart	Baker Ranger District
Bullrun	Unity Ranger District
Camp Creek	Unity Ranger District
Ironside	Unity Ranger District
North Burnt River	Unity Ranger District
South Burnt River	Unity Ranger District
Whipple Gulch	Unity Ranger District
Pole Creek	La Grande Ranger District
Dark-Ensign	La Grande Ranger District
Whitehorse	La Grande Ranger District
Pine Valley	Pine Ranger District

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## INSECTS AND DISEASE (PESTS)

### Goal

Control Forest pests to levels that are compatible with resource objectives

### Standards and Guidelines

1. **Integrated Pest Management.** Use Integrated Pest Management (IPM) strategies for early detection, suppression and prevention of Forest pests and to manage pests within the constraints of laws and regulations. IPM strategies include manual, mechanical, cultural, biological, chemical, prescribed fire, and regulatory means. Strategy selection will be based on environmental analysis.\*
2. **Control of Noxious Weeds.** Aggressively pursue control of identified noxious weeds on lands where such activities are not precluded by management area direction. This will be accomplished through Forest activities and through coordination with county, State and other Federal agencies as funds permit.\*
3. When the need to control noxious weeds or competing vegetation is identified, the selection of any particular treatment method will be made at the project level based on a site-specific analysis of the relative effectiveness, environmental effects (including human health), and costs of the feasible alternatives. Herbicides will be selected only if their use is essential to meet management objectives.
4. Cooperate with the Animal and Plant Health Inspection Service (APHIS) in accord with the Memorandum of Understanding between APHIS and the USDA Forest Service.
5. **Monitoring.** Develop monitoring and enforcement plans for site-specific projects as described in the environmental analyses for these projects.

## SPECIAL AREAS

### Goal

To provide for establishment of specially-designated areas, for recreational or other purposes, as needed to achieve the multiple-use objectives of the Forest.

### Standards and Guidelines

1. *Designate or recommend designation of special areas if, during the life of this plan, proposals are made for the establishment of special areas (e.g., scenic byways, botanical areas) or the need for such areas becomes apparent.*

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\*Plans for control of competing vegetation and noxious weed control (including use of herbicides) will be tiered to the Programmatic FEIS for Managing Competing and Unwanted Vegetation, USDA Forest Service, Pacific Northwest Region, December 1988 or subsequent NEPA documents.

## MISCELLANEOUS

### Standards and Guidelines

- 1 **Catastrophes.** Catastrophes, such as those caused by insect epidemics, fire, floods or weather disturbances will not change the land allocation. The intent is still to achieve the conditions described for the management area. A catastrophe may result in the need for different methods or alter the time frame for achieving the objectives, but the objectives remain the same.
- 2 **Tree Encroachment.** Recognize natural grasslands and meadows primarily for the forage value and habitat they provide. Encroachment of trees on meadows and other high forage-producing nontimbered sites may be prevented if such action is warranted based on site-specific analysis including consideration of other resource objectives.
- 3 **Other Resource Needs.** The accommodation of other resource needs is encouraged within the intent of the primary resource objectives and budgetary constraints.

## MANAGEMENT DIRECTION SPECIFIC TO INDIVIDUAL MANAGEMENT AREAS

### INTRODUCTION

Management area descriptions provide the multiple-use direction for managing specific areas. Each management area is described in terms of 1) a description which defines management objectives and specifies resource priorities, 2) direction, and 3) planning assumptions. 1/

### MANAGEMENT AREA 1 (716,245 ACRES) (Timber Production Emphasis)

#### Description

Management emphasizes wood fiber production on suitable timber lands while providing relatively high levels of forage and recreational opportunities. Temporary forage increases result from silvicultural activities. Timber is managed according to Forest-wide standards and guidelines.

Timber management normally provides a mixture of even-aged stands up to 40 acres in size. These stands are to be managed at intensities promoting vigorous, healthy trees commensurate with the productive potential of the sites. Regeneration harvest units will be separated by uncut stands containing one or more logical logging units. This mixture of stand ages and sizes provides a degree of diversity for big game and other wildlife and a high level of wood fiber and forage production. Open roads are normally limited to 2.5 miles per square mile.

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1/ Planning assumptions are not intended as direction but provide background information on the expected results of the management direction as well as assumptions that were made in developing the planning model. An evaluation of the accuracy of the assumptions will be valuable for developing the next Forest Plan.

This management area contributes to the Forest's allowable sale quantity

#### Direction

1. **Watershed.** Apply Forest-wide standards and guidelines.
2. **Wildlife** Maintain at least 30 percent of the forest land within a project area (such as a timber sale) as cover, including both marginal and satisfactory cover. In addition, in timber sale planning, attempt to achieve a habitat effectiveness index of 0.5 or greater where this can be done without reducing timber harvest volumes. Other adjacent areas which provide cover, such as riparian areas, old-growth (MA 15) or backcountry (MA 6) will be considered in this calculation.
3. **Timber.** Use timber management to convert unmanaged natural stands to vigorous managed stands.
4. Even-aged management will normally be employed with tree spacing maintained to permit optimum growth toward the desired tree size. This may include precommercial thinning on regenerated stands. Where it is determined through project-level environmental analysis that use of uneven-aged management methods are advantageous and practical, as is sometimes the case in ponderosa pine and other forest types, these methods may be used. Even-aged regeneration practices may be by clearcut, shelterwood, or seed tree methods.
5. Silvicultural techniques will not normally include fertilization or irrigation although such practices are permitted, within budget constraints, if an analysis shows them to be desirable.
6. Regeneration will be by planting, natural means, or a combination of the two, depending upon the needs and capabilities of individual sites.
7. A harvest area of commercial forest land will be considered a created opening until minimum stocking level is reached and this stock consists of trees 4 1/2 feet, or greater, in height.
8. Created openings will generally not exceed 40 acres in size and will be separated by blocks of land that generally are not classed as created openings and that contain one or more logical harvest units. Contiguous harvest units (cornering or otherwise touching) are not precluded, but must be considered as a single opening which must be created within requirements for size, exception procedures, and justification.
9. The total area of created openings contiguous to 30-acre or larger natural openings should normally not exceed one-third the size of the natural opening and not occupy more than one-third of the natural opening perimeter. Openings should not be created adjacent to any natural openings (regardless of size) unless adequate vegetation along the edge can be developed or retained in sufficient density to protect wildlife and visual management objectives. The determination of adequate vegetation will be made by an appropriate interdisciplinary team.
10. All even-aged stands scheduled to be harvested will generally have reached the culmination of mean annual increment of growth, expressed in cubic measure.
11. **Transportation** The transportation system will be designed, built, and maintained primarily for management of the timber resource, but will consider all intended uses. The locations and numbers of roads will be determined by the logging systems which will provide the most

suitable means of timber harvest. During commercial hauling activities, public access will be discouraged or prohibited on many local roads.

12. Close local roads and collector roads, permanently or seasonally, between timber sale projects as needed to provide for soil and water protection, fire protection, wildlife habitat, recreation and other purposes. Open road densities will generally not exceed 2.5 miles per square mile. Where densities are projected to exceed 2.5 miles per square mile of open road during timber sale activities, analyses will be made to document that resource objectives will be met with the higher densities.
13. Manage the transportation system on that portion of Management Area 1 within the identified elk winter range as described in Management Area 3, including limiting open road density to 1.5 miles per square mile.
14. Provide public access for removal of fuelwood within the overall guidelines of 2.5 miles per square mile of open roads.
15. Analyze trail needs. Those trails that serve a continuing purpose and appear likely to be used will be protected and maintained for future use.
16. **Range.** Provide for protection of erosion seeding and tree plantations through changes in livestock management. In some instances, nonuse, fencing, or other means of control will be needed.
17. **Recreation.** Recognize undeveloped campsites, hunter camps, or areas where concentrated recreation use occurs as being significant in producing and utilizing dispersed recreation opportunities. Prescriptions for timber harvesting, cleanup, site preparation, and thinning will consider the environmental setting that contributes to the attraction of these sites for recreation purposes. The attempt will be made to retain this attractive character during and after treatments.
18. Provide roaded natural and roaded modified recreation opportunities.
19. **Landscape Management.** Apply Forest-wide standards and guidelines.
20. **Insects and Diseases.** Prevent and/or suppress insects and diseases using integrated pest management techniques when outbreaks threaten resource management objectives. Activities might include stump treatment for root rots, application of pesticides for defoliators and cone insects, early harvest, stocking control, and species control. The most cost-effective strategy may be no action, which will be considered in project analyses.
21. **Landownership.** Consolidate National Forest ownership where this will result in more efficient management and administration, acquisition will be primarily by exchange and should be planned so as not to substantially reduce timber outputs from (or, productivity of) the Forest.
22. **Minerals.** Apply Forest-wide standards and guidelines.
23. **Fire.** Use prescribed burning from planned ignitions to accomplish fire protection, site preparation, silvicultural, wildlife, and livestock objectives. In ecosystems where fire is not a useful treatment tool, fuel treatments other than burning will be used to reduce fuel accumulations to meet resource management objectives.
24. Use slash management, as needed, to provide for free movement of livestock throughout the area and prepare sites for reforestation.

- 25 The lowest cost fuel treatment option which meets the resource management objectives will normally be selected
- 26 Prescribed fire from unplanned ignitions will not be used due to the high resource values and the difficulty in controlling ignitions
27. Design suppression practices to protect the investment in managed tree stands and to prevent losses of large acreages to wildfire. This area is high priority for suppression of wildfires
28. Emphasize industrial operations contacts and inspections. Industrial closures will be utilized as needed, based upon local fire weather conditions
- 29 Avoid felling snags that do not present a hazard to life or a threat to successful suppression action.
- 30 The minimum acceptable suppression response for wildfires at all fire intensity levels will be "contain" (see glossary).

### Planning Assumptions

#### Timber

- Lodgepole pine dominated stands will regenerate naturally, though instances of artificial regeneration may occur
- Site preparation will occur prior to planting on 25 percent of tractor logged areas and 100 percent of other areas.
- Rodent control will be needed on 50 percent of the planted acres. This will normally be accomplished through trapping or poisoning.
- The time span between the regeneration harvest of a shelterwood and the final harvest is assumed to be ten years. Project-specific conditions may indicate the need for earlier or later removals. In the case of seed tree harvest, removal of the overwood may be delayed until the time of commercial harvest of the regenerated stand
- In managed, even-aged stands culmination of mean annual increment will be at 40-50 years for lodgepole pine and 80-100 years for other commercial species.
- It is assumed that site preparation and planting will be required in order to reestablish trees on sites where competition from ninebark is a problem.
- Genetically superior planting stock will be available

#### Wildlife

- Long-term cover/forage ratios will provide high quality big-game habitat although habitat effectiveness will be reduced by the roads needed for timber management. In the short-term, cover shortages will substantially reduce habitat quality in some areas.
- Management of this area will result in an average elk habitat effectiveness index of <sup>50 ROAD</sup> 62 percent (long-term average) of potential (including discounting for roads), although individual sites may have higher or lower values

- A high degree of wood fiber utilization will provide few down logs available for use by wildlife
- Because of the relatively short rotation periods, snags larger than 21 inches in diameter will be rare in managed stands. Snags 12 to 18 inches in diameter will usually exceed 40 percent of the optimum habitat levels for cavity nesters through natural mortality in managed stands

#### Watershed

- Timber harvest will result in temporary increases in streamflow
- Timber harvest, road construction, and grazing will result in some reduction in water quality below natural conditions. This will be mitigated as described in the Forest-wide standards and guidelines

#### Recreation

- Trails will normally become unnecessary due to road access, but may be retained or added through site-specific analysis

#### Range

- Satisfactory range condition will be achieved, as range allotment management plans are completed and implemented

#### Fire

- All techniques and equipment are appropriate for use in suppressing wildfire, dependent upon the fire intensity level and protection needs of the timber stand
- The broadest application of prescribed fire will be in ponderosa pine stands
- Some slash and larger dead material will be left as ground cover for soil protection, microclimates for the establishment of trees, and small mammal habitat

### **MANAGEMENT AREA 3, 3a (382,113 ACRES) (Wildlife/Timber)**

#### **Description**

Similar to Management Area 1, this management area provides a broad array of Forest uses and outputs with emphasis on timber production. However, timber management is designed to provide near-optimum cover and forage conditions on big game winter ranges (Management Area 3) and selected summer ranges (Management Area 3a).

When in a managed condition, timbered areas are normally a mosaic of even-aged stands, 40 acres or less in size. These stands are of different ages and are dispersed to provide a mixture of forage areas, satisfactory cover, and marginal cover. Regenerated trees must be ten feet tall before harvesting adjacent units. Special restrictions apply to any harvest which reduces cover. This is done to achieve optimum distribution of cover for elk. Open public road access is generally not more than 1.5 miles per square mile during the time that the areas are being used by big game. On summer ranges this will require physically closing roads. On winter ranges adequate road closure will normally result from snow. Improved forage area and cover distributions will help maintain or enhance elk herd productivity. Road access will be held at a low level as needed to maintain habitat quality and

recreation values. The availability of big-game escape opportunities along with a low level of road access on summer ranges will provide a big-game hunting challenge not found in Management Area 1.

This management area contributes to the Forest's allowable sale quantity

#### Direction

1. **Watershed.** Apply Forest-wide standards and guidelines.
2. **Timber.** Timber management will be similar to that of Management Area 1 but constrained to meet wildlife objectives. Where it is determined through project-level environmental analysis that use of uneven-aged management methods are practical, and better meet the objectives of Management Area 3, these methods may be used.
3. **Wildlife.** Vegetation manipulation (precommercial thinning, regeneration harvest, and overstory removal) which converts a site from satisfactory or marginal cover to a forage status will be designed so that
  - Summer Range** - At least 80 percent of the treated area is 1) within 600 feet of a satisfactory or marginal cover patch at least 6 acres in size, and 2) within 900 feet of a satisfactory cover patch at least 40 acres in size.
  - Winter Range** - At least 80 percent of the treated area is within 600 feet of a satisfactory cover patch at least 40 acres in size.
4. Consider a harvested area of commercial forest land a created opening until minimum stocking level is reached and this stock consists of trees 10 feet or greater in height.
5. Isolated timber parcels which, because of the distance to other timbered parcels, cannot be managed within the above criteria will be managed to maintain or enhance their big-game cover values.
6. Because of low site productivity some sites do not have the potential to provide thermal cover as defined in the glossary. In these situations, stands which are functioning as thermal cover, even though they do not meet the strict definition, will be considered thermal cover in project design.
7. **Transportation.** Design, build, and maintain the transportation system for the management of the timber resource but recognize all intended uses. The locations and numbers of roads will be determined by the logging systems providing the most suitable means of timber removal considering all resources of the area.
8. Close local roads and some collector roads, seasonally or permanently, as needed to provide soil or water protection or if needed to meet biological requirements of big game. They may also be seasonally closed in accordance with the Forest Travel Management Plan for recreation, fire protection, or other purposes.

NOTE: The preceding constraints are not intended to prevent the regeneration harvest of a hiding cover stand if doing so is necessary to create a quality cover forage mosaic or to rejuvenate a stagnant hiding cover stand, hastening the development of thermal cover where and when it otherwise would not develop.

9. In general, roads left open year long on summer ranges will be limited to 1.5 miles per square mile although in some areas local conditions will necessitate higher densities. In some instances, less than 1.5 miles per square mile will be feasible.
10. Where snow normally will provide an adequate level of road closure on winter ranges, additional closures to meet the 1.5 mile per square mile standard will not be necessary.
11. Close winter ranges to over-snow vehicles if necessary to prevent conflicts with big game using winter range.
12. Recognize and allow for public removal of fuelwood within the overall density guideline of 1.5 miles per square mile.
13. Where harvest entries are relatively infrequent, local roads which are not needed for other activities between harvest periods will be closed. Roads not needed in the foreseeable future for timber management will be closed and obliterated following timber sales, with the land being returned to production.
14. Protect and maintain existing trails that serve a continuing purpose and appear likely to be used in the future.
15. **Range.** Give preference to big game where definite conflicts for forage are determined to exist between big game and livestock, and big game numbers are at or below State management objective levels.
16. **Recreation** Apply standards and guidelines from Management Area 1.
17. **Landscape Management** Apply Forest-wide standards and guidelines.
18. **Insects and Diseases.** Apply standards and guidelines from Management Area 1.
19. **Landownership** Apply standards and guidelines from Management Area 1.
20. **Minerals.** Apply Forest-wide standards and guidelines.
21. **Fire** Favor prescribed fire slash treatment methods when feasible. Prescribed fire from planned or unplanned ignitions will be used to achieve winter range management objectives, and maintain diversity within plant communities.
22. The minimum acceptable suppression response will be "confine" on FIL 1-2-3, and "contain" on FIL 4 and greater.
23. Avoid felling snags that do not present a hazard to life or a threat to successful suppression.

### Planning Assumptions

#### Timber

- The thermal and hiding cover requirements in this management area will delay commercial harvest of some timber stands for one to seven decades, even though silvicultural need would indicate earlier entry.

- In some instances the need for thermal and hiding cover will delay or prevent precommercial thinning of *existing* stands; however, it is not expected that precommercial thinning of *managed* stands will be affected
- Cover constraints will be most restrictive in earlier decades, becoming easier to meet as stands enter a managed condition
- It is assumed that site preparation and planting will be required in order to reestablish trees on sites where competition with ninebark occurs

#### Wildlife

- Application of this direction will result in an average elk habitat effectiveness index of 74 percent (long-term average) of potential (including discounting for roads), although individual sites may have higher or lower values
- Because of the relatively short timber rotation periods, snags larger than 21 inches in diameter will be rare in managed stands. Snags 12 to 18 inches in diameter will usually exceed 40 percent of optimum habitat levels for cavity nesters through natural mortality in managed stands.

#### Transportation

- Snow will effectively close most winter range areas to access by wheeled vehicles during the winter months. Consequently, road closures more restrictive than those applied to Management Area 1 will not normally be necessary on winter ranges

#### Watershed

- Timber harvest will result in temporary increases in streamflows.
- Timber harvest, road construction, and grazing will result in some reduction in water quality below natural conditions. This will be mitigated as described in the Forest-wide standards and guidelines

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented.

#### Fire

- No change from Management Area 1

### **MANAGEMENT AREA 4 (582,700 ACRES) (WILDERNESS)**

#### **Description**

The intent is to preserve the wilderness qualities of these areas. These areas will be managed in accordance with the Wilderness Act of 1964, P. L. 94-199 (establishing the Hell's Canyon Wilderness), the Oregon Wilderness Act of 1984, and the 2320 section of the Forest Service Manual

The intent of the Wilderness Act is to preserve and protect the natural condition and characteristics of designated lands and to provide for current and future public enjoyment of these areas and their wilderness character. These areas are to remain essentially unaltered and undisturbed by man, with natural ecological processes (including the natural role of fire) permitted to operate with a minimum of human interference.

This management area does not contribute to the Forest's allowable sale quantity.

**Direction**

1. **Watershed.** Apply Forest-wide standards and guidelines
2. **Wildlife.** Wilderness designation precludes most types of wildlife habitat manipulation (see FSM 2300).
3. Permit fish stocking and wildlife reintroduction only where compatible with overall wilderness objectives.
4. **Trees** Trees will not be sold or cut for nonwilderness purposes except under specific conditions on valid mining claims.
5. **Transportation.** Limit the transportation system within wilderness to trails intended for nonmotorized use.
6. Access by motorized vehicle will normally be limited to emergencies. Entries for other purposes as provided by the Wilderness Act will be handled on a case-by-case basis. Helispot construction will not occur without Regional Forester approval.
7. Design and maintain system trails to Regional trail standards. Selected trails may be abandoned. New trail construction and relocation will be considered for resource protection, visitor safety, and to provide a variety of wilderness experiences.
8. **Range.** Grazing by domestic livestock may occur where established prior to the Wilderness Act. Manage consistent with the Wilderness Act. Range improvements (fences, water troughs, ponds, etc.) will be managed as described in FSM 2320.
9. Restrict grazing of livestock and recreational animals, as needed, in areas that receive heavy recreation use.
10. Manage grazing of recreational livestock to prevent site degradation.
11. Identify sensitive riparian ecosystems, such as lakeshores and adjacent terrain and wet meadows, in each allotment management plan. Develop prescriptions, including utilization standards, to maintain or enhance them.
12. **Recreation** Constrain user group sizes, use of recreational livestock, camp site locations, and certain other activities, as needed, to protect resources and wilderness values. This may include closure of some areas to horse traffic, and limiting the number of persons allowed to enter the area if other techniques for controlling resource damage prove unsuccessful.
13. Outfitter guide services will continue.
14. Hold meetings with wilderness user groups and outfitter guide associations as needed to keep these organizations informed of wilderness management problems.

- 15 Provide primitive recreation opportunities
- 16 **Landscape Management** The visual quality objective is preservation
- 17 **Insects and Diseases.** 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
- 18 Suppression activities for insect and disease outbreaks may be permitted with approval (Chief of the Forest Service) 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
- 19 **Cultural Resources** Conduct cultural resource inventory within the wilderness using an intuitively-based predictive model designed to provide an inventory of the obvious sites that will likely be affected by wilderness use. Inventory priorities will focus on finding and recording sites threatened by loss or serious deterioration during the next decade.
- 20 Protect cultural resource sites until evaluated. Priorities will be set for site evaluations. Those that are threatened with loss or deterioration will receive highest priority. Other evaluations will be conducted in order to gain data relevant to the past use of the National Forest. All evaluation work will preserve the wilderness resource.
21. Carry out mitigation efforts on all eligible or listed cultural resources if the management prescription is active removal or benign neglect, according to the National Historic Preservation Act and its implementing regulations. Priorities will be established for the mitigation of effects due to benign neglect based on the imminence of loss or deterioration of the affected resource.
- 22 Permit research within the wilderness only when it meets the following criteria
- a) Necessary to support the values set forth in Section 4(b) of the Wilderness Act or cannot be accomplished outside the wilderness
  - b) Is done in compliance with the preservation ethic for the wilderness resource
23. Protect the works of humans within the wilderness only when they are
- a) Necessary to support the values set forth in Section 4(b) of the Wilderness Act, or,
  - b) Serving administrative purposes as necessary for protection of the wilderness resource (Section 4(c)), or
  - c) Essential to cultural resource management
- 24 Nominate sites determined to be worthy of preservation and protection to the National Register of Historic Places.

NOTE Discussion of the wilderness recreation spectrum is found in FSM 2300. Maps of wilderness recreation spectrum are available for review at Wilderness District Offices.

- 25 On-site interpretation of sites will not be done. Interpretation may be done off-site through brochures and audiovisual programs
- 26 **Landownership** Retain all Federal land in Federal ownership and acquire non-Federal lands when available
27. **Minerals.** Designated wilderness is withdrawn from further mineral entry but mining on valid claims that existed prior to December 31, 1983, or establishment of the wilderness (whichever is later) may continue.
- 28 **Fire** The minimum suppression response for wildfires burning at all FIL's is "confine"
- 29 Consider any unplanned ignitions from natural causes (i.e., lightning) that occur in a designated wilderness to be prescribed fire unless the decision is made to declare it a wildfire. This decision must be made on a case-by-case basis
- 30 Give primary consideration to maintenance of wilderness quality during suppression action on wildfires. Evidence of suppression action will be minimized and rehabilitated as discussed in FSM 2462. Suppression techniques will be based upon the guidelines contained in WW-5100-16 and the "light hand tactics" guide

### Planning Assumptions

#### Timber

- No commercial timber harvest will occur

#### Watershed

- Water production is representative of that obtained from undeveloped areas. Recreation activities will not significantly reduce watershed condition or associated water quality. Some reduction in water quality below natural conditions will result from domestic livestock grazing.

#### Wildlife

- Timbered landtypes within this allocation will provide high levels of habitat for snag-dependent and solitude-dependent wildlife species.
- Allowing natural fire to burn some acreage will increase habitat diversity
- Fish populations are likely to decrease in those lakes where fish stocking is discontinued
- Old-growth forest will continue to occur within wilderness at approximately current levels

#### Range

- Grazing of domestic livestock will continue at approximately current levels

Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

## Fire

- Additional smoke in the Class I airshed will result from returning fire to a more natural role
- Although most prescribed fires will be small in size, some are expected to substantially exceed historical average fire size in this area

**MANAGEMENT AREA 5 (4,967 ACRES)  
(PHILLIPS LAKE AREA)**

**Description**

This area includes Mason Dam, Phillips Lake, and surrounding lands, as described in the Reservoir Area Management Plan of March 1971. The area is to be managed recognizing a variety of resource values with emphasis on recreation opportunities.

Timber resources are managed to provide an aesthetically pleasing forest for public enjoyment. Timber stands are managed to retain a thrifty condition, with tree spacing providing a park-like appearance at least at some periods during a stand's life.

This management area contributes to the Forest's allowable sale quantity.

**Direction**

1. **Watershed** Apply Forest-wide standards and guidelines.
2. **Wildlife** Follow habitat management guidelines found in "Wildlife Habitat and Development Plan for Phillips Lake Management", approved in 1978.
3. **Timber** Manage timber stands as visual foreground retention. Management will follow guidelines from National Forest Landscape Management, Volume 2, Chapter 5. Under a fully managed condition, the goal will be to have no more than 40 percent or less than 20 percent of the timber stands in any of the following stand conditions:

Ponderosa Pine/Douglas-fir and Mixed Conifer\*

Seedlings and Saplings	- 0	- 4.9 inches DBH
Poles	- 5	- 10.9 inches DBH
Mature Timber	- 11	- 29.9 inches DBH
Very Large Timber	-	30 + inches DBH

4. Shape and locate harvest units to retain or create irregular appearance and diversity consistent with foreground retention.
5. **Transportation** All construction and reconstruction of roads within the area will recognize heavy recreational use and associated safety hazards where recreationists and log trucks are operating on the same road. These safety problems will be dealt with during design, or with restrictions during use.

NOTE: Some aspects of the landscape may not, at all times, meet retention standards. For example, logging slash may be present for a short time after project completion. Stumps, although cut low, will be visible to persons walking through the area.

- 6 Design all roads to the standards described in the Reservoir Area Management Plan.
- 7 Close the area to off-road travel by motor vehicles
8. Construct and maintain trails to provide recreation access and experiences associated with the developed sites and opportunities offered by the area
- 9 **Range** Use of vegetation by livestock, either by livestock grazing or for hay production, may occur within the primary objective of improving habitat for wildlife
- 10 **Recreation** Manage recreation consistent with the Reservoir Area Management Plan
- 11 Interpretation will be through signs and other structures such as overlooks, decks and guided walks.
- 12 Use staff contacts at contact stations, principal attractions, and amphitheaters as needed
- 13 Provide rural recreation opportunities.
- 14 **Landscape Management** The visual quality objective outside developed sites is retention
- 15 **Insects and Diseases** Apply Forest-wide standards and guidelines
- 16 **Landownership** Retain ownership and acquire additional identified lands that enhance recreation, visual, fish and wildlife values as the opportunity occurs. Acquisition of less than fee title will be considered if direction and land management objectives can be met.
- 17 **Minerals** The area is withdrawn from mineral entry
- 18 **Fire.** Prescribed fire from planned ignition may be conducted for improving the sites Burning intervals will approximate the natural fire cycle in these groups Use of prescribed burning should not be readily apparent to the casual observer two years after occurrence
19. Suppress wildfires in a manner that minimizes heavy equipment use wherever possible
- 20 Use fuel treatment methods consistent with the guidelines found in the National Forest Landscape Management, Volume 2
- 21 The minimum acceptable suppression response for wildfires at all FIL's will be "contain"
- 22 Prescribed fire from unplanned ignitions will not be used

### Planning Assumptions

#### Timber

- Timber stands will be maintained in a healthy, vigorous growing condition throughout most of their rotation, although some trees will be retained for 200 years or longer to provide a big-tree component

#### Wildlife

- Stands 120 years old and older will provide a level of habitat for wildlife dependent on large trees However, the level of human activity and salvage of dead trees will prevent these stands from functioning as true old-growth

#### Watershed

- Timber harvest will result in temporary increases in streamflow
- Timber harvest, road construction, and grazing will result in some reduction in water quality below natural conditions. This will be mitigated as described in the management standards and guidelines

#### Fire

- Optimum fuel loading at developed and dispersed campground areas will resemble Photo Series PNW 52-1-PP-4-PC
- Fuel loading for areas outside developed and dispersed recreational influence zones will have more woody material on the ground than shown in PNW 52-1-PP-4-PC.

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

### **MANAGEMENT AREA 6 (122,788 ACRES) (Backcountry)**

#### **Description**

Management emphasizes opportunities for those dispersed recreation activities usually recognized within the relatively high elevation areas (upper forest, subalpine, or alpine areas). The recreation activities usually involve combinations of viewing scenery, hunting, fishing, rock hunting, observing wildlife, snowshoeing, cross-country skiing, camping, hiking, backpacking, and harvesting of minor products such as mushrooms and berries.

These areas are to remain relatively natural and undeveloped. A road density level similar to 1985 levels will be maintained. Although recreational site development is not precluded within this management area the intent is to emphasize semiprimitive recreation opportunities. These areas will be accessed largely by trail with some trails open to motorized use.

This management area does not contribute to the Forest's allowable sale quantity.

#### **Direction**

- 1 **Watershed** Apply Forest-wide standards and guidelines
- 2 **Wildlife**. Apply Forest-wide standards and guidelines.
- 3 **Timber** Timber harvest may occur in the event of a catastrophe such as a fire or insect outbreak when doing so would maintain or improve recreational or visual characteristics and meet the landscape management direction described herein. In addition, harvest may occur when analysis shows timber removal to be necessary to prevent spread of insects onto adjacent lands.

- 4 **Transportation.** Roads and helispots may be constructed under the following conditions.
  - a For mineral exploration and development as allowed under mining laws and regulations and to satisfy other valid existing rights.
  - b. For salvage of timber following catastrophic fire or insect outbreaks
  - c Incidental and minor portions of roads constructed to serve an adjacent management area
  - d To provide needed access to approved developments such as dams or utility corridors
- 5 Obliterate roads and helispots constructed under conditions (a) and (b) following use.
- 6 Existing roads may be maintained or have minor betterment that is necessary for resource protection and to provide for safe use by high clearance vehicles
7. Construct and maintain trails and trailheads as needed to provide semiprimitive recreation opportunities
8. Identify in the Forest Travel Management Plan what areas, roads, and trails will be open to motor vehicles.
- 9 **Range.** Apply Forest-wide standards and guidelines. Any appropriate range management techniques may be used.
10. **Recreation** Semiprimitive nonmotorized and semiprimitive motorized recreation opportunities will be provided. Minor amounts of roaded natural opportunities will occur at the edges of the areas
- 11 **Landscape Management** The visual quality objective is foreground retention, although measures to prevent insect spread may necessitate different short-term objectives.
- 12 **Landownership** Maintain Federal ownership and acquire lands, primarily by exchange, that enhance opportunities for dispersed recreation as the opportunity arises
13. **Minerals** Place extra emphasis on minimizing surface resource impacts and on high standard reclamation
- 14 **Fire.** The minimum acceptable suppression response in this area will be "confine" at all FIL's. Fire suppression will generally emphasize use of hand tools rather than heavy equipment
15. Use planned or unplanned ignitions to meet resource management objectives
16. Concentrate public contact on reaching the users prior to their entering the area. A low level of fire prevention activity is appropriate within this area
17. Develop a program to treat natural fuels buildup with prescribed fire
- 18 **Insects and Diseases** Insect or disease outbreaks affecting trees will not be artificially controlled unless it is necessary to protect resources in adjacent management areas. Noxious weeds may be controlled where cost effective

## Planning Assumptions

### Timber

- Timber outputs will be negligible

### Watershed

- Watershed impacts are expected to be primarily those associated with recreation activities, a few roads, and grazing activity. Impacts on watershed condition and water quality are expected to be small. Mitigation of these activities will occur as described in the Forest-wide management standards and guidelines

### Wildlife

- Natural tree mortality will provide snag habitat for snag-dependent species at nearly 100% of potential.
- Timber stands will continue to provide old-growth habitat at approximately current levels

### Transportation

- Roading densities will remain essentially unchanged from 1985 levels

### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

### Minerals

- Management of this area may make mineral exploration or extraction opportunities more difficult

### Fire

- Fuel loading will consist of natural accumulations except as modified by prescribed fire.
- Optimum fuel loading will resemble Photo Series PNW 105-2-SA-4

## **MANAGEMENT AREA 7 (26,909 ACRES) (WILD AND SCENIC RIVERS)**

### **Description**

Management is intended to preserve the special values of those rivers or river segments (meaning the river plus its associated corridor) which are part of the National Wild and Scenic Rivers System (See Table 4-10). Management of lands bordering or adjacent to the river (and its associated corridor) will not diminish the special values which caused the river to be included in the National Wild and Scenic Rivers System. The objective is to maintain the characteristics which contributed to their classification. (Also see Wild and Scenic Rivers Act, Public Law 90-542)

This section provides interim direction for management of those rivers added to the National Wild and Scenic Rivers System by the Omnibus Oregon Wild and Scenic Rivers Act of 1988. As specified by the Wild and Scenic Rivers Act (of 1968), individual management plans will be developed for these rivers. These plans, to be developed through the NEPA process, may include management direction different from what is found in these interim guidelines, necessitating a Forest Plan amendment.

This scenic and recreational river corridors of this management area contribute to the Forest's allowable sale quantity.

#### Direction

- 1 **Watershed** Construction of water impoundments, diversions, straightening, riprapping, and other modification of the waterways will generally not be allowed. Exceptions would include protection of major improvements (such as an existing bridge) and then only to the extent that they do not diminish the values that caused the river to be designated. Instances where any construction activities are permitted are expected to be very rare and of small scale.
- 2 **Wildlife** Apply Forest-wide standards and guidelines.
- 3 **Timber Management** No commercial timber harvest will occur within wild river segments.
- 4 Permit salvage and scheduled timber harvest within scenic and recreational river segments, consistent with objectives for visual quality and recreation.
- 5 **Range** Permit domestic livestock grazing to continue, consistent with the objectives for individual river segments.
- 6 Make range management structures visually compatible with river classification.
- 7 **Landownership** Retain Federal ownership.
- 8 Consider acquisition of easements upon, or fee title to, those lands critical to maintaining the characteristics of the river segments.
9. **Minerals** Formal designation by Congress as a wild river precludes further mineral entry but does not affect valid existing rights.
- 10 Evaluate proposals for activities in scenic and recreational segments to prevent pollution and unnecessary impairment of scenic quality.
11. Permit no new entry into study rivers pending study completion.
- 12 **Insects and Diseases** Control forest pests in a manner compatible with the intent of the Act and management objectives of contiguous National Forest System lands (FSM 3400).
- 13 **Fire.** In order to preserve water quality, retardant and heavy equipment will not normally be used in the proximity of wild rivers. Fire suppression activity along wild and scenic segments should protect the primitive nature of the area when possible.
- 14 Prescribed fire from planned and unplanned ignitions may be used, consistent with management direction for adjacent management areas.

The minimum acceptable suppression response to wildfires will be "confine" at FIL's 1-2-3, and "contain" for FIL 4 and greater.

Table 4-10  
Designated Wild, Scenic and Recreational Rivers

Established River/Stream	Segment	Miles	Class
Eagle Creek	Headwaters below Eagle Lake to Eagle Cap Wilderness boundary	4.0	W
	Eagle Cap Wilderness boundary to Paddy Creek	15.5	R
	Paddy Creek to Little Eagle Creek	6.0	S
	Little Eagle Creek to the National Forest boundary	1.5	R
Grande Ronde River	Confluence with the Wallowa River to Umatilla National Forest boundary	1.5	R
	Umatilla National Forest boundary to the Wallowa-Whitman National Forest boundary approximately 1/2 mile east of Grossman Creek	17.4	W
	Wallowa-Whitman National Forest approximately 1/2 mile east of Grossman Creek to Wildcat Creek	9.0	W*
	Wildcat Creek to the Oregon-Washington State line	15.9	R*
Imnaha River	From the confluence of the South and North Forks of the Imnaha River to Indian Crossing	6.0	W
	Indian Crossing to Cow Creek	58.0	R
	Cow Creek to its mouth	4.0	S
South Fork Imnaha River	From its headwaters to its confluence with the North Fork Imnaha River	9.0	W
Joseph Creek	From Joseph Creek Ranch, one mile downstream from Cougar Creek, to the Wallowa-Whitman National Forest boundary	8.6	W
Lostine River	From its headwaters to the Eagle Cap Wilderness boundary	5.0	W

\* Administered by the United States Department of Interior

Table 4-10 (Cont)  
Designated Wild, Scenic and Recreational Rivers

	Eagle Cap Wilderness boundary to the Wallowa-Whitman National Forest boundary at Silver Creek	11.0	R
Minam River	From its headwaters to the Eagle Cap Wilderness boundary one-half mile downstream from Cougar Creek	39.0	W
North Fork John Day River	From its headwaters to the North Fork John Day Wilderness boundary	3.5	W
	North Fork John Day Wilderness Boundary to Trail Creek	7.5	R
	Trail Creek to Big Creek	24.3	W*
	Big Creek to Texas Bar Creek	10.5	S*
	Texas Bar Creek to its confluence with Camas Creek	8.3	R*
North Powder River	From its headwaters to the Wallowa-Whitman National Forest boundary	6.0	S
Snake River	From Hells Canyon Dam to Pittsburg Landing	31.5	W
	From Pittsburg Landing downstream to the National Forest boundary	36.0	S
	See Management Area 8	67.5	W,S
<b>Study River</b>	<b>Segment</b>	<b>Miles</b>	
Wallowa River	From its confluence with the Minam River to its confluence with the Grande Ronde River	9.0	

\* All or partially on the Umatilla National Forest

- 15 **Transportation** Develop and maintain the transportation system consistent with wild, scenic, and recreational river objectives. Roads crossing or readily visible from *wild* river segments will not be constructed. Roads may occasionally cross or parallel *scenic* river segments provided scenic river values are not significantly compromised. Road construction and maintenance within *recreational* river segments will recognize the high scenic recreation and visual values associated with this classification.
- 16 Manage trails consistent with the objectives for individual river segments
- 17 Off-road vehicle use may be allowed to continue on existing routes. New open routes or areas will not be established.
- 18 **Recreation** Permit only primitive recreation developments within *wild river* segments. Primitive or nonprimitive development may occur along *scenic* and *recreational* segments
- 19 Maintain existing river access points. No new accesses will be established until management plans for individual rivers are completed
20. Special use permits for outfitting and guiding may be issued. If analysis indicates that use is nearing capacity, a temporary limit may be set, pending development of a management plan.
- 21 **Landscape Management** Meet the visual quality objectives of preservation along wild river segments, retention along scenic segments, and partial retention along recreational river segments.
- 22 Locate utility corridors so as to not be visible from river segments

### Planning Assumptions

#### Watershed

- Watershed impacts will be insignificant in wild river segments. Minor amounts of erosion and soil compaction will be experienced at campsites, along trails, and possibly from livestock grazing. These will be mitigated as described in the management standards and guidelines.

#### Wildlife

- Timber land types within this management area will provide quality habitat for snag dependent wildlife species.
- Timber stands currently in an old-growth condition will provide old-growth habitat through this planning period.

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented.

#### Fire

- Appropriate suppression action will be taken on ignitions that threaten to burn into areas without authority for unplanned ignitions.

**MANAGEMENT AREA 8 (14,355 ACRES)  
(HCNRA SNAKE RIVER CORRIDOR)**

**Description**

This area includes the wild and scenic river corridor along the Snake River within the Hells Canyon National Recreation Area. The primary emphasis is on maintaining the recreation experiences available at the time the area was established

This management area does not contribute to the Forest's allowable sale quantity.

**Direction**

(Note Also see the NRA Comprehensive Management Plan for detailed direction on management and administration )

1. **Watershed** Construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project work under the Federal Power Act will not be permitted, except for improvements required or used in connection with the operation and maintenance of projects in existence, or under construction, on the date that the Hells Canyon National Recreation Area was established
2. Construction of water impoundments, diversions, straightening, riprapping, and other modification of the waterways will generally not be allowed. Exceptions would include protection of major improvements (such as an existing bridge) and then only to the extent that they do not diminish the values that caused the river to be designated and are consistent with the act establishing the Hells Canyon National Recreation Area (Public Law 94-199) Instances where any construction activities are permitted are expected to be very rare and of small scale.
- 3 **Range** Permit livestock grazing to the extent that it is compatible with range and river management objectives
4. **Recreation.** Provide over-water semiprimitive motorized recreation opportunities. Over land (off-road) motorized use is prohibited
- 5 **Landscape Management** The visual quality objective is retention
- 6 **Timber** No standing trees may be felled (dead or live) except as necessary, in the judgment of the Forest Service, for safety purposes
- 7 **Transportation** Consider road and trail construction on a case-by-case basis to insure compatibility with wild and scenic river values.
- 8 **Insects and Diseases.** Apply Forest-wide standards and guidelines
9. **Wildlife** Apply Forest-wide standards and guidelines
- 10 **Landownership.** Maintain Federal land in Federal ownership
11. Acquire scenic easements within the river corridor. Land purchase may be required where scenic easements will not meet the direction established in the Wild and Scenic Rivers Act

12. **Minerals** This area is withdrawn from mineral entry
13. **Fire.** A fire management action plan will be prepared Suppress all wildfires that threaten life or property
14. Continue restriction of open fires during fire season.
15. The minimum acceptable suppression response to wildfires is "confine" at FIL's 1-2-3, and "contain" at FIL 4 and greater.
16. Use prescribed fire from unplanned ignitions consistent with management direction of adjacent areas.
17. Concentrate prevention efforts at launch sites and at river camp sites.
18. Conduct all fire management activities consistent with the maintenance of visual qualities as outlined in National Forest Landscape Management, Volume 2.
19. **Other** Dead logs or limbs lying on the ground or in the water may be used for campfires except for those that are specifically designated for retention

### Planning Assumptions

#### Timber

- There will be no commercial timber harvest

#### Watershed

- Watershed impacts are expected to be minor, associated primarily with recreational activities and grazing These will be mitigated as described in the Forest-wide management standards and guidelines Impacts on water quality are expected to be negligible.

#### Wildlife

- Habitat for snag-dependent wildlife species will be provided at nearly 100 percent of potential (although there are relatively few timbered acres).
- Timber stands which are currently in an old-growth condition will continue to provide old-growth habitat through this planning period.
- Roost trees for wintering bald eagles will be retained.

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented.

**MANAGEMENT AREA 9 (161,078 ACRES)  
(HCNRA DISPERSED RECREATION/NATIVE VEGETATION)**

**Description**

In these areas all activities will be managed to provide ample opportunities for dispersed recreation and to enhance native vegetation. It is envisioned that these areas will eventually be almost entirely occupied by native plant species. Range will be managed to maintain satisfactory range condition which will be achieved and maintained primarily by nonstructural means. These areas will provide a mix of primitive, semiprimitive nonmotorized and semiprimitive motorized recreation opportunities.

This management area does not contribute to the Forest's allowable sale quantity.

**Direction**

(Note. See the NRA Comprehensive Management Plan for detailed direction on management and administration.)

1. **Watershed** Construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project work under the Federal Power Act will not be permitted, except for improvements required or used in connection with the operation and maintenance of projects in existence, or under construction, on the date that the Hells Canyon National Recreation Area was established.
2. **Timber.** There will be no regulated timber harvest, however, measures necessary to protect timber on other public or private lands from disease or insects are permitted.
3. **Transportation** Develop the road system consistent with the transportation needs for the HCNRA as a whole.
4. Prohibit off-road vehicle travel, except for oversnow vehicles, subject to regulation under the Wallowa-Whitman Forest Travel Management Plan.
5. **Range.** Continue livestock grazing consistent with native vegetation production objectives.
6. Enhance native vegetation through the use of appropriate range management techniques. Management will be designed to favor native vegetation over non-native vegetation.
7. Although no attempt will be made to eradicate non-native species, further introduction will be avoided.
8. **Recreation** Provide recreation opportunities as described in the semiprimitive motorized and semiprimitive nonmotorized, and primitive categories of the Recreation Opportunity Spectrum.
9. **Landscape Management.** Apply Forest-wide standards and guidelines.
10. **Insects and Diseases** Emphasize biological methods when necessary to control insects or noxious weeds, although abiotic methods are not prohibited.
11. **Landownership** Retain these lands in Federal ownership and acquire the remaining non-Federal lands as directed by Congress.

- 12 **Minerals** This area is withdrawn from mineral entry.
- 13 **Fire** Prescribed fire from planned or unplanned ignitions may be used. Fire suppression activities will be conducted to maintain primitive and semiprimitive recreation opportunities.
- 14 Use fire, as needed, to provide forage diversity.
15. Minimum acceptable suppression response to wildfires will be "confine" at FIL's 1-2-3 and "contain" at FIL 4 and above.

### Planning Assumptions

#### Watershed

- Watershed impacts are expected to be minor, associated primarily with recreational activities and grazing. These will be mitigated as described in the Forest-wide Standards and Guidelines.

#### Wildlife

- Natural tree mortality will provide snag habitat for snag-dependent species at 100 percent of potential.
- Timber stands which are currently in an old-growth condition will continue to provide old-growth habitat through this planning period.

#### Timber

- Commercial timber harvest will not occur.

#### Transportation

- Roading densities will remain essentially unchanged from 1982 levels.

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented.

### **MANAGEMENT AREA 10 (123,029 ACRES) (HCNRA FORAGE PRODUCTION)**

#### **Description**

This management area lies within grasslands interwoven with timbered stringers in the Hells Canyon National Recreation Area. The grassland portions of these areas will be managed to provide maximum forage production with ranges maintained in satisfactory condition (desired ecological status) and structural improvements being rustic in nature. Timbered portions will provide old-growth habitat at approximately current levels.

This management area does not contribute to the Forest's allowable sale quantity

**Direction**

(Note: See the NRA Comprehensive Management Plan for detailed direction on management and administration )

- 1 **Watershed** Construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project work under the Federal Power Act will not be permitted, except for improvements required or used in connection with the operation and maintenance of projects in existence, or under construction, on the date that the Hells Canyon National Recreation Area was established.
- 2 **Wildlife.** Timber stringers will be managed as old-growth habitat.
- 3 **Timber** Timber will be managed to maintain old-growth. Timber management, using selective harvest methods, may occur when desirable for wildlife habitat improvement, or to improve scenic or recreational values. All timber harvest will be part of the unregulated component of the timber base.
- 4 **Transportation.** Apply Forest-wide standards and guidelines
- 5 **Range** Use any appropriate range management techniques
- 6 Structural improvements will utilize native materials or will otherwise be made to blend in with the surrounding landscape.
- 7 **Recreation** Provide both semiprimitive motorized and semiprimitive nonmotorized opportunities.
- 8 **Landscape Management.** Apply Forest-wide standards and guidelines
9. **Insects and Diseases** Apply Forest-wide standards and guidelines.
10. **Landownership** Retain these lands in Federal ownership and acquire the remaining non-Federal lands as directed by Congress
- 11 **Minerals** This area is withdrawn from mineral entry.
- 12 **Fire** Use prescribed fire from planned and unplanned ignitions, where appropriate, to maximize forage production in nontimbered areas
- 13 In timbered areas being managed for old-growth, fire management direction is the same as in Management Area 15.
- 14 The minimum acceptable suppression response to wildfires is "confine" at FIL 1-2-3 and "contain" at FIL 4 and above

## Planning Assumptions

### Timber

- Commercial timber harvest will be negligible

### Watershed

- Watershed impacts are expected primarily to be those associated with grazing. These will be mitigated as described in the Forest-wide Management Standards and Guidelines.

### Wildlife

- Natural tree mortality will provide snag habitat for snag-dependent species at 100 percent of potential
- Timber stands which are currently in an old-growth condition will continue to provide old-growth habitat.

### Fire

- Fire-killed trees in old-growth areas will be left standing to create snag habitat

### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

## **MANAGEMENT AREA 11 (70,706 ACRES) (HCNRA DISPERSED RECREATION/TIMBER MANAGEMENT)**

### **Description**

These areas combine dispersed recreation with timber management on the more productive sites within the NRA. The objective is to provide a variety of tree species, a diversity of healthy timber stands and ample dispersed recreation opportunities. This management area contributes to the Forest's allowable sale quantity.

### **Direction**

(Note. See the NRA Comprehensive Management Plan for detailed direction on management and administration.)

1. **Watershed** Construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project work under the Federal Power Act will not be permitted, except for improvements required or used in connection with the operation and maintenance of projects in existence, or under construction, on the date that the Hells Canyon National Recreation Area was established.
2. **Wildlife.** Manage snags of all sizes at a level providing habitat for snag-dependent species at 60 percent of optimum.

- 3 Retain 10 percent of the available commercial forest land in an old-growth condition
- 4 Maintain big-game habitat at no less than 60 percent of the optimum potential size and spacing of hiding cover for any one TRI compartment (or area of similar size).
- 5 **Timber.** Manage timber using selective harvest systems. Acceptable silvicultural treatments include shelterwood\* harvest, individual tree selection, group selection, sanitation and salvage
6. Permit precommercial and commercial thinnings, with individuals thinnings not exceeding two acres
7. Permit group selection for visual, recreation, wildlife, and tree regeneration purposes with a maximum opening size of two acres although exceptions may be permitted on a case-by-case basis
- 8 Provide a representation of five basic successional stages or age classes grass-forb, shrub-seedling, pole-sapling, young timber, and mature timber
- 9 **Transportation** Timber harvest roads will be the minimum necessary for haul of equipment and logs, consistent with protection of other resources
- 10 Timber harvest roads will be closed or left open as indicated by site-specific analysis considering all resources.
- 11 Skidding across meadows, scablands, and natural openings larger than one acre will rarely occur and will include rehabilitation measures necessary to protect site productivity.
- 12 **Range** All available range management techniques may be used to achieve satisfactory range conditions (desired ecological status).
- 13 **Recreation** Provide roaded natural recreation opportunities
- 14 **Landscape Management** Apply Forest-wide standards and guidelines
- 15 **Insects and Diseases** Apply Forest-wide standards and guidelines
- 16 **Landownership.** Retain these lands in Federal ownership and acquire the remaining non-Federal lands as directed or implied by Congress
- 17 **Minerals** This area is withdrawn from mineral entry
- 18 **Fire.** Prescribed fire from planned and unplanned ignitions may be used for slash disposal, site preparation, and habitat modification to meet recreation or other resource objectives.
- 19 The minimum acceptable suppression response to wildfires is "confine" at FIL 1-2-3 and "contain" at FIL 4 and above

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\* In his appeal decision of April 27, 1984, John Crowell, Jr , Assistant Secretary of Agriculture for Natural Resources and Environment, determined that shelterwood harvest is a type of "selective cutting" as the term is used in PL 94-199.

## Planning Assumptions

### Timber

- Timber management will generally be by uneven-aged management techniques with an average entry period of 5-15 years for tractor ground and 15-25 years for steep ground requiring aerial logging systems. Except for old-growth, the entire area of available, capable, and suitable forest will be entered for the initial harvest within about 20 years, a rate of 5-7 percent per year. Diameter distribution cutting in precommercial tree sizes will occur on 30 percent of the forested land area at the time of commercial entry.

### Wildlife

- As stands enter a managed condition, wood fiber utilization will leave only a moderate number of down logs available for use by wildlife. Occasional slash piles will be retained for small animal use. Optimum thermal cover for elk will be limited to old-growth timber stands within this management area (10 percent). Distribution of these old-growth patches may be less than optimum for elk thermal cover, though selective harvest will retain thermal cover values in many instances.

### Watershed

- Streamflow increases as a result of timber management activities will be insignificant.
- Timber management, grazing, and road construction will result in water quality below natural levels. These will be mitigated as described in the management standards and guidelines.

### Fire

- Selective harvest methods will generally limit the use of underburning because of diverse stand conditions; however, some opportunities may exist in fire-tolerant stands.

### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented.

## MANAGEMENT AREA 12 (15,160 ACRES) (RESEARCH NATURAL AREAS)

### Description

The objectives for establishing RNA's are to preserve examples of all significant natural ecosystems for comparison with those influenced by humans, to provide educational and research areas for ecological and environmental studies, and to preserve gene pools for typical and rare and endangered plants and animals.

RNA's typify important forest, shrubland, grassland, alpine, aquatic, and geologic types and other natural situations that have special and unique characteristics of scientific interest and importance. Activities in RNA's are limited to research, study, observations, monitoring, and kinds of educational activities that are nondestructive and nonmanipulative.

A research natural area establishment report will be prepared for each recommended area. These studies will determine the boundaries of the areas. Until the establishment reports are signed by the Chief of the Forest Service, the areas designated by this plan are recommendations. Proposed RNA's will be protected from uses which would reduce their suitability for RNA designation. The Indian Creek RNA has been established by the Chief. Following establishment, a management plan (approved by the District Ranger) will be developed for each RNA.

Additional RNA's may be proposed during the life of this Plan to fill RNA needs identified in Appendix H to the EIS

**Direction**

- 1 **Watershed.** Apply Forest-wide standards and guidelines.
2. **Wildlife.** Prevent the introduction of non-native species.
3. **Timber.** Timber harvest will not occur unless for research purposes
4. **Range.** Objectives for grazing will be defined in situations where grazing is needed to establish or maintain vegetative communities
- 5 In research natural areas where livestock grazing is not part of the management prescription, the Regional Forester and Station Director shall, as appropriate, establish a level of acceptable casual or incidental livestock use that can be tolerated and is consistent with the management prescription for the research natural area.
- 6 **Transportation.** Roads and trails will normally be the minimum necessary to provide access for research and education objectives
7. Off-road vehicle use will be prohibited.
8. **Research** Prepare establishment reports and management plans for each proposed RNA. In addition to the one existing research natural area, 18 areas are recommended for addition to the Research Natural Area System:

Lightning Creek	Pleasant Valley
Alum Beds	Little Granite
Bob Creek	Craig Mountain Lake
West Razz Pond and Razz Lake	Mt. Joseph
Bills Creek	Vance Knoll
Duck Lake	Pt Prominence
Government Draw	Basin Creek
Indian Creek (existing RNA)	Haystack Rock
Horse Pasture Ridge	Cougar Meadow
Lake Fork	

- 9 **Recreation** Manage these areas to accommodate recreational use similar to the management areas surrounding them
- 10 Discourage public recreation use if levels become so high as to be incompatible with the primary objective
- 11 Where special orders are needed to limit, restrict, or control specific activities such as camping, seasons of use, or other uses, that are not compatible with the objectives of the research

natural area, the Forest Supervisor shall issue orders pursuant to 36 CFR 261, subpart B, to protect an area's features. Any such orders shall incorporate the special closure provisions of 36 CFR 261.53

- 12 **Landscape Management.** Apply Forest-wide standards and guidelines.
- 13 **Landownership.** Retain these lands in Federal ownership and acquire private lands as opportunity or need occurs
14. **Minerals.** Recommend formally classified RNA's for withdrawal from mineral entry.
- 15 **Fire.** Design suppression activities to minimize site disturbance. Prescribed fires will be used only in conjunction with approved research projects
- 16 The minimum acceptable suppression response will be "confine" at all FIL's.
- 17 **Insects and Diseases** The decision on treatment of Forest pests will be made on a case-by-case basis. Where pest management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact to other components of the ecosystem.
18. **Other.** Prohibit the gathering of fuelwood for commercial or home use

#### **Planning Assumptions**

##### Timber

- There will be no timber harvest

##### Watershed

- Watershed condition and water quality and quantity will approximate pristine conditions

##### Wildlife

- Timber stands which are currently in an old-growth condition will continue to provide old-growth habitat.
- Natural tree mortality will provide snag habitat for snag-dependent species at 100 percent of potential.

##### Fire

- No fuel treatment activity will occur unless compatible with RNA objectives
- Fuel will be allowed to accumulate at natural rates.
- Prescribed fires from unplanned ignitions will be used consistent with the management plans for specific RNA's.

**MANAGEMENT AREA 13 (5,733 ACRES)  
(HOMESTEAD FURTHER PLANNING AREA)**

**Description**

This management area includes that portion of the Homestead Further Planning Area under Forest Service administration. The USDI Bureau of Land Management administers the larger portion of the Homestead area and is responsible for preparing a recommendation to Congress either for wilderness or nonwilderness use. This area will be managed to preserve wilderness characteristics until the detailed study can be completed.

This management area does not contribute to the Forest's allowable sale quantity.

**Direction**

1. **Watershed** Apply Forest-wide standards and guidelines
2. **Wildlife.** Wildlife habitat manipulation may be permitted provided it does not reduce the suitability or desirability of the area as wilderness.
3. **Timber.** Trees will not be sold or cut except under specific conditions on valid mining claims or under emergency conditions such as fire or insect and disease control
4. **Transportation** Maintain existing trails will be maintained.
5. No new roads will be constructed until the wilderness question is decided.
6. **Range.** Grazing of domestic livestock may occur under the same guidelines as in wilderness
7. Manage range improvements as described in FSM 2320
8. **Recreation.** Limit recreational uses to those which do not reduce the suitability of the area as wilderness.
9. Permit off-road vehicles consistent with the Forest Travel Management Plan.
10. Provide semiprimitive motorized and semiprimitive nonmotorized recreation opportunities
11. **Landscape Management** The visual quality objective is preservation, pending completion of the wilderness study by the Bureau of Land Management
12. **Landownership.** Retain in Federal ownership.
13. **Minerals** Apply Forest-wide standards and guidelines.
14. **Fire.** Design fire suppression activities to maintain future management options, prescribed fires from unplanned ignitions may be used to meet resource objectives
15. Use "No Trace" fire suppression standards will be as outlined in pamphlet WW-5100-16.
16. The minimum acceptable suppression response at all FIL's will be "confine."
17. **Insects and Diseases** Permit artificial control of Forest pests only to protect values outside the further planning area

## Planning Assumptions

### Timber

- No commercial timber harvest will occur

### Watershed

- Water quality and quantity are representative of that obtained from undeveloped areas. Recreation activities will not significantly reduce watershed condition or associated water quality. Some reduction in water quality will result from domestic livestock grazing. These will be mitigated as described in the Forest-wide standards and guidelines.

### Wildlife

- Timbered land types within this allocation will provide maximum potential habitat for snag-dependent and solitude dependent wildlife species

### Fire

- Heavy equipment will rarely be used in fire suppression activities.

### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

## MANAGEMENT AREA 14 (27,051 ACRES) (STARKEY EXPERIMENTAL FOREST AND RANGE)

### Description

This area includes the Starkey Experimental Forest and Range. The area is allocated to research use and will be managed to protect existing research projects and provide for future research needs. In addition to its research contribution, the experimental forest is expected to provide a variety of other benefits including timber and livestock forage when compatible with research uses.

This management area does not contribute to the Forest's allowable sale quantity.

### Direction

(Note: It is expected that standards and guidelines applicable to all management areas will normally be applied. However, standards and guidelines are not intended to restrict research activities.)

1. **Watershed.** Apply Forest-wide standards and guidelines
2. **Wildlife.** Apply Forest-wide standards and guidelines
3. **Timber.** Manage timber using customary silvicultural techniques, unless contrary to research objectives.

- 4 **Transportation.** Apply Forest-wide standards and guidelines
- 5 **Range.** Manage utilization of forage by domestic livestock and wildlife according to research needs.
- 6 **Recreation.** Provide roaded natural and roaded modified recreation opportunities.
7. **Landscape Management** Apply Forest-wide standards and guidelines.
8. **Insects and Diseases.** Apply Forest-wide standards and guidelines provided preventive and suppressive techniques are consistent with research purposes.
- 9 **Landownership** Retain in Federal ownership
- 10 **Minerals** Apply Forest-wide standards and guidelines.
- 11 **Fire.** Suppress wildfires using techniques consistent with research activities Retardant will be used for wildfire suppression only with direct approval from the research project leader
12. Prescribed burning may only occur when compatible with research needs
- 13 The minimum acceptable suppression response is "confine" at FIL 1-2-3 and "contain" at FIL 4 and above
14. **Other** To protect research, wood gathering for home heating will not normally be permitted Exceptions to this policy may occur in special situations.

(Note: Additional direction for managing experimental forests is found in the 4000 section of the Forest Service Manual )

### **Planning Assumptions**

#### Timber

- Timber output is difficult to predict because of changing research needs, although some utilization will occur.
- Timber management techniques and harvest cycles will be highly variable

#### Watershed

- Timber harvest, livestock grazing, and other activities are likely to impact watershed condition although the degree, extent and frequency of impact are unknown

#### Wildlife

- The quality of wildlife habitat in the future is unknown and will vary with research needs Inherent characteristics of the area assure a high degree of habitat diversity and a relatively high level of big game hiding cover, thermal cover, and forage

## Fire

- This area has high priority for suppression of wildfire.

**MANAGEMENT AREA 15 (36,750 ACRES)  
(OLD-GROWTH PRESERVATION)**

**Description**

These areas are intended to maintain habitat diversity, preserve aesthetic values, and to provide old-growth habitat for wildlife. Old-growth stands contain mature and overmature trees in the overstory and are well into the mature growth stage and usually contain a multi-layered canopy and trees of several age classes. Standing dead trees and down material are present. Evidence of human 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.

There are 20 animal species on the Wallowa-Whitman which indicate definite preference for mature or old-growth forest. Management indicators of this type of habitat are the pine marten, pileated woodpecker, northern three-toed woodpecker, black-backed three-toed woodpecker, and goshawk. Old-growth timber habitat represents the best habitat for these species. It is not known whether other habitats are sufficient to maintain viable populations of these species without an available reservoir of old-growth. These areas include timber stands at widely ranging elevations and aspects, and in a variety of plant communities. It is intended that these stands will continue to provide the quality habitat needed by those wildlife species dependent upon mature and old-growth timber and will provide a balance of vegetative condition.

This management area does not contribute to the Forest's allowable sale quantity.

**Direction**

1. **Watershed.** Apply Forest-wide standards and guidelines.
2. **Wildlife.** Select alternative stands in instances where monitoring or project inventories indicate that stands allocated as old growth in this plan are not truly in an old growth condition. Minor changes of this nature will generally be considered nonsignificant changes to this plan.
3. Additional snags may be created if designated old growth stands are lacking necessary snags, but otherwise meet the old growth definition.
4. Use the following definition in monitoring old growth and in identifying replacement stands as needed:

An old-growth stand is defined as any stand of trees ten acres or greater generally containing the following characteristics:

**Ponderosa pine** - The stands will contain at least ten mature to over-mature trees per acre with ponderosa pine or juniper representing 75 percent of the overstory canopy level. Stem size will be 21 inches or greater in the overstory tree layer. Broken-topped trees may be present. Ponderosa pine bark will be furrowed and platy with color ranging from orange to yellow. A minimum of one standing snag, 21 inches or larger, per acre and at least 5 tons of down material including three logs per acre (greater than 9 inches) will be present.

**Douglas-fir, white fir, spruce** - These stands include both intolerant and tolerant species. The stands will contain at least 15 trees per acre 21 inches or more in diameter, two snags and at least five tons of down material including three downed logs per acre (greater than 9 inches in diameter). Broken-topped trees may be present.

- 5 Provide a 300-acre pileated woodpecker feeding area within 0.7 miles of any designated old-growth patch (MA 15) approximately 300 acres or larger. This will normally be a contiguous block although it may be arranged in blocks of 50 acres or larger not more than 0.25 miles apart. Within these feeding areas, maintain at least two hard snags ten inches dbh or larger per acre.
- 6 Locate pileated feeding areas in areas such as wilderness, MA 6, or other areas without scheduled timber harvest, when available.
7. Reevaluate old-growth stands each planning period to determine whether or not they still meet old-growth criteria. When an old-growth stand no longer meets the criteria, select a new stand, returning the original stand to whatever management area surrounds it.
- 8 Select replacement stands from sites having similar character, to the extent practical.
- 9 **Timber** Areas allocated to old-growth timber will have no scheduled timber harvest although salvage may occur following catastrophic destruction if a more suitable replacement stand exists.
- 10 **Transportation.** Avoid new road construction through old-growth stands.
- 11 When it is necessary to build a road through an old-growth area, or where a road already exists, the road will be managed to retain the old-growth characteristics of the area including solitude. This will normally require seasonal or year-round road-use restrictions.
- 12 Existing trails will be maintained and new trails may be constructed where they serve a valid purpose.
- 13 **Range** Apply Forest-wide standards and guidelines.
- 14 **Recreation** Roaded natural and roaded modified recreation opportunities will be provided.
- 15 **Visuals.** Apply Forest-wide standards and guidelines.
16. **Landownership** Retain in Federal ownership.
- 17 **Minerals** Avoid disturbance to the extent practical. If old-growth stands are lost due to mining activities, replacement stands will be selected.
18. **Fuelwood** Close individual old-growth stands to fuelwood cutting as needed to retain snags or provide solitude.
- 19 **Fire** The minimum acceptable suppression response is "contain" at all FIL's.
- 20 Minimal use of heavy equipment for fire suppression and prescribed burning will occur in order to protect old-growth characteristics, specifically snags and downed logs.
- 21 Burned trees and snags should be cut only when they are a direct threat to personal safety or maintaining control.

- 22 Obliterate machine firelines that would otherwise provide future access into old-growth areas
23. Photo Series PNW 105-8-PP-4 and PNW 105-1-MC-4 will be used as a guide.
- 24 **Insects and Diseases** Control of pests is encouraged where pests threaten destruction of an old-growth stand. Where destruction of the old-growth is not likely, artificial control of pests will occur only when this can be accomplished without adverse effects on old-growth values
25. **Other.** Where the presence of old-growth conflicts with visual resource objectives, old-growth will have priority

### **Planning Assumptions**

#### Timber

- No timber harvest will be scheduled for these areas

#### Watershed

- No timber harvest-related watershed effects are expected. Grazing by livestock is expected to cause some increase in erosion and sediment production above natural levels. These will be mitigated as described in the Forest-wide standards and guidelines.

#### Wildlife

- Areas allocated to this management area are currently functioning as old-growth and will continue to do so through this planning period
- These stands will provide habitat for snag-dependent species at 100 percent of potential.

#### Insects and Diseases

- There will be a higher incidence of insects and disease than in managed stands

#### Recreation

- A high level of visual quality will normally be provided

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

### **MANAGEMENT AREA 16 (5,744 ACRES) (ADMINISTRATIVE AND RECREATION SITE RETENTION)**

#### **Description**

These areas include sites such as work centers, fire lookouts, permitted ranch headquarters, campgrounds, seed orchards, and other areas which are occupied by facilities for administration, public recreation, or features of cultural significance. Also included are two summer home tracts.

This management area does not contribute to the Forest's allowable sale quantity

**Direction**

1. **Watershed.** Apply Forest-wide standards and guidelines.
2. **Wildlife** Manage wildlife habitat consistent with the primary administrative or recreational objectives.
3. **Timber.** Timber harvest may occur to facilitate recreational, administrative or other uses or for safety reasons
4. **Transportation** Construct roads, parking lots, trails, and aircraft and boat landing facilities as necessary to provide access to the sites or facilitate their use.
5. Manage roads to permit passenger car traffic when sites are open for use
6. **Range.** Domestic livestock grazing will not normally be permitted although administrative stock may graze on some administrative sites
7. **Recreation** Permit recreation activity on administrative sites which does not interfere with administrative or other uses for which the site is intended.
8. Interpretation will be through signs and other structures, such as overlooks, decks and guided walks. There may be staff contacts at contact stations, principal attractions and amphitheatres
9. Manage developed recreation sites according to FSM 2300
10. Manage recreation residences according to FSM 2700.
11. Provide roaded natural and rural recreation opportunities
12. **Cultural Resources** Apply Forest-wide standards and guidelines.
13. **Landscape Management** Apply Forest-wide standards and guidelines.
14. **Landownership.** Retain in Federal ownership as long as administrative use is warranted
15. **Minerals.** The sites will not normally be recommended for withdrawal from mineral entry
16. **Fire** The minimum acceptable suppression response is "contain" at all FIL's
17. Firelines constructed by hand will be favored over machine fireline.
18. Prescribed fire from unplanned ignitions will not be used in this management area.
19. Prescribed fire from planned ignitions may be used to enhance the appearance of some sites or to meet recreation objectives.
20. **Facilities.** Provide and manage administrative facilities sufficient to accomplish the land and resource management and protection objectives of the Forest
21. Prepare administrative site development plans for all forest administrative sites. Long-term development and maintenance costs will be a consideration in facilities planning

- 22 If, through an environmental analysis, it is determined that additional administrative or recreational sites are needed, additional areas may be added to Management Area 16 sufficient to meet the identified need. This change in land allocation will normally be considered a non-significant amendment to this Forest Plan because of the relatively small areas involved
23. Facilities will be planned, developed, maintained and operated for safe use, support of the Forest resource programs, and cost effectiveness. The construction of new buildings or additions to existing buildings shall comply with approved site development plans.
24. **Other.** Permits for fuelwood removal will normally not be issued for these sites
- 25 **Insects and Diseases** Prevent insect and disease outbreaks including noxious weeds, with a minimum of disturbance to developments or users. Favor biological and silvicultural treatments.

**MANAGEMENT AREA 17 (6,594 ACRES)  
(POWER TRANSPORTATION FACILITY RETENTION)**

**Description**

These areas are presently in use or proposed for the transport of gas, oil, or electricity. Through proper design and management, optimum use will be made of those lands allocated to power facilities. To the extent possible use will be made compatible with other uses of the Forest including consideration of visual objectives. One Existing Utility Corridor (see Figures 4-3 and 4-4) is designated in order to facilitate authorization of future utility rights-of-way. It lies along Interstate Highway 84 west of La Grande and presently includes several facilities. Exclusion areas and avoidance areas are also identified.

This management area contributes to the Forest's allowable sale quantity.

**Direction**

1. **Watershed.** Apply Forest-wide standards and guidelines.
2. **Wildlife.** Apply Forest-wide standards and guidelines.
3. **Timber.** To the extent practicable, timber management will be planned as on adjacent lands. Timber harvest from suitable timberlands will contribute to the regulated timber harvest.
4. **Transportation.** Transportation systems will be designed and maintained primarily for the installation and maintenance of the structures associated with the utility corridor although these systems may also serve to access adjacent areas. When not being used for these purposes, these roads will normally be closed. In all cases, roads will be the minimum needed for their intended purpose.
5. **Range.** Use of this forage within utility rights-of-way will be directed by the applicable allotment management plan.
6. **Landscape Management.** Manage these areas as described in National Forest Landscape Management, Volume 2, Chapter 2 (USDA Agriculture Handbook 478).
7. **Cultural Resources.** Protection of the cultural resource values of the Oregon Trail will take priority over use as a utility corridor.

- 8 **Recreation.** Provide roaded modified recreation opportunities
- 9 **Landownership** Consolidate National Forest ownership where this will result in more efficient management or administration
10. **Minerals** Apply Forest-wide standards and guidelines
11. **Fire** Tailor slash disposal to meet utility corridor needs.
12. The minimum acceptable suppression response is "contain" at all FIL's.
13. Prescribed fire from unplanned ignition will not be used in this management area
14. **Insects and Diseases** Apply Forest-wide standards and guidelines
15. **Other.** Manage utilities to create the least impact on National Forest resources. Wherever possible, utility rights-of-way will be designated to allow joint use of the rights-of-way.
16. *Additional utility rights-of-way or corridors may be identified and approved subject to site-specific environmental analysis.*

### **Planning Assumptions**

#### Watershed

- Long-term effects on water quality and soil erosion will be minor, primarily associated with roads needed for installation and maintenance. These will be mitigated as described in the management standards and guidelines.
- Long-term streamflow increases will result from those corridors where a substantial reduction in tree cover is maintained. Since such a small acreage is involved the overall effect on Forest runoff is negligible.

#### Fire

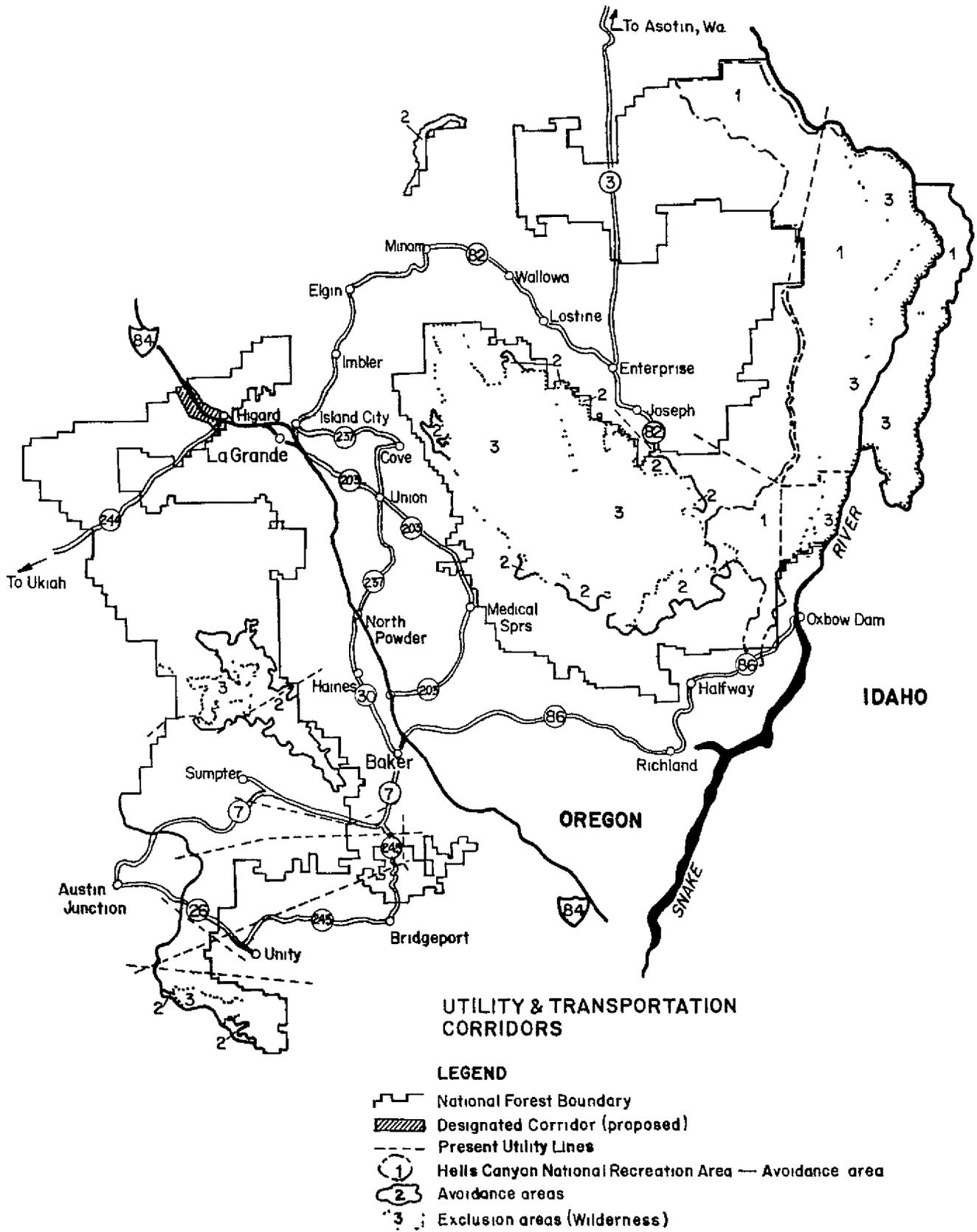
- Prescribed fire may not be feasible once the facility is in place

### **MANAGEMENT AREA 18 (59,743 ACRES) (Anadromous Fish Emphasis)**

#### **Description**

This area is intended to achieve and maintain optimum conditions for anadromous fish and provide near-optimum conditions for big game. Emphasis is placed on providing anadromous fish habitat at, or near, the maximum potential of the watershed where this area is applied. In most instances, it is expected that near-optimum habitat for big game can be provided simultaneously with anadromous fish habitat. Providing quality fish habitat takes priority over big-game habitat where conflicts occur.

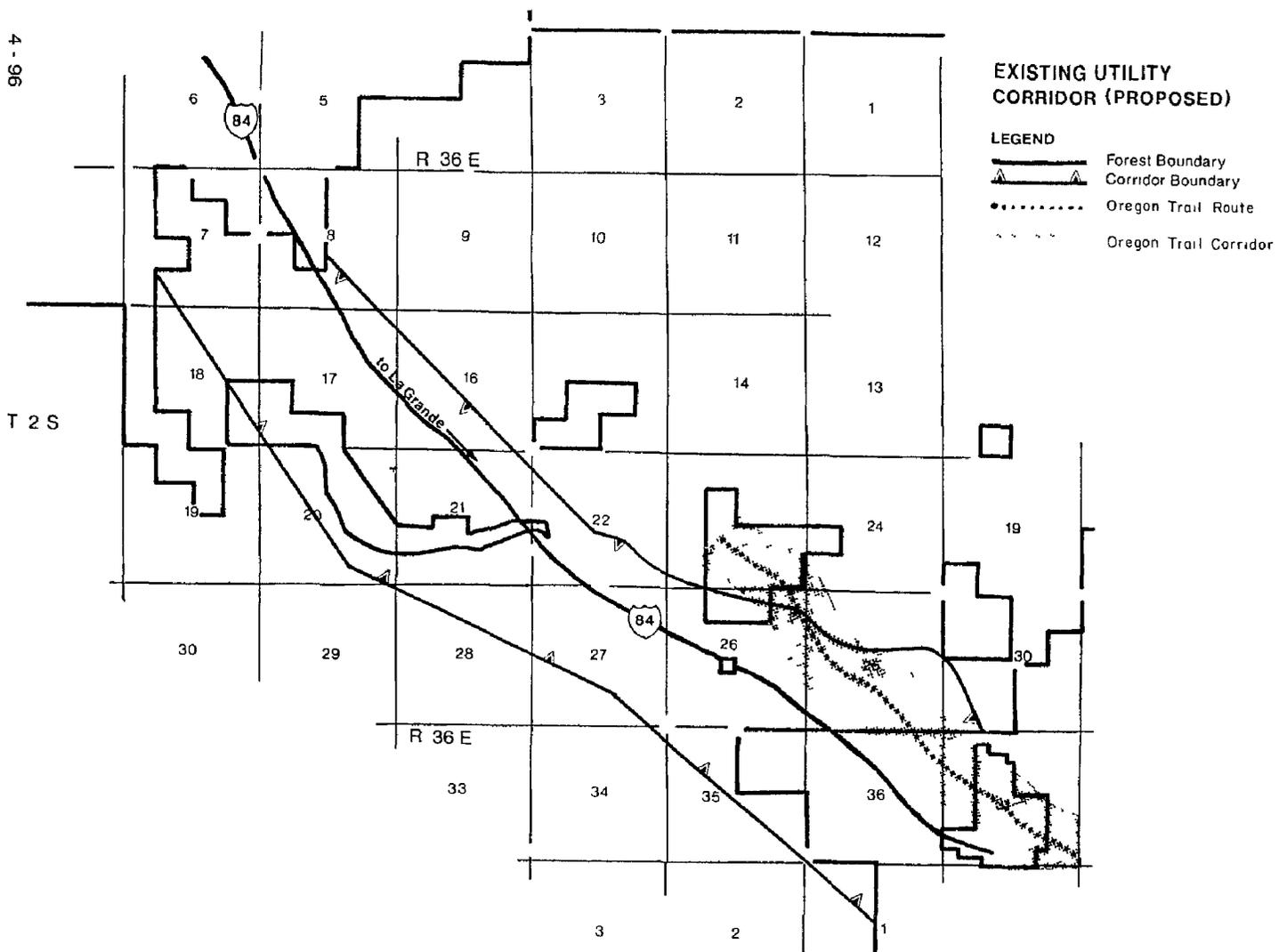
FIGURE 4-3



Information on present utility lines from Pacific Power & Light Company using data from the Western Regional Corridor Study of May 1980

FIGURE 4-4

4 - 96



The intent is not to maintain the watershed in a pristine condition, rather it is to manage all resources of the area using the most effective management techniques to assure that anadromous fisheries values are maintained or enhanced.

This management area contributes to the Forest's allowable sale quantity

#### Direction

- 1 Apply management direction from Management Area 3 except as follows
- 2 **Watershed** Apply Forest-wide standards and guidelines
3. **Wildlife** Manage riparian areas to achieve near-optimum conditions for fish
- 4 Enhancement and restoration will be practiced to produce anadromous fish habitat at the highest level practical. (Restoration efforts will strive to attain 90 percent of the original Smolt Habitat Capability Index found under natural conditions Restoration technology cannot fully restore streams to pristine condition ) Practices may include boulder placement, bank riprapping, vegetation planting, and the construction of log and rock weirs, log and rock deflectors, adult holding pools and spawning beds
- 5 Retain trees immediately adjacent to perennial streams, as needed, for future instream habitat
- 6 **Timber** Design silvicultural prescriptions, reforestation methods, harvest schedules, and logging systems to achieve fisheries and wildlife objectives
7. **Transportation.** The major consideration in the design and maintenance of roads will be protection of fisheries values. Design, construction and maintenance will be adjusted, as needed, to protect fisheries values
- 8 Close local roads and collector roads permanently or seasonally as needed to provide soil and water protection, fire protection, wildlife habitat, recreation, and other purposes In general, open road density will be limited to a maximum of 1.5 miles per square mile, although in some areas local conditions may necessitate higher or permit lower densities
- 9 Provide public access for removal of firewood within the overall guideline of 1.5 miles per square mile of open road
10. Where harvest entries are relatively infrequent, local roads which are not needed for other activities between harvest will be closed Roads not needed in the foreseeable future for timber management or other activities will be closed and obliterated following timber harvests, with the land returned to production
- 11 Analyze trail needs. Those trails needed will be protected and maintained for future use New trails may be constructed to serve valid needs
- 12 **Range** Manage ranges to protect and improve riparian vegetation and fish habitat.
- 13 **Recreation** Provide roaded modified and roaded natural recreation opportunities
- 14 **Landscape Management** Apply Forest-wide standards and guidelines

- 15 **Landownership** Retain in Federal ownership
- 16 **Minerals** Protect fish habitat and habitat investments through reasonable provisions in plans of operation and in reclamation requirements
17. **Fire** The minimum acceptable suppression response is "contain" at all FiL's
- 18 Emphasize low-impact suppression techniques to minimize effects on soil and water
- 19 **Insects and Diseases** Practice high intensity prevention activities such as monitoring pest populations to be forewarned of outbreaks, stump removal for root rots, stocking control, species selection for plantings, timely salvage of weather-damaged timber, etc , where cost effective and consistent with fish habitat objectives Use pesticides only where this use can occur without adversely affecting fish habitat.

### Planning Assumptions

#### Timber

- It is assumed that implementation of this area will result in a reduction in timber outputs of about 20 percent on those areas to which it is applied (Compared to Management Area 1)
- To provide for hydrologic recovery, watersheds which have been heavily harvested in recent years will have little or no additional harvesting for one or more decades

#### Wildlife

- Long-term cover/forage ratios will provide high quality big game habitat although habitat effectiveness will be reduced by the roads needed for timber management
- Management of this area will result in an average elk habitat effectiveness index of 74 percent of potential on summer ranges (including discounting for roads), although individual sites may have higher or lower values.
- Outside of riparian areas a high degree of wood fiber utilization will provide few down logs available for use by wildlife.
- Because of the short rotation periods, snags larger than 21 inches in diameter will be rare in managed stands Snags 12 to 18 inches in diameter will usually exceed 40 percent of the optimum habitat levels for cavity nesters through natural mortality in managed stands Large snags within riparian areas will approximate the 100 percent level.

#### Watershed

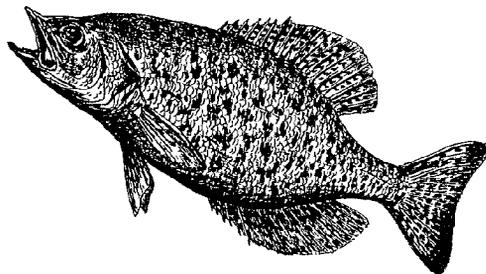
- Timber harvest will not result in increases in streamflow harmful to stream stability
- Timber harvest, road construction and grazing will result in some reduction in water quality below natural conditions This will be mitigated as described in the Forest-wide standards and guidelines

#### Range

- Satisfactory range conditions will be achieved as range allotment management plans are completed and implemented

# *CHAPTER 5*

## Implementation of The Forest Plan



## CHAPTER 5

# IMPLEMENTATION OF THE FOREST PLAN

### INTRODUCTION

Implementation of the Wallowa-Whitman National Forest Plan requires moving from an existing management program, with a budget and "targets" for accomplishment, to a new management program with a budget, goals, and objectives that provide a different way of addressing the issues and concerns people have voiced about Forest management. This Forest Plan establishes the direction for the Wallowa-Whitman National Forest for the next 10 to 15 years, when used in conjunction with Forest Service Manuals, Handbooks, and the Pacific Northwest Regional Guide

The remainder of this chapter explains how management of the Wallowa-Whitman National Forest moves from the Current Direction and Existing Situation to this Forest Plan, all described in the FEIS. The following sections describe aspects of implementation that are influenced by previous management activities and objectives; the relationship between project planning and this Forest Plan; the goals of and requirements for monitoring and evaluation; and the circumstances which could require the plan to be amended or revised.

### IMPLEMENTATION DIRECTION

#### Project Scheduling

Implementation of the Forest Plan occurs through identification, selection, and 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/or occupancy of National Forest System lands.

The schedule of proposed activities is contained in Appendix A of this document. Listings of possible projects to meet the ten-year management activity schedule are maintained by the unit managers. These listings will routinely change as projects are implemented, or are removed from the listings for other reasons, and as new projects take their place. Projects are scheduled in response to the planned output of goods and services and the annual budgeting process.

The identification and selection of management practices must meet the requirements of FSM 1922.4 and Chapter 5, FSH 1909.12. Scheduling of the practices is in response to the management direction in the Forest Plan and the near-term management needs and opportunities (an example of this scheduling is in the Ten-Year Timber Sale Schedule in Appendix C). Additional requirements for timber sale scheduling are found in FSH 2409.13. Execution is in response to the annual budget. The Plan appendices contain ACTIVITY schedules. These activity schedules represent a pool of possible projects from which IMPLEMENTATION schedules (specific, funded projects) are developed in conjunction with funding approvals.

### **Consistency With Other Instruments**

This Forest Plan serves as the single land management plan for the Wallowa-Whitman National Forest. All other land management plans are replaced by the direction in this plan, a list of unit plans superseded by this plan are shown below:

- Wallowa Valley
- Grande Ronde
- Burnt Powder
- Desolation
- Elgin

Also superseded are the present (1962 as amended) Timber Management Plan for the Wallowa-Whitman, those portions of the timber management plans for the Nez Perce and Payette National Forests which affect the Wallowa-Whitman administrative area, and interim guidelines for managing the Eagle Cap Wilderness.

The Hells Canyon NRA Comprehensive Management Plan is incorporated into this Forest Plan.

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 this Forest Plan, subject to the valid existing rights of the parties involved, this will be done as soon as practicable, and generally within three years of the date of this Plan.

### **Budget Proposals**

The plan's scheduled projects are translated into multiyear program budget proposals that identify needed expenditures. The schedule is used for requesting and allocating the funds needed to carry out the planned management direction. Upon approval of a final budget for the Forest, the annual program of work is identified and carried out. Accomplishment of the annual program is the incremental implementation of the management direction of the Forest Plan. Outputs and activities in individual years may be significantly different from those shown in Chapter 4 depending on final budgets.

### **Environmental Analysis**

Projects and activities permitted through this Plan are subject to a site-specific environmental analysis 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 site-specific environmental assessments or environmental impact statements (EIS). 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. For most analyses, an analysis file and/or a project file will be available for public review, but the analysis will not necessarily be documented in the form of an environmental assessment or EIS.

## **MONITORING AND EVALUATION PROGRAM**

The Monitoring Action Summary, Table 5-1, identifies the key activities and outputs to be tracked during implementation of this plan to ensure that activities reasonably conform to the management area direction, and that outputs satisfy the objectives of the plan.

At intervals established in this Forest Plan, implementation will be evaluated to determine how well objectives have been met, how accurate effects and cost projections are, and how closely management standards and guidelines have been applied. Based upon an evaluation of the monitoring results, the interdisciplinary team shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the Forest Plan as deemed necessary. The action prescribed by the Forest Supervisor will depend upon the significance of the monitoring results. The magnitude of the change from predicted conditions is an important factor, as is the risk associated with the change. Procedures prescribed by the National Environmental Policy Act will be followed by the Forest Supervisor in determining the appropriate action.

Action directed by the Forest Supervisor could include one or several of the following:

1. A determination that no action is needed, that monitoring indicates goals, objectives, and standards are being achieved.
2. District Ranger(s) may be directed to improve application of management area direction as projects are implemented. Normally, this would involve a change in proposed project design, or a site-specific interpretation of management area direction. In some instances, additional information or study may be required due to an inconclusive evaluation.
3. Management area direction may be modified as a Plan amendment. This would normally involve a question of the applicability of the direction to a specific geographic area, rather than forestwide for a particular management area.
4. The allocation of a management prescription may be modified as a Plan amendment.
5. The projected schedule of outputs may be amended.
6. The needed action may singly or cumulatively result in a significant change to the Plan or initiate revision of the Plan.

Monitoring and evaluation each have a distinctly different purpose and scope. In general, monitoring is designed to gather the data necessary for evaluation. During evaluation, data provided through monitoring are analyzed and interpreted. This process will provide periodic summary data necessary to determine if implementation is within the bounds of the Forest Plan.

Figure 5-1, is a flow diagram displaying how the monitoring program will be carried out and how the results will be used. Following Figure 5-1 are Forest Monitoring Plan worksheets which provide additional monitoring details.

## AMENDMENT AND REVISION

The Forest Plan incorporates legal mandates, professional judgement 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 or as new information is gained about resources, the Plan's 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 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 occurs at the project-level planning stage, such as allotment management planning.

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, standards, and other contents of the Forest Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the Plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a Forest Plan. 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.

The Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may 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 RPA 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 whether conditions or demands of the public have changed significantly.

Table 5-1  
MONITORING ACTION SUMMARY

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
GENERAL Project compliance with National Environmental Policy Act and Forest Plan	Assure compliance with NEPA requirements including cumulative effects analysis. Assure project decisions are in accord with Forest Plan	Projects	Failure to meet NEPA requirements or Forest Plan Goals and Objectives	Review EA's and other environmental documents	Forest NEPA coordinator/ District NEPA coordinator	Each project/ annual	1950 files	\$70,000
GENERAL Standards and Guidelines (S&G's)	Assure adherence to standards and guidelines not covered by a separate monitoring item	Standards and Guidelines	Failure to implement correctly or failure to meet goals and objectives	Review selected activities	District Ranger/SO Staff	Continuous/ Annual	1920 files	\$30,000
TIMBER Insect and Disease Control	Avoid epidemic levels	---	Threat of epidemic infestation	Aerial surveys, ground surveys, and routine observation	RO Pest Mgt staff/Forest Timber Staff	Annual/Annual	3400 files	\$1,500
TIMBER Timber Offered for Sale	Assure that allowable sale Quantity (ASQ) by species, and timber sale program quantity (TSPQ) are offered as planned	MMCF	+ - 10% different from planned for the decade	Compare actual offerings with planned offerings using STARS data base, attainment reports	Timber Staff Officer	Annual/Annual	2400 files	\$1,000

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
TIMBER Timber Harvest	Assure that harvest volumes by acreage, species group, harvest type, and management areas planned	Acres,MMCF	+ - 20% different from planned for the decade	Compare harvest with planned offerings using STARS data base.	Timber Staff Officer	Annual/Annual	2400 files	\$1,000
TIMBER Precommercial Thinning	Assure that planned levels of precommercial thinning are accomplished	Acres	+ - 10% on a decadal basis	Compare planned level with attainment	Timber Staff Officer	Annual/3 years	2400 files GIS	\$2,000
TIMBER Harvest Units	Assure that S&G's regarding size and dispersal of created openings are effective and implemented correctly	---	S&G not met	EA reviews, timber sale reviews	Timber Staff Officer	Continuous/ 3 years	1400 files	\$1,000
TIMBER Reforestation	Assure that reforestation is occurring in a timely manner as provided in the Plan	Acres	Greater than 29% plantation failure or greater than 50% below prescribed stocking level	Program review, field sampling, silvicultural accomplishment reports	Timber Staff Officer	Annual/Annual	2400 files GIS	\$3,000
TIMBER Lands Not Suited for Timber Management	Assure that lands are correctly identified as to their suitability for timber management	Acres	5% change in suited land base	Stand examinations, EA reviews, sale reviews	Timber Staff Officer, District Ranger	Continuous/ 5 years	2400 files GIS	\$2,000

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
TRANSPORTATION Roads and Trails	Assure that Forest Plan objectives for roads and trails are being met, including open road densities	---	Failure to meet objectives	Review EA's transportation system plans, and individual projects	Forest Engineer	Continuous/ 3 years	7700 files GIS	\$1,500
RANGE MANAGE- MENT Range Outputs	Provide forage for permitted domestic livestock and wildlife within constraints imposed by basic plant and soil needs	AUM's	AUM'S fall more than 20% below permitted levels from preceding five years	Review annual grazing report and permit transactions	Range Staff Officer	Annual/5 years	2200 files	\$1,000
RANGE MANAGE- MENT Forage Utilization	Assure range use standards and guidelines are correctly implemented	----	10% of reviewed allotments show use on key areas in excess of standards	Field surveys, AMP reviews	District and SO Range Staff	Continuous/5 years	2200 files	\$6,000
RANGE MANAGE- MENT Range Vegetative Conditions	Assure that ranges have satisfactory range condition or improving trend	---	Failure to achieve satisfactory or improving trend	Field reviews photo monitoring points	District and SO Range Staff	Continuous/5 years	2200 files	\$6,000

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
RANGE MANAGEMENT Range Improvement	Assure that range improvements are accomplished as planned	Range improvements	10% below assigned level	Review annual budget and attainment	SO Range Staff	Annual/5 years	2200 files	\$500
RANGE MANAGEMENT Allotment Management Planning	Assure that allotment management plans are completed and implemented on schedule	Plans	More than 10% of plans fall more than two years behind schedule	Review attainment reports, annual work plans, allotment management plans, and annual operating plans	Range Staff Officer	Annual/5 years	2200 files	\$5,000
RANGE MANAGEMENT Noxious Weeds	Assure that noxious weeds are controlled according to Regional EA's, Forest Plan, and applicable laws and regulations	Acres	Assigned targets are not met by 10% or more	Attainment reports, budget requests, EA's	District and SO Range Staff	Annual/10 years	2200 files	\$1,000
WATER Watershed Standards and Guidelines and BMP's	Assure that watershed S&G's and BMP's are implemented properly and are effective -	---	S&G's are BMP's not implemented correctly or not effective	Field reviews, stream sampling	District and SO Watershed Staff	Annual/Annual	2500 files	\$13,600

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
WATER Riparian Area Cumulative Effects	Assure that riparian values are protected or improved	---	Failure to maintain/improve riparian condition	Stream channel transects	Forest Hydrologist	Annual/Annual	2500 files	\$1,600
WATER Summer Low Flow Cumulative Effects	Assure that May-September flows are not reduced	---	Any management-related flow reduction	Review stream gage records	Forest Hydrologist	Annual/3 years	2500 files	\$400
WATER Peakflow Cumulative Effects	Assure that damaging peak flows are avoided or reduced	---	Failure to implement S&G's Management-related peak	Project reviews EA reviews stream channel sampling	Forest Hydrologist	Annual/Annual	2500 files	\$1,500
SOIL Soil Productivity	Assure that productivity is being maintained	---	Failure to meet standards	Field sample/ ocular estimates	Forest Soil Scientist	Continuous/ Annual	2500 files	\$1,250
WILDLIFE Old-growth Forest	Assure that the amount, size, and distribution of old growth is maintained as specified in the Plan	Acres, distribution	Loss of designated old-growth stand	Inventory/visit designated and other old-growth stands	District Staff	Continuous/5 years	2600 files GIS	\$22,500 (initially)
WILDLIFE Dead and Defective Tree habitat	Assure that adequate numbers and sizes of snags, logs, and replacement trees are provided	---	More than 10% of surveyed areas have less than 90% of the prescribed levels	timber sale reviews, surveys of occupancy	District Timber and Wildlife Staff	Continuous/ 5 years	2600 files GIS	\$8,000

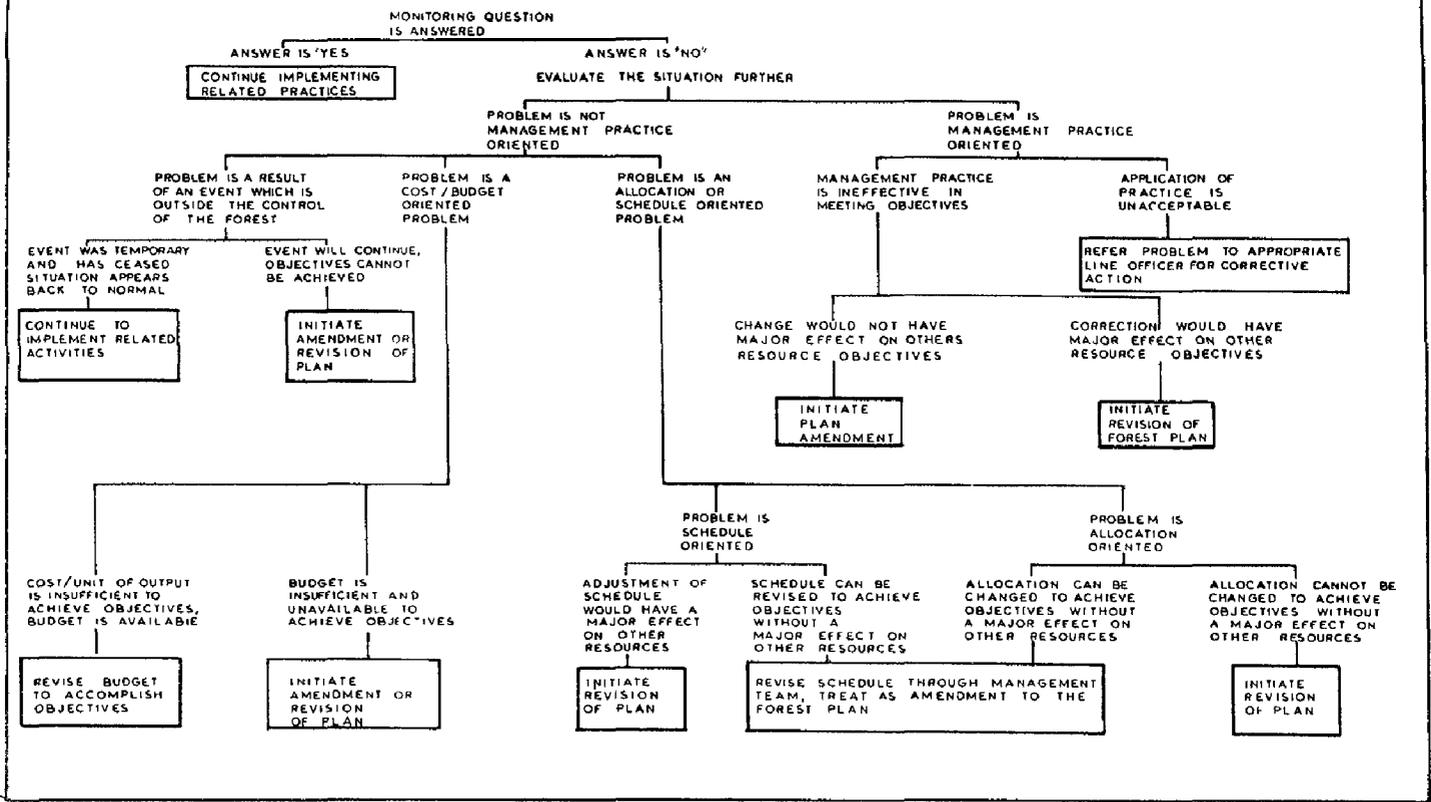
Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
WILDLIFE Pileated Woodpecker Populations	Assure that viable (or higher) populations are maintained	Pairs	Greater than 10% variation below projected populations	Field sample population levels in suitable habitat	District and Zone Biologists	Annual/5 years	2600 files	\$17,000 (initially)
WILDLIFE Goshawk	Assure that viable or higher populations are maintained	Pairs	Greater than 10% variation below expected population level	Field sample population levels in suitable habitat	District and Zone Biologists	Continuous/ Annual	2600 files	\$7,000
WILDLIFE Pine Marten	Assure that viable or higher populations are maintained	Pairs	Greater than 10% of habitat unused	Field sample population levels in suitable habitat	District and Zone Biologists	Continuous/ Annual	2600 files	\$7,000
WILDLIFE Elk Habitat/ Populations	Assure that prescribed habitat conditions are provided on winter ranges and selected summer ranges	---	Failure to implement standards and guidelines correctly	Timber sale reviews, EA reviews	District and Zone Biologists	Continuous/ Annual	2600 files	\$5,000
T & E SPECIES Bald Eagles	Assure active participation in bald eagle recovery plans	---	Failure to meet requirements in recovery plan and Forest Plan S&G's	Roost and nest site observation, review of site plan development process	District and Zone Biologists	Continuous/ Annual	2600 files	Costs not differentiated from T&E Program costs
T & E SPECIES Peregrine Falcon	Assure active participation in peregrine falcon recovery plans	---	Failure to meet requirements in recovery plan and Forest Plan S&G's	Nest site observation Review progress in site management plan development and habitat development.	District and Zone Biologists	Continuous/ Annual	2600 files	Costs not differentiated from T&E Program costs

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
FISHERIES Anadromous and Resident Fish	Assure that habitat quality and populations are being maintained or improved	Stream miles/ numbers	Any reduction in habitat quality or population. Failure to improve where needed	Field inventory of stream condition	Fisheries Biologist	Annual	2600 Files, TRI, GIS	\$18,000
MINERALS Mineral Development and Rehabilitation	Assure that standards and guidelines for mineral operations and rehabilitation are reasonable, effective, and being implemented correctly	Operations	Standards and guidelines are ineffective or unreasonable	Review 50% of operating plans each year	Forest Minerals Geologist, District Rangers	Continuous/ 3 years	2800 files	\$40,000
RECREATION Wilderness	Assure the Wilderness recreation opportunities are provided as specified in standards and guidelines	—	Failure to meet management direction	Annual field observations	District Rangers	Continuous/3 years	2300 files TRI, GIS	\$15,000
RECREATION Wild and Scenic Rivers	Assure that river management objectives are being met	—	Failure to meet objectives	Annual observations, formal of each segment every five years	District Rangers	Continuous/5 years	2300 files	\$15,000

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
RECREATION Recreation Setting	Assure that recreation opportunities are provided as directed in the Plan	Acres meeting ROS objectives	Failure to meet ROS criteria	Monitor recreation use by activity and compare with objectives	District Rangers	Continuous/ 2 years	2300 files TRI, GIS	\$20,000
RECREATION Off-Road Vehicle Use	Assure that ORV opportunities are provided in a manner consistent with other resource objectives	---	ORV use shows unacceptable effects	Annual field observations	District Rangers	Continuous/ 2 years	2300 files TRI, GIS	\$10,000
RECREATION Visual Resource Objectives	Assure that visual quality objectives are being met	---	Failure to meet VQO's	Routine observations, formal project reviews, summary viewshed analysis	District Rangers/ Forest Landscape Architects	Continuous/ Annual	2300 files TRI, GIS	\$10,000
CULTURAL RESOURCES Cultural and Historic Site Protection, Rehabilitation and Interpretation	Assure that sites are protected, stabilized, and/or rehabilitated as specified in the standards and guidelines	---	Failure to meet standards and guidelines	Field review Review annual reports of condition	District Rangers/ Forest Archaeologists	Continuous/3 years	2300 files TRI, GIS	\$50,000
ECONOMICS Budget	Assure that annual budgets and programs needed to implement the Forest Plan are being provided	Dollars	Budget is less than 90% of need -- 3 year average	Compare annual budget with budget needed for plan implementation	Forest Administrative Officer	Annual/Annual	6500 files	\$1,000

Monitoring Item	Actions/Effects	Units	Variability Threshold	Suggested Methods	Who Will Monitor	Frequency/ Report Per	Location of Data	Estimated Annual Cost
Costs and Values	Verify that the major costs and values used in the Forest Plan Analysis are in line with actual costs and values	Dollars	+ -25% difference based on a 3-year average	Compare actual costs and values with projection costs and values	Forest Economist	Annual/5 years	1900 files	\$3,000
Community Effects	Verify that the projected economic and social effects of the Forest Plan are in line with actual effects	Dollars, population, social trends, employment	Actual Forest-related effects are +- 15% different from projected and are having significant, adverse community impacts	Compare projections with actual values	Forest Economist	Annual/5 years	1900 files	\$5,000
Adjacent Lands	Assure no adverse effects on adjacent landowners	---	indication of significant adverse effects	Interview local landowners, government officials, state and federal agency officials	Public Affairs Officer, Forest Staff	3 years/3 years	1900 files	\$3,000

FIGURE 5-1  
DECISION FLOW DIAGRAM FOR THE EVALUATION OF THE FOREST PLAN  
WALLOWA-WHITMAN NATIONAL FOREST



FOREST MONITORING PLAN WORKSHEET

ISSUE: *Compliance with NEPA and Forest Plan*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Comply with National Environmental Policy Act (NEPA) requirements, including cumulative effects analysis, during project-level decision-making*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS

*Are project-level decisions being made using appropriate NEPA procedures including analysis of cumulative effects?*

*Are project-level decisions tiered to, and in accord with, the Forest Plan?*

THRESHOLD OF VARIABILITY: *Failure to use appropriate procedures or to meet Plan requirements*

SUGGESTED SAMPLING METHODS

*Review all decisions for NEPA adequacy and tiering to Forest Plan*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY. *Annual*

MONITORING RESPONSIBILITY. *Forest NEPA Coordinator/District NEPA Coordinator*

REPORTING RESPONSIBILITY. *Forest NEPA Coordinator*

ESTIMATED COST OF MONITORING *\$70,000 per year*

PRECISION. *H*

RELIABILITY. *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Standards and Guidelines - General*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Implement Forest-wide and management area guidelines for all resources*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Are Forest Plan Standards and Guidelines being implemented and are they meeting stated goals and objectives?*

THRESHOLD OF VARIABILITY: *Failure to implement correctly or failure of standards and guidelines to meet goals and objectives.*

SUGGESTED SAMPLING METHODS

*Review selected activities in order to assess implementation of standards and guidelines not covered by other monitoring items in the Plan This will include timber sales, range allotments, road construction projects, and wildlife habitat improvement projects*

MONITORING FREQUENCY. *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY: *District Rangers/S O Staff*

REPORTING RESPONSIBILITY *Planning Staff Officer*

ESTIMATED COST OF MONITORING: *\$30,000 per year*

PRECISION: *M*

RELIABILITY *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Insect and Disease Control*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Control Forest pests to levels that are compatible with resource objectives*

MANAGEMENT AREAS AFFECTED *Forest-wide*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 1 = RISK INDEX 3

MONITORING QUESTIONS:

*Are destructive insect and disease organisms remaining below potentially-damaging levels following management activities?*

THRESHOLD OF VARIABILITY: *Evidence of insect or disease buildups above endemic levels.*

SUGGESTED SAMPLING METHODS

*Annual aerial survey by Regional specialists*

*Conduct annual review of insect and disease surveys*

*Conduct field evaluations as needed*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY: *Regional Pest Mgmt Staff/Forest Timber Staff Offcr*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING: *\$1,500 per year*

PRECISION: *M*

RELIABILITY: *M*

REMARKS. *Required by NFMA regulations (36 CFR 219 12K)*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Timber Offered for Sale*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *To provide for production of wood fiber consistent with various resource objectives, environmental requirements, and economic efficiency To offer for sale up to an average of 144 MMBF ASQ annually and 27.7 MMBF TSPQ annually as averaged for the decade*

MANAGEMENT AREAS AFFECTED: *1, 3, 5, 7, 11, 18*

RISK ASSESSMENT. COST OF ERROR *3* X LIKELIHOOD OF ERROR *1* = RISK INDEX *3*

MONITORING QUESTIONS.

*Is the Forest offering the cubic foot volume and species of chargeable timber established by the Plan ASQ?*

*Is the Forest offering the cubic foot volume and species of nonchargeable timber necessary to achieve the estimated TSPQ?*

THRESHOLD OF VARIABILITY *Greater than 10% over or under the planned volume*

SUGGESTED SAMPLING METHODS

*Use STARS system data base. Compare volume in MCF, per species group, annually to project decade trend Determine action required (Plan adjustment) based on significance of end-of-decade difference between projection and planned.*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY: *Timber Staff Officer*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING: *\$1,000 per year*

PRECISION *H*

RELIABILITY: *H*

REMARKS *Required by NFMA to assure decadal ASQ is not exceeded To test assumption re TSPQ  
Also and R-6 issue*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Timber Harvest*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Is the harvest by volume, by species group, management area, and harvest type as specified in the Plan*

MANAGEMENT AREAS AFFECTED *1, 3, 5, 7, 11, 18*

RISK ASSESSMENT. COST OF ERROR *1* X LIKELIHOOD OF ERROR *1* = RISK INDEX *1*

MONITORING QUESTIONS.

*Is the harvest type (clearcut, shelterwood cut, overwood removal, etc ), volume, and acreage per species group, as planned for each management area?*

THRESHOLD OF VARIABILITY: *Greater than 20% deviation from planned level in any category*

SUGGESTED SAMPLING METHODS:

*STARS data base. Report of accomplishment Annual comparison with Plan to identify deviations and their significance.*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY: *Timber Staff Officer*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING: *\$1,000*

PRECISION *H*

RELIABILITY *H*

REMARKS: *This is an R-6 and Forest issue re timber management as it affects other resources*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Silvicultural Practices -- Precommercial thinning*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Achieve acres of precommercial thinning as specified in the Plan*

MANAGEMENT AREAS AFFECTED. *1, 3, 5, 7, 11, 18*

RISK ASSESSMENT. COST OF ERROR *2* X LIKELIHOOD OF ERROR *1* = RISK INDEX *3*

MONITORING QUESTIONS:

*Has the planned acreage of precommercial thinning been accomplished?*

THRESHOLD OF VARIABILITY *Accomplished acreage varies from planned acreage by 10% or more on a decadal basis.*

SUGGESTED SAMPLING METHODS:

*Compare silvicultural attainment reports with planned levels*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY: *Timber Staff Officer*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING. *\$2,000 per year*

PRECISION. *H*

RELIABILITY. *H*

REMARKS *R-6 issue re timber intensity, management cost, and acres affected Needed to ascertain plan implementation and support ASQ*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Timber Harvest Units*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Disperse harvest units and limit their size*

MANAGEMENT AREAS AFFECTED. *1, 3, 5, 7, 11, 18*

RISK ASSESSMENT: COST OF ERROR *2* X LIKELIHOOD OF ERROR *1* = RISK INDEX *2*

MONITORING QUESTIONS:

*Are Forest Plan Standards and Guidelines regarding the size and dispersal of openings and state of vegetation being appropriately implemented?*

*Are these Standards and Guidelines effective in meeting the objectives for dispersal of created openings and state of vegetation as described in the EIS for the Regional Guide (Chapter 4)*

THRESHOLD OF VARIABILITY. *Any identified failure to meet dispersion requirements*

SUGGESTED SAMPLING METHODS

*Timber sale reviews, EA reviews*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY: *Timber Staff Officer*

REPORTING RESPONSIBILITY *Timber Staff Officer*

ESTIMATED COST OF MONITORING. *\$1,000 per year*

PRECISION: *H*

RELIABILITY: *H*

REMARKS. *R-6 issue re clearcut size Check of standards and guidelines required by NFMA and established in Regional guide.*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Reforestation*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Achieve reforestation, by natural and artificial means at the stocking levels and within the timeframes assumed within the Forest Plan*

MANAGEMENT AREAS AFFECTED *1, 3, 5, 7, 11, 18*

RISK ASSESSMENT: COST OF ERROR *3* X LIKELIHOOD OF ERROR *2* = RISK INDEX *6*

MONITORING QUESTIONS:

*Is stocking, for each management area and silvicultural method, within the timeframes assumed in the Forest Plan?*

THRESHOLD OF VARIABILITY: *Greater than 20% plantation failure or more than 50% below prescribed stocking levels*

SUGGESTED SAMPLING METHODS

*Program review, field sampling, silvicultural accomplishment reports*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY. *Timber Staff Officer, District Rangers*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING. *\$3,000 per year*

PRECISION: *H*

RELIABILITY: *M*

REMARKS *Costs are in addition to normal stocking surveys*

*Forest and R-6 issue Information needed to test the premise supporting the planned ASQ.*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Lands Not Suitable for Timber Management*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Assure that lands are correctly classified as to their suitability for timber management*

MANAGEMENT AREAS AFFECTED: *All except Management Area 4 (Wilderness)*

RISK ASSESSMENT COST OF ERROR 2 X LIKELIHOOD OF ERROR 3 = RISK INDEX 6

MONITORING QUESTIONS.

*Are the forest lands correctly classified as to their suitability for timber management?*

THRESHOLD OF VARIABILITY: *Suitable land base changes by 5% or more*

SUGGESTED SAMPLING METHODS

*Stand examinations, EA reviews, sale reviews*

MONITORING FREQUENCY. *Continuous*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY *Timber Staff Officer, District Rangers*

REPORTING RESPONSIBILITY: *Timber Staff Officer*

ESTIMATED COST OF MONITORING *\$2,000 per year*

PRECISION. *M*

RELIABILITY. *M*

REMARKS *Required by NFMA regulations (36 CFR 219 14d)*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Transportation System*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To provide road and trail systems as described in the "Desired Future Condition" section of the Forest Plan*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT. COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Does the transportation system serve the management area resource objectives within Forest Plan projections, including open road density guidelines*

THRESHOLD OF VARIABILITY: *System design road density, or maintenance fail to meet management area objectives.*

SUGGESTED SAMPLING METHODS

*Review environmental assessments, transportation system plans, and individual projects Review trails, including location, design, and maintenance*

MONITORING FREQUENCY *Forest Engineer*

REPORTING FREQUENCY. *Forest Engineer*

MONITORING RESPONSIBILITY *Forest Engineer*

REPORTING RESPONSIBILITY: *Forest Engineer*

ESTIMATED COST OF MONITORING: *\$2,000 per year*

PRECISION. *H*

RELIABILITY: *M*

REMARKS: *Issue concerning the availability of roads available to the public*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Range Outputs*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Within the constraints imposed by basic plant and soil needs, provide forage for utilization by wildlife and permitted domestic livestock*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT COST OF ERROR <sup>2</sup> X LIKELIHOOD OF ERROR <sup>3</sup> = RISK INDEX <sup>6</sup>

MONITORING QUESTIONS:

*Are the outputs for permitted domestic livestock (AUM's) being achieved as projected in the Forest Plan?*

*To what degree are Forest Plan standards affecting permitted AUM's?*

THRESHOLD OF VARIABILITY: *Annual outputs (AUM's) for permitted domestic livestock fall more than 20% below permitted levels from the beginning of the preceeding five years*

SUGGESTED SAMPLING METHODS:

*Annual Grazing Statistical Report*

*Evaluation of permit transactions and adjustments to determine cause*

*INTENSITY: Sample full Annual Report, sample all permit adjustments*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY. *Range Staff Officer*

REPORTING RESPONSIBILITY. *Range Staff Officer*

ESTIMATED COST OF MONITORING. *\$1,000*

PRECISION *H*

RELIABILITY: *H*

REMARKS *36 CFR 219 12 (k)1*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Range Forage Utilization*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *All allotments implement the Forest Plan utilization standards through Allotment Management Plans*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

*Are Forest Plan utilization standards being implemented through the Allotment Management Plan and being enforced on the ground?*

*Are actual use levels within the Forest Plan utilization standards?*

THRESHOLD OF VARIABILITY *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 key areas of an allotment.*

SUGGESTED SAMPLING METHODS:

*Key Area measurements, Reconnaissance Utilization surveys, Utilization and Distribution studies*

*Reviews of AMP's and field reviews of actual utilization, emphasis on riparian utilization*

*INTENSITY: Sample at least 10% of allotments annually with emphasis on Priority I (riparian problem) allotments*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY. *District and SO Range Staff*

REPORTING RESPONSIBILITY. *Range Staff Officer*

ESTIMATED COST OF MONITORING. *\$6,000*

PRECISION. *M*

RELIABILITY: *M*

REMARKS *36 CFR 219 12(k)*

*This monitoring is in addition to and as a check of monitoring performed as a normal part of Allotment Management Plan monitoring*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Range Vegetative Condition*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *All significant areas of suitable primary and secondary range, including riparian areas, in satisfactory condition with a stable or upward trend (with satisfactory condition defined as. Forage conditions are fair or better with a stable trend and no allotments are classified as PC or PD\* )*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

- 1) *Are range vegetative conditions on suitable primary and secondary range, being improved to and maintained at a satisfactory condition?*
- 2) *Are range vegetative conditions within riparian areas being improved to and maintained at a satisfactory condition level?*

THRESHOLD OF VARIABILITY: *By year 2000, at least 85% of suitable primary and secondary range is in satisfactory range 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*

*Trends indicate the threshold described above will not be met*

SUGGESTED SAMPLING METHODS

- 1) *Condition and Trend transects as per FSH 2209.21, Ecoplots*

*Permanent Camera Points as per FSH 2209.21 and "Recording the Changes, a Field Guide to Establishing and Maintaining Permanent Camera Point Systems (R6-10-095-1982)*

*INTENSITY: Field reviews of all allotments classified as PC or PD, and at least 10% of the allotments on the Forest each year*

- 2) *Permanent Camera Points (R6-10-095-1982).*

*Macroinvertebrate Sampling as per Aquatic Ecosystem Inventory, Macroinvertebrate Analysis, R-4 FSH 2609 23 1/*

*Managing Riparian areas. in Eastern Oregon*

*INTENSITY. Field review of all allotments classified as PC.*

MONITORING FREQUENCY. *Continuous*

REPORTING FREQUENCY *5 years*

\* See Glossary -- SATISFACTORY RANGE CONDITION

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

MONITORING RESPONSIBILITY: *District and SO Range Staff*

*1/ To be coordinated with fisheries and watershed monitoring.*

REPORTING RESPONSIBILITY. *Range Staff Officer*

ISSUE: *Range Vegetative Condition*

PRECISION: *M*

RELIABILITY: *M*

ESTIMATED COST OF MONITORING \$6,000

REMARKS *36 CFR 219 12(k)2, 219.20*

*Monitoring to be shared with all affected resources including watershed, wildlife and timber management This monitoring is in addition to, and as a check of, the normal monitoring as prescribed in the Allotment Management Plans*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Range Improvements*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Allotment Management Plans, based on the Forest Plan, provide for a full development schedule (using all available funding sources) that contributes to satisfactory range conditions*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS.

*Are range improvements planned in Allotment Management Plans, or other development plans such as Sale Area Improvement plans or Annual Operating Plans, being accomplished?*

*Are these improvements contributing to meeting Forest Plan objectives?*

THRESHOLD OF VARIABILITY. *Accomplishment of annual range improvement targets falls more than 10% below the assigned output*

SUGGESTED SAMPLING METHODS

*Review annual budget process and annual attainment reports*

MONITORING FREQUENCY. *Annual*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY *SO Range Staff*

REPORTING RESPONSIBILITY *Range Staff Officer*

ESTIMATED COST OF MONITORING. *\$500*

PRECISION: *H*

RELIABILITY *H*

REMARKS: *(Describe research needs, other agency coordination, special skills needed, etc ) 36 CFR 219 12(k)1*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Allotment Management Planning*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *All allotments have developed and implemented Allotment Management Plans that fully meet the standards and guides of the Forest Plan*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS.

- 1) *Are allotments containing significant areas of unsatisfactory condition range and/or allotments classified as PC or PD receiving priority emphasis for development and implementation of Allotment Management Plans?*
- 2) *Do AMP's fully meet Forest Plan standards and guidelines?*
- 3) *Are AMP's being implemented on the ground in a manner that meets Forest Plan direction?*

THRESHOLD OF VARIABILITY: *AMP planning schedule as developed by the Forest Supervisor varies by more than two years for 10% or more of the plans*

*Any of the AMP's approved following approval of the Forest Plan fail to contain objectives and standards that fully implement the Forest Plan*

*More than 5% of the Annual Operating Plans and annual budget requests, KV Sale Area Improvement Plans, etc are not supported by standards or development schedules from Allotment Management Plans.*

SUGGESTED SAMPLING METHODS:

*Attainment reporting, annual work planning, to determine if planning schedule is being followed*

*Allotment Management Planning reviews, comparison with Forest Plan standards*

*Review of budget planning, SAI plans, and Annual Operating Plans, comparison with Allotment Management Plans.*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY: *Range Staff Officer*

REPORTING RESPONSIBILITY: *Range Staff Officer*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ESTIMATED COST OF MONITORING: \$5,000

PRECISION *H*

RELIABILITY: *H*

REMARKS *Monitoring is to determine effectiveness of Allotment Management Planning and to monitor the implementation of the Forest Plan through the Allotment Management Plan.*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Noxious Weeds*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Noxious weed infestations are controlled according to the Managing Competing and Unwanted Vegetation EIS, the Forest Plan and applicable State laws and regulations*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

*Are Noxious weeds infestations being treated in accordance with the Managing Unwanted or Competing Vegetation EIS, Forest Plan direction and applicable State laws and regulations?*

THRESHOLD OF VARIABILITY: *Assigned targets are not met by 10% or more.*

SUGGESTED SAMPLING METHODS:

*Monitor annual attainment report, annual budget requests, and review treatment plans/EA's*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY *10 years*

MONITORING RESPONSIBILITY. *District and SO Range Staff*

REPORTING RESPONSIBILITY. *Range Staff Officer*

ESTIMATED COST OF MONITORING: *\$1,000*

PRECISION: *M*

RELIABILITY *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Watershed Standards and Guidelines and BMP's*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain or improve the unique and valuable characteristics of riparian areas and maintain or improve water quality, wildlife habitat and fish habitat near or within riparian ecosystems*

*Maintain water quality and quantity and meet or exceed State water quality regulations.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS:

- 1) *Are S&G and BMP's being properly implemented within each management project area?*
- 2) *Are S&G and BMP's effective.*
  - *During 100% of the weather events that occur during a management project's implementation or soon after?*
  - *On 100% of the appropriate application areas within each management project area?*

*The standards for effectiveness always include whether or not State Water Quality Standards are being achieved. At times these may also be assessed: prevention of detrimental impacts on State designated Beneficial Uses, and achievement of Forest Plan goals*

THRESHOLD OF VARIABILITY *Failure to meet State Water Quality Standards and Protect Beneficial Uses With respect to other question components, a 5% or more deviation (95% success rating) will trigger corrective action*

SUGGESTED SAMPLING METHODS:

- 1) *Perform field inventory to determine which S&G and BMP's should be applied in what places as prescribed by Forest and project management plans For these potential situations, determine if S&G and BMP's were implemented and then if done correctly Inventory will be conducted by watershed specialists, project administrator and/or interdisciplinary team*
- 2) *Sample key water quality, riparian or channel condition parameters above and below specific S&G and BMP implementation areas The parameters will usually be chosen from: eroded soil deposits on floodplain, sediment deposits in channel, water temperature, peak streamflows at culverts, turbidity, bank stability, riparian vegetation and stream shade*

MONITORING FREQUENCY: (per year) (by question)

- 1) *5 timber sales (includes associated roads); 3 mining operations, 4 grazing allotments; 150 SMU road segments*
- 2) *1 timber sale; 1 grazing allotment*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE *Watershed Standards and Guidelines and BMP's*

REPORTING FREQUENCY: *1) Annual. 2) As each monitoring project is completed (see Remarks)*

MONITORING RESPONSIBILITY. *District Rangers/SO Staff*

REPORTING RESPONSIBILITY *Forest Watershed Staff*

ESTIMATED COST OF MONITORING (per year) (by question) *1) \$7,500 2) \$6,100*

PRECISION *M*

RELIABILITY *M*

REMARKS

- *Effectiveness monitoring for grazing/range S&G and BMP's is much narrower in scope than that dealt with under Range Vegetation Condition and Riparian Cumulative Effects. These two assess effects of all range management BMP's together, whereas here, single BMP's are isolated such as utilization standards versus bank vegetation overhang and bank stability, or season of use versus brush density increase*
  
- *Effectiveness monitoring for timber sale S&G and BMP's will typically assess 3 to 5 practices for each management project monitored. It will take about 1 to 3 years for each timber sale project and about 5 to 10 years for each grazing allotment – report will be at end of these time periods*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Riparian Area Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Maintain or improve the unique and valuable characteristics of riparian areas and maintain or improve water quality, wildlife habitat and fish habitat near or within riparian ecosystems.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR <sup>2</sup> X LIKELIHOOD OF ERROR <sup>3</sup> = RISK INDEX <sup>6</sup>

MONITORING QUESTIONS

- *The overall question is: Is long-term (20 to 100 year plus) riparian and channel health being maintained, or if in poor condition, being improved?*
- *More specific questions are:*
  - 1) *Does aquatic habitat have a habitat suitability index (HSI) that is at least 90% of the natural potential HSI?*
  - 2) *Does riparian cover have a value that is at least 80% of the natural potential for the area?*
  - 3) *For channel and riparian areas that are presently below the 90% and 80% standards, is the rate of condition improvement such that a transition potential will be obtained within 20 years?*

*Natural potential is defined as the environmental conditions that would occur if there were no or had been no detrimental management impacts on the channel and riparian zone condition*

*Transition potential is defined as the HSI or cover value that could be expected to occur at the year 20 if there were no further detrimental management impacts within the recovery period -- this may or may not be the natural potential (natural potential may not be achievable for 100 years, for instance)*

THRESHOLD OF VARIABILITY: *No Immediate evaluation or corrective action if S&G and BMP's are not being met*

SUGGESTED SAMPLING METHODS

*Permanently installed terrestrial and stream channel transects using Cowfish and Haugen or similar procedures Photo documentation. Approximately 16 representative locations*

MONITORING FREQUENCY *Each location will be measured once every 4 years, and be tracked over duration of many decades*

REPORTING FREQUENCY. *Annual for 1/4 of the monitoring stations each report*

MONITORING RESPONSIBILITY. *Forest Hydrologist*

REPORTING RESPONSIBILITY. *Forest Watershed Staff Officer*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE: *Riparian Area Cumulative Effects*

ESTIMATED COST OF MONITORING \$1,600 per year

PRECISION: *M*

RELIABILITY *L*

REMARKS

- *A few individual transect locations will probably be part of the same network used for Peakflow Cumulative Effects monitoring*
  
- *The distinction between this issue and the Range Vegetation Condition issue is that this cumulative effects monitoring will last for decades, and the Range Vegetation Condition monitoring will be stopped when each allotment reaches the condition standards*
  
- *This monitoring will not adequately assess effectiveness of timber sale riparian management due to the small sample size (16 measurement locations); the Issue, Water/Riparian -- Implementation and Effectiveness of S&G and BMP's is where T.S. riparian management will be assessed*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Low Flow Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain water quantity*

MANAGEMENT AREAS AFFECTED *All watersheds large enough to show streamcourse existence symbols on U S Geological Survey topographic maps*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

*Is streamflow produced in May through September being reduced?*

THRESHOLD OF VARIABILITY *No variability is allowed -- the nature of long-term cumulative effects monitoring requires immediate evaluation or corrective action if S&G and BMP's are not being met*

SUGGESTED SAMPLING METHODS

*Compile streamflow records maintained by U S Geological Survey and other agencies. Perform statistically adequate analyses for the purpose of determining if May through September low streamflows have been reduced.*

MONITORING FREQUENCY: *Monitoring (recording data) by these agencies is continuous*

REPORTING FREQUENCY: *Every 3 years*

MONITORING RESPONSIBILITY: *Forest Hydrologist*

REPORTING RESPONSIBILITY: *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING: *\$400 per year*

PRECISION *H*

RELIABILITY: *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Peakflow Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Prevent or reduce damaging peak flows*

MANAGEMENT AREAS AFFECTED *All watersheds large enough to show streamcourse existence symbols on U.S Geological Survey topographic maps*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 3 = RISK INDEX 6

## MONITORING QUESTIONS

- 1) *Is timber harvesting being patterned and scheduled to minimize the potential for adverse cumulative change in stream peakflows? Are standards and guidelines and BMP's being implemented correctly?*
- 2) *In watersheds where timber harvesting is influencing peakflows, is stream channel stability being maintained at 100% of potential (in riparian areas where other stability influences have been isolated out)*

THRESHOLD OF VARIABILITY. *Evidence that S&G's and BMP's are not being met or that stream channel stability is being reduced as a result of management induced peak flow increases.*

## SUGGESTED SAMPLING METHODS.

- *Streams in watersheds with low riparian area impact by livestock but full scale timber harvesting will have permanently located transect sites. Measurements will be made for channel profile, sediment deposits and other parameters necessary for interpretation of possible channel or sediment changes. Some of these measurement sites will need permanent 1 acre livestock exclosure fences. Approximately 12 permanent sampling areas will be established.*
- *If there is no significant average channel profile or sedimentation change over long periods, then it can be inferred that peakflow management practices are correct. Correlate absence of damage to percent peakflow change predicted by hydrologic models*
- *If significant changes show up, further and more refined monitoring will have to be designed to isolate harvesting induced changes from other possible causes such as extreme natural hydrologic events*

MONITORING FREQUENCY. *Each location will be measured once every 4 years, and be tracked over duration of many decades*

REPORTING FREQUENCY *Annual for 1/4 of the monitoring stations each report*

MONITORING RESPONSIBILITY *Forest Hydrologist*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE *Peakflow Cumulative Effects*

REPORTING RESPONSIBILITY *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING *\$1,500 per year*

PRECISION: *L*

RELIABILITY: *L*

REMARKS: *36 CFR 219 as(k), 219 23(d), 219 27(A)4*

*A few individual transect locations will probably be part of the same network used for riparian area cumulative effects monitoring.*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Soil Productivity*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain or enhance soil productivity.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT· COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS

*Is soil production being adequately protected (at least 80% of an activity area is not in a detrimentally impacted condition)?*

THRESHOLD OF VARIABILITY· *Total monitored acres for all damage classes will be within one confidence interval (probability of D-1) and a one-tailed t-test will be used to determine whether conditions following an activity are equal to or less than planned objectives.*

SUGGESTED SAMPLING METHODS

*Quantitative sampling (Ref: FSM 2520 R-6 Supplement) on at least one project every year using procedures in "guidelines for sampling some physical conditions of surface soils," or other appropriate techniques Ocular evaluation, by a soil scientist of at least one project annually, per affected Ranger District*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY *Annually*

MONITORING RESPONSIBILITY. *Forest Soil Scientist*

REPORTING RESPONSIBILITY· *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING *\$1,250 per year*

PRECISION. *M*

RELIABILITY· *M*

REMARKS· *Long-term effects of various activities on soil productivity are not completely understood Continue to work with agencies and universities to reduce the knowledge gap*

*36 CFR 219 12(k), 219 27*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Old-Growth Forest*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain the amount, size, and distribution of old-growth forest stands specified in the Forest Plan*

*Provide key feeding and nesting habitat units to maintain viable population numbers of pileated woodpeckers, pine martens, and other species with similar habitat requirements.*

MANAGEMENT AREAS AFFECTED *All management areas with old-growth forests (161,500 acres), with emphasis on Management Area 15 (38,500 acres).*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be severe biologically, costly economically and severe politically Likelihood of error may be large due to limited resource availability, large due to the state of management knowledge for managing the hazards to highly fragmented habitat units, and large due to lack of knowledge of all the elements integral to the function of old-growth units.*

MONITORING QUESTIONS:

- 1) *Are the 161,500 acres of old-growth habitat available and suitable for use by pileated woodpeckers, pine marten, goshawk, and other dependent species?*
- 2) *Are the number, size, and spacing of areas identified in the plan being maintained?*
- 3) *Are the prescribed conditions of old-growth units within the accepted range of variability for old-growth units?*
- 4) *Are the specified pileated woodpecker feeding areas designated and to standard?*

THRESHOLD OF VARIABILITY. (by monitoring question)

- 1) *Loss of any designated old-growth stand*
- 2) *More than 10% of the directed pileated woodpecker feeding areas are not to standard of designation, juxtaposition, and/or trees per acre*

SUGGESTED SAMPLING METHODS: (by monitoring question)	REPORT PERIOD (YEARS)
1) <i>Inventory and describe all designated and identified old-growth units and selected pileated woodpecker feeding units</i>	<i>Complete in 3 years</i>
2) <i>Track project activities, including insect infestations and fires, that may compromise the integrity of old-growth units or selected feed areas</i>	<i>Annual review 5 year report</i>
3) <i>Visit every identified unit within each 5 years and qualify the base-line description, inventory for MR and MIS species</i>	<i>Annual increment and 5 year report</i>

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE. *Old-Growth Forest*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *3 years to base-line, 5 year periodic reports*

MONITORING RESPONSIBILITY *District TMA's, (supported by Wildlife Biologist)*

REPORTING RESPONSIBILITY. *Fish and Wildlife Staff Officer*

ESTIMATED COST OF MONITORING: *\$22,500 each year first 3 years, \$11,500 per year for subsequent years.*

PRECISION *M*

RELIABILITY *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Pileated Woodpecker Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *To maintain viable populations of pileated woodpeckers.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be moderate biologically, high economically, and significant politically, therefore judged on 3 for this purpose. Likelihood of error is significant due to the dispersion of elements in this consideration and the number of people and biological factors involved.*

MONITORING QUESTIONS.

- 1) *Are pileated woodpeckers using the provided old-growth habitat and feeding areas as planned?*
- 2) *What is the trend of populations?*

THRESHOLD OF VARIABILITY:

- 1) *There is a greater than 10% variance from expectations in pileated woodpecker occupancy, use, or production, on a 5-year average*
- 2) *Populations are on a downward trend*

SUGGESTED SAMPLING METHODS

- 1) *Through cooperation with ODF&W and other agencies or organizations, cooperatively build, predictive models and field sample populations to selected standard*

REPORT PERIOD  
(YEAR)

Annual effort with  
5-year report

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual increments and 5-year summary*

MONITORING RESPONSIBILITY: *District and Zone Biologists*

REPORTING RESPONSIBILITY: *Forest Fish and Wildlife Program Manager*

ESTIMATED COST OF MONITORING *\$17,000/yr for first 2 years and \$7,000/yr thereafter*

PRECISION: *M*

RELIABILITY *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Goshawk Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To maintain viable or higher populations of goshawks*

MANAGEMENT AREAS AFFECTED *All forested management areas*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be high biologically, moderate economically, and politically. The cost of failure can easily result in a reduced population. The limits of population viability have not been established for goshawks. The likelihood of error is high due to the fragmented nature of most of the suitable nesting habitat, and the variety of hazards to both other habitat and the animals.*

## MONITORING QUESTIONS.

- 1) *Are goshawks using provided old-growth habitat or nesting habitat in other allocations where considerations allow?*
- 2) *Are the encompassing habitats providing adequate prey bases for goshawks?*
- 3) *Is the population of goshawks at or above the expected level given the levels of habitat consideration prescribed?*
- 4) *Are the reproductive parameters of goshawks at or above population sustaining levels (i.e., young per nesting attempt greater than 2.1, less than 3% of breeding females are subadult, etc)?*

## THRESHOLD OF VARIABILITY.

- 1) *There is a greater than 10% variance from expectations in goshawk occupancy, use, or production on a 5-year average*
- 2) *A 20% or greater shift in prey used over a 5-year average*
- 3) *A greater than 10% deviation in predictability of goshawk nest site occurrence on a 3-year average*

## SUGGESTED SAMPLING METHODS: (by question)

- 1) *In cooperation with ODF&W and other interested organizations or agencies, search for and verify nest site occupancy*
- 2) *Systematic collections and analysis of prey remains under cooperative arrangement with ODF&W*
- 3) *Assist ODF&W to monitor reproductive success parameters that relate to effectiveness of habitat management*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE: *Goshawk Populations*

MONITORING FREQUENCY *Continuous effort*

REPORTING FREQUENCY: *Five years*

MONITORING RESPONSIBILITY *District and Zone Biologists*

REPORTING RESPONSIBILITY *Forest Fish and Wildlife Program Manager*

ESTIMATED COST OF MONITORING. *\$7,000 annually*

PRECISION *M*

RELIABILITY *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Pine Marten Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain viable or higher populations of pine marten*

MANAGEMENT AREAS AFFECTED *All forested management areas*

RISK ASSESSMENT· COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be severe biologically, costly economically and politically. The cost of failure can easily result in a reduced population. The limits of population viability have not been established for pine martens. The likelihood of error is high due to the fragmented nature of much of the most suitable habitat, and the variety of hazards to both the habitat and the animals.*

## MONITORING QUESTIONS

- 1) *Are the old-growth habitats, subalpine forest, and uneconomic lodgepole pine areas suitable and available and used by pine marten as planned?*
- 2) *Are the reproductive parameters and population demographics of pine martens indicative of stable or improving habitat conditions?*

## THRESHOLD OF VARIABILITY:

- 1) *More than 10% of the identified pine marten habitat is unused within the expected distributional and use zones including active Forest management activities.*
- 2) *More than 20% variance from accepted norms for reproductive parameters. More than 20% variance from anticipated distributions.*

## SUGGESTED SAMPLING METHODS· (by question)

- 1) *Establish and read a system of sampling points for summer and/or winter occurrence and use*
- 2) *Cooperate with ODF&W on a sample design to determine some normal ranges and departures from that*

MONITORING FREQUENCY *Continuous effort with annual and five year reports*

REPORTING FREQUENCY: *Annual and five year periods*

MONITORING RESPONSIBILITY: *District and Zone Biologists*

REPORTING RESPONSIBILITY *Fish and Wildlife Program Manager*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ESTIMATED COST OF MONITORING: *\$7,000 per year*

PRECISION: *M*

RELIABILITY: *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Dead and Defective Tree (DDT) Habitat and Primary Cavity Excavators*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Meet or exceed the minimum numbers, sizes, and distribution of dead and defective trees and logs, to meet direction in the FLRMP, and habitat capability objectives of primary cavity excavators.*

MANAGEMENT AREAS AFFECTED *All Management Areas.*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS.

- 1) *Are dead and defective trees, and logs being managed in sufficient numbers, distribution, and sizes to meet FLRMP direction?*
- 2) *Are Management Indicator Species (primary cavity excavators) occupying the DDT habitat as predicted?*

THRESHOLD OF VARIABILITY:

- 1) *More than 10% of the surveyed areas have less than 90% of the minimum prescribed dead and defective trees, snags and logs*
- 2) *Expected primary cavity excavators are absent from more than 10% of the surveyed sites, or are at 80% or less of predicted numbers*

SUGGESTED SAMPLING METHODS (by question)	REPORT PERIOD (YEARS)
1) <i>Examine habitat on 20% of timber sales within one year of sale closure per district</i>	<i>Annual</i>
<i>Evaluate timber inventory plot data each ten year period</i>	<i>10 yr report</i>
<i>Establish and measure transects to measure longevity of snags in areas where fuelwood is gathered</i>	<i>Bi-annually</i>
2) <i>Conduct surveys to determine if the expected primary excavators are occupying the habitat</i>	<i>Annual survey 5 yr report</i>

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY: *Project impact accountability - Annually & semi-annually Primary cavity excavator response - 5 year reports*

MONITORING RESPONSIBILITY *Monitoring Question #1 - District Timber Staff Monitoring Question #2 - District Wildlife Staff*

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE. *Dead and Defective Tree (DDT) Habitat and Primary Cavity Excavators*

REPORTING RESPONSIBILITY. *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING: *\$8,000 (wildlife P&M), note supporting efforts and contributions of SSF, KV and P&M sale prep programs*

PRECISION: *H*

RELIABILITY: *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Elk Habitat/Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Provide near-optimum hiding cover, thermal cover, and forage conditions on big-game winter ranges and selected summer ranges*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS.

*Are standards and guidelines for hiding cover, thermal cover, forage, and open-road density being applied appropriately?*

*Are elk populations approximately as projected?*

THRESHOLD OF VARIABILITY. *Failure to implement Forest Plan standards and guidelines correctly*

*Elk populations are +/- 15% from projections and differences are attributable to Forest activities.*

SUGGESTED SAMPLING METHODS

*Timber sale reviews, EA reviews*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY.

REPORTING RESPONSIBILITY: *Wildlife Staff Officer*

ESTIMATED COST OF MONITORING: *\$5,000*

PRECISION: *H*

RELIABILITY. *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE: Bald Eagles: *Nesting Habitat, Winter Roost Habitat and Critical Feeding Habitat*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To protect and manage habitat for the perpetuation and recovery of bald eagles.*

*To participate in re-establishing eight pairs of bald eagles in the Blue Mountains and Snake River recovery zones*

*To identify and manage for continued utility, all winter roosts on NF land*

*To identify and manage critical winter feeding areas and food resources on NF lands, to maintain utility and use by bald eagles.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error is primarily biological Likelihood of error is largely due to the currently limited knowledge*

MONITORING QUESTIONS:

- 1) *Are all nesting, communal roosting, and associated foraging habitats being identified?*
- 2) *Are individual site management plans (nest sites, roost sites and critical winter feeding sites) being developed and adhered to as sites are identified?*
- 3) *Are potential habitats being identified and planned for to assure species recovery?*
- 4) *Are the "young per occupied territory" goals (1.00) being met by our increment of nest sites?*

THRESHOLD OF VARIABILITY.

- 1) *A single nest or roost site is compromised due to Forest Service activities.*
- 2) *Two years or more from time of discovery to complete an approved site management plan.*
- 3) *0.90 young per occupied territory, for all occupied territories under our management, in any given 5 year period*

SUGGESTED SAMPLING METHODS (by question)  
*See also action plan for TE&S species mgt in Forest Plan*

REPORT PERIOD  
(YEARS)

- |  |               |
|--|---------------|
| 1) <i>Periodic roost counts and nest site observations.</i>                            | Annual report |
| 2) <i>Review of site plan development progress and ground review of planned sites.</i> | Annual report |

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE: *Bald Eagles Nesting Habitat, Winter Roost Habitat and Critical Feeding Habitat*

- 3) *Review of site plan development progress* *Annual report*
- 4) *Nest site observations, to fledging* *Annual report*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY *District/Zone Biologists*

REPORTING RESPONSIBILITY: *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING *Cost are reflected in action plan for TE&S species mgt in Forest Plan*

PRECISION: *H*

RELIABILITY: *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Peregrine Falcon Reintroduction Sites and Nesting Habitats*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To protect and manage habitat for the perpetuation and recovery of peregrine falcon*

*To participate in re-establishing 4 pairs of peregrine falcons, in northeast Oregon, to successful natural nesting*

MANAGEMENT AREAS AFFECTED. *All (primary zones are in the vicinity of cliffs)*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error is primarily biological, and we are in recovery now Likelihood of error is largely due to currently incomplete habitat inventory and the lack of site specific management plans*

MONITORING QUESTIONS.

- 1) *Are nesting and associated foraging habitats being identified?*
- 2) *Are individual nest site management plans being developed and adhered to?*
- 3) *Are potential nest habitats identified and being managed to maintain suitability?*
- 4) *Are the "young per occupied territory" goals (1 5) being met by our increment of nest sites?*

THRESHOLD OF VARIABILITY

- 1) *Plus or minus 20% off the Forest Land and Resource Management Plan "Multi-Year Action Plan" for TE&S species mgt*
- 2) *Any lag time in developing individual site management plans for reintroduction sites or active nests.*
- 3) *1 35 young per occupied territory, for all occupied territories under our management, in any given 5 year period*

SUGGESTED SAMPLING METHODS. (by question)  
*See also action plan for TE&S species mgt in Forest Plan*

REPORT PERIOD  
(YEARS)

- |  |   |
|--|---|
| 1) <i>Review the progress of survey for re-occupancy of historic and high potential nesting habitats</i>                                 | <i>Annual report</i>                                |
| 2) <i>Review the progress of developing individual site management plans, and ground review of activities within those planned areas</i> | <i>Annual report<br/>Continuous project reviews</i> |
| 3) <i>Review of progress in identifying and rating potential nesting habitats</i>  | <i>Annual report</i>                                |
| 4) <i>Conduct and/or coordinate nest site observations until fledging</i>  | <i>Annual report</i>                                |

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE: *Peregrine Falcon Reintroduction Sites and Nesting Habitats*

MONITORING FREQUENCY. *Annual for reporting purposes, continuous for project reviews and coordination*

REPORTING FREQUENCY *Annual*

MONITORING RESPONSIBILITY *District/Zone Biologists*

REPORTING RESPONSIBILITY. *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING: *Costs are reflected in action plan for TE&S species mgt in Forest Plan*

PRECISION: *H*

RELIABILITY: *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Fisheries*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain or improve anadromous and resident fish habitat*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS

*What are the cumulative effects of activities, in the watersheds of the Forest, on anadromous and resident fish habitat and populations?*

*Are fisheries habitat condition and trend being maintained or improved so as to meet Forest Plan objectives?*

THRESHOLD OF VARIABILITY: *Decrease in habitat capability or fish populations in a watershed or subwatershed*

SUGGESTED SAMPLING METHODS (by question)

*Develop baseline stream habitat/riparian data using Region 6 Standard Stream survey methods which incorporate the Reeves and Hankins method of stream survey.*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY. *5 years*

MONITORING RESPONSIBILITY *Fisheries Biologist*

REPORTING RESPONSIBILITY *Range, Watershed, Wildlife Staff Officer*

ESTIMATED COST OF MONITORING *\$18,000 per year*

PRECISION: *M*

RELIABILITY: *M*

REMARKS *36 CFR 219 12, 219 19 This is a Forest and Regional issue*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Mineral Development and Rehabilitation*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To provide for exploration, development, and production of a variety of minerals in coordination with other resources, and ongoing rehabilitation of mine sites*

MANAGEMENT AREAS AFFECTED. *All except 4, 8-11*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Are the standards and guidelines for mineral operations reasonable and effective? Are they being implemented correctly?*

THRESHOLD OF VARIABILITY. *Standards and Guidelines are unreasonable or ineffective in meeting goals, or are not being implemented correctly.*

SUGGESTED SAMPLING METHODS:

*Review and evaluate 50 percent of operating plans each year.*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY *Forest Minerals Geologist, District Rangers*

REPORTING RESPONSIBILITY *Recreation, Lands, Minerals Staff Officer*

ESTIMATED COST OF MONITORING *\$40,000*

PRECISION: *H*

RELIABILITY: *H*

REMARKS: *36 CFR 219.12(k)  
36 CFR 228  
Chief's Policy (FSM Zero Code) on minerals administration 9/15/89*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Wilderness*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage these areas in accordance with the values specified in the Wilderness Act of 1964 and the Oregon Wilderness Act of 1984*

MANAGEMENT AREAS AFFECTED. *4*

RISK ASSESSMENT. COST OF ERROR *2* X LIKELIHOOD OF ERROR *3* = RISK INDEX *6*

MONITORING QUESTIONS:

*Are wildernesses being managed in accord with the Wilderness Act (P L. 88-577) as amended*

*Are the physical/biological, social, and managerial settings of each WROS Class maintained within the levels outlined in the standards and guidelines, and R-6 Supplement No 81 to FSM 2320?*

THRESHOLD OF VARIABILITY *Failure to implement Forest Plan standards and guidelines correctly*

SUGGESTED SAMPLING METHODS.

*Evaluate established monitoring locations for changes (e.g , water quality, vegetation, air quality, visitor interactions).*

*Evaluate wilderness/low impact education activities*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY *District Rangers*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING \$15,000

PRECISION *M*

RELIABILITY, *M*

REMARKS: *The Chief's Policy (FSM 2320 3) requires that each wilderness area be managed under a policy of nondegradation. The annual monitoring report is part of the annual wilderness report to Congress (FSM 2327 1).*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Wild and Scenic Rivers*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Preserve the wild, scenic, and recreational characteristics of those rivers or river segments which are part of the National Wild and Scenic Rivers System*

MANAGEMENT AREAS AFFECTED: *7, 8*

RISK ASSESSMENT: COST OF ERROR *3* X LIKELIHOOD OF ERROR *2* = RISK INDEX *6*

MONITORING QUESTIONS

*Are the designated wild, scenic, and recreational rivers being managed in accord with the Wild and Scenic Rivers Act of 1968, the Omnibus Oregon Wild and Scenic Rivers Act of 1988, Public Law 94-199 (Snake River), and the Forest Plan Standards and Guidelines?*

THRESHOLD OF VARIABILITY *Failure to meet law, or direction in the Forest Plan or river management plans.*

SUGGESTED SAMPLING METHODS:

*Annual field observations as specified in river management plans.*

*Formal Forest review of compliance for each river every 5 years.*

MONITORING FREQUENCY. *Continuous*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY: *District Rangers*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING *\$15,000*

PRECISION. *H*

RELIABILITY *H*

REMARKS *River plans are scheduled for completion in 1992*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Recreation Setting*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain a semiprimitive social and physical setting showing little or no evidence of human activity and meeting the needs of people seeking a place where there is little interaction with other users. Encourage, establish and sustain a diverse, balanced, and stable range of recreation services and facilities on the Forest*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 3 = RISK INDEX 6

MONITORING QUESTIONS:

*Are Forest settings with desirable recreation attributes being managed to provide high quality and stable opportunities for outdoor recreation*

*Are the setting indicators of access, nonrecreation use impacts, social encounters, facilities, and visitor management maintained, at the levels desired in the standards and guidelines?*

THRESHOLD OF VARIABILITY *Failure to meet standards and guidelines for high quality recreation opportunities within each ROS class*

SUGGESTED SAMPLING METHODS.

*Monitor recreation use by activity, location and interaction with others Compare findings with ROS objectives (standards and guidelines).*

*Monitor proposed nonrecreation projects for potential impacts to recreation resources*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *2 years*

MONITORING RESPONSIBILITY: *District Rangers*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING *\$20,000*

PRECISION: *M*

RELIABILITY: *H*

REMARKS: *This is a Forest and Regional issue*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Off-Road Vehicle (ORV) Use*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage ORV use to provide for recreation opportunity in a manner consistent with other resource management objectives*

MANAGEMENT AREAS AFFECTED *All except 4, 12*

RISK ASSESSMENT. COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS.

*Are Forest settings with desirable recreation attributes being managed to provide high quality and stable opportunities for ORV use?*

*Is ORV use conflicting with other recreation or other resource management objectives?*

*Is management meeting the intent of the Forest Plan Standards and Guidelines?*

*Are corrective actions being taken to resolve problems as provided for in the Forest Plan?*

THRESHOLD OF VARIABILITY *Failure to meet standards and guidelines*

SUGGESTED SAMPLING METHODS:

*Monitor ORV use by type, location, interaction with others, and impacts on other resources, compare findings with ROS objectives (standards and guidelines)*

*Monitor both recreation and nonrecreation projects for potential impacts to ORV activities.*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY *2 years*

MONITORING RESPONSIBILITY. *District Rangers*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$10,000*

PRECISION: *M*

RELIABILITY. *H*

REMARKS. *36 CFR 295.1*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Visual Resource Objectives*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage viewsheds to meet the visual quality objectives defined in the Forest Plan*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT. COST OF ERROR *3* X LIKELIHOOD OF ERROR *2* = RISK INDEX *6*

MONITORING QUESTIONS:

*Are the visual quality objectives for projects adopted in the Forest Plan being achieved?*

*Are related standards and guidelines being implemented and do they achieve stated goals and objectives?*

*Do the cumulative effects of all resource activities within a viewshed meet the desired visual condition?*

THRESHOLD OF VARIABILITY: *Failure to meet standards and guidelines*

SUGGESTED SAMPLING METHODS: (by question)

*Annual interdisciplinary review of at least two projects per year*

*Monitor (visit) 20 percent of all major project areas per year.*

*Conduct a summary viewshed analysis in the last half of the plan decade*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY: *District Rangers/Forest Landscape Architect*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$10,000*

PRECISION: *M*

RELIABILITY: *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Cultural and Historic Site Protection and Rehabilitation and Interpretation*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *To provide for the identification, protection, preservation, enhancement, and interpretation of cultural resources*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Are the National Register characteristics of unevaluated and significant cultural resource properties being protected as stated in the Forest Plan?*

*Is appropriate stabilization, rehabilitation, or mitigation of damaged sites eligible for inclusion in the National Register of Historic Places being done as stated in the Forest Plan?*

*Are survey methods adequate to identify all locatable sites?*

*Where appropriate, are cultural resources being interpreted for the public?*

THRESHOLD OF VARIABILITY: *Failure to adequately protect any significant cultural resource property or unevaluated site.*

SUGGESTED SAMPLING METHODS:

*Monitor (visit) 100% of all significant sites in active project areas prior to close of contract.*

*Monitor (visit) 100% of all unevaluated sites in active project areas prior to close of contract.*

*Monitor 100% of the update reports on (1) the condition of significant sites and (2) the measures to mitigate damaged sites*

*Annually monitor one or more project areas after ground-disturbing activities have been completed to compare with preproject survey findings (to determine adequacy of initial survey findings).*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY. *2 years*

MONITORING RESPONSIBILITY. *District Rangers/Forest Archaeologist*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$50,000*

PRECISION. *H*

RELIABILITY: *H*

REMARKS. *36 CFR 800*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Budgets*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Full funding of all resource programs and activities including monitoring.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR <sup>3</sup> X LIKELIHOOD OF ERROR <sup>2</sup> = RISK INDEX \*

MONITORING QUESTIONS.

*Are the annual programs and budgets needed to implement the Forest Plan being realized?*

THRESHOLD OF VARIABILITY: *Budget more than 10% different from what is needed -- 3 year average.*

SUGGESTED SAMPLING METHODS

*Annually monitor budgets and programs of work in relationship to the levels needed to implement the Forest Plan. Compare actual budget in preceding three years with budget needed for Plan implementation*

MONITORING FREQUENCY *Annual*

REPORTING FREQUENCY *Annual*

MONITORING RESPONSIBILITY: *Administrative Officer*

REPORTING RESPONSIBILITY *Administrative Officer*

ESTIMATED COST OF MONITORING *\$1,000*

PRECISION *H*

RELIABILITY. *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Costs and Values*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Verify that projected costs and values approximate actual costs and values.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT. COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS

*Are the major costs and values used in the Forest Plan analysis in line with actual implementation costs, and present values being realized?*

THRESHOLD OF VARIABILITY. *Plus or minus 25%*

SUGGESTED SAMPLING METHODS: (by question)

*Monitor Forest financial records and accomplishment reports to determine average annual costs for all major resource activities*

*Monitor timber cut and sold reports and RPA values to determine current values*

*Monitor payments to local governments*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY *3 years*

MONITORING RESPONSIBILITY: *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING. *\$3,000 per year*

PRECISION: *H*

RELIABILITY *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Community Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Economic and social effects are in line with actual effects.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR *3* X LIKELIHOOD OF ERROR *2* = RISK INDEX *6*

MONITORING QUESTIONS

- 1 Are Forest-related jobs and personal income approximately as projected in the Plan?*
- 2 Are local population trends approximately as projected?*
- 3 Are payments to local governments approximately as projected?*
- 4. Are changes in lifestyles, attitudes, beliefs, or values occurring more quickly than expected, related to Forest activities, and adversely affecting local communities?*

THRESHOLD OF VARIABILITY:

*For 1, 2, and 3, changes are +/- 15% from projected*

*For 4, Forest-related changes are determined to be significant and adverse.*

SUGGESTED SAMPLING METHODS. (by question)

*For 1, 2, and 3 - Review U. S Census, State publications, local agency reports, and Forest Service reports.*

*For 4 - Interview key publics and local leaders*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING *\$5,000 per year*

PRECISION *H*

RELIABILITY *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Effects on land and resources adjacent to the Forest including land managed by other federal or other government agencies including local governments*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Verify that adjacent lands are not adversely affected by National Forest activities.*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS

*Are adjacent and nearby lands being adversely affected by Forest Management activities?*

THRESHOLD OF VARIABILITY: *Any indication of significant adverse effects on local communities or adjacent lands attributable to National Forest activities.*

SUGGESTED SAMPLING METHODS:

*Interviews with local land owners, city and county officials, state agency officials and other federal agency officials*

MONITORING FREQUENCY: *3 years*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY. *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING *\$3,000 per year*

PRECISION: *M*

RELIABILITY. *M*

# *APPENDIX A*

## Detailed Schedules of Projected Activities



## APPENDIX A

## DETAILED SCHEDULES OF PROJECTED ACTIVITIES

This appendix contains the schedule of proposed projects for the Forest Plan.

TABLE A-1

## FISHERIES HABITAT IMPROVEMENT PROJECTS

District	Project	Year	Funding	Output	Cost (M\$)
La Grande	Fly Ridge	1991	KV	35 Structures	36
La Grande	Huckleberry	1991	KV	4 mile fence	9
La Grande	Five Point Creek	1991	PM	1 plan	5
La Grande	McCoy Creek	1991	PM	1 plan and design	2
Baker	Deer Creek Riparian Improvement	1991	PM	2 miles	10
Baker	North Fork John Day River Streams	1991	BPA	Structure	95
Baker	Phillips Fish Habitat	1991	PM	5 structures	1
Baker	Phillips Trail Plan	1991	PM	1 plan	15
Unity	South Fork Burnt River	1991	PM	2 miles	5
Unity	North Fork Burnt River Riparian Improvement .207	1991	PM	1 plan and design	5
Unity	West Fork Burnt River Riparian Improvement 206	1991	KV	2 miles	30
Unity	Trout Creek	1991	KV	1 mile	10

## Appendix A

District	Project	Year	Funding	Output	Cost (M\$)
Pine	Eagle Creek Handicap Access	1991	PM	1 structure	5
Pine	Little Eagle Creek	1991	PM	1 plan and EA	3
Wallowa Valley	Swamp Creek (Prop)	1991	KV	35 structures	21
Wallowa Valley	Swamp Creek (Nells Canyon)	1991	KV	36 acres Vegetation plant	12
Wallowa Valley	Echo (Nells Canyon)	1991	KV	40 structures	14
La Grande	Fly Ridge (Nells Canyon)	1992	KV	35 structures	7
La Grande	Antler	1992	KV	30 structures	37
La Grande	Collins Creek	1992	KV	4 miles	5
La Grande	McCoy Creek (Nells Canyon)	1992	BPA	2 miles	8
La Grande	Five Points Creek	1992	PM	1 design	10
Baker	Deer Creek	1992	PM	2 miles	10
Baker	Cracker Creek	1992	PM	1 plan	2
Baker	Anthony Creek Fishing Trail	1992	PM	1 plan	1
Unity	South Fork Burnt River	1992	PM	20 structures	20
Unity	North Fork Burnt River	1992	KV	30 structures, 2 miles	40
Pine	Eagle Creek	1992	PM	1 plan	3
Pine	Little Eagle Creek	1992	PM	1 design	5
Wallowa Valley	Echo	1992	KV		6
Wallowa Valley	Swamp Creek (Nells Canyon)	1992	KV	18 acres Vegetation planting	9
La Grande	Camp Creek	1993	KV	220 structures	35

District	Project	Year	Funding	Output	Cost (M\$)
La Grande	Fly Ridge	1993	KV	53 structures	58
La Grande	Middle/Buck/Corral	1993	KV	3 miles	170
La Grande	Lucky Strike	1993	KV	4 miles	4
La Grande	Five Points Creek	1993	PM	2 miles	74
La Grande	McCoy	1993	BPA	2 miles	10
Baker	Cracker Creek	1993	PM	1 mile	15
Baker	Anthony Creek Fishing Trail	1993	PM	7 miles	20
Baker	Dutch Creek	1993	PM	1 plan	1
Unity	West Camp Creek	1993	PM	1 plan	1
Pine	Eagle Creek	1993	PM	1 interpretive display	3
Pine	Little Eagle Creek	1993	PM	1 mile	37
Wallowa Valley	Echo	1993	KV	10 acres vegetative planting	5
La Grande	Fly Ridge	1994	KV	2 miles	5
La Grande	Five Points Creek	1994	PM	Maintenance	10
Baker	Cracker Creek	1994	PM	1 mile	15
Baker	Dutch Creek	1994	PM	1 mile	5
Baker	Elk Creek	1994	PM	1 plan	1
Baker	McCully Fork	1994	PM	1 plan	1
Unity	West Camp Creek	1994	PM	3.5 miles	28
Unity	Upper North Fork Burnt River	1994	KV	1 plan	2
Baker	Elk Creek	1995	PM	1.5 miles	8
Baker	McCully Fork	1995	PM	1 mile	10
Unity	Upper North Fork Burnt River	1995	PM	4 miles	32

**TABLE A-2**  
**ROAD-RELATED CAPITAL IMPROVEMENTS\***  
 (Exclusive of Bridges)

Project Name	Number	Estimated Road Cost (M\$)
Hat Point (II)	4240	1,100
Grande Ronde River (II)	51	1,700
Pittsburg Landing	493	968
Tanner Sale	Various	177
Swing Sale	Various	197
Burnt-Clear	2226	85
Lostine River	8210	179
Lookout Sale	Various	73
Potters Mill Sale	Various	65
Upper Wahoo-North Wind	Various	50
Miscellaneous Small Projects	Various	400
Elkhorn Drive	73	1,000
Dug Bar Road and Recreation site	4260	3,000
Marble Creek Pass	6510	200
Ladd Canyon	43	80
Huckleberry	77	360
Indian Creek	62	200
Boulevard Sale	Various	176
Rock Willow	Various	150
Warm Creek Sale	Various	235
Dug Bar (II)	4260	4,000
PSC Sale	Various	192
Ragged Marble Sale	Various	290
Low Saddle Road and Recreation site	2060	1,600
Chesnimnus	4625	95
Wellamotkin	46	175
Cantrell Springs Sale	Various	68
South Fork Burnt River	6005	160
East Fork Sale	Various	106
Sawpit Saddle	2060	143
McCubbin Creek	3021	175
Camp Creek	19	230
Smooth Marble	Various	500
Harl Butte	3930	75
Devil's Run	4690	120
Triangle Mountain Road and Recreation Site	420	2,000
Muddy Creek	Various	380
Fish lake	66	390
Summit Creek	4625	71
Wellamotkin	46	175
Sheep Creek Cutoff and Bndge	5184	200
South Shore BST	1170	80

**TABLE A-2 (Cont.)**  
**ROAD-RELATED CAPITAL IMPROVEMENTS\***  
 (Exclusive of Bridges)

Project Name	Number	Estimated Cost (M\$)
Indian Crossing	3960	600
Hurricane	8205	40
Mt. Emily	3120	175
East Fork Timber Sale	5138	106
La Grande Reservoir	4305270	175
Eagle Creek	77	400
Forshey Meadows	70	100
Idaho Access roads	420/2060/2062/1819	733
Swampy Timber Sale	43	192
Devils Run	4690	120
Camp Creek	19	230
McCarty	4670	44
Hells Canyon Overlook (I)	3965	400
Hells Canyon Overlook (II)	3965	3,200
Cold Springs Road and Recreation Site	4680	2,000
Heaven's Gate	517	4,900
Syrup Creek Timber Sale	Various	445
Perrine Loop	2105	20
Grande Ronde River (III)	51	2,400
Fisheries Improvement Projects	Various	320
Phillips Lake Chip Seal	1170,2230	80
Oregon Trail	3000600	97
Anthony-Ladd	43	350
Paddy Creek - Carson Section	77,7710	400
Olive	1305	100
Wallowa Mt. Scenic Byway - Pine Creek Section	39	1,300
Indiana Mine	4350	200
John Day Slide	73	100
Summit Point	7715	110
Wallowa Mt. Scenic Byway - Gumboot Section	39	5,100
Schneider Meadows	6610	220
East Camp	16	400
Hat Point Road and Scenic Overlook	4240	300
Crazyman Road and Bridge	4230	200

\* Additional Capital Investment Projects for roads and bridges may be developed as needs are identified. The total need for improvements to the road system is identified in the "Wallowa-Whitman NF INTERIM ROAD MANAGEMENT PLAN," dated 5/20/80. This document identifies the reconstruction needs for Arterials and major Collectors on the Forest. New construction needs beyond those listed above will be developed during project planning activities in areas which are presently unroaded. Funding for listed projects is dependent upon annual appropriations by Congress, and may vary from year to year.

TABLE A-3

## BRIDGES\*

Name	Number	Year for Cost (M\$)	Rough Cost Est.
<b>TRAIL BRIDGES</b>			
Goat Creek	1653-4 6	1996	\$18,000
East Fork Lostine	1662-5 0	1998	14,000
North Minam Meadows	1666-0 1	1994	25,000
North Minam Trail	1673-22 3	1996	22,000
Imnaha River Trail (3 bridges)	1713-4 0,1,2	1995	28,000
B C Creek	1803-1.0	1990	50,000
East Fork Wallowa River	1804-4 0	1996	21,000
Ice Lake Trail	1808-0 1	1997	44,000
West Fork Wallowa River	1810-0 1	1993	25,000
North Fork Imnaha	1816-6 8	1991	48,000
Little Minam No 1	1901-0 7	1996	41,000
Horseshoe Creek	1908-1 4	1995	21,000
Little Minam No 2	1908-4 5	1994	28,000
Horse Ranch Pack (Minam River)	1908-8 0	1996	70,000
Elk Creek Trail	1912-9 5	1992	30,000
Main Eagle Trail No 2	1922-2 1	1995	37,000
Main Eagle Trail No 4 and 5	1922-0 1	1996	60,000
Trail Creek	1931-9 6	1995	39,000
Slide Creek	1934-0 9	1994	14,000
Imnaha River Trail (new)	1713	1996	75,000
<b>ROAD BRIDGES</b>			
Lockhart (Powder River)	2200100-0 1	1993	75,000
College Crossing (Imnaha River)	4200200-0 1	1995	165,000
Wolf Creek	4315-6 6	1993	65,000
Chesnimnus Creek	46-13 8	1992	125,000
Peavine Creek	4625-4 5	1996	95,000
East Sheep Creek	5184-0 3	1994	50,000
Deer Creek	6540-0.6	1992	40,000
Clear Creek	6610-1 6	1997	45,000
Main Eagle Creek No 3	7015-4 6	1993	120,000
Post Office (Burn Creek)	7055-8 5	1992	65,000
N. Catherine Creek (Buck Creek)	7787-0 1	1993	80,000
Big Creek #1	67-0 2	1993	60,000
Crazyman	4230-0 3	1992	50,000

\* Additional Capital Investment Projects for roads and bridges may be developed as needs are identified. The total need for improvements to the road system is identified in the "Wallowa-Whitman NF INTERIM ROAD MANAGEMENT PLAN," dated 5/20/80. This document identifies the reconstruction needs for Arterials and major Collectors on the Forest. New construction needs beyond those listed above will be developed during project planning activities in areas which are presently unroaded. Funding for listed projects is dependent upon annual appropriations by Congress, and may vary from year to year.

**TABLE A-4**  
**TRAIL RELATED CAPITAL INVESTMENT NEEDS\***

Name	Number	Estimated Cost (M\$)	Tentative Year Planned
Spring Creek Interpretive Trail Partnership	1960	60	1990
Elk Creek Segment 2	1944	60	1990
Long Lake	1669	35	1990
Four Mile	1748	20	1990
Hidden Lake	1915	50	1990
Shore Line	1610	65	1990
Mt Emily Cost-Share	1844	155	1990
West Eagle Meadows Trailhead	1934	65	1990
ATV Cost-Share	9876	95	1991
Boulder Park Trailhead	1922	130	1992
Copia-Summit Trailhead	1865	162	1992
Buck Creek Trailhead	1944	130	1992
Flagstaff Loops	1923, 1926	90	1992
Hoffer Lake	1641	30	1993
Snake River Dug Bar	1726	145	1993
Shore Line	1610	90	1993
West Eagle Meadows Trailhead	1934	120	1993
Sparta Ditch	1870	150	1993
Mt Emily Face	1844	150	1993
Spring Cr Bike/Snopark	1840	180	1993
Martin Bridge Trail	1878	42	1993
West Spring Loops	686	80	1993
Oregon Trail	1842	500	1994
Fake Creek	1941	100	1994
North Catherine Trailhead	1905	125	1994
Rock Springs Trailhead	1928	50	1994
Snake River Idaho	102	50	1994

\* Additional Capital Investment Projects for trails, trailheads, and bridges may be developed as needs are identified. The listing above may be updated periodically due to changing priorities and funding levels.

The total need for improvements in the trail system is documented in the Trail Inventory and Development Plan. This document is updated annually and lists all trails on the Forest where construction or reconstruction is required to meet management objectives. Project needs beyond those listed will be developed during planning activities. Projects identified as having a higher priority than those listed may be substituted for a listed project or injected in the list as required.

**TABLE A-4 (Cont.)**  
**TRAIL RELATED CAPITAL INVESTMENT NEEDS\***

Name	Number	Estimated Cost (M\$)	Tentative Year Planned
Moss Spring Trailhead	1908	75	1994
Long Lake	1669	35	1994
Hidden Lake	1915	50	1995
Indian Rock and Trailhead	1648	175	1995
Glacier Lake Segment 2	1806	60	1995
Imnaha Fork Bridge	1816	25	1995
Dug Bar Trailhead	1774A	75	1995
Wood Lake	1659	30	1995
Medicine	1772	15	1996
Maxwell Lake	1674	50	1996
Kettle Creek Trailhead	1910	75	1996
Elk Creek Bridge	1944	30	1996
Power Line	1627	75	1996
Rock Creek Lake	1626	35	1996
Dry Diggins Idaho	56	25	1996
Frazier Pass	1947	65	1996
Bernard Lakes Idaho	57	50	1996
East Eagle	1910	50	1996
Two Pan Trailhead	1670	75	1996
Russel Mountain Trailhead	1887	75	1996
Copper Creek Trailhead	1879	200	1996
Cat Creek	1701	30	1996
Fivepoints Trail and Trailhead	1843	120	1996
Mt. Ireland Trailhead	1604	50	1996
East Fork Wallowa Bridge	1804	30	1996
Mountain Chief Mine Bridge	1728	40	1996

\* Additional Capital Investment Projects for trails, trailheads, and bridges may be developed as needs are identified. The listing above may be updated periodically due to changing priorities and funding levels.

The total need for improvements in the trail system is documented in the Trail Inventory and Development Plan. This document is updated annually and lists all trails on the Forest where construction or reconstruction is required to meet management objectives. Project needs beyond those listed will be developed during planning activities. Projects identified as having a higher priority than those listed may be substituted for a listed project or injected in the list as required.

**TABLE A-5**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

<b>Project Name</b>	<b>M\$ Cost</b>	<b>Year</b>	<b>Description</b>
Main Eagle (Boulder Park) Trailhead	38	1990	Relocation
Hat Point Road (II)	1,000	1990	Realignment and surfacing of access to the western rim of Hells Canyon
Southwest Shore Boat Ramp	20	1990/91	Phillips Lake -- co-op project with State Marine Board
Huckleberry	360	1992	Reconstruction of upper end of Eagle Creek Road.
Hells Canyon Creek Recreation site	600	1992	Access road and parking area paving, boat ramp paving, employee housing at Big Bar, prehistoric and historic site interpretation
Low Saddle Road and Recreation site	2,100	1994	Reconstruction and surfacing of scenic drive on the Idaho side of Hells Canyon.
Elkhorn Drive	1,000	1991	Pavement seal
Moss Springs Campground	92	1990	Reconstruction
Facility Replacements	32	1990	Replacement of deteriorated facilities at 7 sites on Pine Ranger District
Marble Creek Pass Road	200	1994	Reconstruction of road access to Elkhorn Crest Trail
Indian Creek Road	205	1992	Resurfacing of wilderness access road
Dug Bar Road and Recreation Facilities	4,000	1993	Realignment and resurfacing of road, construction of campground boat launch and trailhead on Snake River
Indian Crossing	700	1991	
Pittsburg Landing	2,600	1991	
Hat Point Road and Scenic Overlook	800	1992	
Hells Canyon Overlook (I)	76	1990	
Hells Canyon Overlook (II)	2,000	1992	

**TABLE A-5 (Cont.)**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

Project Name	M\$ Cost	Year	Description
Oregon Trail Interpretation	128	1990/92	Interpretive signing, route marking for the Blue Mountain segment of the Oregon Trail, per approved management plan.
Stabilization and interpretation of Kirkwood Ranch complex in Hells Canyon	500	1993	Stabilization and interpretation
Steamboat and Hat Point Road Interpretation	85	1990	Interpretive signing for reconstructed access routes into Hells Canyon NRA
Anthony Lakes CCC Interpretation	20	1990	Interpretive signing for CCC era recreation improvements
Recreation Companion Projects Grande Ronde River Road Project	405	1990/94	Mitigate effects road realignment, betterment of existing sites
North Fork Catherine Creek Fencing		1991	Exclude cattle from important recreation area
La Grande ATV Cost-Share Trailheads	220	1991/93	Four trailheads to serve motorized trails.
Buck Creek Trailhead	70	1991/93	Relocation
Main Eagle (Boulder Park) Campground	100	1991	Construction/Relocation
Hells Canyon NRA Miscellaneous Recreation Sites	32	1991	Minor betterment of several sites
Facility Replacements	38	1991	Replacement of deteriorated facilities at 13 sites on La Grande, Eagle Cap, and Wallowa Valley Ranger Districts
South Fork Burnt River Road	160	1993	Resurfacing of road accessing four campgrounds
West Eagle Meadows Trailhead	42	1992	Trailhead reconstruction
Two Color Campground Rehabilitation	90	1992	Rehabilitation
North Fork Catherine Creek Campground, Trailhead, Picnic	36	1992	Betterment

TABLE A-5 (Cont.)

## RECREATION-RELATED CAPITAL INVESTMENT PROJECTS

Project Name	M\$ Cost	Year	Description
Cold Springs Road and Recreation Site	2,300	1996	Improvements
Upper Imnaha Recreation Site and Road	4,000	1995	Improvements
Black Lake Campground	400	1996	Improvements
Hat Point Campground	1,000	1996	Improvements
Saw Pit Saddle	143	1990	Reconstruction and surfacing of scenic drive on the Idaho side of Hells Canyon
Grandview Campground	120	1992/93	Relocation
Triangle Mountain Road and Recreation Site	2,700	1995	Reconstruction and surfacing of a scenic route on the Idaho side of Hells Canyon.
Fish Lake Campground	72	1992	Upgrading
La Grande Winter Sports Area Trailhead and Shelter	65	1994	Construction
Woodley Campground and Handicapped Fish Access	70	1995	Betterment
Moss Springs Trailhead	65	1995	Betterment
Bird Track Springs Wildlife Interpretation Area Campground	68	1996	Construction
Heavens Gate Road	4,900	1996	Relocation and reconstruction.
Hells Canyon VC (Clarkston)	11,200	1994	
Riggins Visitor Center	1,600	1993	
Baker Ranger District Interpretive	42	1992	Interpretive signing on 4-6 historical sites on the Baker Ranger District
Grande Ronde Campground	36	1993	Reconstruction and Betterment
Facilities Replacement	93	1993	Replace deteriorating facilities at eight recreation sites on the Baker Ranger District

**TABLE A-5 (Cont.)**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

Project Name	M\$ Cost	Year	Description
Scenic Byways Interpretation	66	1993	Interpretation on four cultural sites located adjacent to the Elkhorn Scenic Byways
Correction to Union Creek	287	1993	Expansion and betterment, conversion to full service sites (water and electricity).
Salt Creek Summit Snopark	179	1990	Development
Coyote Campground	190	1991	Betterment
Vigne Campground	100	1992	Betterment
Joseph Rim Campground	300	1994	Development
Joseph Rim Day Use Area	150	1993	Development
Burnt Springs Wetlands Nature Development	65	1994	Development
Harl Butte Viewpoint/Picnic Area	25	1995	Betterment
ATV Trails Partnership Development	50	1994	Development
Mountain Bike Trails Development	20	1992	Development
Chico Trailhead	70	1993	Betterment
Joseph Canyon Overlook	93	1992	Betterment
Sled Springs Interpretive Trail	15	1993	Betterment

TABLE A-5 (Cont.)

## RECREATION-RELATED CAPITAL INVESTMENT PROJECTS

Project Name	M\$ Cost	Year	Description
<b>Other projects listed in the Comprehensive Management Plan for the Hells Canyon National Recreation Area as occurring in the first five years following plan approval but with no specific schedule.</b>			
Memaloose to Warnock Corral	20		Minimum improvements to correct resource damage
Interpretive Facilities at Several Locations	400		Hells Canyon Dam, Lookout Mountain, Steamboat Springs, Heavens Gate, Lewiston, Riggins
<b>Other recreation site improvement projects proposed for the 1990-1996 time period but with no specific schedules.</b>			
Harl Butte Road	75	1992	Reconstruction and surfacing
Devils Run	120	1992	Reconstruction and surfacing.
Mount Emily Viewpoints and Trailheads	140	1992/93	Construction
Social Security Point	194		Campground and day-use facilities
Eagle Forks Campground	22		Water and fencing
Union Creek Campground	133		Expansion
McBride Campground	26		Reconstruction
West Eagle Meadows Trailhead	136		Betterment
Eagle Creek Campground	22		Restoration
Main Eagle Trailhead	25		Betterment - southwest side of Eagle Cap Wilderness.
Lillyville Trailhead	6		Betterment - Lostine River
Two Pan Trailhead	8		Betterment - Lostine River

**TABLE A-6**  
**FIVE YEAR ALLOTMENT MANAGEMENT PLANNING SCHEDULE**

DISTRICT	1990		1991		1992		1993		1994	
	ANAL	AMP	ANAL	AMP	ANAL	AMP	ANAL	AMP	ANAL	AMP
BAKER	Hawley	Dønney	Lokhart	Hawley	Blue Ca	Lokhart	Auburn	Blue Ca	Bourne	Auburn
		Dean-Hu			Wash Gu			Wash Gu		
PINE	Pine Va		Pine Va		N Pine	Pine Va	Turnbul	N Pine	Dubl P:	Turnbut
					Snake R		Doyle	Snake R	Goose Cr	Doyle
					Ghost Cr			Ghost Cr		
UNITY	N Burnt	Camp Cr	Ironsde	N Burnt	Whipple	Ironsde	S Burnt	Whipple	Bull Run	S Burnt
NORTH	Marr Fl	Chesnim	Marr Fl		Hmlwnt	Marr Fl		Hmlwnt	Log Cr	
ZONE	Cold Sp	Cherry	Dod-Has	Cold Sp	Rhodes	Dod-Has	Rhodes			Rhodes
	Table Mt	Cayuse	Pittsbg	Table Mt	Vigne	Pittsbg		Vigne	Dun-Thn	
	Doe Cr	Buck Cr	Toomey	Doe Cr	Davis Cr	Toomey		Davis Cr	Saddle	
		Fine	Cow Cr	Canyon	Temp Snk	Cow Cr	Temp Snk			Temp Snk
		Swamp Cr			Lst Cow		Jim Cr	Lst Cow		Jim Cr
		Bear Gl			Elk Mt		McGraw	Elk Mt		McGraw
					Divide		Duck Cr	Divide		Duck Cr
							Grouse			Grouse
							Nebo		Nebo	
							Mud Sp			Mud Sp

ANAL Analysis  
AMP Allotment Management Plan

Additional notes on following page

The above listed allotments are shown in a five year planning schedule for the development of Allotment Management Plans. This schedule is based on the Allotment Management Planning Process developed for the Wallowa-Whitman National Forest. The process divides allotments into five priority categories based on the severity of resource problems and the absence or existence of an approved and functioning allotment management plan.

The allotments shown below will be worked into the planning schedule for the second five years based primarily on their planning priority.

Priority 1 - (Allotments having basic resource damage. Included in this priority are allotments with riparian or soils problems and not having an approved and functioning allotment management plan.) All Priority 1 allotments are scheduled within the initial five year schedule.

Priority 2 - (Allotments having resource problems other than basic resource damage and not having an approved and functioning allotment management plan) - Jordan Creek

Priority 3 - (Allotments not rated as Priority 1 or 2 but not having an approved and functioning allotment management plan) - Mill Creek, Indian Lake, Big Creek, Five Points, Tie Creek, Warm Springs, Standley-Huckleberry, Frazier Mountain, Fruit Springs, Gilkison, Big Sheep, Powwatka South, Upper Clover Creek, Clark Mtn, Snow Creek, Milk Creek, Joseph Canyon, Tope Creek, Mud Creek, Sheep Creek, Indian Point, Sparks, Special #2, Powell Gulch, Huckleberry, Minam River, Powwatka North, Schleur, Middle Point, Turner Creek, Dunn Creek, Mink, Cache Creek, Squaw Creek, Dobbins, Carrol Creek, Chicken Hill, Big Canyon, Hale, Alder Springs, Elmwood Ranch, Whitney, Cree, N Fork Burnt River, Tater Knob, Coyote, Needham Butte, Al-Cunningham, Wallupa, Cummings.

Priority 4 - (Allotments having an approved and functioning allotment management plan. May have basic or other resource problems but the management strategies in the plan are leading toward resolution of the problems. These plans are scheduled for periodic revision or update) - Horse Creek, Lone Pine, Stovepipe, Hunting Camp, Boulder Creek, Eagle Valley, Lobo, Chalk Creek, Keeler, Black Mountain, Day Ridge, College Creek, Cougar Creek, TeePee Elk, Hope Creek, Blackmore, Snell, Grizzly Ridge, W. Burnt River, Haney Gulch, Trouble Gulch, Crow Creek, Spring Creek, Starkey, Tin Trough, McCarty, China Creek, Sheep Ranch.

Priority 5 - (Allotments to be worked into the planning priority at a later date, or to be planned in cooperation with the BLM) Sheep Rock, Castle Rock, Indian Crane, Bridgeport

TABLE A-7

ACTION PLAN FOR THREATENED, ENDANGERED, AND SENSITIVE  
FISH AND WILDLIFE SPECIES

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Peregrine Falcon	1 Continue with hacking site at P O Saddle F S Cost - \$6,000	1 Continue with hacking site at P O Saddle F S Cost - \$6,000	1 Same as FY 1990 Determine whether or not to continue	1 Anticipate closing out P O Saddle hack site F S Cost - None
	2 Co-op with state on foot and/or aerial check of P F sighting reports and/or potential natural nest sites F S Cost - \$1,000	2 Same as FY 1990 and include search for natural nesting resulting from the P. O Saddle hacking site F S Cost - \$1,500	2 Same as FY 1990 and develop nest site management/protection plan for any active nest F S Cost - \$2,000	2 Same as FY 1990 and monitor nest site management plan(S) F S Cost - \$2,000
	3 Begin Co-op planning for an additional hacking site F S Cost - \$500	3 Develop plan, EA, and M of U for additional hacking site \$1,500 F S Cost - \$1,500	3 Begin implementation of new hacking site F S Cost - \$6,000	3 Continue with new hacking site F S Cost - \$6,500
Bald Eagle	1 Second of two years coop survey for winter roost sites on W-W and adjacent areas F S Cost - \$15,000	1 In co-op with state, develop winter roost site management plans for half the sites identified on National Forest land F S Cost - \$4,00/yr for 2 years	1 Same as for FY 1991 (remaining half)	1 In co-op with state, monitor roost site use and management plan compliance F S Cost - \$4,000
	2 Monitor and maintain Unity nest site F S Cost - \$1,000	2 Same as FY 1990	Same as FY 1990	Same as FY 1990
	3 In Co-op with state field review and evaluation of each of 17 potential nest sites or areas F S Cost - \$3,400	3 In co-op with state, check potential nest sites for occupancy (aerial and foot) F S Cost - \$3,400	3 Same as FY 1991. F S Cost - \$1,700	3 Same as for FY 1991 plus make analysis for each site that may result in increased attraction F S Cost - \$4,000
Wolverine	With state and other interested parties, make determination whether to pursue additional studies or to begin transplanting program Document decision in an EA F S Cost - \$1,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Townsend's Big-eared Bat	Co-op with states on additional inventory for new colonies and monitoring existing colonies F. S Cost - \$8,100 (portions of 3 Forests)	Same as for FY 1990 plus co-op on development of a management/protection plan F S Cost - \$2,000	Co-op with states on maintenance of colony habitat and complying with management/protection plan F S Cost - \$1,000	Same as for FY 1992
Prebles Shrew	Co-op with states on additional inventory and survey to more specifically define National Forest distribution F S cost - \$2,000	Same as FY 1990 plus co-op development of status and distribution report and species management plan F S Cost - \$4,000	Co-op with states on monitoring for compliance with species management/protection plan F S Cost - \$1,000	Same as FY 1992
North American Lynx	No action	No action	Co-op with state on surveys/inventories to confirm existence-distribution on Forest F S Cost - \$2,000	Same as for FY 1992 F S Cost - \$2,000
California Bighorn	No action	No action	No action	No action
Greater Sandhill Crane	Co-op with ODF&W on field survey to confirm distribution and search for additional nesting birds F S Cost - \$1,000	Co-op in development of species nesting habitat management plan if found on or adjacent to W-W F S Cost - \$1,000		
Long-billed Curlew	Same as for Sandhill Crane F S Cost - \$2,000	Continue with field survey to confirm distribution and search for additional nesting birds F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$1,000	
Upland Sandpiper	Same as for Sandhill Crane F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$2,000	Same as for Long-billed Curlew F S. Cost - \$1,000	
Ferruginous and Swainson's Hawks	No Action	Co-op field survey to confirm distribution and search for additional nesting birds F S. Cost - \$4,000	Continue with field survey to confirm distribution and search for additional nesting birds F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$2,000

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Townsend's Big-eared Bat	Co-op with states on additional inventory for new colonies and monitoring existing colonies F S Cost - \$8,100 (portions of 3 Forests)	Same as for FY 1990 plus co-op on development of a management/protection plan F S Cost - \$2,000	Co-op with states on maintenance of colony habitat and complying with management/protection plan F S Cost - \$1,000	Same as for FY 1992.
Prebles Shrew	Co-op with states on additional inventory and survey to more specifically define National Forest distribution F S cost - \$2,000	Same as FY 1990 plus co-op development of status and distribution report and species management plan F S Cost - \$4,000	Co-op with states on monitoring for compliance with species management/protection plan F S Cost - \$1,000	Same as FY 1992
North American Lynx	No action	No action	Co-op with state on surveys/inventories to confirm existence-distribution on Forest F S Cost - \$2,000	Same as for FY 1992 F S Cost - \$2,000
California Bighorn	No action	No action	No action	No action
Greater Sandhill Crane	Co-op with ODF&W on field survey to confirm distribution and search for additional nesting birds F S Cost - \$1,000	Co-op in development of species nesting habitat management plan if found on or adjacent to W-W F S Cost - \$1,000		
Long-billed Curlew	Same as for Sandhill Crane F S Cost - \$2,000	Continue with field survey to confirm distribution and search for additional nesting birds F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$1,000	
Upland Sandpiper	Same as for Sandhill Crane F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$1,000	
Ferruginous and Swainson's Hawks	No Action	Co-op field survey to confirm distribution and search for additional nesting birds F S Cost - \$4,000	Continue with field survey to confirm distribution and search for additional nesting birds F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$2,000

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Yellow-billed Cuckoo	Co-op with state to confirm existing distribution and search for additional nesting birds. F. S Cost - \$1,000	If found on National Forest lands, co-op with state in development of species habitat management plan. F. S Cost - \$500	Co-op with state on monitoring for compliance with species habitat management plan F S Cost - \$200	

TABLE A-8

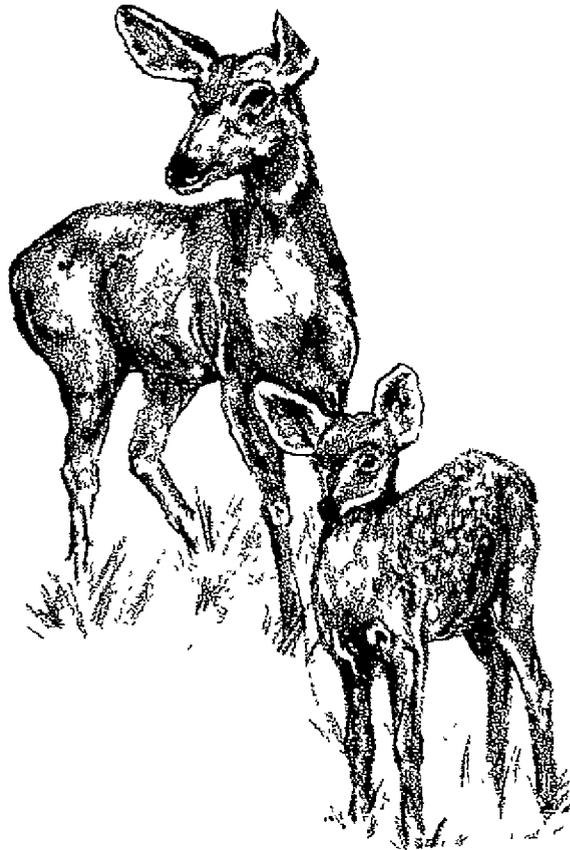
**FACILITIES CAPITAL IMPROVEMENTS**  
**(Buildings and Other Administrative Facilities)**

Project Name	Ranger District	Type Work	Sq Ft	FY	Cost M\$
Wallowa Valley Bunkhouse	WV	New Const	3,000	94	100
Drain Pave Baker/Unity Comp	Baker/Unity	Reconst	N/A	92	130
Baker Office	Baker	Replace	15,000	92	2,000
Pine Office Addition	Pine	ADD	4,000	94	100
Pine Bunkhouse	Pine	New Const	2,000	95	80
Unity Office Addition	Unity	ADD	4,000	94	100
Unity Bunkhouse	Unity	New Const	2,000	94	80
Clarkston Office	HCONRA	New Const	8,000	95	800
Riggins Office	HCONRA	Replace	3,000	96	250
Starkey Hdqtrs Office	PNW	Replace	4,000	94	350
Kirkwood Water System	HCONRA	New Const	N/A	93	25
Greenhouse/Storage Impr	PNW	Major Mod	400	93	40
Herbarium Impr.	PNW	Major Mod	400	94	30
Starkey Sewage System	PNW	New Const	N/A	91	50
Starkey Water System	PNW	New Const	N/A	91	75
Billy Meadows Bunkhouse	WV	Renovation	400	95	50
Unity Storage Bldg.	Unity	New Const	1,000	90	35
La Grande VIS Cost-Share	La Grande	New Const	1,000	96	300
Catherine Creek Cabin	La Grande	Stabilize	N/A	96	10
Point Prominence	La Grande	Rehab	N/A	96	20
Johnson Rock	La Grande	Rehab	N/A	96	20
Two Color Guard Station	La Grande	Rehab	N/A	96	60
Historic Moss Sprgs Guard Station	La Grande	Rehab	N/A	96	80
Grande Ronde Guard Station	La Grande	Rehab	N/A	96	50

NOTE. The Forest is currently preparing a Forest-wide "Facilities Master Plan" which will document all needs associated with the administrative facilities on the Wallowa-Whitman. This plan is to be completed in 1990, and as a result, some of the above projects may change. Future programming of facilities on the Forest will be guided by the Facilities Master Plan upon its completion.

# *APPENDIX B*

## Visually Sensitive Travel Routes



## APPENDIX B VISUALLY SENSITIVE TRAVEL ROUTES

This appendix identifies and describes the visually sensitive travel routes on the Forest. A map showing Sensitivity Level 1 and Level 2 travel routes is provided in the map packet which accompanies the Environmental Impact Statement. The major travel routes are the most sensitive (Sensitivity Level 1). The viewshed number refers to the areas mapped on Figure IV-1 and shown in Table IV-6 and IV-7 of the Environmental Impact Statement. Less sensitive viewsheds (Sensitivity Level 2) are listed in Table IV-7 of the EIS.

Sensitivity Level 1 normally indicates that landscapes adjacent to the travel route are managed in such a manner that management activities are not visually evident (Retention). Along Sensitivity Level 2 routes, management activities are normally to be visually subordinate, but management activities may be evident (Partial Retention). With Level 3 routes, management activities are dominating, but appear natural (Modification). These guidelines apply for the routes shown in this table with the exception of those indicated by the Management Direction column. For these particular routes, management direction to meet a certain visual quality objective is different than indicated by the sensitivity level in order to achieve other resource objectives of the land management plan.

R = Retention, PR = Partial Retention, and M = Modification.

### SENSITIVITY LEVEL 1 & LEVEL 2 TRAVEL ROUTES

Travel Routes	Sensitivity Level	Management Direction	General Description	Viewshed
Grande Ronde River	1		Grande Ronde River Corridor (between Umatilla and Wallowa-Whitman National Forest)	1
Highway 3	1		State Highway 3 north of Enterprise	2
Trail 1653	1		Bear Creek	3
Road 8250	1		Road to Bear Creek Campground	3
Road 8210	1		Lostine Canyon	4
Road 8205	1		Hurricane Creek Road	5
State Highway 82	1		Wallowa Valley	5
Trail 1807	1		Hurricane Creek Trail	5
Trail 1812	1		McCully Creek	5
Tramway	1		Mount Howard Tramway	5
Road 39	1		Wallowa Mountain Loop Road, entire	5,7
Road 3960	1		Ollokot to Indian Crossing Campground	8
County Road 727	1		Imnaha to Neiman Ranch	9
Road 4260	1		Imnaha to Dug Bar	10
Road 493	1		Melhorn Saddle to Pittsburg Landing	11
Idaho Power Road 1039	1		Oxbow to Hells Canyon Dam	12
Road 6610	1	PR	Clear Creek to Trail 1867	13

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Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
State Highway 86	1		Richland to Oxbow	14
Road 7740	1		East Eagle Creek	15
Road 7755	1		Eagle Creek - Boulder Park area	16
Road 7015	2		Empire Gulch - Switchback above Eagle Creek	16,31
Road 7015	1		Switchback to Junction with Road 77	16
Highway 203	1		State Highway 203 (Catherine Creek State Park, et al)	17
Road 77	1		Corridor from State Highway 203 through Bald Hill, to Flagstaff Butte, and Junction Empire Gulch Road 7015	16,17
Trail 1914	1		West Eagle Meadows, (Fake Creek)	17
Road 67	1		Big Creek to Tamarack Campground	18
Road 6220	1	PR	Mill Creek to Moss Springs	19
Summit Springs	1		Summit Springs Viewpoint overlooking Moss Springs	19
Highways 237 & 82	1		Grande Ronde and Cove Valley	20
Road 66	1		Duck Lake and Duck Creek Area	21
Road 66	1	PR	Fish Lake area	22
Road 66	1	PR	Clear Creek to Fish Lake	13,14,22
I-84	1		Interstate 84 and railroad corridor	23
State Highway 350	1		Lightning Creek to Imnaha (town)	24
State Highway 82	1		La Grande to Enterprise	25
Highway 244	1		State Highway La Grande to Ukiah	26
Road 51	1		Grande Ronde River Road to Tony Vey Meadows	27
Road 73	1		Elkhorn Loop Drive Scenic Byway to Anthony Lakes	28,29
Winter Sports Area	1		Anthony Lakes Ski Area	29
Trail 1606	1		Trail north from Crawfish Lake to Road 73	29
Trail 1611	1		Elkhorn Crest Trail, entire length	29,33,34
Peavy Cabin Road	2		Road from 73 to Peavy Cabin	30
Road 3120	1		Grandview Drive - Mt. Emily	31
Road 31	2		Forest Boundary northeast to junction 3120 (Conklin Spring)	Q
New Mt Emily Road	2		Carters Hog Ridge to about Telephone Springs on Road 3120	31/P
Road 4240	1		Imnaha to Hat Point	32
Trail 1633	2		Trail 1633 to Twin Lakes	33
Road 6550	2		Road from Highway 7 to Trail 1633	33
Trail 1624	2		From Pole Creek Ridge to Elkhorn Crest Trail	33
Highway 7	1		Phillips Lake area	33

\*Refer to Figure IV-1 & IV-2 and Tables IV-6 and IV-7 in Chapter IV of the DEIS

Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
Road 7301	2		North Fork North Powder River	34
Trail 1632	2		North Fork North Powder River (to Meadow Lake)	34
Trail 1617	2		Killamacue Creek Trail	34
Trail 1621	1		Lost Lake and Meadow Lake	34
Goodrich Road	2		To Goodrich Reservoir	34
Pine Creek Road	2		To Pine Creek Reservoir	34
Trail 1626	2		Rock Creek Lake Trail	34
Trail 1628	2		From Road 5520 to Western Union Mine	34
Road 6510	2		Marble Creek Road	34
Road 5520	2		North Fork Rock Creek	34
Highway 7	1		State Highway 7 to Whitney-Tipton	35
County Road 507	1		North Burnt River (Whitney to King Ranch	36
Highway 26	1		State Highway 26	37
Road 6005	1		Mammoth Springs, South Fork Burnt River	38
Snake River	1		From Hells Canyon Reservoir at Oxbow to Washington-Oregon border	10,11,12, 39,42,43, 44,DD,EE
Jeep Road 1774	1		Memaloose to Somers Point to Lord Flat	39
Trail 1607	2		Dutch Flat Creek	40
Road 21	2		Spring Creek area	A
Road 21	2	M	From 244 to Frog Heaven Meadows	B
Road 5160	2	M	From Highway 244 to Road 51	C
Trail 1853	2	M	Lookout Creek Trail from Road 5160 to Tower Mountain	C
Trail 1843	2	M	From 1842 Junction north	P
Road 43	2	M	From Ladd Canyon to Elkhorn Drive Road	D
Road 5125	2	R	From Grande Ronde River to Ladd Canyon Road 43	D
Road 51	2		Tony Vey Meadows to North Fork John Day Campground	E
Road 52	2		From Road 51 to Ukiah (Blue Mt. Scenic Byway)	F
Road 73	2		North Fork of the John Day to Granite (Scenic Byway)	G
Road 73	2		Sumpter to Granite (Scenic Byway)	H
Road 1042	2	M	From Highway 7 to Greenhorn	I
Road 2640	2	M	From Mammoth Springs along Last Chance Creek	J
Road 1689	2	M	West Fork Camp Creek area	K
Road 1684	2	M	East Camp Creek	L

\*Refer to Figure IV-1 & IV-2 and Tables IV-6 and IV-7 in Chapter IV of the DEIS

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Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
Old Highway 7	2		Stices Gulch to Mill Creek on Dooley Mountain	M
County Road 550	2		Road from Sumpter to Bourne	N
Road 73	2		From Badger Butte to North Fork of the John Day Campground (Scenic Byway)	O
Trail 1859	2	M	Five Points area to Big Rock Spring Area	P
Trail 1842	2		Five Points area to New Mt. Emily Road	P
Road 31	2	M	From I-84 to Conklin Spring	Q
Road 19	2		Beaver Meadows area	R
Road 62	2	M	Grey Mountain - Mount Moriah area	S
Trail 1843	2		Main Five Points Creek to 1842 junction	P
Trail 1843	2	M	Upper Five Points Creek from Junction 1842 to Road 3120	P
Road 6220	2		From Road 62 to an area south of Point Prominence	S
Road 600 & 650	2		Along South Fork Catherine Creek to Flagstaff Butte	T
Road 7785	2		North Fork Catherine Creek to Trail 1905	T
Trail 1905	2		North Fork Catherine Creek to Wilderness Boundary	T
Road 7787	2	M	Buck Creek Road	T
Trail 1944	2	M	Middle Fork Catherine Creek Trail to Burger Pass Trail	T
Trail 1951	2	M	Squaw Creek Trail to China Ridge Trail	T
Road 7045	2		Road Corridor from Balm Creek Reservoir to Road 67	U
Road 70	2		Sawtooth Ridge - Balm Creek area	U
Road 7735	2		Forest boundary to Eagle Forks Campground	V
Trail 1878	2		Along Eagle Creek	V
Road 77 and 7715	2	M	From Highway 86 to McBride Campground and Summit Point Trailhead	W
Road 70	2		From Forshey Meadow to Empire Gulch Road 7015	X
Road 46	2		From State Highway 3 to Crow Creek	Y
Road 46	2		Wellamotkin Drive to Zumwalt Road	Z
Road 4620	2	M	Crow Creek Road	AA
Crow Creek Road	2		Davis Ranch to Joseph Creek	AA
Road 4625	2	M	Road 46 to Vigne Campground	BB
Road 420	2		Grave Point to Kirkwood Cow Camp	DD
Road 1819	2		Iron Phone Junction to Low Saddle	DD
Road 3930	2	M	To Harl Butte	GG

Travel Routes	Sensitivity Level	Management Direction	General Description	Viewshed
Trail 1640	2		Peavy Cabin to Summit of Elkhorn Ridge	N. Fork John Day Wilderness
Road 1434	2		Bull Run Mountain, Table Rock, and Mine Ridge Area	Monument Rock Wilderness
Old Oregon Trail	1		All within Forest	23
Cornucopia Road	1		Carson to Cornucopia	14
Road 493	1		NRA Boundary to Pittsburg Landing	11
Road 420	2		Pittsburg Road to Buckhorn Spring	DD
Imnaha River Road	1		Dug Bar to Indian Crossing	6,9,10
Road 2060	2		Iron Phone Junction to Low Saddle	DD
Road 2060A	2		Saw Pit Saddle Road	DD
Roads 112 and 114	1		Roads to Black Lake	41
Road 4240	1		Hat Point Road	32
Road 1774	1		Western Rim Trail (4WD)	39
Road 3965	2		Road 39 to Lookout Mountain	12
Road 490	2		Road 39 to Road 3965	6
Trail 1767	1		From Trail 1774 to Somers Point	39
Road 517	1		Road to Seven Devils and Heavens Gate Lookout (interior exclusion Seven Devils Wilderness Viewshed)	
Road 4680	2		Cold Springs Ridge Road to Grande Ronde River	CC
Road 1819	2		Buckhorn Spring to Cold Spring	DD

# *APPENDIX C*

## Timber Information And Ten-Year Timber Sale Action Plan



## APPENDIX C

### TIMBER INFORMATION AND TEN-YEAR TIMBER SALE ACTION PLAN

#### INTRODUCTION

This appendix displays how the timber outputs, as projected by the preferred alternative in the FEIS, are likely to be provided during the first ten years of plan implementation. It also identifies the earned harvest factor (EHF) which will be used to adjust harvest levels if, due to lack of funding or for other reasons, the level of precommercial thinning required by the plan cannot be accomplished.

The Timber Sale Program Quantity is divided into two sections -- regulated and unregulated timber volume. The regulated timber volume (the allowable sale quantity) is that portion for which the Forest will be held accountable to offer for sale during the planning period. In general, it is the volume from sound green trees that can be sawn into lumber.

In addition to the regulated volume, there is often a market for down logs (culls), dead trees, or small size material that may be sold with the regulated timber or by separate sale. This material may be processed into chips, poles or other products. Fuelwood is included in the unregulated volume.

Table C-1 lists the timber sales currently planned during the first five years of plan implementation. This list may be updated during plan implementation, with corrected lists being available at the National Forest Headquarters and at District offices. Maps showing approximate sale areas are available for review at Forest Offices.

Table C-2 illustrates the total timber harvest for the ten-year period.

Table C-3 describes the regulated volume, distributed to the three markets for the first five years.

Table C-4 illustrates the unregulated volumes. The Forest is not required to sell these amounts. The figures are their best estimates of what will be sold under presumed market conditions. If the markets for the material improve, the amount of material to be sold may increase -- and if markets are not available, the amounts shown may not be achieved.

An estimate of the amount of various vegetation management practices likely to occur in the first decade is shown in Table C-5. The comparisons of the potential environmental effects of those practices that are issue-related or controversial are contained in Appendix G of the EIS. The reasons for the choice of the vegetation management practices are contained in Appendix B and Chapter IV, both of the EIS.

Regeneration harvests include any removal of trees intended to assist regeneration already present or to make regeneration possible. Intermediate harvests are those removals of trees from a regular crop or stand between the time of their formation and the harvest cut (SAF 1971).

Timber stand improvement comprises all intermediate cuttings made to improve the composition, constitution, conditions, and increment of a timber stand (SAF 1971). As used in these documents, the term excludes those instances in which the intermediate cutting is sold.

Reforestation or regeneration is the renewal of a tree crop, whether by natural or artificial means

Estimates as to the incidence of these practices and their timing were developed based on the professional opinions of Forest specialists, the available literature, and modelling techniques such as FORPLAN. Refer to the EIS, the Regional Guide, the planning records, FSM 2400, and FSH 2409 13 for more information on the subject

Page 25 of the Comprehensive Management Plan for the Hells Canyon National Recreation Area states that "Potential yield volumes will be specified in the Wallowa-Whitman National Forest Management Plan." The term "potential yield" has since been replaced (in standard Forest management terminology) by the term "allowable sale quantity" in recognition that the desired timber sale level for any given period of time may be more or less than the potential of an area to produce timber. Consequently, this plan identifies the portion of the Forest's total ASQ which will normally come from the Hells Canyon National Recreation Area rather than identifying the potential yield of the area. The projected timber offering from the NRA is 6 MMBF/year during the first decade, although this may vary in response to the Forest-wide resource situation

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1990

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>BAKER DISTRICT</b>								
Webfoot Salvage	T 6S, R 37E, Secs 18&19	1	400	1.1	1.1	0	0	Fire salvage from Tanner Gulch Fire Tractor and cable Mostly spruce, larch
Auburn Salvage	T 12S, R 40E	3	2833	11.3	11.3	0	0	Fire salvage from Dooley Mtn Fire Majority skyline. Western part of fire
Ebell Salvage	T.12S, R 41E	3	3,000	10.7	10.7	0	0	Fire salvage from Dooley Mtn Fire Majority skyline Eastern part of fire
Clear Fire Salvage	T 7S, R 36E, Sec 16	18	1,000	0	1.4	0	0	Older dead fire-killed timber from 1986 Clear Fire Mostly LPP Tractor
Replacement	T 9S, R 36E., Secs 35&36	1	723	1.9	2.4	2.4	0	Mixture of shelterwood and overwood removal 85% tractor, 15% skyline Mostly assoc species
Fuelwood Sales	District-wide	1	400	0	3.5	0	0	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1&18	300	0	0.3	0	0	Combination of wood residue, post and poles, and commercial fuelwood
<b>Subtotal - Baker</b>			<b>8,656</b>	<b>25.0</b>	<b>30.7</b>	<b>2.4</b>	<b>0</b>	
<b>WALLOWA VALLEY DISTRICT</b>								
Cabin Salvage	T4S, R 46E, Secs 16&21	1	2,000	5.5	5.5	2.2	0.7	Engelmann spruce salvage Tractor and skyline Regeneration harvest
Loop Salvage	T 4S, R 46E	1	400	2.7	2.7	5.6	12.7	Fire salvage from Canal Fire Mostly Engelmann spruce Tractor, skyline, and helicopter
Engraver Salvage	T 4S, R 46E	1	3,000	4.5	4.5	-	-	Spruce. Tractor and skyline Insect salvage sale.
Smokey Salvage	T 3N, R 43E	1	1,550	4.0	4.0	4.0	2.0	Engelmann spruce salvage

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Appendix C

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Hump Salvage	T 4S ,R 46E Sec 2,11	1	100	3	3	-	-	Engelmann spruce salvage.
Fire salvage additions to existing timber sale contracts	District-wide	1	20,000	20.9	20.9	--	--	TS contract modifications
Sled	T 3N , R,43E , & R 44E	1	1,200	6.5	6.5	4.8	23.8	Tractor and Skyline Reduced tire pressure.
Papoose	T 3S , R 45E , Secs 25,36, T 3S , R 46E , Secs 30,31	6	500	0.5	0.5	--	--	Engelmann spruce and Canal Fire salvage
E P 's	District-wide	1	100	0.5	0.5	--	--	Evaluation plantations
Fuelwood Sales	District-wide	1			2.8	--	--	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1			0.6			Combination of wood residue, post and poles, and commercial fuelwood
Subtotal - Wallowa Valley			28,850	45.4	48.8			
<b>HELLS CANYON NRA</b>								
Fire Salvage additions to existing TS contracts	T 4S , R 46E , 47E , 48E	11	400	1.2	1.2			TS contract modifications
Black SSTS	T 5S , R 47E	11	200	0.3	0.3			
Summit Salvage	T 1S , R 49E	11	950	4.3	4.3			Fire Salvage, Long Fire area
North SSTS	T 5S , R 48E	11	526	0.3	0.3			
North 2	T 4S , 5S , R 48E	11	300	1.5	1.5			
Lookout Salvage		11	500	3.0	3.0			Fire salvage, Long Fire area Sale access is uncertain.
Spain	T 3N , R 48E , Secs 5&32	11	400	2.2	2.2			1.2 MMBF PP, 1.0 DF/WL 80% tractor, 20% skyline

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Fuelwood Sales	District-wide	11		--	0.8			Personal use charge fuelwood
Subtotal - HCNRA			3,276	12.8	13.6			
<b>EAGLE CAP DISTRICT</b>								
Canyon Salvage	T 1N, R 41E, Sec 10,15,27,39	1	200	0.4	0.4	--	--	
Bebe SSTS	T 1S, R 42E, Sec 9	1	40	0.4	0.4	--	--	
Wing-Papoose Salvage	T 3S, R 45E, Sec 25,36	1&6	700	3.0	3.0	0	0	Joint salvage sale with Willowa Valley District
Fuelwood Sales	District-wide			--	0.1			Personal use charge fuelwood
Miscellaneous Small Sales	District-wide			--	0.4			Wood residue, post and poles, and miscellaneous salvage
Subtotal - Eagle Cap			940	3.8	4.3			
<b>LA GRANDE DISTRICT</b>								
French Bug Salvage	T 3S, R 33E, Sec 16	1	1,900	9.5	9.5	5.1	8.9	9.5 MMBF associated species Skyline and tractor.
Fire Bug Salvage	T 6S, R 36E, 37E	3	---	6.4	6.4	--	--	6.4 MMBF associated species Tanner Gulch Fires Tractor, skyline, and helicopter
Rotor Salvage	T 4S, R 34E	3	---	2.5	2.5	---	---	All helicopter yarding of associated species
Riley Salvage	T 3S, R 33E, Sec 36	1	2,500	4.5	4.5	1.5	3.4	Associated species Skyline and tractor
Skidder	T 1S, R 41E	1	1,320	9.7	11.4	1.3	7.9	1.3 MMBF PP, 2.1 MMBF DF/WL, 6.3 MMBF FF&O Skyline and tractor.
Strip LP Salvage	T 1S, R 41E, Sec 7	1	100	0.5	1.0	--	0.1	LP pulpwood, all tractor
Lost Goose	T 7S, R 43E, Sec 17	3	483	4.0	4.0	3.8	2.7	Associated species Skyline and tractor

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Potters Mill	T 3S, R 41E	1	560	18	55	102	137	Associated species and LP pulpwood Tractor and pulpwood CTI/VTP demo sale
Chicken Beak Salvage	T 7S, R 36E, Sec 9	1	—	10	40	--	--	Associated species and LP pulpwood. All tractor
Porter Salvage	T 2S, R 35E, Sec 1	1	—	10	10	--	--	Associated species Tractor and skyline.
Lookout	T 5S, 6S, R.34E	1	1,000	52	5.7	11.4	14	Associated species and LP pulpwood Tractor and skyline
Vey Salvage	T 6S, R 35-1/2E, Sec 24	1	—	0.7	0.7	--	--	Associated species Tractor and skyline
Bounty Salvage	T 6S, R 35-1/2E, Sec 22	1	—	1.5	1.5	--	--	Associated species Tractor and skyline
Syrup Creek	T 3S, R 34E, Sec 15	14	1,800	100	10.5	26.3	9.2	Starkey Experimental Forest Associated species Tractor and skyline. CTI/VTP demo sale
Trail Salvage	T 5S, R 34E, Sec 27	1	—	0.7	0.7	--	--	Associated species. All tractor
Diphtheria Salvage	T 6S, R 35E, Sec 24	1	—	0.4	0.4	--	--	Associated species Tractor and skyline
Camp Out	T 6S, R.40E, Sec 14	1	450	40	4.5	--	--	Associated species Skyline and tractor
Shanty Salvage	T 5S, R 35E, Sec 21	3	—	1.0	1.0	--	--	Associated species
Fuelwood Sales	District-wide	13	150	--	5.0	--	--	Personal use charge fuelwoods.

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Miscellaneous Small Sales	District-wide	13	100	30	30	--	--	Wood residues, post and poles, miscellaneous salvage
<b>Subtotal - La Grande</b>				67.4	82.8			
<b>PINE DISTRICT</b>								
Biddy Beagle	T 7S, R 44E	1	92	0.9	0.9	--	--	Shelterwood and overwood removal sale PP and associated species All tractor
Walnut	T 7S, 8S, R.44E, 45E	1,3	648	30	35	0.3	--	50% PP, 10% skyline 90% tractor
Dark Red	T 7S, 8S, R 43E, 44E	1,3,7	736	36	36	1.0	--	75% PP, 10% skyline 90% tractor
ELOP Salvage	T 6S, R 46E	1,3A	50	1.0	1.0	--	--	Engelmann spruce salvage Tractor
Corral Creek Salvage	T 6S, R 47E	1	150	1.0	1.0	--	--	Engelmann spruce salvage Tractor
Schneider Salvage	T 6S, R 45E, 46E.	1,3A	98	0.7	0.7	--	--	Engelmann spruce salvage
Clear Creek Salvage	T 6S, R 46E	1,3A	108	0.6	0.6	--	--	Engelmann spruce salvage Tractor and skyline
Lark	T 7S, R 46E, 47E	1,3	302	2.0	2.0	--	--	Associated species Tractor and skyline
Panther	T 6S, 7S, R 45E	1	772	9.6	9.6	1.0	--	30% PP, 70% associated 80% helicopter, balance tractor and skyline
Lily	T 7S, R 43E, 44E	1,3,7	1,000	3.5	3.5	2.0	--	Associated species Tractor and skyline
West Wall	T 7S, 8S, R 45E	1,3	500	2.5	2.5	2.0	--	Associated species Tractor or skyline

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Fuelwood Sales	District-wide	1,3	--	--	0.7	--	--	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1	200	0.4	0.5	--	--	Wood residue, post and poles and miscellaneous salvage
Subtotal - Pine			---	28.8	30.1			
<b>UNITY DISTRICT</b>								
Smoken Salvage	T 14S, R 36E	1	1,212	5.2	5.2	--	--	Fire salvage Monument Rock Fire
Walaho	T 10 S, R 36E	1	1,200	4.5	4.5	4.5	--	
Bull Salvage	T 14S, R 36E.	1.6	1,400	3.2	3.2	--	--	Fire salvage Monument Rock Fire Helicopter logging
Crypt	T 11&12S, R 36E	1.3	800	3.0	3.0	--	1	
Fuelwood Sales	District-wide	1.3	--	--	1.0	--	--	
Miscellaneous Small Sales	District-wide	1.3	--	--	0.5	--	--	
Subtotal - Unity			---	15.9	17.4			
<b>TOTAL PROGRAMMED</b>					205.2 235.3			MMBF Sawtimber MMBF All products

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1991

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>BAKER DISTRICT</b>								
Snell Hollow	T 9S, R 37E, Secs 5,6,7	1	377	37	42	14	0	10% PP, 90% associated species Tractor and skyline
Isham	T 6S, R 37E, Secs 13,14,23,24	1	843	116	126	9	0	Insect salvage sale
North Wind	T 9S, R 37E, Secs 2,3,4,6,7	1	1,037	68	73	79	75	15% PP, 85% associated species Tractor, short-span, and long-span skyline
Fuelwood Sales	District-wide	1	400	0	37	0	0	Personal use charge fuelwood
<b>Subtotal - Baker</b>			2,657	221	278	183	75	
<b>WALLOWA VALLEY DISTRICT</b>								
Nova	T 3N, R 44E	1	300	06	06	--	--	Harvest overstory removal sale
Bearpaw	T 4N, R 46E	3	753	50	50	47	247	
Hilton	T 3N, R 46E, 47E	3	1,532	88	88	75	128	
Tamarack	T 3N, R 47E, 48E	3	700	30	30	--	40	
Mandy L P	T 4S, R 47E	---	500	15	15	---	---	
Hwyway	T 3N, R 44E	1	540	20	20	18	30	
Tanya	T 4S, R 46E, 47E	---	500	17	17	---	---	Harvest final removal entry
Reba	T 4N, 3N, R 45E, 46E, 47E	1,3	1,300	12	12	---	---	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Fuelwood Sales	District-wide	1,3	—	—	3 0	—	—	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1	—	0 2	0 2	—	—	Miscellaneous product sales
<b>Subtotal - Wallowa Valley</b>			—	24 0	27 0			
<b>HELLS CANYON NRA</b>								
Long	T 5N, R 46E, Sec. 34	11	150	1	.1	—	—	
Nog	T 4S, R 47E	11	150	1	.1	—	—	
Fuelwood Sales	District-wide	11	—	—	0 9	—	—	Personal use charge fuelwood.
<b>Subtotal - HCNRA</b>			—	0 3	1 1			
<b>EAGLE CAP DISTRICT</b>								
Alkanyon	T 1S, R 42E	1	450	1 0	1 0	—	—	
Fuelwood Sales	District-wide	1	—	—	0 1	—	—	Personal use charge fuelwood
<b>Subtotal - Eagle Cap</b>			—	1 0	1 1			
<b>LA GRANDE DISTRICT</b>								
Tinman	T 5S, R 34E	1	600	3 0	3 0	2 0	8 1	17% PP, 83% associated species Tractor
Blue Spring	T 5S, R 35E, Secs 28,29	3	110	0 6	0 7	1 0	0 2	Associated species Tractor.
Horn	T 2S, 3 S, R 35E	1	900	3 6	3 8	—	—	Associated species Tractor and skyline
Union Spring	T 6S, 7S., R 42E, 43E	1	600	3 7	3 7	—	—	Associated species Tractor and skyline

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Stiff II	T 5S, R 36E, Sec 27	3	2,000	10 0	12 0	12 0	10 0	Associated species 80% tractor, 20% skyline
Cantrell Spring	T 2S, R 36E, 37E	3	416	1 4	1 4	--	--	PP and associated mix Tractor and skyline
Long Shot	T 5S, R 41E	1	480	2 3	2 6	11 1	14 2	Associated species Tractor and skyline
Meadow Muffin	T 6S, R 36E	1	300	2 0	3 8	1 5	3 3	PP, associated, LPP mix Tractor and skyline
HFR 91	To be selected	1	200	2 5	2 5	--	--	Final overwood removal entries
Sardine	T 6S, 7S, R 42E	1	600	3 1	3 1	1 4	4 7	
Sawtooth	T 7S, R 42E, Sec 15	1	700	7 0	7 0	--	--	
Gravel Flat	T 6S, R 42E	3	500	2 5	2 5	--	--	
Miscellaneous Small Sales	District-wide	1,3	760	3 8	4 4	--	--	Miscellaneous salvage and product sales
Fuelwood Sales	District-wide	1,3	150	--	5 0	--	--	Personal use charge fuelwood.
<b>Subtotal - La Grande</b>			---	45 5	55 5			
<b>PINE DISTRICT</b>								
Backsight	T 6S, R 44E	3A	216	3 4	3 4	4 1	---	90% skyline, associated
Trinity	T 6S, 7S, R 45E, 46E	1,3	500	6 6	6 6	4 0	--	15% PP, 45% skyline 55% tractor

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Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Fuelwood Sales	District-wide	--	--	--	10	--	--	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	--	400	06	0.5	--	--	Miscellaneous product and salvage sales
<b>Subtotal - Pine</b>			--	106	11.5			
<b>UNITY DISTRICT</b>								
Rail II	T 13S, 14S, R 35 1/2E 36E	1	500	25	2.5	5	1	75% tractor, 25% skyline.
High Noon	T 13S, R 36E	1	125	05	0.5	--	--	Tractor OR/TH
Ewe	T 13S, R 35 1/2E	1	458	14	1.4	--	--	Reg tractor
Clay	T 10S, R 35E	3	365	10	1.0	--	1	Reg tractor
Trout	T 10S, 11S, R 36E, 37E	1,3	1,000	32	3.2	3	4	Regen 75% tractor, 25% skyline
Jack	T 10S, R 36E	1,3	2,000	78	7.8	--	2	regen 75% tractor, 25% skyline
Fuelwood Sales	District-wide	13	--	--	10	--	--	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1,3	--	01	0.5	--	--	Miscellaneous product and salvage sales
<b>Subtotal - Unity</b>			--	165	17.9			
<b>TOTAL PROGRAMMED</b>					123.4 145.7	MMBF MMBF	Sawtimber All Products	

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1992

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>BAKER DISTRICT</b>								
High Ham	T6S, R 37E, Secs. 1,6,7,8,17,18	1	1136	50	55	54	50	85% WF&O, 15% LPP 50% tractor, 50% skyline, 65% regen clear-out, 35% final removal
Sand Gap	T 6S, 7S, R 37E	1	931	65	7.8	80	30	
Rock Willow	T 7S, R 37E, Secs 11,12,13,14,15	1	794	80	90	30	02	
Upper Wahoo	T 9S, R 37E, Secs 11,12,13,14	1	700	30	30	23	0	100% skyline 100% WF and others
Misc Small Sales	District-wide	1	200	02	02	--	0	Small salvage sales
Fuelwood Sales	District-wide	1	400	0	40	0	0	Personal use charge fuelwood
<b>Subtotal - Baker</b>			<b>4,161</b>	<b>227</b>	<b>295</b>	<b>187</b>	<b>10</b>	
<b>WALLOWA VALLEY</b>								
Elk Creek	T 2N, R 43E, Secs 2-4,9-16,21-34	3	10,530	35	35	35	138	Commercial thinning sale
Allen	T.5N, R 45E, Secs 35,36	1,3	1,100	70	70	30	20	
Cut Out	T 3N, R 47E, Sec 4	1	--	40	40	20	15	
Peavine	T 4N, R 46E, Sec 29,32	1	--	85	85	30	10	
Wood	T 3N, R 43E	1	---	40	40	---	40	
Firewood Sales	District-wide				30			Personal use charge fuelwood

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Appendix C

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Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Misc Small Sales	District-Wide	1,3	1,000	4 0	4 0	-	-	Miscellaneous products and salvage sales
<b>Subtotal - Wallowa Valley</b>				31 0	34 0			
<b>HELLS CANYON NRA</b>								
Bluebird	T 4N , 5N , R 47E	11	1,000	4 5	4 5	4 0	7 1	Selection harvest 75% tractor, 25% skyline 45% PP, 55% DF and other species
Cold Salvage	T 6S , R 47E	11	300	0 2	0 2	---	---	Misc Small Salvage
Fuelwood Sales	District-wide	11	---	---	0 8			Personal use charge fuelwood
<b>Subtotal - HCNRA</b>				4 7	5 5			
<b>EAGLE CAP</b>								
Bitter Green	T 1S., R 43E	1	75	0 3	0 3	-	-	
Long Root	T 1S , R 42E	1	100	0 3	0 3	-	-	
Fuelwood Sales	District-wide	1	---	---	0 1	---	---	Personal use charge fuelwood
<b>Subtotal - Eagle Cap</b>				4 0 0	0 6	0 7		
<b>LA GRANDE</b>								
Basin	T 6S , R 43E , Sec 20	1	1,450	9 1	9 1	2 5	18 0	
Little Bear	T 4S , R 41E	1	1,300	13 2	16 5	3 6	11 5	All associated species Tractor and skyline yardinf
Sufferin Smith	T 6S , R 42E	1	1,300	6 5	6 9	3 0	2 0	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Foghorn	T 6S , R 35 1/2E	1	1,300	51	5.4	0.3	3.0	
Herron	T 1S , R 37E	3	400	50	5.3	1.0	1.5	
Big Boundary	T 6S , R 35E , Secs. 34 35	3	40	0.4	0.4	-	1.0	
HFR 92	To be selected	1	200	2.5	2.5	--	--	Final overwood removal entries.
Eagle Beak	T 6S , R 43E , Secs 10,16	1	220	3.0	3.0	1.0	--	
Misc Small Sales	District-wide	1,3	350	3.4	3.5	--	--	Salvage and miscellaneous forest product sales
Fuelwood Sales	District-wide	1,3	150	--	5.0	--	--	Personal use charge fuelwood
<b>Subtotal - La Grande</b>			7,625	48.2	57.6			
<b>PINE</b>								
Cabin Creek	T 6S , R 46E ,47E	3	600	12.0	12.0	4.0	--	
Miscellaneous Small Sales	District-wide	1	300	0.6	0.6	--	--	Salvage and miscellaneous forest product sales
Fuelwood Sales	District-Sales	1,3	--	--	1.0	6	--	Personal use charge fuelwood
<b>Subtotal - Pine</b>				13.0	13.2			
<b>UNITY</b>								
North Fork Corridor	T 11S , R 36E	1,3	600	3.0	3.0	--	--	
Irish Quartz	T 9S , 10S , R 35E	18	1,500	5.0	6.0	2.6	12.0	75% tractor, 25% skyline
Slip	T 11S , R 36E	1,3	500	1.5	1.5			75% tractor, 25% skyline

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Sale Name	Legal Description	Mgt. Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
South Fork Burnt River		1	-	0.5	0.5			
Elmer	T 14&15S., R 37E	1	1,500	4.1	4.1			100% skyline
Dorf	T 13&14S, R 35,35-1/2,36E	1.3	1,500	2.9	2.9	8	4	50/50
Three Cent	T 10S, R 36&37E	1.3	1,000	2.0	2.0	2	2	
Fuelwood Sales				—	1.5			Personal use charge fuelwood
<b>Subtotal - Unity</b>			—	19.0	21.5			
<b>Total Programmed</b>					139.2 164.8	MMBF MMBF	Sawtimber All Products	

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TABLE C-1  
Five-year Timber Sale Action Plan

Fiscal Year 1993

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>BAKER</b>								
Thrd Wolf	T 5S , R 37E	1	1,180	5 0	5 4	2	2	
Dutch II	T 6S, R 37E , Secs. 1,2,3,11,12,13	1	2,200	10 0	10 0	0	4 5	
Finish II	T 5S , R 38E , Secs 19,20, 29, 30, 31	1	1,500	7 0	7 0	0	4 5	
Fuelwood Sales	District-wide	1,3	500	0	5 0	0	0	
<b>Subtotal Baker</b>			<b>5,380</b>	<b>22 0</b>	<b>27 4</b>	<b>2</b>	<b>11</b>	
<b>WALLOWA VALLEY</b>								
Rich	T 3S , R 47E , Sec 36, T 4S , R 47E , Sec 1,12, T 4S , R 48E , Sec 6,7, T 3S , R 48E , Secs 16-21,29-32	1	2,000	1 0	1 0	-	-	
Mahogany	T 3S , R 47E , T 4S., R 47E	1	20,000	6 0	6 0	1 0	3 5	
Chesbridge	T 3N , R 45E Secs. 26,27	1	124	2 0	2 0	0 5	1 5	Helicopter yarding sale
Meadow	T 4N , R 46E , Secs 10,11,1,3-15,22-26	1	1 600	10 0	10 0			
Baldwin	T 4N , R 46E	1,3	68	8 0	8 0	3 5	3 0	
Fuelwood Sales	District-wide		-	-	3 5			Personal used charge fuelwood sales
Misc Small Sales	District-wide	1	-	4 0	4 0			

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Subtotal - Wallowa Valley				305	345			
<b>HELLS CANYON NRA</b>								
Boot Hog	T 4N, R 47E, 48E.	11	1,500	67	67	15	100	
Beaver Salvage	T 5S., R 47E	11	300	0.3	0.3			
Fuelwood Sales	District-wide	11	--	--	0.8	--	--	Personal use charge fuelwood
Subtotal - HCNRA			1,800	7.0	7.8			
<b>EAGLE CAP</b>								
Alder	T 2S., R 44E	3	400	0.9	0.9	-	-	
Fuelwood Sales	District-wide	1	--	--	0.1			Personal use charge fuelwood
Subtotal - Eagle Cap			400	0.6	1.0			
<b>LA GRANDE</b>								
Silver Bullet	T 6S., R 41E, 42E	1	550	2.0	2.0	4.0	6.0	
Swampy	T 6S., 7S, R 36E	3	710	5.0	5.3	2.0	4.0	
Tweety	T 3S, R 36E	3	650	1.3	1.3		0.5	
Moonshine	T 6S., R 35 1/2S, Sec 36	1	480	4.3	4.6	1.5	4.0	
Lost Hunter	T 6S, R 36E	3	1,700	4.3	4.6	3.0	2.0	
Boulevard		1	400	3.6	5.8	3.6	4.0	
Drumhill	T 1S, R 37E	3	500	4.0	5.0	2.0	3.0	
Evans	T 2S, R 37E	3	200	2.0	2.0	2.2		

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Eagle II	T 6S, R 43E, Sec 8	1	800	5.6	6.0	7.0	3.0	
Flagstaff	R 6S, R 43E Sec 6	1	240	1.4	1.4	3.0		
Fool Hen	T 6S, R 35 1/2E	3	480	2.0	2.0	0.5	2.0	
Horse Fly	T 6S., R 35E, Sec 3	1	250	1.0	1.0		1.0	
3 Cabin	T 2S, R 37E	3	500	2.0	2.0	3.0	2.0	
Warm Creek	T 2S, R 40E, 41E	3	1,200	7.0	7.3	1.0	3.0	
HFR 93	To be selected	1	200	2.0	2.0	—	—	Final overwood removal entries
Reservoir	T 2S, 3S, R 36E	3	450	0.6	0.6	2.0	3.0	
Oz	T 5S, R 34E	1	500	1.5	2.5	1.0	2.0	
Miscellaneous Small Sales	District-wide	1,3	200	4.0	4.5			
Fuelwood Sales	District-wide	1,3	150	—	5.0			
<b>Subtotal - La Grande</b>			10,516	50.0	64.9			
<b>PINE</b>								
Cougar	T 6S, R 43E, 44E	1,3	1,000	12.0	12.0			
Misc Small Sales	District-wide	1	300	1.1	0.5			
Fuelwood Sales	District-wide	1,3	—	—	0.6			
<b>Subtotal - Pine</b>				13.1	13.1			

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>UNITY</b>								
Pat	T 10&11S , R 35-1/2,36E	3	1,600	40	40	1	1	Visual, 65% tractor, 35% skyline
Gieser	T 10S , R 35-1/2,36E	1,3	1,000	40	40	2	1	Regen 50/50
Sunflower	T 11S , R.38E	1,3	250	05	05	1	1	Regen thin 60/40
Crunch	T 11S , R 38,39E	1	500	15	15	2	1	Regen thin 75/25
Rough	T 14,15S , R 36,37E	1	375	15	15	1	2	Regen 50/50
Highway 26	T 12S , R35-1/2,36E	1	375	15	15		1	Visual, Regen thin 80/20
Beaver	T 9,10S R 35-1/2,36E	18	1,600	40	40		5	Regen cut, WF and LP
Slop	T 11,12S , R 36,37E	3	500	10	10	1	1	Regen thin, 75/25
Miscellaneous Small Sales				10	15			
Fuelwood Sales				—	10			
<b>Subtotal - Unity</b>				190	205			
<b>TOTAL PROGRAMMED</b>					1417 1719	MMBF MMBF	SAWTIMBER ALL PRODUCTS	

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1994

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>BAKER DISTRICT</b>								
Silver	T 8S , R 36E , Secs 25,26,36	1	876	10 0	12 0	4 0	3 5	
Umpqua	T 8S , R 36E , Secs 35,36	1	854	7	8 0	3	5 0	
Downie	T 8S , R 36E , Secs 33,34	1	710	2 0	3 0	2	1	
Miscellaneous Small Sales	District-wide	1	200	3 0	3 0	0	0	
Fuelwood Sales	District-wide	1,3	500	0	5 0	0	0	Personal use charge fuelwood
<b>Subtotal - Baker</b>			3,140	22 0	31 0	9	9 5	
<b>WALLOWA VALLEY</b>								
Marr	T 2S , 3S , R 47E	1	1,200	4 0	4 0	2 5	1 5	
Canyon	T 4N , R 47E , Secs 6,7	1	3,800	5 0	5 0	6 0	5 0	
Cat	T 3N , R 43E , Secs 29,32	1	5,000	5 0	5 0	3 0	3 0	
Eyebrow	T 5N , R 41E , Secs 33-35	1	450	3 0	3 0	2 0	1 0	
Hay Pen	T 4N , R 46E , Secs 16,21	1	2,600	4 0	4 0	4 0	3 5	
Harl	T 4S , R 48E , Secs 5,6	1,3	5,000	6 0	6 0	2 0	2 0	

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Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Miscellaneous Small Sales	District-wide			40	40	--	--	Small salvage and miscellaneous forest product sales
Fuelwood Sales					35			Personal use charge fuelwood
<b>Subtotal - Wallowa Valley</b>				310	345			
<b>HELLS CANYON NRA</b>								
Madeover	T 5S., R 46E, Secs 13,14,15	11	1,500	69	69	60	5	
Janes Salvage	T 3S, R 48E	11	200	01	01			
Fuelwood Sales	District-wide	11	--	--	08	--	--	Personal use charge fuelwood
<b>Subtotal - Hells Canyon NRA</b>			1,700	70	7.8			
<b>EAGLE CAP</b>								
Foxer	T 1,2S, R 42E	3	2,000	50	5.0	30	20	
Misc Small Sales	District-wide	1	200	--	02			
Fuelwood Sales	District-wide	1	--	--	01			
<b>Subtotal - Eagle Cap</b>			2,200	50	5.3			
<b>LA GRANDE</b>								
Tanner LP	T 6S, R 36E, Secs 32,33	3	425	55	13.4	50	--	All associated species and LP pulp Tractor and skyline sale.
McKay	T 2S., R 35E, Secs 21,22	1	240	17	17		15	
HFR 94	To be selected	1	200	20	20	--	--	Final overwood removal entries
Split Rail	T 7S, R 35 1/2E	1	1,000	05	10		05	
Black Velvet	T 6S., R 42E	1	2,000	80	100	30	70	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
Homer	T 6S , R 35E	1	960	4.8	5.1	2.0	4.0	
Stonewood	T 5S , R 35E , Secs 22,23	3	2,400	2.4	14.2	0.5	2.0	
Broken Bottle	T 5S , R 42E	1	600	2.0	6.7	1.0	2.0	
Higard	T 2S , R 36E	3	200	1.0	1.0	5.0	—	
Winter Ridge	T 4S , R 35E , 36E	3	800	3.0	3.2	1.0	3.0	
Misc Small Sales	District-Wide	1,3	200	4.0	4.5	—	—	
Fuelwood Sales	District-Wide	1,3	150	—	5.0	—	—	Personal use charge fuelwood sales
<b>Subtotal - La Grande</b>			12,275	50.5	67.8			
<b>PINE</b>								
Paddy	T 7S , R 44E	1,3	400	4.5	4.5	3.0	—	
Eagle Forks	T 7S , R 43E	1,3	1,000	6.6	6.6	1.0	—	
Misc Small Sales	District-wide		400	1.0	1.0	—	—	Miscellaneous salvage and forest products sales
Fuelwood Sales	District-Wide	1,3	—	—	1.0	—	—	Personal use charge fuelwood
<b>Subtotal - Pine</b>				13.1	13.1			

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles		Comments
						C	R	
<b>UNITY</b>								
Willow	T 14,15S , R 37E	1	400	10	10	1		Regen 60/40
Calif	T 10S , R 35,35-1/2E.	1,3	525	21	21	2		Along No Fork Burnt River, Regen 60/40
Huckleberry	T 10,11S , R 37E	1,3	250	05	0.5		2	Regen. Thin 80/20
Curran	T 11S , R 37,38E	1,3	250	05	0.5	0.5	1	Regen Thin 60/40
Lyman	T 12 , R 35-1/2,36E	1	250	10	10	1		Regen 60/40
Sister	T 11,12S , R 35-1/2,36E	1,3	330	10	1.0		1	RC Regen Thin 75/25
Pole	T 12,13S , R 35-1/2,36E	1	570	20	2.0		1	Regen RC 75/25
Look Out	T 14S , R 35-1/2,36E	1	330	10	10	1		Regen 50/50
Misc Small Sales				10	15			Miscellaneous salvage and forest product sales
Fuelwood Sales				—	10			Personal use charge fuelwood
<b>Subtotal - Unity</b>				<b>101</b>	<b>116</b>			
<b>TOTAL PROGRAMMED</b>					138.2 177.6	MMBF MMBF	Sawtimber All Products	

Table C-2  
TEN-YEAR TIMBER SALE ACTION PLAN SUMMARIES

## Summary of Acres and Volumes by Working Group 3/

Working Group 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
CD	92	69	384	68.6	40.5	220.9	23.4	28.5	163.1
CW	131	167	947	121.9	84.2	455.8	9.1	82.8	491.2
LP	20	39	99	6.6	9.8	37.8	13.4	29.2	61.2
CD-B	1	2	10	0.4	0.2	1.1	0.6	1.8	8.9
MSS, Roundwood, Fuelwood 4/	134	129	646	24.0	28.9	154.6	110.0	100.1	491.4
Totals	378	406	2086	221.5	163.6	870.2	156.5	242.4	1215.8

## Summary of Acres and Volumes by Silvicultural Method 3/

Silvicultural Method 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
RC	12	15	88	22.5	17.0	89.2	0	0	0
INT	39	16	90	13.3	9.4	51.3	25.7	6.6	38.7
REG	127	222	1129	138.6	90.6	483.6	0	131.4	645.4
SEL	66	24	133	15.6	12.8	68.1	50.4	11.2	64.9
Sanitation/Salvage 4/	134	129	646	31.5	33.8	178.0	102.5	95.2	468.0
Totals	378	406	2086	221.5	163.6	870.2	178.6	244.4	1217.0

Summary of Acres and Volumes by Yarding Methods 3/  
for the Allowable Sale Quantity

Yarding Method 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
G 4/	176	183	790	139.2	105.7	543.8	36.8	77.3	246.2
S	59	83	445	69.8	48.7	264.3	0	34.3	180.7
H/L	9	11	57	12.5	9.2	62.1	0	1.8	0
Totals	244	277	1440	221.5	163.6	870.2	36.8	113.4	426.9

1/ CD - Conifer Douglas-fir/ponderosa pine working group  
 CW - Conifer grand fir/Englemann spruce working group  
 LP - Lodgepole pine  
 CD-B - CD working group with severe brushfield competition  
 G - Ground based (tractor) yarding  
 S - Skyline cable (0-2,000') yarding  
 H - Skyline cable (2,000' and over) and helicopter yarding  
 RC - Removal cut (final removal cut from a planned shelterwood or seed tree and overstory removal from an existing two-storied stand)  
 INT - Intermediate harvest (commercial thinning)  
 REG - Regeneration harvest (clearcut, seed cut of a shelterwood or seed)  
 SEL - Selection harvest (NRA-dispersed recreation/timber management or special areas needing continuous forest cover)  
 Sanitation/Salvage - Fuelwood, cull logs, mortality salvage sales  
 Roundwood/Fuelwood - Commercial fuelwood and personal use fuelwood sales from small diameter LPP (less than 5 inches), dead LPP and logging slash removed in fuelwood form

2/ RC - 70 percent is removal cuts from planned shelterwoods and seed cuts, 30 percent is from overstory removal cuts

3/ The three summary tables are listed in the order of Forest Plan goal priority. The working group goal is the most significant. The timber program will be adjusted as necessary to assure that the ten-year goal for the Forest, by working group, is approximated. The silvicultural and yarding methods are planning objectives, but not overriding plan goals. These methods will be monitored annually and the need for adjustment considered as a part of the Five-Year Timber Sale Action Plan preparation.

4/ Actual programmed sell may vary depending on market availability and timber sell budgets assigned to the Forest under RPA.

TABLE C-3  
 APPROXIMATE DISTRIBUTION OF ANNUAL ALLOWABLE SALE QUANTITY BY  
 FOREST SERVICE MARKET AREAS 1/  
 MMBF/YEAR UNLESS OTHERWISE INDICATED

Market Area	CD 2/	CW 2/	LPP 2/	CD-B 2/	Total Regulated Volume 3/
Wallowa Valley	15.2	21.9	1.9	1.0	40.0
WV RD					(30.5)
HCNRA					(7.0)
E Cap RD					(2.5)
La Grande	11.8	33.2	5.0		50.0
La Grande RD					(50.0)
Baker	11.4	39.6	3.0		54.0
Baker RD					(22.0)
Pine RD					(13.0)
Unity RD					(19.0)
Total MMBF	38.4	94.7	9.9	1.0	144.0
MMCF	(7.0)	(17.0)	(3.6)	(0.1)	(27.7)

The Ranger District Sale Quantities are shown in parenthesis, but are not added to the Market Area and total volume lines

1/ The Market Areas are.

Wallowa Valley - Wallowa Valley and Eagle Cap Ranger Districts and Hells Canyon National Recreation Area

La Grande - La Grande Ranger District

Baker - Baker, Pine, and Unity Ranger Districts

2/ CD = Conifer Douglas-fir, ponderosa pine working group

CW = Conifer grand fir, white fir, Engelmann spruce working group

LP = Lodgepole pine working group

CD-B = Above working groups with severe brushfield competition

3/ Total volume column represents the total volume chargeable to the regulated allowable sale quantity. This is the net (green) merchantable sawtimber portion of the Forest timber sales to be offered

The volume estimates in the tables are presented in both board feet (Scribner Decimal C) and cubic feet. The conversion ratios used for these displays are based on trees 7-inch dbh to 5-inch top for lodgepole pine and 9-inch dbh to 6-inch top for other species. This complicates comparisons somewhat since the conversion of board feet to cunits in existing timber management reports is based on 8-inch dbh to 5-inch tops for lodgepole pine and commercial thinning sales.

## CALCULATION OF EARNED HARVEST

The levels of outputs displayed on the preceding tables assume substantial investments in precommercial thinning. If full achievement of this intensive forestry practice is not possible due to lack of funding or other reasons, or if a higher level of achievement occurs, it may be necessary to adjust the Forest's allowable sale quantity (ASQ) accordingly.

Earned harvest of this plan is based on a comparison of the FORPLAN run for the proposed action (proposed intensity level) with a FORPLAN run having the same land allocations but with a reduced level of investment in cultural activities (base level).

TABLE C-4  
APPROXIMATE DISTRIBUTION OF ANNUAL SALE QUANTITIES OF ROUNDWOOD AND  
FUELWOOD BY FOREST MARKET AREAS (UNREGULATED VOLUME) 1/ 2/  
MMBF/YEAR (MMCF/YEAR)

Market Area	Roundwood 3/	Personal Use Fuelwood 4/	Total Unregulated Volume 1/	Grand Total All Volume Including Table C-3
Wallowa Valley	8.1	4.0	12.1	52.1
La Grande	14.3	9.0	23.3	73.3
Baker	17.2	12.0	29.2	83.2
Subtotal MMBF				
MMCF				
Total MMBF	39.6	25.0	64.6	208.6
MMCF	(7.9)	(5.0)	(12.9)	(40.6)

1/ Includes the total (opportunity) volume of nonchargeable sawtimber and wood fiber material, exclusive of volume from unsuitable lands. The volume of nonchargeable material to be programmed will depend upon funding available and market demand. Actual sell based on historical projections is expected to be less, particularly during the first half of the decade. For a more complete description of terms and definitions, the reader may wish to refer to the Management Information Handbook, Chapter 30, Timber Codes.

2/ The Market Areas are:

Wallowa Valley - Wallowa Valley and Eagle Cap Ranger Districts and Hells Canyon National Recreation Area

La Grande - La Grande Ranger District

Baker - Baker, Pine, and Unity Ranger Districts

3/ Roundwood - Includes volumes of older dead (cull) trees and per acre priced logs not suitable for sawtimber; small diameter (less than five inch dbh and tops smaller than four inches); and commercial firewood sales

4/ Personal-use firewood - Volume of personal-use fuelwood sold on a cord basis to individual families

Table C-5  
VEGETATION MANAGEMENT PRACTICES  
(Average Annual First Decade Figures)

Practice	Acres
Regeneration Harvest	
Clearcut	4,400
Shelterwood and Seed Tree	
Seed Cut	8,400
Final Removal Cut	1,200
Selection	6,500
Intermediate Harvest	
Commercial Thinning	3,900
Salvage/Sanitation	13,400
Timber Stand Improvement	7,400
Reforestation*	14,300

\*Includes both natural and artificial regeneration

The Earned Harvest Factor (EHF) is computed by comparing the Allowable Sale Quantity (ASQ) for the first decade of this plan, and its accompanying scheduled intensity forestry practices, with an ASQ computed for the same land use allocation for the first decade without those intensive forestry practices. The EHF represents how much volume each acre of applied intensive forestry practices contributes to the plan ASQ for the first decade. On the Wallowa-Whitman precommercial thinning is the only intensive practice used in the calculation.

The **Base Level** includes restocking and other intensive forestry practices planned for the first decade but does not include precommercial thinning. The harvest level associated with this intensity level is 232 MMCF in the first decade.

The **Intensive Level** includes all opportunities for intensive forestry practices which are scheduled for the first decade in the preferred alternative and are accomplished. The harvest associated with this intensity level is 282 MMCF in the first decade.

Earned harvest gain due to accomplishing planned intensive forestry practices in the first decade is calculated by subtracting the base level harvest from the intensive forestry level harvest and dividing this value by the acres of precommercial thinning planned for the first decade. This calculation is displayed in Table C-6.

Table C-6  
CALCULATION OF THE EARNED HARVEST FACTOR (EHF)

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Earned Harvest Factor =	$\frac{\text{Earned Harvest Gain (MMCF)/first decade Intensive - Base}}{\text{Acres of Intensive Forestry practices accomplished in first decade}}$	$\frac{\text{ft}^3/\text{acre}}{\text{first decade}}$
Earned Harvest Factor =	$\frac{282 \text{ MMCF} - 232 \text{ MMCF}}{73,660 \text{ acres}^*}$	$= 679 \text{ ft}^3/\text{acre}/\text{first decade}$

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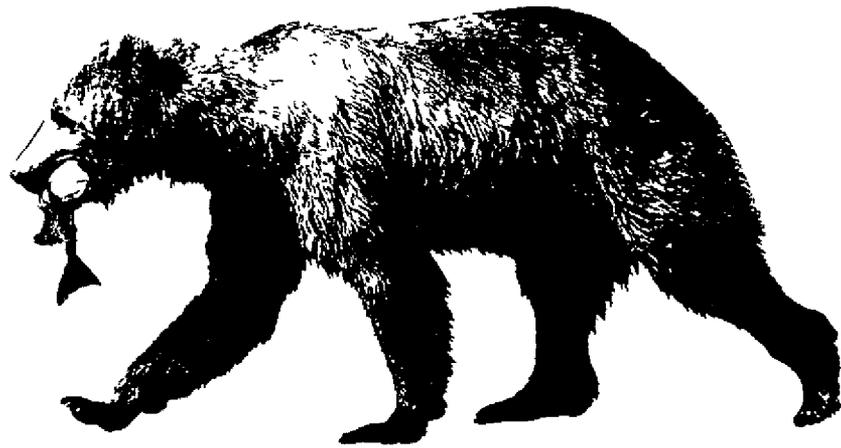
\*Total precommercial thinning scheduled in Decade 1.

*Occurrences which may trigger adjustments during plan implementation are listed below*

- 1 When accomplished earned harvest activities vary more than plus or minus 10 percent from the planned level, a change in the allowable sale quantity will be made based on a proration adjustment. The Forest Plan will then be amended to portray the new ASQ.
- 2 When the cumulative chargeable (regulated) sold volume measured in cubic feet varies more than plus or minus 10 percent of the planned volume (as when funding is inadequate) an adjustment in sale offerings for the remaining plan period will be triggered. The adjustment will be made with the objective of meeting the decade allowable sale quantity.
- 3 When cumulative changes greater than plus or minus 5 percent of the acres classified capable, available and biologically suitable occur, the allowable sale quantity will be recomputed using the Forest model. Cumulative changes in management area boundaries greater than 5 percent of the acres classified capable, available, and suitable will also trigger a recomputation of the allowable sale quantity using the Forest model. The Forest Plan will then be amended to portray the new Allowable Sale Quantity (ASQ).
- 4 When agents such as fire, insects or disease affect a cumulative total land area greater than 5 percent of the acres classified capable, available and biologically suitable, a new allowable sale quantity will be calculated using the Forest model and FORPLAN and the Forest Plan will be amended to portray the new ASQ.
- 5 Following analysis of updated timber inventory data, this data will be incorporated into the FORPLAN model and the ASQ will be recomputed. If the ASQ varies by more than 5 percent, the Forest Plan will be amended.

# *APPENDIX D*

## Landownership Plan



## APPENDIX D

### LANDOWNERSHIP PLAN

Modifications will be made to the National Forest's landownership pattern that will accomplish the objectives of this Forest Land and Resource Management Plan. Opportunities for improving the pattern will come through land exchanges, purchases, donations, transfers, interchanges, and disposals.

The public and private lands within and surrounding the Forest have been classified and prioritized for landownership adjustment with the intent of eventually achieving the optimum landownership pattern. All lands have been placed in one of the following groups.

**Group I** These are lands where Congress has either directly or indirectly instructed the Forest Service to retain ownership and acquire non-Federal lands for a designated purpose. The objective for Group I lands is to retain existing ownership and acquire the remaining lands as implied by Congressional direction. Acquisition of less than fee title will be considered if direction and land management objectives can be met.

**Group II.** These lands have been recognized for a special kind of management and are allocated to meet specific purposes. They include lands allocated to recreation, fish and wildlife, visual, watershed, soils, and special interest areas. Landownership direction is to retain in Federal ownership and acquire lands as the opportunity or need occurs. The basic criteria for Group II lands is special management to meet a special public need. Acquisition of less than fee title will be considered if direction and land management objectives can be met.

**Group III** Lands in this group are in the areas where management direction emphasizes commodity production. These lands will be available for land adjustment and usually will provide 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. Also included are some isolated parcels that can best be managed by the Forest Service or some 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.

**Group IV.** These are generally small isolated tracts of National Forest System lands that are costly to administer, contain no special resource features, or which cause land ownership conflicts. The landownership direction is to generally make these lands available for exchange or disposal.

**Group V.** These are lands which need more intensive study and planning before landownership decisions can be made. Land adjustment decisions will be deferred until the needed studies have been completed.

*Acreages within each group are summarized in Table D-1*

**LAND ADJUSTMENT PRIORITIES**

Lands which should be considered for acquisition to meet essential National Forest Management needs are assigned the following priorities:

- Priority 1 - Group I lands
- Priority 2 - Group II lands
- Priority 3 - Group III lands

National Forest lands available for use in exchange or disposal are assigned the following priorities

- Priority 1 - Group IV lands
- Priority 2 - Group III lands

A detailed map showing the lands available for ownership adjustment is available for review at the Forest Supervisor's Office.

Table D-1  
**LANDOWNERSHIP PLANNING ACREAGES BY  
 MANAGEMENT AREA AND OWNERSHIP\***

Management Area	LOP Group	National Forest	Private	Totals
1	III	714,285	28,480	742,765
	IV	1,960	-	1,960
3	III	377,923	18,950	396,873
	IV	4,190	-	4,190
4	I	582,700	2,100	584,800
5	II	4,967	-	4,967
6	II	122,788	2,060	124,848
7	V	26,909	10,840	37,749
8	I	14,355	110	14,465
9	I	161,078	1,120	162,198
10	I	128,009	21,280	149,289
11	I	70,706	1,740	72,446
12	II	15,160	-	15,160
13	V	5,733	-	5,733
14	II	27,051	320	27,371
15	II	36,750	130	36,880
16	II	5,744	-	5,744
17	II	6,594	-	6,594
18	II	59,743	200	59,943

\*Acreages are provided to illustrate the magnitude of the program. Figures are approximate and subject to annual change

# *GLOSSARY*



## GLOSSARY

Many of the definitions in this glossary are referenced to the following sources. The sources are identified by a number in parentheses following the definition. This number corresponds to the list below. Some other terms will be referenced to Forest Service Manuals (FSM), Forest Service Handbooks (FSH), or other sources which are too numerous to list. Finally, many other definitions are not referenced, but are those in general use on the Forest.

### SOURCE LIST

- (1) 36 CFR 219 National Forest Management Act Regulations
- (2) Regional Guide for the Pacific Northwest Region, 1984
- (3) SAF Dictionary of Forestry Terms, 1971.
- (4) The Random House College Dictionary, Revised Edition, 1975
- (5) Webster's New Collegiate Dictionary, 1977
- (6) Wildland Planning Glossary, 1976
- (7) Webster's Third New International Dictionary, 1981.
- (8) Wildlife Habitats in Managed Forests, The Blue Mountains of Oregon and Washington, 1979.
- (9) A Glossary of Terms Used in Range Management
- (10) Forest Service Manual or Forest Service Handbook
- (11) Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges, 1988

## A

**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 (4)

**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** - When applied to habitat improvement or improvement structures, this term reflects 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 occupies very little space but has an acre equivalent of 160 because it serves 160 acres of bird habitat. 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 one acre to a depth of one foot (i.e., 43,560 cubic feet or 325,851 gallons) (6)

**activity** - An action, measure or treatment undertaken that directly or indirectly produces, enhances, or maintains forest and rangeland outputs, or achieves administrative or environmental quality objectives (FSM 1309, Management Information Handbook) An activity can generate multiple outputs. (2)

**activity fuels** - Fuels generated or altered by a management activity. (10)

**administrative unit** - An area under the administration of one line officer, such as a District Ranger, Forest Supervisor, or Regional Forester. (6)

**aerial logging** - A timber yarding system employing aerial means, e.g , balloons or helicopters, to lift the log or logs. (3)

**age class** - An interval, usually 10 to 20 years, into which the age ranges of vegetation are divided for classification or use (3)

**age group distribution** - Age class distribution, the location and/or proportionate representation of different age classes in a forest (3)

**airshed** - A geographic area that, because of topography, meteorology, and climate, shares the same air. (2)

**allocated funds** - Those funds transferred to the Forest from other agencies (including those from the Land and Water Conservation Fund, the Department of Labor, and the Soil Conservation Service) or provided from the K-V, Brush Disposal, Co-op Road Maintenance, or Purchaser Road Credits accounts.

**allocation** - See **land use allocation** or **resource allocation**

**allotment** - See **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". (6) (1)

**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.

**alternative** - One of several policies, plans, or projects proposed for decision making (2) (10)

**amenity** - An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses The terms "amenity values" or "amenity resources" are typically used in land management planning to describe those resources for which monetary values are not or cannot be established (such as clean air and water, or scenic quality).

**anadromous fish** - Those species of fish that mature in the sea and migrate into streams to spawn Salmon, steelhead, and sea-run cutthroat trout are examples

**analysis area** - A delineated area of land subject to analysis of (1) responses to proposed management practices in the production, enhancement, or maintenance of forest and rangeland outputs and environmental quality objectives, and (2) economic and social impacts (FSM 1905) Tracts of land with relatively homogeneous characteristics in terms of the outputs and effects that are being analyzed in the FORPLAN model

**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 (1)

**animal unit** - Considered to be one mature (1,000 lb ) cow or the equivalent based upon average daily forage consumption of 26 pounds dry matter per day. (9)

**animal unit month (AUM)** - The amount of forage required by one mature (1,000 lb.) cow or its equivalent for one month (based upon average forage consumption of 26 lbs. dry matter per day). (6)

Animal Month is one month's use and occupancy of the range by one animal. For grazing fee purposes, it is a month's use and occupancy of range by one weaned or adult cow with or without calf, bull, steer, heifer, horse, burro, or mule, or 5 sheep or goats. Forage consumption by other animals is converted to AUM's from animal months by the following factors:

mature cow	=	1.0 AUM	mature sheep	=	2 AUM
one horse	=	1.2 AUM's	cow/calf	=	1.32 AUM
ewe/lamb	=	.3 AUM			

**annual sale quantity** - The quantity of timber that may be sold annually from the area of suitable land covered by the Forest Plan

**anomalies** - A deviation from the common rule, type, or form. An incongruity or inconsistency (4)

**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 suppression response** - The planned strategy for suppression action (in terms of kind, amount, and timing) on a wildfire which most efficiently meets fire management direction under current and expected burning conditions. The response may range from a strategy of prompt control to one of containment or confinement (10)

**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. (6)

**artifact** - An object made or modified by humans. (4)

**assigned values** - Monetary values given to nonmarket resources, based on estimates from comparable market transactions. For example, the benefits of dispersed recreation are given assigned monetary values for their production.

**available forage** - The amount of forage which may be removed without adversely affecting the vigor of the forage plants. (Normally considered to be about 50 percent of a grass plant.)

**available forest land** - Land which has not been legislatively withdrawn by Congress 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. (6)

## B

**background** - In visual management terminology, refers to the visible terrain beyond the foreground and middleground where individual trees are not visible, but are blended into the total fabric of the stand Also a portion of a view beyond three to five miles from the observer, and as far as the eye can detect objects. (6)

**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 (3)

**base flow** - That portion of the water flowing in a stream which is due to ground water seepage into the channel. (6)

**base sale schedule** - A timber sale schedule formulated on the basis that the quantity of timber planned for 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 (This definition expresses the principle of nondeclining flow.) (1)

**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.

**batholith** - A great mass of intruded igneous rock that for the most part stopped its rise a considerable distance below the surface (10)

**below-cost timber sale** - A sale in which the dollar costs of the sale, including all costs resulting from the sale, are greater than the dollar benefits.

**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 in monetary or nonmonetary terms (10) Also

**direct benefit** - A primary benefit that responds to specified objectives of the policy, program, project, or expenditure. (10)

**induced benefit** - A primary benefit that is incidental to the objectives of the policy, program, project, or expenditure (10)

**primary benefit** - 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. (10)

**secondary benefit** - 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 (10)

**benefit/cost ratio** - A measure of economic efficiency computed by dividing total discounted primary benefits by total discounted economic costs. (10)

**best management practices** - A practice or combination of practices that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (Federal Register, Volume 40, No. 230 dated 11/28/75)

**big game** - Large mammals hunted for sport. On the National Forest these include animals such as deer, elk, antelope, and bear (8)

**big-game summer range** - See **summer range**

**big-game winter range** - See **winter range** .

**biological control** - A method to control insect populations or tree diseases through the use of applied technology Also used in noxious plant control (3)

**biological growth potential** - The average net growth attainable in a fully stocked natural forest stand. (1)

**biological needs** - The combination of habitat factors necessary to sustain an organism through normal life processes

**biological potential** - The maximum production of a selected organism that can be attained under optimum management (8)

**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).

**biscuit scabland** - Also termed biscuit-swales, mounded topography, and patterned ground. For the purpose of this document, biscuit scabland means natural mounds surrounded by or interspersed with either shallow-soiled swales or scabland The mounds, typically composed of medium-textured soils, are normally capable of supporting a dense cover of grasses, forbs, and occasionally shrubs The swales, typically rocky with somewhat coarser textured soils, are normally sparsely vegetated with grasses, forbs, and moss The scablands are either devoid of vegetative cover or are vegetated by grasses and moss.

**board foot (BF)** - The amount of wood equivalent to a piece of wood one foot by one foot by one inch thick. (3)

**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 diameter, height, and form factors A specific factor by species is applied to the cubic foot FORPLAN outputs to give board foot estimates

**British thermal unit (BTU)** - The quantity of heat required to raise the temperature of one pound of water one degree fahrenheit at or near 39.2 degrees F

**broadcast burn** - Allowing a prescribed fire to burn over a designated area within well-defined boundaries for reduction of fuel hazard or 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 (6)

**brush** - A growth of shrubs or small trees usually of a type undesirable to livestock or timber management.

**Bureau of Land Management (BLM)** - An agency within the Department of the Interior, with land management responsibility for the Public Domain lands

**buyback and defaulted timber sales** - In 1984, the Federal Timber Payment Modification Act was enacted by Congress. It allowed private companies to return timber sales not economical to harvest after payment of a fee to the government. The sales returned under the conditions of this Act are known as "buyback" sales. A timber sale is considered "defaulted" if it is not in compliance with the terms of the contract by the contract termination date. Defaulted sales are also returned to the government.

## 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 (6)

**canopy** - The more-or-less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth (3)

**canopy closure** - The progressive reduction in space between tree crowns as they spread laterally (Ford-Robertson 1971), a measure of the percent of potential open space occupied by the collective tree crowns in a stand (8)

**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 given levels of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease. (1)

**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. (10)

**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). (10)

**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 excess of 1 year. (10)

**capital investment** - Activities that create or improve capital assets to obtain benefits occurring during several planning periods (10)

**carrying capacity** - 1) The number of organisms of a given species and quality that can survive in, without causing deterioration of, a given ecosystem through the least favorable environmental conditions that occur within a stated interval of time. 2) In recreation, refers to the number of people that can occupy an area for a given social and experience goal 3) In range, refers to the maximum stocking rate possible on a given range without causing deterioration to vegetation or related resources. (3)

**cave** - Any natural void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, or any mine, tunnel, aqueduct, or other man-made excavation), and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the cave entrance

**cavity** - The hollow excavated in trees by birds or other natural phenomena, used for roosting and reproduction by many birds and mammals (2)

**channel or stream scour** - Erosion of the channel bottom caused by high flows of water, loss of channel stability, or debris torrents

**characteristic landscape** - In reference to the USDA Forest Service visual management system; the overall impression created by a landscape's unique combination of visual features (land, vegetation, water, structures), as seen in terms of form, line, color and texture, synonymous with "visual landscape character." (6)

**chargeable volume** - All timber 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. (10)

**clearcutting** - The cutting method that describes the silvicultural system in which the old crop is cleared over a considerable area at one time. Regeneration then occurs from (a) natural seeding from adjacent stands, (b) seed contained in the slash or logging debris, (c) advance growth, or (d) planting or direct seeding. An even-aged forest usually results. (3)

**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 (6)

**climax species** - Those species that dominate a climax stand in either numbers per unit area or biomass.

**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. (1)

**coho smolt** - Young coho salmon which are ready to migrate to the sea

**commercial forest land** - Land that is producing, or is capable of producing, crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service; (2) land where existing technology and knowledge is available to ensure timber production without irreversible damage to soil productivity or watershed conditions, and (3) land where existing

technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be obtained within 5 years after final harvesting

**commercial thinning** - Any type of tree thinning that produces merchantable material.

**commodity** - A transportable resource with commercial value; all resource products that are articles of commerce. (6)

**common minerals** - See **mineral materials**.

**common varieties** - See **mineral materials**

**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 (10)

**community types** - A generalized category comprising a number of similar stands of vegetation and including animal life (8)

**compaction** - The packing together of soil particles by forces exerted at the soil surface, resulting in *increased soil density*

**composite** - In reference to planning for special areas under the Land and Water Conservation Act of 1965, an area identified as having unique recreation and/or fish and wildlife values.

**composite plan** - A documented analysis which, at one time was required to justify the use of Land and Water Conservation Funds for acquisition of private lands within a designated composite

**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 (9)

**confine** - 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. (10)

**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.

**constant dollars** - See **real dollars**

**constraint** - In FORPLAN, a 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 (See also **nonconsumptive use**.) (6)

**contain** - To surround a fire, and any spot fires therefrom, with control lines as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions (6184 definition) (10)

**control** - 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. (10)

**conversion period** - The duration of a change from one silvicultural system to another or from one tree species to another (3)

**corridor** - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. (1)

**corridor avoidance area** - Area with high resource values which are in conflict with power transmission facilities. Used for power facility corridors only when other reasonable choices are not available.

**corridor exclusion area** - Area from which power transmission facilities will be excluded. Classified wilderness is the most common example.

**full corridor** - Approximately 600 feet wide (or wider where existing corridor is wider)

**utility corridor** - A strip of land, up to approximately 600 feet in width, designated for the transportation of energy, commodities, and communications, by railroad, state highway, electrical power transmission (66 KV or more), oil, gas, and coal slurry pipelines 10 inches in diameter and larger, and telecommunication cable and electronic sites for interstate use.

**existing utility corridor** - A strip of land containing one or more existing linear utility rights-of-way which, in the current Forest planning effort, are being included within the designation of a full 600-foot utility corridor in order to facilitate future authorization of additional utility rights-of-way.

**new utility corridor** - A strip of land containing no existing linear utility right-of-way, but warranting designation as a full corridor.

**critical window** - A control point or area (such as a mountain pass) not to be designated within an existing utility corridor, but needed to retain future new utility corridor options.

**transportation corridor** - A strip of land of variable width designated to accommodate the clearing and access control and visual resource limits of a highway or road facility, which may also be designated to accommodate one or more linear utilities

#### **costs -**

**direct cost** - A cost that directly contributes to the production of the primary outputs of an activity, project, or program. (10)

**economic cost** - Total fixed and variable costs for inputs, including costs incurred by other public parties and, if appropriate, opportunity costs and cost savings. (10)

**fixed cost** - 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. (10)

**investment cost** - A cost of creating or enhancing capital assets, including costs of administrative or common-use transport facilities and resource management investments. (10)

**joint cost** - A cost contributing to the production of more than one type of output (10)

**non-Forest Service cost** - 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. (10)

**opportunity cost** - The value of a resource's foregone net benefits in its most economically efficient alternative use. (10)

**unit cost or cost per unit** - Total cost of production divided by the number of units produced (10)

**variable cost** - A cost that varies with the level of controlled outputs in the time horizon covered by the planning period or decisions being considered (10)

**cost, capital investment** - The cost of manmade structures, facilities, or improvements in natural resources used as inputs in production processes to produce outputs over one or more planning periods (FSM 1905)

**cost effective** - Achieving specified outputs or objectives under given conditions for the least cost (6)

**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 internal rate-of-return may be appropriate. (1)

**cost sensitivity analysis** - A type of analysis done to estimate how a particular problem's solution would change if the costs were increased or decreased

**Council on Environmental Quality (CEQ)** - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters (Abstracted from the National Environmental Policy Act of 1969, as Amended.)

**cover/forage ratio** - The mixture of cover and forage areas on a unit of land, expressed as a ratio.

**created opening** - An opening in the Forest created by the silvicultural practices of final removal harvest of shelterwood; clearcutting; seed tree cutting, or group selection cutting (2)

**critical habitat** - That habitat designated by the Secretary, USDI, as critical to the continued survival of threatened or endangered species

**critical window** - See **corridor**

**crop tree** - Any tree forming, or selected to form, part of the final crop, generally a tree selected in a young stand for that purpose.

**crown closure** - See **canopy closure**.

**crown fire** - A fire that runs through the tops of trees, scrub or brushwood

**crown height** - In a standing tree, the vertical distance from ground level to the base of the crown, measured either to the lowest live branch whorl, or to the lowest live branch (excluding shoots arising spontaneously from buds on the stem of a woody plant), or to a point halfway between (3)

**cubic foot (CF)** - The amount of timber equivalent to a piece of wood one foot by one foot by one foot (3)

**culmination of mean annual increment (CMAI)** - The age at which average annual growth is greatest for a stand of trees. Mean annual increment is expressed in cubic feet measure, and is based upon expected growth according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields and any additional yields from planned intermediate harvests. (10)

**cultural resource** - The remains of sites, structures, or objects used by humans in the past—historic or prehistoric. (2)

**cumulative effects or impacts** - Cumulative effect or impact is 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 nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7 - these regulations use effects and impacts synonymously.)

**cunit** - One hundred cubic feet of wood chips

**current direction** - The existing direction in approved management plans, continuation of existing policies, standards and guidelines, current budget updated for changing costs over time, and, to the extent possible, production of current levels and mixes of resource outputs

**cutting cycle** - The planned lapse of time between successive cuttings in a stand (6)

## 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. (6)

**debris slide** - A shallow landslide of soil, rock, and organic material that occurs on steep slopes

**debris torrent** - A large debris slide that is charged with water and confined to a steep stream channel. Debris torrents may travel several thousand feet.

**decadent (stands)** - Decaying, deteriorating. (4)

**deer winter range** - See **big-game winter range**

**de facto outputs** - Resource outputs produced from lands not necessarily being managed or allocated for the specific production of these outputs. De facto resource outputs are most commonly recreation and wildlife opportunities. For example, an area may not be allocated to emphasize recreation management and, in fact, may be scheduled for timber harvest in a later decade. However, the area can usually continue to provide recreation opportunities until it is entered for harvesting.

**de facto supply** - In dispersed recreation, those acres that are available for timber harvests but not entered.

**deferred rotation** - A type of grazing management where the grazed area is divided into two or more pastures. One or more of the pastures are grazed for only part of the grazing season. The following season the period of use is rotated. (10)

**DEIS** - See **draft environmental impact statement**

**demand** - The amount of an output that users are willing to take at a specified price, time period, and condition of sale. (10)

**demand analysis** - A study of the factors affecting the schedule of demand for an output, including the price-quantity relationship, if applicable. (10)

**Department of Energy (DOE)** - A department of the Executive branch of the Federal Government which oversees national matters involving the development and use of energy

**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. (10)

**dependent communities** - Communities whose social, economic, or political life would change in important respects if market or nonmarket outputs from the National Forests were substantially decreased.

**designated area (air quality)** - Those areas delineated in the Oregon and Idaho Smoke Management Plans as principal population centers of air quality concern

**design standard** - Approved design and construction specifications used mainly for recreation facilities and roads--includes specified materials, colors, dimensions, etc

**desirable residual vegetation** - The remaining vegetation after application of harvest cutting methods that meets management area objectives. The vegetation may be trees, shrubs, grass, or a combination

**developed recreation** - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of developed recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings. (2)

**developed recreation site** - Relatively small, distinctly defined areas where facilities are provided for concentrated public use, e.g., campgrounds, picnic areas, swimming areas, and downhill ski areas. (6) (As used in this Plan, includes any recreation site where a capital investment has been made.)

**diameter at breast height (d.b.h.)** - The diameter of a tree measured 4 feet 6 inches above the ground. (6)

**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. (6) (10)

**discounting** - An adjustment, using a discount rate, for the value of money over time so that costs and benefits occurring in the future are reduced to a common time, usually the present, for comparison (6) FSM 1905

**dispersed recreation** - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments (2)

**distance zone** - One of three categories used in the Visual Management System to divide a view into near and far components. The three categories are: (1) foreground, (2) middleground, and (3) background.

**diversity** - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. (2) (1)

**draft environmental impact statement (DEIS)** - The draft statement of environmental effects which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. (6) (In this document, usually refers to the DEIS for the Forest Plan.)

**drop camp** - A camp where an outfitter furnishes transportation only. Clients provide all their own gear. Everything is packed in at the start of the trip and everything is packed out at the end of the trip.

**dry ravel** - The slow to very rapid gravity driven movement of dry soil. Dry ravel usually occurs when the organic materials in the surface few inches of the soil are severely altered by fire. Dry ravel is most likely where soils are medium to coarse textured and slopes are over 60% gradient.

**duff** - Organic matter in various stages of decomposition on the floor of the forest. (4)

**dwarf mistletoe** - Any of a number of relatively host specific plant parasites of the genus *Arceuthobium*. In Northeastern Oregon, ponderosa pine, lodgepole pine, western larch, and Douglas-fir are affected. Spread is via seeds ejected from capsules on the female plant in the late summer to early fall. Impact includes growth reduction, and reduced quality and quantity of seed. Severely infected trees may be killed outright or rendered susceptible to attack by other pests.

## E

**early forest succession** - The early stage or condition of a plant community that occurs during its development from bare ground to climax. (6)

**ecoclass** - A classification system for identification and mapping of basic vegetative resources and their characteristics.

**economic efficiency** - The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefits 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. (10)

**economic growth** - Increased economic output in real terms over time (6)

**economic impacts** -

**direct economic impact** - Effects caused directly by forest product harvest or processing or by forest uses (10)

**indirect economic impact** - Effects that occur when supporting industries sell goods or services to directly affected industries (10)

**induced economic impact** - Effects that occur when employees or owners of directly or indirectly affected industries spend their income within the economy. (10)

**ecosystem** - An interacting system of organisms considered together with their environment; for example, marsh, watershed, and lake ecosystems (2)

**edge** - An area where plant communities meet or where successional stages or vegetation conditions within the plant communities come together. (2)

**effects** - Environmental changes resulting from an 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 FEIS 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 effects, whether direct, indirect, or cumulative. Effects may also 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, 2)

**electronic 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.

**empirical yield table** - A table showing, for one or more given species on a given site, the progressive development of a timber stand at periodic intervals covering the greater part of its useful life. This table is prepared on the basis of actual average stand conditions.

**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. (10)

**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. (6)

**ending inventory constraint** - The standing volume left in the inventory at the end of the planning horizon. The constraint insures that there is enough standing inventory at the end of the planning horizon to perpetuate long-term sustained yield capacity harvest levels on a nondeclining flow basis.

**environment** - The aggregate of physical, biological, economic, and social factors affecting all organisms in an area.

**environmental analysis** - A comprehensive evaluation of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions. (2)

**environmental assessment** - The concise public document required by the regulations for implementing the procedural requirements of the National Environmental Policy Act. (40 CFR 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. (6)

**Environmental Protection Agency (EPA)** - An agency of the Executive Branch of the Federal Government which has the responsibility for environmental matters of national concern.

**ephemeral draw** - A drainage way which conveys surface water for short periods of time in direct response to snowmelt or rainfall runoff. Form in slight depressions in the natural contour of the ground surface but do not normally develop sufficient flow to wash or scour their channels. Can usually be identified by the presence of needles or other litter in the depressions.

**erosion** - (1) The wearing away of the land surface by running water, wind, ice, or other geologic agents, including such processes as gravitational 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:

**accelerated erosion** - 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.

**gully erosion** - 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.

**rill erosion** - An erosion process in which numerous small channels less than 4 inches deep and 6 inches wide are formed

**sheet erosion** - The removal of a fairly uniform layer of soil from the land surface by runoff water.

**eutrophic** - Of habitats, particularly soils and water, that are rich or adequate in nutrients (3)

**even-aged management** - The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age 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. (1)

**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

**exchange reserved** - Lands which have been added to the National Forest System by exchange under the General Exchange Act for reserved/proclaimed National Forest System Lands.

**existing visual condition (EVC)** - An inventory of existing visual impacts as seen from sensitive travel corridors or use areas; measures visual changes to the landscape caused by natural or human activities.

**exports** - As used in IMPLAN are defined as outputs or products produced but not consumed or used in production of other outputs in the impact area. Includes both exports to other areas of the U.S. and international exports (10)

**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.

## F

**fault** - A ground surface fracture or fracture zone along which there has been a displacement of one side with respect to the other. (6)

**fault scarp** - An abrupt change in surface elevation resulting from earthquake activity. Fault scarps may vary from as little as a few inches to two or three thousand feet

**fawn rearing habitat** - Areas used regularly by female deer for fawn raising; optimum fawning habitat includes low shrubs or small trees under an overstory of about 50% closure, usually located on slopes of less than 15 percent where vegetation is succulent and plentiful in June, and water is available within 183 meters (8)

**feral** - Non-native species, or their progeny, which were once domesticated but have since escaped from captivity and are now living free (6)

**FIL** - See **fire intensity level**

**final cut** - See **final removal harvest**.

**final environmental impact statement** - The final version of the statement of environmental effects required for major federal actions under section 102 of the National Environmental Policy Act. It is a revision of the draft environmental impact statement to include public and agency responses to the draft. (6)

**final removal harvest** - The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood system. (6)

**fire intensity level** - Fire intensity level, a measure of heat released over time by the flaming front of a fire, indicated by flame length (i.e., FIL 1 = 0-2 ft; FIL 2 = 2-4 ft)

**fire management** - All activities required for protection of resources from fire and for the use of fire to meet land management goals and objectives. (6)

**fire risk** - Potential for a fire start, natural or human-caused.

**fisheries habitats** - Streams, lakes, and reservoirs that support fish populations.

**flood plain** - The lowland and relatively flat area adjoining inland waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year. (2)

**forage** - All browse and nonwoody plants that are available to livestock or game animals and used for grazing or harvested for feeding (6)

**forb** - Any herb other than grass, sedges, or rushes. (7)

**foreground** - A term used in visual management to describe the portions of a view between the observer and up to 1/4 to 1/2 mile distant. (6)

**Forest and Rangeland Renewable Resources Planning Act of 1974** - An Act of Congress requiring the preparation of a program for the management of the National Forests' renewable resources, and the preparation of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources. (6)

**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 of any width, and adjoining road clearings and powerline clearings of any width (1) (10)

**forest program** - 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-range environmental study (FRES) levels** - Various range management intensities developed to reflect the degree of range utilization. FRES levels measure the amount of native forage available to livestock for consumption under these different intensities. Developed in a Forest Service

report entitled "The Nation's Range Resources -- A Forest-Range Environmental Study," Forest Resources Report No. 19

**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. (10)

**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 designated as Forest development transportation facilities. (See **roads** )

**forest type** - A classification of forest land based upon the tree species presently forming a plurality of basal area stocking in live trees.

**formally dedicated area** - An area of the Forest set aside for a specific use by virtue of a formal ceremony or congressional designation.

**FORPLAN** - A linear programming system used for developing and analyzing forest planning activities (10)

**free-to-grow** - A term used by silviculturists to indicate that trees are free of growth restraints, the most common of which is competing over-topping vegetation

**fuel break** - A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire Fuel breaks are designated or constructed before the outbreak of a fire. Fuel breaks may consist of one or a combination of the following: natural barriers, constructed fuel breaks, constructed barriers (6)

**fuel hazard** - A supply of fuel that forms a special threat of ignition or suppression difficulty

**fuel management** - The practice of planning and executing the treatment or control of living or dead vegetative material in accordance with fire management direction. (10)

**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** - Combustible wildland vegetative materials While usually applied to above ground living and dead surface vegetation, this definition also includes roots and organic soils such as peat. (10)

**full-service management** - Management of developed recreation sites to furnish the full range of amenities and maintenance for the public enjoyment Management objectives are based on site capacity, site protection needs, seasonal demands for public use, and desired levels of service to enhance visitor's experience and convenience and provide optimum maintenance.

**furbearing species** - See **game species**

## G

**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. (6)

**genetic seedlings** - Tree seedlings from a genetically superior seed source. The seeds are collected from trees displaying exceptional form and raised in nurseries before outplanting. The seedlings usually have faster growth rates than naturally regenerated seedlings.

**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. (6)

**geothermal** - Of or pertaining to the internal heat of the earth. (4)

**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. (2) (1)

**goods** -

**nonmarket good** - 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. (10)

**public good** - 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 because the costs of collection and control exceed likely revenue. (10)

**goods and services** - The various outputs, including on-site uses, produced from forest and rangeland resources. (2,1)

**grass/forb** - An early forest successional stage where grasses and forbs are the dominant vegetation.

**group selection cutting** - See **uneven-aged silvicultural systems**

**growing season** - That part of the year when temperature and moisture are favorable for vegetation growth.

**guideline** - An indication or outline of policy or conduct, i.e., any issuance that assists in determining the course of direction to be taken in any planned action to accomplish a specific objective. (2)

**guzzler** - A device for collecting and storing precipitation for use by wildlife or livestock. Consists of an impenetrable water collection area, a storage facility, and a trough from which animals may drink. (9)

## H

**habitat** - The place where a plant or animal naturally or normally lives or grows (2)

**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.

**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: no more than 25 percent of an analysis area may be harvested in one decade.

**HCNRA** - Hells Canyon National Recreation Area

**headwaters** - The upper tributaries of a river. (4)

**herbaceous** - An adjective describing seed-producing plants that do not develop persistent woody tissue, but die down to ground level at the end of the growing season.

**herbicide** - A chemical substance used for killing plants (8)

**high-site timbered lands** - A relative measure of resource productivity.

**historic site** - Site associated with the history, tradition, or cultural heritage of national, state, or local interest, and of enough significance to merit preservation or restoration (6)

**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

**ID team** - See **interdisciplinary team**

**impacts** - See **effects**

**impact analysis area** - The delineated area subject to significant economic and social impacts from Forest Service activities included in an economic or social impact analysis.

**impact analysis subarea** - A specific area within an analysis area that is subject to localized economic or social impacts from Forest Service activities.

**impact, economic, direct** - Impacts, caused directly by forest product harvest or processing, or forest uses.

**impact, economic, indirect** - Impacts that arise from supporting industries selling goods or services to directly-affected industries.

**impact, economic, induced** - Impacts resulting from employees or owners of directly or indirectly-affected industries spending their income within the economy.

**IMPLAN** - A computer-based system used by the Forest Service for constructing nonsurvey input/output models to measure economic input. The system includes a data base for all countries in the U.S. and a set of computer programs to retrieve data and perform the computational tasks for input/output analysis. (10)

**imports** - As used in IMPLAN 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. (10)

**improved genetic stock** - Group of plants (trees) that have been improved genetically (4)

**income** - Employee compensation, profits, rents, and other payments to households (10)

**indicator species** - See **management indicator 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 (6)

**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. (3)

**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

**INTEGER** - A computer model used to integrate Forest social and economic data.

**integrated pest management** - 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 population on various resource values, alternative regulation tactics and strategies, and benefit/cost estimates of those 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 plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable. (2) (1)

**integrated resource management** - A management strategy which emphasizes no resource element to the exclusion or violation of the minimum legal standards of others. (FSM 1905)

**intensive grazing management** - Grazing management that controls distribution of cattle and duration of use on the range, usually by fences, so parts of the range are rested during the growing season. (See also **quality extensive management**; **quality intensive management**.)

**intensive management (intensive forest management)** - A high investment level of timber management that includes use of precommercial thinnings, commercial thinnings, genetically improved stock, and control of competing vegetation. (2)

**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. (6)

**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. (6)

**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.

**intrusive** - (rock) having been forced while in a plastic state into cavities or between layers (of other rock). (6)

**inventory data and information collection** - The process of obtaining, storing, and using current inventory data appropriate for planning and managing the Forest. (6)

**irretrievable** - Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible. (10)

**irreversible** - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options. (10)

**issue** - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process. (See also **public issue**) (2)

## K

**Knutson-Vandenberg Act (K-V)** - An act of Congress which among other things authorizes the Forest Service to use funds collected from timber sales for tree planting, timber stand improvement, and other forest uses.

## L

**Land and Water Conservation Fund (L&WCF)** - Funds collected from sales of surplus Government real property, motorboat fuels taxes, recreation use fees, etc. which are available to purchase and develop certain qualifying lands for recreational purposes.

**land class** - The topographic relief of a unit of land. Land classes are separated by slope, which coincides with the timber inventory process. The three land classes used in the Fremont National Forest Plan are defined by the following slope ranges: 0 to 40 percent; 40 to 60 percent, and greater than 60 percent

**land exchange** - The conveyance of nonfederal land and/or interests in exchange for National Forest System land or interests in land

**landform** - An area of that is defined by its particular combination of bedrock and soils, erosion processes and climatic influences.

**landing** - Any place where round timber is assembled for further transport, commonly with a change of method (3)

**land management** - The intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions (6)

**land management planning** - The process of organizing the development and use of lands and their resources in a manner that will best meet the needs of people over time, while maintaining flexibility for a combination of resources for the future.

**landownership pattern** - The National Forest System resource land base, in relation to other land ownerships within given boundaries (2)

**landscape management** - The art and science of planning and administering the use of Forest lands in such ways that the visual effects maintain or upgrade human psychological welfare. The planning and design of the visual aspects of multiple-use land management

**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 (1)

**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 219.27(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. (1)

**lands suitable for timber production** - Includes all lands not classified as either Not Suited or Not Appropriate for Timber Production

**landtype** - A portion of the Forest mapped in the Siuslaw National Forest Soil Resource Inventory that has a defined arrangement of specific landforms that reacts to management activities in generally predictable ways. Landtypes range from 60 to 600 acres in size.

**landtype association** - A group of landtypes that make up a large portion of the Forest. The landtypes are sufficiently homogeneous to be considered as a whole for modeling the future outputs and effects of planned management activities. Landtype Associations do not usually follow watershed boundaries and are defined on the basis of general similarities in geology, climate, landform and vegetation. Landtype Associations on the Forest range in size from 14,000 to 93,000 acres.

**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. (6)

**leasable minerals** - Coal, gas, oil, phosphate, sodium, potassium, oil shale, sulphur, geothermal steam. Also includes other minerals on acquired National Forest Lands. (6)

**least-cost analysis** - Determination of the least cost means of attaining specified results (10)

**Level IV Law Enforcement Officer** - A Forest Service employee who has graduated from the Federal Law Enforcement Academy and holds a law enforcement commission signed by the Regional Forester. District Level IV officers generally perform other duties as well as law enforcement.

**lifestyle** - The characteristic way people live, indicated by consumption patterns, work, leisure, and other activities. (10)

**linear programming** - A mathematical method used to determine the cost-effective allocation of limited resources between competing demands when both the objective (e.g., profit or cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities. (6)

**locatable minerals** - Those hardrock minerals which can be obtained by filing a claim on Public Domain or National Forest System lands reserved from the Public Domain. In general, the locatable minerals are those hardrock minerals which are mined and processed for the recovery of metals, but may also include certain nonmetallic minerals and uncommon varieties of mineral materials (6)

**lode mining** - The mining of a valuable mineral which occurs as a tabular deposit between definite, contrasting mineral or rock boundaries (6)

**logging residues** - See slash.

**long-span cable system** - In timber harvesting, any cable logging system capable of yarding logs at distances greater than 2,000 feet.

**long-term** - Greater than ten years.

**long-term sustained yield timber capacity (LTSY)** - 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 (1)

**low income** - Household income below the poverty level as defined by the U S Department of Health and Human Services. (10)

## M

**management area** - An area with similar management objectives and a common management prescription (1) (10)

**management concern** - An issue, problem, or condition which influences the range of management practices identified by the Forest Service in the planning process (1)

**management direction** - A statement of multiple use and other goals and objectives, and the associated management prescriptions, and standards and guidelines for attaining them (1)

**management emphasis** - That portion of a management scheme which receives the most stress or is of the greatest significance or importance. It may be the resources being produced, or it may be the way in which they are produced.

**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. (8)

**Management Information Handbook (MIH) codes** - An accounting system that labels each Forest activity or budget item with a code to identify that activity in a consistent manner. Normally used for budgeting purposes.

**management intensity** - The management practices or combination of management practices and associated costs to obtain different levels of goods and services (1). In FORPLAN management prescriptions, a set of activities designed to accomplish a particular management emphasis (See also **management prescriptions**).

**management practice** - A specific activity, measure, course of action, or treatment. (1)

**management prescription** - The management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives (1). In FORPLAN, the combination of a management emphasis and associated management intensities with a variety of timing choices for implementation. (2)

**management requirement (MR)** - Minimum standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, soil and water diversity, to be met in accomplishing National Forest System goals and objectives. (1)

**marginal cover** - A stand of coniferous trees 10 or more feet (3 or more meters) tall, with an average canopy closure equal to or more than 40 percent (11)

**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. (10)

**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. (10)

**market assessment** - A market study describing sources of supply and demands for goods or service, pricing processes, and influences on value. (10)

**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. (10)

**mass movement** - A general term for any of the variety of processes by which large masses of earth material are moved downslope by gravitational forces - either slowly or quickly. (6)

**mature timber** - Trees that have attained full development, particularly height, and are in full seed production. (3)

**maximum modification** - See **visual quality objective**.

**MBF** - Thousand board feet

**MCF** - Thousand cubic feet

**mean annual increment of growth** - The total volume of a tree or stand of trees up to a given age divided by that age. (2)

**mesotrophic** - Habitats, particularly soil and water, of moderate nutrient capacity. (3)

**middleground** - A term used in visual management to describe the portions of a view extending from the foreground zone out to 3 to 5 miles from the observer. (6)

**MIH** - Management Information Handbook.

**mineral entry** - The filing of a mining claim upon public domain or related land to obtain the right to any minerals it may contain. (6)

**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. (6)

**mineral materials** - Deposits such as sand, stone, gravel, and clay. (6)

**mineral soil** - Weathered rock materials usually containing less than 20 percent organic matter. (6)

**minimum level management** - FORPLAN term designating lands that will not be actively managed for timber or forage production. Often, these are lands that have high costs and low benefits associated with their management.

**minimum streamflows** - A specified level of flow through a channel that must be maintained by the users of streams for biological, physical, or other purposes.

**mining claim** - A portion of the public lands which a miner, for mining purposes, takes and holds in accordance with mining laws. (6)

**minority** - Persons as specified in Directive 15, Office of Federal Statistical Policy and Standards, U. S. Department of Commerce, Statistical Policy Handbook (1978). Generally identified as one of the following four categories: Alaskan native or American Indian, Asian or Pacific Islander, Black, Hispanic. (10)

**mitigation** - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action, (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensating for the impact by replacing or providing substitute resources or environments (40 CFR Part 1508.20)

**mitigation measures** - Actions to avoid, minimize, reduce, eliminate, or rectify adverse impacts of management practices.

**MMBF** - Million board feet.

**MMCF** - Million cubic feet.

**MMRVD** - Million recreation visitor day.

**MRVD** - Thousand recreation visitor day

**model** - 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 (6)

**modification** - See **visual quality objective**.

**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 (8)

**mountain pine beetle** - A tiny black insect, ranging in size from 1/8 to 3/4 inch, that bores its way into a tree's cambium and cuts off its supply of nutrients, thus killing the tree.

**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 and 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 (1)

**multiplier** - A ratio of a measure of total change in income or employment to the direct income or employment change. The measure to total change may be direct plus indirect change (Type I

Multipliers); or direct, indirect, and induced change (Type II Multipliers), or direct, indirect, and interactive increased induced demands based on population increase (Type III Multipliers) (10)

**municipal watershed** - A watershed which provides water for human consumption, where Forest Service management could have a significant effect on the quality of water at the intake point, and that provides water utilized by a community or any other water system that regularly serves: 1) at least 25 people on at least 60 days in a year, or 2) at least 15 service connections. In addition to cities, this includes campgrounds, residential developments, and restaurants (10)

## N

**National direction** - Statements of missions, goals, and objectives that guide Forest Service planning. (FSM 1905)

**National Environmental Policy Act (NEPA) of 1969** - An Act to declare a National policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the Nation, and to establish a Council on Environmental Quality (The Principal Laws Relating to Forest Service Activities, Agriculture Handbook No 453, USDA, Forest Service, 359 pp.)

**National Forest Land and Resource Management Plan** - A Plan which ". . . shall provide for multiple use and sustained yield of goods and services from the National Forest System in a way that maximizes long-term net public benefits in an environmentally sound manner" (1)

**National Forest Management Act (NFMA)** - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development

**National Forest System (NFS)** - All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat 525, 7 U.S.C. 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system (16 U.S.C. 1608)

**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. (6)

**National Register of Historic Places** - A listing (maintained by the U.S. National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the Nation (6)

**National Wilderness Preservation System** - All lands covered by the Wilderness Act and subsequent Wilderness designations, regardless of the governmental department having jurisdiction

**natural barrier** - A natural feature that restricts livestock or wildlife movements, such as a dense stand of trees or a cliff.

**natural regeneration** - Reforestation of a site by natural seeding from the surrounding trees. 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. (1)

**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 (nitrogen fixation)** - Conversion of free nitrogen by plants such as red alder into combined forms useful in nutrient cycles and other functions in the biosphere.

**nominal value** - A monetary value relative to time that does not account for the effects of inflation.

**nonchargeable volume** - All volume not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity. (FSH 2409.13)

**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 the supply. For example, nonconsumptive use of water includes hydroelectric power generation, boating, swimming, and fishing. (2)

**nondeclining flow** - Where the quantity of timber planned for 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. (1)

**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. (6)

**nongame species** - Animal species which are not hunted, fished, or trapped.

**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. (10)

**nonmarket valued outputs** - Assessed value of a goods 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. (6)

**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. (6)

**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

**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.

**noxious weeds** - Undesirable plant species that are unwholesome to the range or to animals (6)

## O

**objective** - A concise, time-specific statement of measurable planned results that respond to pre-established 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. (1)

**off-road vehicle (ORV)** - Vehicles such as motorcycles, all-terrain vehicles, four-wheel drive vehicles, and snowmobiles (2)

**old-growth deficit** - A forest without the excess volume of mature/overmature old-growth trees that could be used to offset reductions in programmed harvest volume resulting from allocation changes.

**old-growth habitat** - Habitat for certain wildlife that is characterized by overmature coniferous forest stands with large snags and decaying logs.

**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 (2) (In this Forest Plan, old-growth stands less than 30 acres in size were generally not tracked.)

**oligotrophic** - Lakes characterized by a low accumulation of dissolved nutrient salts, supporting only sparse plant and animal life, and having a high oxygen content, owing to the low organic content. (4)

**open roads** - Any roads which are not blocked or closed to all standard vehicle use (excluding ATV or over-the-snow vehicles) for a full year Seasonal closures do not constitute a "closed" road

**open to entry** - With respect to minerals management, lands available to occupy under the mining laws.

**operational costs** - Those costs associated with administering and maintaining National Forest facilities and resource programs

**operational plan** - A document approved by the Forest Supervisor which specifies at the project level, implementation of the management direction established in the Forest Plan. (6)

**opportunity** - A proposal that is considered in developing alternative activities, projects or programs where an option exists to invest profitably to improve or maintain a present condition

**opportunity cost** - The dollar-quantifiable net loss resulting from selecting a less efficient course of action

**output** - A good, service, or on-site use that is produced from forest and rangeland resources. See FSH 1309.11 for forest and rangeland outputs codes and units measure. Examples: X06-Softwood Sawtimber Production MBF; X80-Increased Water Yield - Acre Feet; W01-Primitive Recreation Use RVD's. (FSM 1905)

**output, controlled** - The amount of an output which management has the legal and practical ability to control with management activities. (10)

**output, market** - A good, service, or on-site use that can be purchased at a price. (FSM 1905)

**output, noncontrolled** - The amount of an output which will occur regardless of management activity (10)

**output, nonmarket** - A good, service, or on-site use not normally exchanged in a market (FSM 1905)

**overbid** - To bid more than the appraised value. (4)

**overgrazing** - Continued overuse (year after year) creating a deteriorated range

**overgrazed range** - A range that has deteriorated and may still be deteriorating from its productive potential due to overgrazing.

**overmature timber** - The stage at which a tree declines in vigor and soundness, for example, past the period of rapid height growth. (2)

**overstory** - That portion of the trees, in a Forest or in a stand of more than one story, forming the upper or uppermost canopy. (3)

**overuse (overutilization)** - Utilizing an excessive amount of the current year's growth which, if continued, will result in overgrazing and range deterioration

**overwood removal** - A harvest method that removes the overstory of a two-story stand and leaves the smaller understory for further treatment (thinning or harvesting)

## P

**P & M** - Fund appropriated by Congress for protection and management of the Forest.

**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 objective**

**particulates** - See **total suspended particulates**.

**payment in lieu of taxes (PILOT)** - Payments to local or State governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing. Specifically, they

include payments made under the payments in Lieu of Taxes Act of 1976 by U. S. Department of the Interior. (10)

**payments to counties** - See **payment in lieu of taxes**.

**perennial stream** - A stream that flows year round

**permittee** - Any person or business formally allowed to graze livestock on the land of another person or business (e.g.; on state or federal land). (3)

**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)** - A recreation capacity measurement term indicating the number of people who can use a facility or area at one time. (2)

**pests** - Any animal or plant that, during some portion of its life cycle, inhibits the establishment or growth of some other species of plant or animal favored by man

**phenology** - The science dealing with the influence of climate on the recurrence of such annual phenomena of animal and plant life as bird migrations, budding, etc. (4)

**physiographic province** - A Region having a particular pattern of relief features or land forms that differs significantly from that of adjacent Regions. (6)

**pioneer species** - A plant capable of invading bare sites (e.g., a newly exposed soil surface) and persisting there, i.e., "colonizing" them, until supplanted. (3)

**placer mining** - The extraction of valuable heavy minerals from a mass of sand, gravel, or other similar alluvial material by concentration in running water. (6).

**planned ignition** - A fire started deliberately, and controlled to accomplish a resource management objective.

**planning area** - The area of the National Forest System covered by a Regional guide or forest plan (1)

**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. (1)

**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 (1). 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. (1)

**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.

**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)

**pole/sapling** - A Forest successional stage in which trees between five and nine inches in diameter are the dominant vegetation. (See also **size class**)

**pole timber** - Trees of at least five inches in diameter at breast height, but smaller than the minimum utilization standard for sawtimber (See also **size class**.)

**policy** - A guiding principle upon which is based a specific decision or set of decisions (FSM 1905)

**potential yield** - (*This term is in reference to the 1962 Timber Management Plan only*) Optimum sustained yield of timber harvest volume attainable with intensive forestry on available commercial forest land (forest lands able to produce 20 cubic feet of timber per acre per year or more).

**practices** - Those management activities that are proposed or expected to occur.

**preattack planning** - In fire management, a system for collecting, evaluating, and recording fire intelligence data for a given planning unit. The planning phase is usually followed by a construction and development program integrated with other management functions

**precommercial thinning** - The practice of removing some of the trees less than marketable size from a stand so that the remaining trees will grow faster. (2)

**prehistoric site** - An area which contains important evidence and remains of the life and activities of early societies which did not record their history

**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. (3)

**prescribed fire** - A wildland fire burning under specified conditions which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Proposals for use of unplanned ignitions for this purpose must be approved by the Regional Forester. (2)

**prescription** - A written direction for harvest activities and regeneration methods.

**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. (1)

**preservation** - A visual quality objective that allows only for ecological changes (2)

**price** - The unit value of an output expressed in dollars. (10)

**price elasticity** - A measure of the sensitivity of the quantity of a good or service exchanged to changes in price. (10)

**priced 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 (10)

**price trend analysis** - An analysis done to estimate how a particular FORPLAN solution would change if predicted price trends were increased or decreased.

**primitive recreation** - Those types of recreational activities associated with unroaded land -- e.g., hiking, backpacking, cross-country travel. (6)

**proclaimed land** - Lands reserved from the Public Domain for National Forest purposes by presidential proclamation. (See also **reserved land**)

**program** - Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments. (10)

**program budget** - A plan that allocates annual funds, work force ceilings, and targets among agencies. (10)

**program budget level** - A single, comprehensive integrated program responsive to the Chief's direction that specifies a level of production attainable from a given investment of dollars and other resources. Each budget level represents a complete, full, and independent package within the criteria and constraints identified. (10)

**Programmatic Memorandum of Agreement** - An agreement between the USDA Forest Service, Pacific Northwest Region, the Oregon State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation on the management of two types of cultural resource sites found on the Forest: Depression-era administrative structures and prehistoric lithic scatters.

**programmed harvest** - The amount of timber on the Forest that is scheduled for harvesting. The programmed harvest is based on current demand, funding, and multiple-use considerations.

**project** - An organized effort to achieve an objective identified by location, timing, activities, outputs, effects, and time period and responsibilities for executions. (10)

**project design** - The process of developing specific information necessary to describe the location, timing, activities, outputs, effects, accountability, and control of a project.

**public involvement** - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plan, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making. (10)

**public issue** - A subject or question of widespread public interest relating to management of the National Forest System. (1)

**public participation** - Meetings, conferences, seminars, workshops, tours, written comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service planning. (2)

**public participation activities** - Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific publics.

**purchaser road credits** - Credit earned by the purchaser of a National Forest timber sale by construction of contract-specific roads. earned purchaser credit may be used by the purchaser as payment for National Forest timber removed. (2)

**pyroclastic** - Formed by or involving fragmentation as a result of volcanic or igneous action. (5)

## Q

**quality extensive management (QE)** - Range management based on low operating and investment costs per acre. (3)

**quality intensive management (QI)** - Range management to obtain a high production of livestock through the best techniques of range management. (3)

## R

**range** - Land producing native forage for animal consumption, and lands that are revegetated naturally or artificially to provide forage that is managed like native vegetation. (6)

**range allotment** - An area designated for use of a prescribed number and kind of livestock under one management plan. (6)

**range allotment management plan** - An approved plan for managing a range allotment resulting in resolution of resource conflicts including riparian areas. Resource damages may still be occurring, however, the action items identified in the AMP are expected to stop resource damage or resolve resource conflicts over time

**range condition** - The current productivity of a range relative to what that range is naturally capable of producing (Also see **satisfactory range condition**.) (9)

**range environmental assessment (REA)** - An environmental assessment to determine the condition of the range with regard to suitability for grazing, vegetative cover types, potential vegetative communities, condition of vegetation, soil stability, and forage production and utilization.

**rangeland** - Land on which the climax vegetation (potential natural plant community) is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing and browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain forb and shrub communities. It also includes areas seeded to native or adapted introduced species that are managed like native vegetation

**range management** - The art and science of planning and directing range utilization so as to secure sustained maximum production of livestock, milk, and/or cut forage, consistent with other uses and conserving natural resources. (3)

**raptors** - Predatory birds, such as falcons, hawks, eagles, or owls

**RARE II** - An acronym for a second generation "Roadless Area Review and Evaluation" instituted in June 1977, to identify roadless and undeveloped land areas in the National Forest system. Its purpose was to determine which of the inventoried areas should be recommended to Congress for inclusion in the National Wilderness Preservation System, which areas should be managed for

nonwilderness uses, and which areas required further planning before a reasonable decision on them could be made

**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.) (10)

**real dollar** - A monetary value that compensates for the effects of inflation. (1)

**receipts** - Those priced benefits for which money will actually be paid to the Forest Service: recreation fees, timber harvest, mineral leases and special use fees.

**receipt shares** - 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 (1)

**Record of Decision** - A document separate from but associated with an Environmental Impact Statement which states the decision, identifies all alternatives, specifying which were environmentally preferable, and states whether all practicable means to avoid environmental harm from the alternative have been adopted, and if not, why not (40 CFR 1505.2)

**recreation capacity** - The number of people that can take advantage of the recreation opportunity at any one time without substantially diminishing the quality of the experience or the biophysical resources (2)

**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 users to participate in the recreational activities they prefer within the settings they prefer

**Recreation Opportunity Spectrum (ROS)** - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a continuum or spectrum divided into seven classes: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Road-ed Modified, Road-ed Natural, Rural, Urban.

**primitive** - 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.

**semiprimitive nonmotorized** - 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 would be 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.

**semiprimitive motorized** - 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 on-site

controls and restrictions use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.

**roaded natural** - Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually 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.

**roaded modified** - Timber harvest and other management activities may be dominant, but carried out within NFMA requirements. Interaction between users may be moderate to high with evidence of other users present. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

**rural** - Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities is designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.

**urban** - Area is characterized by a substantially urbanized environment, although the background may have natural appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site, are predominant. Large numbers of users can be expected, both on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

**recreation visitor day (RVD)** - A measure of recreation use, in which one RVD equals twelve visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons. (2)

**recreational river** - See wild and scenic river

**redd** - Nest in gravel of stream bottom where fish deposit eggs. In this document, refers to salmon spawning redds.

**reduced service management** - Management of developed recreation facilities below optimum maintenance standards.

**reforestation** - The natural or artificial restocking of an area with forest trees. (2)

**regeneration** - The renewal of a tree crop, whether by natural or artificial means. Also, the young crop itself, which is commonly referred to as reproduction. (2)

**Region** - An area covered by a Regional guide. See FSM 1221.3 for organizational definitions. (10)

**Regional Forester** - The Forest Service official responsible for administering a single Region.

**Regional Guide** - The guide developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended. It guides all natural resource management.

activities, and establishes management standards and guidelines for the National Forest System lands within a given Region. It also disaggregates the assigned Regional RPA objectives to the Forests within that Region

**regulated** - Stands which contribute to the calculated base timber sale schedule or departure. Herein includes green volume projections of FORPLAN.

**regulations** - Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers management of the Forest Service. (2)

**rehabilitation** - Action taken to restore, protect, or enhance site productivity, water quality, or other resource values over a period of time

**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 (6)

**renewable resources** - Resources that are possible to use indefinitely, when the use rate does not exceed the ability to renew the supply.

**renewable resources assessment** - An appraisal of the Nation's renewable resources that recognizes their vital importance and the necessity for long-term planning and associated program development. The Assessment meets the requirements of Section 3 of the Resources Planning Act and includes analyses of present and anticipated uses, demands, and supplies of the renewable resources; a description of Forest Service programs and responsibilities; and a discussion of policy considerations, laws, and regulations.

**research natural area (RNA)** - An area set aside by a public or private agency specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. In U.S.D.A. Forest Service usage, Research Natural Areas are areas designated to ensure representative samples of as many of the major naturally-occurring plant communities as possible (6)

**reserved lands** - Lands reserved from the public domain for National Forest purposes, and lands which are added to the National Forest System by exchange for reserved National Forest lands. (See **proclaimed land**)

**residual stand** - The trees remaining standing after some activity such as selection cutting. (2)

**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. (6)

**resource allocation** - The action of apportioning the supply of a resource to specific uses or to particular persons or organizations. (6)

**resource management plan** - A Plan developed prior to the Forest Plan that outlined the activities and projects for a particular resource element independently of considerations for other resources. Such Plans will be superseded by the Forest Plan

**Resource Planning Act (RPA)** - The Forest and Rangeland Renewable Resources Planning Act of 1974 Also refers to the National Assessment and Recommended Program developed to fulfill the requirements of the act. (2)

**responsible line officer** - The Forest Service employee who has the authority to select and/or carry out a specific planning action (1)

**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. (6)

**retention** - See **visual quality objective**.

**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.

**right-of-way (R/W)** - An accurately located strip of land with defined width, point of beginning, and point of ending, the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding (6)

**riparian** - Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence Stream sides, lake borders, or marshes are typical riparian areas. (3)

**riparian area** - Geographically delineated areas, with distinctive resource values and characteristics, that are comprised of aquatic and riparian ecosystems

**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

**road** - A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width

**forest arterial road** - Provides services to large land areas and usually connects with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service (10)

**forest collector road** - Serves smaller land areas than a forest arterial road and is usually connected to a forest arterial or public highway Collects traffic from forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multiresource service needs as well as travel efficiency. May be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility. (10)

**forest local road** - Connects terminal facilities with forest collector or forest arterial roads or public highways. The location and standard are usually controlled by specific resource activity requirements rather than travel efficiency needs. (10)

**road (temporary)** - Any short-lived road not intended to be a part of the forest development transportation system and not necessary for future resource management (10)

**Roadless Area Review and Evaluation II (RARE II)** - The national inventory of roadless and undeveloped areas within the National Forest and Grasslands. This refers to the second such assessment, which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation, January 1979. (2)

**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. (6)

**roundwood products** - All timber products other than sawtimber and personal use fuelwood

## S

**sale preparation costs** - Costs associated with preparing a timber harvest on Forest Service lands for sale to the public; usually include all administrative costs for developing sale layout, writing an Environmental Assessment and selling the timber sale.

**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. (1) For planning purposes, the sale schedule and the allowable sale quantity are synonymous for all periods or decades over the planning horizon. (1)

**salvage cuttings** - Intermediate cuttings made to remove trees that are dead or in imminent danger of being killed by injurious agents. (10)

**sanitation cuttings** - Intermediate cuttings made to remove dead, damaged, or susceptible trees to prevent the spread of pests or pathogens. (10)

**sanitation-salvage treatment** - See **salvage cutting**; **sanitation cutting**.

**satisfactory cover** - a stand of coniferous trees 40 or more feet (12 or more meters) tall, with an average canopy closure equal to or more than 70 percent. (11)

**satisfactory range condition** - On suitable range, forage condition is at least 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.

- a. 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
- b. Management-induced instability exceeds 20 percent of the total miles of stream (SMU classes I-IV) in an allotment
- c. Gully development of sufficient size to lower the seasonally saturated zone and change the plant community type is occurring

- d. 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.

**scablands** - Shallow-soiled lands typically dominated by such species as low and stiff sagebrush.

**scarified** - Land in which the topsoil has been broken up or loosened in preparation for regenerating by direct seeding or natural seedfall. Also refers to ripping or loosening road surfaces to a specified depth for obliteration or "putting a road to bed." (3)

**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. (6)

**scenic river areas** - See **wild and scenic river**.

**scheduled timber harvests** - Volumes and acres programmed for harvest which are within the allowable sale quantity. This does not include salvage and sanitation harvesting.

**scoping process** - A part of the National Environmental Policy Act (NEPA) process, early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an Environmental Impact Statement. (40 CFR 1501.7)

**second growth** - Forest growth that has become established following some interference, such as cutting, serious fire, or insect attack, with the previous Forest crop. (6)

**sediment** - Earth material transported, suspended, or deposited by water. (6)

**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. (3)

**seedlings and saplings** - Live trees less than five inches in diameter at breast height (See also **size class**.) (3)

**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. (3)

**sensitive species** - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for 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 placement on Federal or State lists. (2)

**sensitivity analysis** - A determination of the effects of varying the level of one or more factors, while holding the other factors constant. (6) (10)

**sensitivity level** - A measure of people's concern for the scenic quality of the National Forests. Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment.

- Level 1 - Highest sensitivity
- Level 2 - Average sensitivity
- Level 3 - Lowest sensitivity (2)

**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. (See **constraint**)

**seral** - A biotic community which is a developmental, transitory stage in an ecologic succession. (6)

**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. (3)

**short-span cable system** - In timber harvesting, any cable logging system capable of yarding logs only from distances of up to 2,000 feet.

**short-term** - Ten years or less.

**silvicultural examination** - The process used to gather the detailed in-place field data needed to determine management opportunities and direction for the timber resource within a small subdivision of a Forest area, such as a stand.

**silvicultural system** - A management process whereby 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. (3) (1)

**silviculture** - The art and science of controlling the establishment, composition, and growth of forests. (2)

**single-tree selection** - See **individual (single) tree selection**.

**site index** - A numerical evaluation of the quality of land for plant productivity, (6) . . . based on the height of dominant trees in a stand at an arbitrarily chosen age. (3)

**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 five-inch diameter

pole/sapling or pole timber = five-inch to nine-inch diameter

sawtimber = greater than nine-inch diameter (7 inches in future stands)

**skidding** - A general term for hauling loads by sliding, not on wheels, as developed originally from stump to roadside, deck, skidway, or other landing (3)

**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 tree felling and tending, and/or accumulating there as a result of storm, fire, girdling or poisoning. It includes unutilized logs, uprooted stumps, broken or uprooted stems, the heavier branchwood, etc (3)

**small game** - Birds and small mammals normally hunted or trapped. (2)

**smolt** - Young salmon or steelhead which migrate to the ocean

**smolt habitat capability index** - An indicator of the quality of rearing habitat for young salmon or steelhead (smolt) It assumes that spawning gravels are adequate to provide sufficient spawning areas to fully seed the existing rearing habitat and that sufficient numbers of adults will escape past fishermen, hydroelectric dams, or natural mortality to return and fully seed the spawning gravels It is expressed as the number of smolt which could be produced, estimating potential rather than actual production.

**snag** - A standing dead tree

**socioeconomic** - Pertaining to, or signifying the combination or interaction of social and economic factors (2)

**softwoods** - Coniferous trees, usually evergreen, having needles or scalelike leaves

**soil** - The portion of the earth's surface consisting of disintegrated rock and humus. (7)

**soil damage (detrimental compaction or displacement)** - For volcanic ash soils, an increase in bulk density of 20 percent over pre-harvest levels is considered detrimental compaction For all other soils, an increase of 15 percent in bulk density or more is considered detrimental compaction Detrimental displacement is the removal and horizontal movement of more than 50 percent of the topsoil or humus enriched A1 and/or AC horizons from an area of 100 square feet or more which is at least 5 feet in width

**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 resource inventory** - See soil surveys.

**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. (6)

**soil texture** - The relative proportions of the various soil separates in a soil, described by the classes of soil texture. Twelve basic soil texture classes are recognized, such as "loam." The textural classes may be modified by the addition of suitable adjectives when coarse fragments are present in substantial amounts; for example, "stony loam."

**special interest areas** - Areas managed to make recreation opportunities available for the understanding of the earth and its geological, historical, archaeological, botanical, and memorial features. (6)

**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. (10)

**special places** - Special places on the Wallowa-Whitman National Forest, i.e., dispersed recreation sites, water features, rock or unique landform features, areas of unique vegetation, historic sites or other places which are special to Forest users will be protected, commensurate with other Forest management objectives.

**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.

**spike camp** - A hunting camp that is set up in advance of the client's arrival. This camp may be left up for the duration of the hunting season. The camp may or may not be used by the outfitter. The specific location is described in the permit. Also refers to an isolated fire camp, away from the primary fire camp.

**stand (tree stand, timber stand)** - An aggregation of trees or other vegetation occupying a specific area and sufficiently uniform in species composition, age arrangement, and condition as to be distinguishable from the forest or other vegetation or land cover on adjoining areas. (2)

**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.

**stand examination surveys** - Procedures to collect data on Forest stands.

**standard** - A statement which describes a condition when a job is done properly. Standards show how well something should be done, rather than what should be done. (6)

**standards and guidelines (S&G)** - Principles specifying conditions or levels of environmental quality to be achieved.

**standard motor vehicles** - Those which are normally used on highways and roads, such as passenger cars, pickups, four-wheel-drive pickups and station wagons, vans, trucks, and other types of vehicles that are not primarily designed for off-road use.

**statistical high bid (stat high bid)** - The successful bid for Forest stumpage.

**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.

**stream blockage** - Accumulation of soil, rock, and organic material deposited in a stream channel by landslides that prevent fish from moving upstream.

**stream buffer** - Vegetation left along a stream channel to protect the channel or water from the effects of logging, road building, or other management activity (See **vegetation leave area**)

**stream class** - Classification of streams based on the present and foreseeable uses made of the water, and the potential effects of on-site changes on downstream uses. Four classes are defined

Class I - Perennial or intermittent streams that provide a source of water for domestic use; are used by large numbers of fish for spawning, rearing or migration; and/or are major tributaries to other Class I streams.

Class II - Perennial or intermittent streams that are used by moderate though significant numbers of fish for spawning, rearing or migration; and/or may be tributaries to Class I streams or other Class II streams.

Class III - All other perennial streams not meeting higher class criteria

Class IV - All other intermittent streams not meeting higher class criteria (10)

**streamflow** - The flow of water, generally with its suspended load, down a well-defined water course (6)

**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

**stumpage (stumpage value)** - The value of timber as it stands uncut, in terms of an amount per unit of volume. (6)

**substantive comment** - A comment that provides factual information, professional opinion, or informed judgment germane to the action being proposed (10)

**successional stage** - A stage or recognizable condition of a plant community that 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 timber, young timber, mature timber, old-growth timber. (2)

**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. (1) (2) (FSM 1905)

**suitable forest land** - Land to be managed for timber production on a regulated basis

**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 (8)

**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. (See **price-quantity relationship**)

**suppression** - The process of extinguishing or confining fire. (2)

**sustained-yield of products and services** - 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 of the productivity of the land. (1) (6)

## T

**targets** - Pacific Northwest Regional RPA output and activity levels which are assigned to the 19 Forests in the Region.

**technology change** - A change in the relationship between inputs and outputs in a production process resulting from the implementation of new technology, or a new application of existing technology. (10)

**tentatively suitable forest land** - Forest land that is producing or is capable of producing crops of industrial wood and, (a) has not been withdrawn by Congress, the Secretary, or the Chief, (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions, (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within five years after final harvest; and (d) 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 (3)

**threatened and endangered (T&E) species** - See **threatened**; see **endangered**.

**threatened species** - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also **endangered species**.) (2)

**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 analyses (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** - Forest land is classified under each of the land management alternatives according to how it relates to the management of the timber resource. The following are definitions of timber classifications used for this purpose.

**nonforest** - Land that has never supported forests and land formerly forested where use for timber production is precluded by development or other uses.

**forest** - 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.

**suitable** - Commercial forest land identified as appropriate for timber production in the forest planning process

**unsuitable** - Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness) or identified as not appropriate for timber production in the forest planning process.

**timber harvest schedule** - See **sale schedule**.

**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. For purposes of Forest planning, the term "timber production" does not include production of fuelwood or harvest of unsuitable lands. (1) (2)

**timber sale program quantity (TSPQ)** - The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (ASQ) (chargeable volume) and any additional material (nonchargeable volume) planned for sale. Expressed as the average for the first decade

**timber stand improvement (TSI)** - Measures such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, or poisoning of unwanted trees aimed at improving the growing condition of the remaining trees. (2)

**topography** - The configuration of a surface including its relief, elevation, and the position of its natural and human-created features. (6)

**Total Resource Information system** - See **TRI**

**total suspended particulates (TSP)** - Any finely divided material (solid or liquid) that is airborne with an aerodynamic diameter smaller than a few hundred micrometers

**tractor logging** - Any logging method which uses a tractor or other mobile surface units as the motive power for transporting logs from the stumps to a collecting point—whether by dragging or carrying the logs. (3)

**tradeoff** - The combination of benefits and costs which are gained and lost in switching between alternative courses of action. Trade-offs include only those portions of benefits and costs which are not common to all alternative courses of action under consideration. (6)

**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. (6)

**TRI** - A natural resource data base used on National Forests in the Pacific Northwest (Washington and Oregon) to provide storage and retrieval for in-place resource data. TRI system is a multimedia information system using maps, aerial photographs, paper forms, microfilm, and computer storage to handle large volumes of data.

**TRI compartment** - An orthophoto map area for indexing and storing data locations. The scale is 4" = 1 mile, and covers approximately 6,500 to 8,000 acres, with boundaries on photo-identifiable features. Each compartment has a unique name and number used for information storage on the orthophoto maps and in the USDA Fort Collins Computer Center

**TRI-counties** - Baker, Union, and Wallowa Counties of Oregon -- the primary impact area of the Wallowa-Whitman National Forest

**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. (6)

**undeveloped area** - Portion of the National Forest that is essentially unroaded.

**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. (1)

**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:

individual tree selection cutting - The removal of selected trees of all size classes on an individual basis.

group selection cutting - The removal of all trees in groups for regeneration purposes. The size of the group will be small enough in area that all subsequent regeneration will be influenced by the surrounding uncut stand. Cuts are generally .25 - 2.0 acres in size.

**ungulate** - A mammal with hooves (8)

**unplanned ignition** - A fire started at random by either natural or human causes, or a deliberate incendiary fire

**unregulated** - Timber which was not considered (because of land allocations or condition of trees) in calculating a base sale schedule or departure. Unregulated timber includes salvage of epidemic mortality, volumes of cull material, or green volumes from unsuited lands.

**unsatisfactory range condition** - Allotment does not meet criteria for satisfactory condition (See **satisfactory range condition**.)

**utility corridor** - A strip of land, up to approximately 600 feet in width, designated for the transportation of people, energy, commodities, and communications by: railroad, state highway, electrical power transmission (66 KV and above), and/or oil, gas, and coal slurry pipelines 10 inches in diameter and larger; and telecommunication cable and electronic sites for interstate use (See also **corridor**.) (1)

**utilization standards** - Standards guiding the projection of timber yields and the use and removal of timber. The standards are described in terms of minimum diameter at breast height, minimum length, and percent soundness of the wood, as appropriate. (1)

## V

**variety classes** - Variety Classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality.

The classification is based on the premise that all landscapes have some value, but those with the most variety or diversity have the greatest potential for high scenic value.

There are three variety classes which identify the scenic quality of the natural landscape:

- Class A - Distinctive
- Class B - Common
- Class C - Minimal

**vegetative management** - Activities designed primarily to promote the health of the crop forest cover for multiple-use purposes.

**vertical relief** - A contour variation of the land surface perpendicular in relation to the surrounding land. (3) (4)

**viable population** - A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population on the planning area. (FSM 1905)

**viewshed** - Portion of the Forest that is seen from a major travel route, or high use location.

**visual absorption capacity (VAC)** - The physical capability of the land to support management activities without significantly affecting its visual character. Rated as high, moderate, and low.

HIGH (H) - High visual capability to absorb change  
MODERATE (M) - Moderate visual capability to absorb change  
LOW (L) - Low visual capability to absorb change

**visual quality objective (VQO)** - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

preservation (P) - Ecological changes only.

retention (R) - Management activities should not be evident to the casual Forest visitor

partial retention (PR) - Management activities remain visually subordinate to the characteristic landscape.

modification (M) - Management activities 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 middleground.

maximum modification (MM) - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background

enhancement - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists. (2)

**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 (2)

## W

**water rights** - Rights to divert and use water or to use it in place.

**water yield** - The measured output of the Forest's streams. (6)

**watershed** - The entire land area that contributes water to a drainage system or stream (6)

**wetlands** - Areas that are inundated by surface or ground water often enough to support, and usually do support, primarily plants and animals that require saturated or seasonally saturated soil conditions for growth and reproduction. (E.O. 11990)

**wild and scenic river** - Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended. Wild and scenic rivers may be classified and administered under one or more of the following categories:

**wild river areas** - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted

**scenic river areas** - 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

**recreational river areas** - 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. (2) (6)

Other terms pertaining to wild, scenic, and recreational river designation include

*potential rivers* - Rivers on the National Rivers Inventory, as well as those identified by the Forest Service as having "potential" for designation as Wild and Scenic Rivers, which flow partly or wholly through the Forest. These may or may not include rivers formally designated as "potential" by the Secretaries of Agriculture and the Interior under Section 5(d) of the W&SRA

*eligible rivers* - Those rivers found to be eligible for Wild and Scenic status according to resource considerations and in accordance with the Final Revised Guidelines for Eligibility, *Federal Register*, Vol. 47, no 173, September 7, 1982 NRI rivers are not automatically eligible.

*suitable rivers* - Those eligible rivers found to be suitable for recommendation to Congress as a component of the National Wild and Scenic River System. Such a determination would be conducted *only* on rivers that are eligible. While there are no nationally recognized guidelines for a suitability determination, the following should be considered the amount of private land and its use, state and local government as well as public interest, and cost involved. In other words, the eligibility study considers the resources, and the suitability study includes political, economic, and public interest considerations.

*study rivers* - Those rivers formally designated by Congress to be studied under Sections 5(a) and 5(b) of the W&SRA. Only one stream in the Pacific Northwest, the North Umpqua, is currently in this category.

*recommended rivers* - Those rivers which are found to be eligible and suitable, and which are recommended to Congress to become components of the National Wild and Scenic River System. In the past, such a recommendation has usually been made only after Congress first directed that a study be made under provisions of Sections 5(a) and 5(b) of the W&SRA. However, this does not preclude agency-initiated studies.

**wilderness** - Areas designated by congressional action under the 1964 Wilderness Act. 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 a primitive and unconfined type of recreation, 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. (2)

**Wilderness Recreation Spectrum (WRS)** - A further refinement of the primitive portion of the ROS. The following terms deal only with officially designated wilderness.

**primitive trailed** - The sights, sounds, and smells relating to human activities outside the wilderness are essentially non-existent. The same factors relating to human activities within the

wilderness are minimized. An **extremely high opportunity** exists for exploring and experiencing considerable isolation, tranquility, and self-reliance.

**primitive trailless** - The most remote, generally the core area which is least accessible. Terrain, vegetation, trail density, and reasonable travel methods provide an area generally large enough to allow at least two days of cross-country travel without crossing a constructed trail. A **most outstanding** opportunity exists for isolation and solitude free from evidence of past human activity.

**semiprimitive trailed** - The least remote; generally those areas nearest trailheads and major access points or the wilderness periphery where the sights, smells, and sounds of human activities both within and outside the wilderness are affecting the wilderness visitor. Opportunities for a wilderness-related experience are only **moderate**.

**wildlife and fish user day (WFUD)** - Twelve visitor hours which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

**wildfire** - Any wildland fire that is not a prescribed fire. (See also **prescribed fire**.) (2)

**winter range** - A range usually at lower elevation, used by migratory deer and elk during the winter months; usually smaller and better-defined than summer ranges. The criterion for mapping big-game winter range was. These ranges represent the area occupied by approximately 90 percent of the elk population from December 1 to April 1, two out of three winters.

**withdrawal** - A legislative or administrative order removing specific land areas from availability for certain uses.

**wolf plant** - A plant species generally considered to be palatable, but which is not grazed. Absence of grazing allows the plant to evolve into a relatively large, coarse form intermixed with dead previous year's growth. Extensive root development allows the plant to successfully exclude competition from younger plants. The resulting coarse growth is less palatable and produces less forage growth than identical species exposed to periodic grazing.

**wood fiber production** - The growing, tending, harvesting, and regeneration of harvestable trees.

**woody material** - Organic materials necessary for stream channel stability and maintenance of watershed condition. It includes large logs and root wads.

**working circle (WC)** - A geographic division of the Forest created for administrative or marketing purposes. (3)

**working group** - A grouping of community types or forest types indicative of timber productivity.

## X, Y, Z

**xeric** - A dry soil moisture regime. Some moisture is present but does not occur at optimum levels for plant growth. Irrigation or summer fallow is often necessary for crop production. (3)

**yarding** - Hauling timber from the stump to a collection point (2)

**yield tables** - Tables that estimate the level of outputs that would result from implementing a particular activity. Usually referred to in conjunction with FORPLAN 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.



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