

before it has a chance to get old and coarse, then leaving the regrowth for big game, increases quality of winter forage. Livestock browsing on shrub winter ranges, however, decreases the value of these areas for wintering big game, as does heavy use on grass ranges, thus resulting in displacement of winter big game and/or reduction in carrying capacity of big game winter ranges.

Effects of Alternatives on Threatened, Endangered, and Sensitive Species

The bald eagle and peregrine falcon are the only two Federally listed threatened and endangered species known to occur on the Forest. The bald eagle uses parts of the Forest for winter roosting and feeding. Infrequent sightings of the peregrine indicate migrating individuals; no nest sites have been found. Under each alternative, their habitats, either known or when found in the future, will be managed to meet the intent of the recovery plans for both species. Conservation measures for the bald eagle include road closures in and around their roosting sites, supplemental feeding stations near winter roosting areas, and allocations for protection of known roosting sites. Consultation procedures with the U. S. Fish and Wildlife Service for threatened and endangered species will be carried out as required under the Endangered Species Act. All alternatives equally protect eagle and falcon habitat as required by law.

Sensitive wildlife species, listed in "Rare, Threatened and Endangered Plants and Animals of Oregon," 1985, and the Regional Forester's list (FSM 2670), that are known or suspected to occur on the Forest or Grassland are Swainson's hawk and the wolverine. The Swainson's hawk is known to use primarily juniper for nesting purposes. Juniper is located along the Forest fringes and on the Grassland. None of the alternatives are anticipated to reduce nesting habitat below existing levels.

The wolverine, classified by the State of Oregon as a threatened species, has had sightings reported in recent years (Utzinger, 1985). Because of their large home range and habitat requirements, alternatives such as C-Modified, with less roading and less intensively managed acres, would favor wolverine more than commodity-oriented alternatives.

Three additional species (Cooper's hawk, golden eagle, and prairie falcon) are considered species that require special consideration because of their nesting habitat requirements. The Cooper's hawk utilizes young, dense stands of ponderosa pine. Alternatives which include precommercial thinning on these stands could have effect on nesting opportunities for this species. The prairie falcon and golden eagle are primarily cliff nesters. All alternatives will control management activities that might disrupt the nesting cycle.

Effects by Alternatives on Pileated Woodpeckers

The pileated woodpecker is a management indicator species for old growth habitat. It serves as the surrogate for a guild of species which require old growth forest for habitat. There are constraints on management activities in areas allocated to old growth (see Appendix D). The major consequence of the alternatives on old growth dependent wildlife species will be the amount of old growth allocated in any alternative. Acreage currently in an old growth habitat condition, estimated to be 93,800 acres, declines in all alternatives as stands are entered for timber harvest. Alternative C-Modified would retain the most old growth, whereas No Change and B-Modified have the least remaining after five decades. See the Old Growth section of this chapter for more detail on effects by alternative on old growth dependent species, and Appendix F.

Effects by Alternative on Primary Cavity Excavators

The alternatives and their objectives, as described in Chapter 2, provide different levels of snags for primary cavity excavator habitat. Table 2-8, Chapter 2, displays the estimated percent of maximum potential population by alternative. The 100-percent level occurs when the number, size, and spatial distribution of snags are not limiting to the population. The habitat levels depicted represent an average for all the management areas in each alternative. However, for each alternative, snag levels vary by management area, generally ranging from 40 to 80 percent, except wilderness, unroaded areas, and other less intensively timber managed lands, which provide 100-percent levels.

Snag levels are unknown for Alternative No Change because data is unavailable for it. However, it is estimated to be about the same as Alternative A (46-52 percent of potential). This is a moderate level of habitat.

Snag levels for alternatives E-Departure and I are also both moderate (E-Departure 46-55 percent; and I 47-54 percent).

Alternative C-Modified has a potentially higher level of habitat, at 51-69 percent of the potential population.

Alternative B-Modified provides a low level of habitat starting at 43 percent and dropping to 33 percent of potential by the fifth decade. This is above the NFMA management requirement level of 20 percent of the potential population, as such it should maintain a viable populations of primary cavity excavators, but at much lower population levels than the other alternatives above.

The common flicker was identified as a specific primary cavity excavator (indicator species) to represent juniper old growth habitat. It is probably the only avian species capable of creating cavities in juniper (Thomas, 1979). It is not anticipated that juniper habitat will become a limiting factor in any alternative. However, due to the fact that juniper cutting and burning will be done for deer habitat, range improvement, and fuelwood cutting, Alternatives I and B-Modified have identified stands of juniper on the Grassland to be retained undisturbed for old growth juniper characteristics. Fifteen stands of juniper, for a total of 740 acres, are identified in both of those alternatives. No juniper stands are protected in the other alternatives, nor on the National Forest in any alternative.

Effects by Alternative on Rainbow and Brook Trout

Rainbow and brook trout are treated as indicator species for riparian habitat. It is assumed that if requirements for rainbow trout are adequately met, the aquatic system will also be suitable for steelhead spawning.

Timber harvest, road construction, livestock grazing, recreation, fire, and watershed structural improvements all affect riparian habitat, which affects fisheries. Discussion of the effects of alternatives on riparian condition are given under the water section of this chapter.

In this respect, resident trout numbers would vary somewhat by alternative (see Chapter 2, Table 2-8). Alternatives No Change and A have two riparian prescriptions (see Chapter 2 and Appendix D for a discussion of riparian prescriptions) with 17 watersheds going to a fair condition class and seven watersheds going to an excellent condition class. Fish numbers are lower in these two alternatives because of the seventeen watersheds being maintained in fair condition.

Alternative E-Departure has 17 watersheds going to excellent prescription and seven going to a fair prescription. Fish numbers are higher than in alternatives NC and A because of fewer watersheds being maintained in fair condition. Cottonwood Creek and Rock Creek unroaded tributaries of the John Day are planned for development.

Alternatives B-Modified, C-Modified and I have all watersheds being managed under an excellent riparian prescription and, therefore, are predicted to provide the highest resident trout numbers.

Effects by Alternative on Anadromous Fish

All alternatives are assumed to have the same effect on steelhead populations (see Chapter 2, Table 2-8). This is because in all alternatives, the watersheds with anadromous fish are all priority streams for riparian improvement to excellent condition. It is recognized, however, that alternatives which have greater levels of industrial and commodity management activity pose greater risk and higher cost for maintaining or improving anadromous fish spawning habitat. Therefore, Alternatives No Change, A, B-Modified, and E-Departure favor fisheries the least, Alternative I is better relatively speaking, and C-Modified, the best in respect to the six alternatives treated.

Indirect Effects

Increases or decreases in wildlife and fish populations have indirect effects on activities and businesses related to hunting, fishing and wildlife viewing recreation opportunities. See Table 2-8, Chapter 2 for estimations of recreation use by alternative. Also see the Recreation section of this chapter.

Wildlife and fish populations affect social and economic considerations. The requirements incorporated into alternatives to produce higher levels of wildlife populations can limit timber management which decreases jobs in that sector. At the same time, recreation related jobs and services may be increased. Central Oregon lifestyles relate indirectly to fish and wildlife populations. For further discussion of social and economic considerations, see the Social and Economic section, this Chapter and Appendix B.

Providing habitat that results in large populations of free-ranging big game animals results in conflicts with farms and ranches, damaging crops and fences, and competing with domestic stock when animals drift or migrate off public lands onto private lands in winter.

Cumulative Effects

Continuing and widespread management activities, timber management practices applied uniformly over the Forest, improved access and increased human presence contribute to reduced habitat effectiveness for wildlife, increase stress at critical periods, and increase hunter access. When considered in total over time these effects can be cumulative and impact wildland resources through reductions in certain wildlife populations, habitat loss and reduced diversity. Alternatives such as E-Departure, B-Modified, A and No Change, which promote intensive development and utilization of resources, are thought to be more likely follow a scenario of this kind.

Conversely, large acreages of undeveloped and inaccessible land increase the risk of epidemic insect outbreaks, wildfire or other natural catastrophe which may result in significant long term economic and habitat loss. The utilization argument is to manage

wildland resources to prevent this kind of catastrophic loss of resource and impacts, and thus better maintain a sustained level and of fish and wildlife production over time. Alternative C-Modified would represent the least intensive management (for commodity resources) over time.

Other practices on the Forest can have cumulative effects, e.g. salvage and firewood cutting have impacted the snag habitat over time on the Forest; clearing of vegetation, silviculture activities and roads alter timing, flows and sediment for streams, thus potentially affecting fish habitat over time; and, cumulative effects of past management practices are reflected in condition of riparian areas in places.

Mitigation Measures

Mitigation measures are intended to minimize or eliminate potential conflicts or adverse effects of implementation. Mitigation measures have been developed through interdisciplinary efforts and incorporated into the Plans at different levels in several different ways.

The standards and guidelines (Appendix D) and management area prescriptions in Chapter 2, are a fundamental and integral part of these measures, and as such they are a basic and essential part of the analysis. These apply to such things as road closures which are utilized to reduce harassment of big game, especially during critical periods. Road closures have been found to be very effective for mitigating loss of other big game habitat components, and are accomplished by either physically restricting access or by the "green-dot system," which provides for seasonal road closures during the hunting season. In addition to benefitting big game, road closures can be employed to restrict access for firewood cutters, which helps insure planned snag density levels are maintained. Practices which may be employed to improve or maintain wildlife habitat and timing of activities can be a way to mitigate adverse effects, such as during raptor nesting and big game calving/fawning periods. Restoration practices such as woody debris placement, channel and erosion structures, planting, seeding and fencing, and improved grazing systems and road design are also mitigation measures which have been found to be very effective.

The allocations (see Chapter 2) play an important role in mitigation by the separation of incompatible uses, impacts and conflicts. Allocations relate to protection of riparian areas, old growth, unroaded areas, wildernesses and others which, when viewed in total across the Forest or Grassland, contribute to the habitat mosaic and diversity. This is probably the most effective method for mitigating forest-wide impacts to wildlife and fish resources.

National Forest Management Act (NFMA) requirements were incorporated into the planning process and are reflected in the allocations and standards and guidelines (see Appendix B and Appendix F). These requirements assure that in all cases adequate habitat is provided to maintain viable populations of wildlife.

“General Water Quality Best Management Practices” (USDA Forest Service, Pacific Northwest Region, November 1988. 86p) are incorporated by reference under requirements of Section 319 of the Clean Water Act. The BMP’s assure water quality requirements, and hence fish habitat, are protected.

Mitigation measures are developed at the site specific project level of planning, and projects are “tiered” to other planning levels above. Project level application controls what actually occurs on the ground.

Conflicts with Other Plans and Policies

None are known to exist.

The Relationship Between Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity

From the perspective that each generation is trustee of the environment for succeeding generations, an objective of this plan is to provide for the proper and continued development of resources in a manner that maintains economic stability, yet retains local natural heritages, such as wildlife habitat, outdoor recreation opportunities, water quality, scenic qualities and open range. The preferred alternative emphasizes a balanced mix of uses and also attempts to provide for the protection of other resources (soil, water, wildlife habitat, aesthetics) over the long term.

While the plan proposes short term harvest of timber, sustaining or improving long term productivity is planned through intensive forest management practices (e.g. reforestation, thinnings). Lands identified as unsuitable for sustained timber yield management have been allocated for soil, watershed or wildlife habitat protection. Dispersion of timber harvest activity, retention of old growth and protection of riparian areas have all been planned in order to prevent impairment of long term land and resource productivity.

Construction of roads, mechanical slash piling, and logskidding are examples of activities that are short-term uses, but can reduce long term vegetation productivity on specific places where they occur.

Increases in road densities, improvements in access, subsequent increases in human presence and continuing and ongoing expansion of management activities proposed herein have the potential in the short term to create effects that could cumulatively affect long term productivity of wildlife habitats, aquatic systems and local socio-economic developments.

The allocation of land to uses other than timber production may affect timber supply in the short term, but it retains future management options and does not rule out the possibility of future harvest in the event of emergency or change.

Irreversible and Irretrievable Commitments of Resources Associated with the Preferred Alternative (I)

This plan deals with both developed and undeveloped (roadless) lands. Lands where road systems, plantations, thinnings and structures are established represent an economic commitment. These investments represent "sunk funds" from an economic standpoint, and are not retrievable; nor do they necessarily have any liquidity over the planning period.

The specific acres, estimated to be one percent of the total Forest and Grassland area, on which permanent roads and facilities are constructed constitute an irretrievable, and for all practical purposes irreversible, loss of soil vegetation productivity and unaltered landscape.

Continued avoidance of cultural resource sites (as opposed to evaluation/mitigation/clearance) tends to undermine efforts to acquire data which would expedite future site evaluations. Data recovery

projects ultimately enhance the Forest's ability to manage its cultural resources. Data recovery efforts represent, in essence, the scientific and controlled destruction of a cultural resource site. Once undertaken, the effects of data recovery are irreversible; this mitigation measure represents an irretrievable commitment to the resource.

Use of rock for road surfacing and construction purposes, estimated to be 147,850 cubic yards annually on the Forest and Grassland, is an irreversible commitment of a resource, but is not considered critical because of the abundant availability of good quality rock in this locale.

Undeveloped or unroaded areas once allocated for development will, in a relatively short time, no longer be suitable for wilderness classification. Wilderness designation is considered a permanent commitment. Congress could reverse this designation but this is extremely unlikely.

In the case of lands already intensively developed by roading, a high degree of irreversibility exists. With undeveloped lands, frequently a wide range of management options exists.

Dasmann, et. al., in *Ecological Principles for Economic Development*, 1973, (pp. 22-23), recognized six broad development levels for lands, each representing a progressively greater commitment of resources. The development levels are:

- 1) The land can be left in a completely natural state and reserved for scientific study, educational use, wilderness, watershed protection and its contribution to landscape stability.
- 2) It may be used as a park, refuge or reserve with the natural scene remaining largely undisturbed to serve as a setting for outdoor recreation and attraction of tourism.
- 3) It might be used for limited harvest of its wild vegetation or animal life, but maintained for the most part in a wild state, serving to maintain landscape stability, support certain kinds of scientific or educational uses, provide for some recreation and tourism and yield certain commodities from its wild populations.

- 4) It can be used for more intensive utilization of its wild products as in forest production, pasture for domestic stock, recreation, or intensive wildlife production. In this case, its value as a wild area for scientific study diminishes, but it gains usefulness for other kinds of scientific and educational uses. Its value for some tourism and outdoor recreation diminishes, but is not necessarily lost. Its role in landscape and watershed stability is changed, but may be maintained at a relatively high level.
- 5) The wild vegetation and animal life having been removed in part, it can be intensively utilized for the cultivation of planted tree crops, pastures or farming crops.
- 6) The wild vegetation and animal life having been almost completely removed, it can be used for intensive urban, industrial or transportation purposes.

Using these development levels, Tables 4-37, 4-38 and 4-39 display the extent of irreversibility proposed by the preferred alternative (I).

So long as the first three choices are taken, the option remains open to change to any of the others. In the fourth choice, the options for restoring the land to any of the first three levels are reduced, but not eliminated. Lands allocated to development are likely to approach the fifth level. This would largely prohibit any shift to the lower level on those acres.

With the resource allocations proposed in the preferred alternative, 19 percent of the lands will be managed in categories of "low or moderate" irreversibility, 80 percent will be managed for intensive timber and range production or "moderately high" irreversibility, and one percent will be committed to roads and administrative sites which represent "high" irreversibility.

Unavoidable Environmental Effects Associated with the Preferred Alternative (I)

Air Quality

Prescribed fire use will contribute to total suspended particulates (TSP) in the atmosphere, and will result in a temporary increase in haze and localized impairment of visibility. The FEIS on Managing Competing and Unwanted Vegetation (U.S.D.A. Forest Service, 1988) provides a detailed investigation into the effects of smoke on human health. The following is a summary of that investigation pertinent to this FEIS.

Short term effects due to high level exposures immediately adjacent to prescribed fires or wildfires include "...eye irritation, coughing, and shortness of breath in moderate-to-heavy smoke..." This type of exposure is generally experienced only by forest workers since the general public is not normally involved in such activities.

Documentation of adverse effects from long-term exposure to wildland fire smoke is virtually nonexistent. Forest workers are at some risk of such low-level exposure contributing to such health effects as emphysema or lung cancer. Long-term effects from even lower levels of smoke experienced by the public-at-large are less well known. Individuals with chronic lung disease or other respiratory ailments may experience additional irritation from the infrequent episodes of stagnated smoky airmasses.

There are a number of potentially toxic components known to exist in wildland smoke. However, the levels experienced under normal conditions and exposures are well below any levels known to cause harmful effects on humans. Some of the more common are carbon monox-

TABLE 4-37
Acreeage by Levels of Irreversibility in Alternative I
(The Preferred Final for the National Forest)

Management Areas	Irreversibility					
	Low 1	2	3	4	5	High 6
MA-F1	13,400					
MA-F2	5,400					
MA-F3	17,400					
MA-F4	1,125					
MA-F5	4,400					
MA-F6	19,250					
MA-F7		170	9,390			
MA-F8		11,820				
MA-F9			2,480			
MA-F10		3,110				
MA-F11		7,750	7,910			
MA-F12			570			
MA-F13				1,810		
MA-F14			1,970			
MA-F15			18,130			
MA-F16			1,580			
MA-F17			1,070			
MA-F18			2,560			
MA-F19			770			
MA-F20				64,130		
MA-F21				107,360		
MA-F22				496,850		
MA-F23			1,830			
MA-F24		830				
MA-F25			6,850			
MA-F26			33,260			
MA-F27			1,000			
MA-F28						460
TOTAL ACRES	60,975	23,680	89,370	670,150	0	460
Minus Roads	60,750	23,680	88,340	661,700	0	460
						+9,720 *
Net Acres	60,750	23,680	88,340	661,700	0	10,180
Percent of Forest	7	3	10	79	0	1

* Acres included in roads

TABLE 4-38
Acres by Levels of Irreversibility in Alternative I
(The Preferred Final for the Forest and Grassland)

Management Areas	Irreversibility					
	Low 1	2	3	4	5	High 6
MA-G1	110			22,700		
MA-G2				12,740		
MA-G3				59,440		
MA-G4						
MA-G5			740			
MA-G6			720			
MA-G7			650			
MA-G8			7,840			
MA-G9				2,110		
MA-G10			430			
MA-G11					150	
MA-G12					2,690	
MA-G13			560			
MA-G14				90		
MA-G15						80
MA-G16						460
TOTAL ACRES	61,085	34,620	91,570	767,870	0	1,000
Minus Roads	110	10,800	2,090	96,600	0	540
						+1,280 *
Net Acres	110	10,800	2,090	96,600	0	1,820
Percent of Grassland	<1	10	2	86	0<2	

* Acres included in roads

TABLE 4-39
FOREST AND GRASSLAND TOTALS BY
LEVELS OF IRREVERSIBILITY

	irreversibility					
	Low 1	2	3	4	5	High 6
Net Acres - Forest and Grassland 1/	60,860	34,480	90,430	766,750	0	12,000
Percent Total Acres Forest and Grassland	6	4	9	80	0	1

1/ Total acres less roads

ide, carbon dioxide, carbon particles, and trace amounts of a number of chemicals that may enter the lungs on the surface of particulate matter. Close to 90 percent of the particulate matter is small enough (less than 2.5 microns diameter) to penetrate deeply into the lungs.

Some of the components (polycyclic aromatic hydrocarbons) are known carcinogens under exposures much higher than that documented from wildland smoke. Other components, such as the aldehydes, are acute irritants. These are most likely to affect forest workers who receive high exposures at burn sites.

Because of the regional scope of visibility effects and problems, Region 6 of the Forest Service has been conducting cumulative effects analysis on TSP production through subregional analysis of emissions (for example, Eastern Oregon). The FEIS for Managing Competing and Unwanted Vegetation (U.S.D.A. Forest Service, 1988) contains the latest information on this continuing analysis. In that analysis, the Ochoco National Forest contributed approximately 15 percent of the emissions from Forest Service sources in Eastern Oregon. The Eastern Oregon subregion is projected to reduce emissions by 23 percent under the selected alternative in the Vegetation Management Plan. The Ochoco National Forest and Crooked River National Grasslands will contribute to that reduction in all of the Alternatives in this FEIS.

The projected reductions in emissions for the preferred alternative should continue to widen the gap between probable exposures and any possible health effects; chronic or acute.

Biological Diversity

Forest vegetation will be altered in respect to species composition, stand structure and age. With the exception of about 10 percent retained in old growth, RNA's and wilderness, existing mature forest on suitable lands will be subject to management treatments, including harvesting of mixed conifer timber

stands and, where feasible, replacement with more economically or silviculturally desirable species (primarily ponderosa pine). Other management treatments include overstory removal of old-growth ponderosa pine from multi-storied stands, resulting in reduction in basal area, and removal of less desirable species in densely forested areas by thinnings. Intensively managed or regulated forests may provide less habitat for species dependent on old growth forest, snags and down material; less species diversity and habitat diversity; and fewer scenic settings.

Cultural Resources

Current procedures cannot insure that all cultural resource sites will be located. Some sites could be inadvertently destroyed or damaged. Such impacts are unavoidable pending advances in inventory techniques.

Forage and Livestock Use

The direction in the Plans to improve riparian conditions may initially result in increased costs in grazing management; e.g., in installation of improvements (fencing and water developments), herding and transport to control stock distribution and use and possible slight reductions in stocking levels.

Recreation

With the exception of the areas designated wilderness (4 percent), or allocated to roadless management (4 percent), opportunities for primitive recreation, solitude, and recreation in natural settings unaltered by man will decrease over time.

Social and Economic

Levels of commodity and amenity resources provided by the Forest and Grassland may decrease over time in response to changing conditions and legal requirements. Decreases in timber harvest levels

or amenity resources may have direct socio-economic effects on local communities, governments and businesses in terms of socio-economic variables such as occupational lifestyles, leisure, attitudes, beliefs, values and community institutions.

Forest users will encounter more controls and restrictions as management intensity, resource competition and human population continue to increase over time.

Soil

Soil displacement or erosion can be expected to result from planned management activities, such as vegetation removal, slash disposal, log skidding, prescribed fire, construction and maintenance of roads, trails, transmission facilities, recreation sites and others. Soil productivity will be maintained, except for sites dedicated to roads, skid trails, log landings, recreation sites and other facilities or uses that may compact the soil, alter soil profiles or deplete nutrients. An estimated one percent of the Forest and Grassland area will be occupied by permanent roads or facilities. Experience has shown that temporary road surfaces can be revegetated, but the productivity is reduced. Forest-wide an estimated ten percent of cable-logged areas and thirty percent of tractor logged areas will experience increases in soil bulk densities or compaction. These factors, in turn, have indirect effects relating to reduced wildlife habitat, vegetation productivity, incidence and spread of noxious weeds, and increases in stream sedimentation over time.

Scenic Resources

The overall natural appearance of the Forest will change over time, giving way to more dominance by management activities and effects of management.

Wildlife and Fish

Increased road densities (and access), and ongoing expansion of management activities can result in reduction of wildlife security. Physiological stress in wildlife species may therefore result in altered behavior and productivity. This is likely to change attitudes and experiences of hunters over time.

Other Specifically Required Disclosures

Effects on Consumers, Civil Rights, Minority Groups, and Women

Federal and State Human Resource Programs, Civil Rights and Minorities

The Forest and Grassland will continue to participate in these programs in accordance with laws, administrative opportunities and economic availability of programs. Minorities or economically disadvantaged groups should not be adversely affected by the preferred alternative (I).

Alternatives involving reduced recreational attractions and fewer government jobs could have an effect on employment of women. Fewer recreation opportunities may mean local merchants benefit less, and are less apt to hire people for low wage jobs traditionally held by women in this locale.

Effects on Prime Farmland, Rangeland, and Forest Land

All the proposed actions in alternatives are consistent with the intent of the Secretary of Agriculture direction (FSH 1909.15) for protecting and managing prime lands.

Effects on Prime Farmland, Rangeland, and Forest Land

All the proposed actions in alternatives are consistent with the intent of the Secretary of Agriculture direction (FSH 1909.15) for protecting and managing prime lands.

Effects on Wetlands and Floodplains

Consideration for floodplain management, as required by Executive Order 11988, and protection of wetlands, Executive Order 11990, are incorporated into all alternatives by virtue of the respective executive orders.

Effects on Threatened and Endangered Species, and Critical Habitat

The only Federally listed species which occasionally are observed on the Forest and Grassland are the peregrine falcon and bald eagle. Neither is a known permanent resident in the area, even though roosting sites for both bald and golden eagles are known to exist and have received legally required protection under all of the alternatives.

All Federally listed species are protected in all alternatives regardless of the management direction that may apply to the area where they are found (see Effects on Wildlife and Fish, this chapter, for more thorough discussion on threatened and endangered species).

Natural or Depletable Resource Requirements (including energy), and Conservation Potential of the Alternatives and Mitigation

Measures.

Methods to estimate the impacts of various management activities on energy resources have been outlined by Schwarzbart and Schmitz (1982). Prestructured energy coefficients in terms of British Thermal Units (BTU's) applicable to resource management activities in the Pacific Northwest are provided in the above source.

Analyses conducted on other National Forests in the course of environmental impact assessment and forest planning indicate, without exception, that the energy required to implement alternatives is more than the energy produced. The range that planned National Forest activities' energy consumption exceeds energy yields has been shown to be in the magnitude of two to six billion BTU's/decade. The amount of energy deficit per alternative as a general rule is directly proportional to timber harvest volumes projected. Alternatives providing maximum timber yields generally require intensified timber cultural activities and more road construction and maintenance, both being spread across a greater land area. Therefore, efforts to maximize timber production or commodity production under current states of technology lead to proportionally greater amounts of energy consumption.

Activities on the Forest and Grassland which may have a positive net energy balance are firewood gathering and forage production. Generally, all other activities consume more energy than they produce.

Effects of the Alternatives on Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment Including the Re-use and Conservation Potential of Various Alternatives and Mitigation Measures

This FEIS deals with wildland resources and as such does not directly affect urban quality, or historic or cultural resources within an urban environment.

Conflicts with other Federal, Regional, State, and Local Plans (including Indian Reservation Plans)

County Plans

Regulations require Forests to coordinate with other public planning efforts (36 CFR 219.7) during the planning process. Accordingly, comprehensive plans for the six counties and the Warm Springs Reservation were reviewed.

The Crook County - Prineville Area Comprehensive Plan, issued in 1978, sets forth many objectives. Protection of the current timber industry is a primary topic, but concerns about grazing for livestock and wildlife, recreational opportunities, and environmental needs (especially protection of water and soil) are all mentioned. As an overall goal, the county plan states:

“It shall be the policy of the county to support forest land use and management decisions which maximize the present level of benefitting uses; specific emphasis shall be on timber production to sustain the existing forest products industry, forage production to maintain at least the existing levels of livestock and wildlife habitat, protection of water quantities and quality and to maintain existing dispersed recreation level 5 in coordination with the USFS planning and management programs” (p. 53).

If Alternative C-Modified was selected, it might be perceived as conflicting with the goal “to sustain the county forest products industry.” Conversely, Alternative B-Modified might be judged as not being

entirely compatible with the goal to protect wildlife, soil and water. Alternative I (Preferred) would appear to be consistent with the county’s overall goal.

The Deschutes County Year 2000 Comprehensive Plan, issued in 1979, makes no mention of the Ochoco National Forest or the Crooked River National Grassland. Its general emphasis on the importance of timber, or tourism, and of multiple resource management is similar to the concerns of the other counties. No conflict is anticipated with the Deschutes County plan.

The 1969 Grant County plan expresses concern about the timber harvest level from Federally-owned lands, but makes no policy statement regarding desirable harvest levels. Other concerns include the quantity and quality of forage, the quantity of water, the desirability of increasing recreation, and the importance of multiple use. No conflict is foreseen with the objectives of this 1969 plan.

The Harney County Comprehensive Plan (1979) discusses the importance of National Forest land (the Ochoco and the Malheur) as sources of timber, grazing, recreation, fish and wildlife, and water. The plan supports the adoption of the preferred alternative in the Forest Service “Silvies-Malheur Unit Plan.” This implies support for a mixture of uses similar to the Forest’s present management.

The Jefferson County Comprehensive Plan, adopted in 1981, refers to the Crooked River National Grassland, but not to the Ochoco National Forest. The present management of the Grassland is supported. Except for the statement, “The County does not support the creation of additional Wilderness Areas inside Jefferson County” (p. 145), there do not appear to be conflicts with the Jefferson County plan.

A Wheeler County Comprehensive Plan was adopted in 1980. It examines concerns such as the supply of timber, forage, recreation, and water, but sets no official objectives. No conflicts are foreseen between Wheeler County policies and the effects of any alternative.

Warm Springs Indian Reservation Comprehensive Plan

The Warm Springs Indian Reservation Comprehensive Plan contains no references to the Forest or the Grassland. In the planning process, a number of meetings were held with representatives of the Confederated Tribes of the Warm Springs Reservation. Concerns expressed included availability of access to the Forest and Grassland, being able to gather plant materials, support of prescribed burning, protection of archaeological sites, and the general availability of Forest and Grassland resources. Except for the level of prescribed burning, none of these concerns vary among alternatives, and no conflict is currently anticipated between these desires and the preferred alternatives.

Oregon State Forestry Program Projections

The Oregon State Forestry Department has developed a Forestry Program for Oregon (FPFO). This program is the guiding policy for the State Board of Forestry in reviewing forestry matters in the State of Oregon. Key to this program for the Ochoco National Forest are the output levels assigned to the various land "owners" (state, private, industrial, federal) required to accomplish the coordinated programs envisioned.

The State Board of Forestry Forest Program for Oregon target levels related to timber production must not be confused with the State of Oregon objectives reflected in the Governor's response nor the State Alternative prepared for the Forest Plan Objectives guiding the Governor's response include concerns for Oregon's forest environment, wildlife protection, jobs, and timber production. An equitable balance among these often conflicting resources is the principal goal.

Table 4-40 displays a comparison of timber outputs from the preferred alternative (I) with the FPFO objectives, sales, harvest, and alternatives.

Other Resource Plan Comparisons

Oregon State Air Quality Implementation Plan

Depending on cumulative effects in conjunction with neighboring prescribed burning, the smoke particulate emissions from the Forest may conflict with the Oregon State Implementation Plan (SIP) concerning air quality.

TABLE 4-40
COMPARISON OF TIMBER OUTPUTS

	MMBF/YEAR	MMCF/YEAR
FPFO - State Forestry Department Recommended	115	19 0
Actual Sales (Average 1980-84)	129 4	----
Actual Harvest (Average 1980-84)	85 4	----
Actual Sales (Average 1985-88)	145 4	----
Actual Harvest (Average 1985-88)	146 1	----
Forest Preferred Alternative I	115 TSPQ	19 0
Alternative A (1st Decade)	115 TSPQ	19 3
TM Plan (potential yield) 1/	136 5	----

1/ The potential yield is the net chargeable volume from the current Timber Management Plan and is not directly comparable to Forest Plan TSPQ (Timber Sale Program Quantity) TSPQ includes volume that will be up for sale but which is chargeable against the allowable sale quantity

Emissions from prescribed burning can have significant short-term adverse effects on visibility in and around wilderness areas. There are legal requirements to preserve or enhance visibility quality in designated Class I Areas (Clean Air Act, 1977). The closest Class I Area downwind of the Forest is the Strawberry Wilderness on the Malheur NF. Under certain weather conditions, smoke from the Forest and Grassland may affect visibility in the Strawberry Wilderness.

Oregon Outdoor Recreation Plans

Alternatives not including the East-West Trail as a part of the Forest-wide trail system are in conflict with Oregon Outdoor Recreation plans and the State of Oregon Trail Advisory Group plans. All final alternatives except the No Change include the Summit Historic Trail, which also may serve as an East-West cross state trail.

Establishment of Pacific Northwest System of Research Natural Areas

The proposed RNA's provide some of the plant associations and conditions identified in *Research Natural Area Needs in the Pacific Northwest* (Dyrness et al. 1975). The five areas represent a portion of many areas reviewed and are the ones identified as best representing the needed cells (basic units in a natural area system). The preferred alternative (I) recommends all five of the areas for RNA designation.

Oregon State Water Quality Standards

Analysis of the effects of the various alternatives on dispersion of harvest activities indicates that potential conflicts may occur between final Alternative NC in the first decade and the ability of the Forest to meet State water quality guidelines for turbidity and temperature (DEQ. 1980).

Oregon Department of Fish and Game Objectives

There has been little conflict regarding projected deer population levels because populations in all alternatives are maintained at the levels presently desired by Oregon Department of Fish and Wildlife (ODFW) through the fifth decade.

Based on the Habitat Capability Index predictive model, population numbers for elk may, depending on the alternative, exceed or fall below the proposed ODFW planning benchmarks. The preferred Alternative I, however, is in accord with ODFW's recent benchmark of 2,600 for elk. ODFW's population benchmark for elk has been in flux. The benchmark for elk when planning was originally initiated in the early 1980's was 1,250, as compared to 2,600 now. There have been ongoing discussions between ODFW, the Forest Service, local land owners, and sportsmen's groups on the appropriate elk population objective; the population objective has yet to be determined.

Federal Regulations Governing Toxic and Hazardous Materials

Activities that may occur on the Forest or Grassland involving the use or disposal of hazardous or toxic materials are required in all alternatives to meet all State and Federal laws and provisions.

Utility and Transportation Corridors

All alternatives recognize State and County road corridors. The Western Region Corridor Study (1986) information has been consulted and appropriate utility corridors recognized. No alternatives result in any conflict with movement of power throughout the area.

List of Preparers

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List of Preparers

The following is a list of Forest Interdisciplinary Team (IDT) and Forest Planning core team members who developed the Ochoco National Forest Plan, Crooked River National Grassland Plan, and Final Environmental Impact Statement. Their qualifications (position, education, and experience) are provided.

Numerous other Forest Service employees contributed to the completion of these documents through assignments to the Forest Supervisor's Office, by providing needed information, or by assuming the duties of co-workers who were deeply involved in the planning effort.

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Experience: Developed planning model and data base for prototype area on the Allegheny National Forest in Pennsylvania. Developed forest model, coordinated economic analysis and managed forest data base for the Ochoco National Forest planning effort. Helped coordinate, document, and present Ochoco National Forest planning process and results.

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Experience: Seventeen years experience in 5 Regions on 6 National Forests, 5 Ranger Districts. Includes a breadth of experience in all resource areas at the Ranger District and National Forest level. Experience includes assignments ranging from technical work as a silviculturist to line officer responsibility while a District Ranger on the Tongass National Forest in Alaska. Breadth of experience includes 1-1/2 years in National Forest planning.

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Bibliography

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Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

* Term is defined in the Glossary

Acronym	Definition
"8A"	Contracts set aside for Minority Contractors
A	Alternative A
A.	Acres
ACF	Acre Foot *
ACHP	Advisory Council on Historic Preservation *
ADRV	Air Quality Related Values
AFDC	Aid for Dependent Children
AIRFA	American Indian Religious Freedom Act
AMP	Allotment Management Plan
AMS	Analysis of the Management Situation *
ASQ	Allowable Sale Quantity *
ATV	All-Terrain Vehicle *
AU	Animal Unit *
AUM	Animal Unit Month *
B-MOD	B-Modified Alternative
BD	Brush Disposal
BG	Big Game Habitat (Area Management Objective) *
BLM	Bureau of Land Management
BMP	Best Management Practices *
BOR	Bureau of Reclamation
<i>B.t.</i>	<i>Bacillus thuringiensis</i> *
BTU	British Thermal Units
C-MOD	C-Modified Alternative
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CFL	Commercial Forest Land *
CFR	Code of Federal Regulations
CMAI	Culmination of Mean Annual Increment *
CRITFC	Columbia River Inter-Tribal Fish Commission
CRNG	Crooked River National Grassland
DBH	Diameter Breast Height *
DC/SF	Deschutes Canyon/Steelhead Falls
DEIS	Draft Environmental Impact Statement *
DEP	Departure *
DEQ	Oregon Department of Environmental Quality
DF	Douglas Fir
DIB	Diameter Inside Bark
DOGAMI	Oregon Department of Geology and Mineral Industries
E-DEP	E-Departure Alternative
EA	Environmental Assessment *
EA	Euro-American (Cultural Resources)
ECA	Equivalent Clearcut Area *
EEO	Equal Employment Opportunity
EFSA	Escaped Fire Situation Analysis
EHA	Equivalent Harvest Area *
EHE	Earned Harvest Effect *
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FDR	Forest Development Road *
FEIS	Final Environmental Impact Statement *

FIA	Forest Influence Area
FMEI	Fire Management Effectiveness Index *
FORPLAN	Forest Planning Model
FPFO	Forestry Program for Oregon *
FRES	Forest and Range Environment Study
FS	Forest Service
FS	Forest Supervisor
FSH	Forest Service Handbook
FSM	Forest Service Manual
FUD	Fishing User Days
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year *
HE	Habitat Effectiveness *
HEI	Habitat Effectiveness Index
HCI	Habitat Capability Index *
I	Alternative I
ICO	Issues, Concerns, and Opportunities
ID	Interdisciplinary
IDT	Interdisciplinary Team (ID Team) *
IMPLAN	Forest Service Input-Output Economic Model *
IPM	Integrated Pest Management *
K-V	Knutson - Vandenberg Act of 1924 *
KV	Kilovolt
LIDES	Local Interactive Digitizing and Editing System
LMP	Land Management Planning
LP	Lodgepole Pine
LP	Linear Programming
LRMP	Land and Resource Management Plan
LTSYC	Long Term Sustained Yield Capacity *
M	Roman Numeral for 1000 *
MA	Management Area *
MA-D1-14	Management Area-Draft Plan, Areas 1-14
MA-F1-28	Management Area-Forest Plan, Areas 1-28
MA-G1-16	Management Area-Grassland Plan, Areas 1-16
MAI	Mean Annual Increment *
MAR	Management Attainment Report
MAX	Maximum Viable Population
MBF	Thousand Board Feet *
MC	Mixed Conifer *
MCF	Thousand Cubic Feet
MIS	Management Indicator Species *
MM	Million *
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MO	Management Objective
MOA	Memorandum of Agreement *
MOU	Memorandum of Understanding
MR	Management Requirement *
MRVD	Thousand Recreation Visitor Days
MVP	Minimum Viable Population *
NA	Native American
NC	No Change Alternative
NEPA	National Environmental Policy Act *
NFCR	North Fork Crooked River
NFDRS	National Fire Danger Rating System
NFF	National Forest Fund *
NFMA	National Forest Management Act *
NFS	National Forest System Land *

NIRP	National Information Requirements Project
NWPS	National Wilderness Preservation System
ODFW	Oregon Department of Fish and Wildlife
OHV	Off-Highway Vehicle *
ONF	Ochoco National Forest
ORV	Off-Road Vehicle •
OSWC	Oregon State Wildlife Commission (Now ODFW)
PAMARS	Program Accounting Management Attainment Reporting System
PAOT	Persons at One Time *
PL	Public Law (also P.L.)
PMOA	Programmatic Memorandum of Agreement
PNV	Present Net Value *
PNW	Pacific Northwest
PP	Ponderosa Pine
PSD	Prevention of Significant Deterioration
R	Rural (ROS Classification) •
R-6	Forest Service, Northwest Region
RAMIS	Range and Management Information System
RARE II	Roadless Area Review and Evaluation *
RIM	Recreation Information Management *
RMO	Road Management Objective
RN	Roaded Natural (ROS Classification) *
RNA	Research Natural Area *
RO	Regional Office
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum *
RPA	Forest and Rangeland Renewable Resources Planning Act of 1974
RVD	Recreation Visitor Days *
RWS	Recreation Wilderness Spectrum *
SCORP	State-wide Comprehensive Outdoor Recreation Plan
SEV	Soil Expectation Value
SHPO	State Historic Preservation Officer (or Office) *
SIP	State Implementation Plan (for Air Quality)
SMU	Streamside Management Units
SPM	Semiprimitive motorized (ROS Classification) *
SPNM	Semiprimitive Nonmotorized (ROS Classification) *
SRI	Soil Resource Inventory *
STARS	Sale Tracking and Reporting System
S&G	Standards and Guidelines
T&E	Threatened and Endangered Species
T/R	Area to be developed for Timber/Forage Production
TIS	Transportation Inventory System
TRP	Timber Resource Plan
TSI	Timber Stand Improvement *
TSP	Total Suspended Particulates
TSPIRS	Timber Sale Program Information Reporting System
USDA	United States Department of Agriculture
USFS	United States Forest Service
VAC	Visual Absorption Capability
VIS	Visitor Information Service
VMS	National Forest Visual Management System
VQO	Visual Quality Objective
WFUD	Wildlife/Fish User Day *
WRS	Wilderness Resource Spectrum •
WS	Wild and Scenic Designation
WSA	Wilderness Study Area
WUD	Wildlife User Day

Glossary

GLOSSARY

These definitions apply to Forest Service land management and planning. Meanings may differ when used in another context. Some definitions were shortened, paraphrased or adapted to fit local conditions. Definitions of other terms used in resource management but not included in this glossary may be found in the following publications:

- * American Geological Institute; *Dictionary of Geological Terms* Doubleday & Company Inc., New York; 1962.
- * Kothman M M.; *A Glossary of Terms Used in Range Management* Society for Range Management, 1974.
- * Mifflin, Ronald W and Hiron H. Lysons. *Glossary of Forest Engineering Terms* USDA Forest Service, Pacific Northwest Forest and Range Experiment Station; 1979.
- * Schwarz, Charles F.; Thor, Edward C.; Elsner, Gary H. *Wildland Planning Glossary* USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, General Technical Report PSW-13; 1976.

A

ACCEPTABLE RIPARIAN CONDITION - A shady, brushy riparian condition with frequent amounts of tall overstory conifer trees and shorter hardwoods of alder, willow and aspen; the site has the potential to produce conifers and/or hardwood species. Moderately gentle bank slopes containing moderate to high plant densities, thick root masses, embedded angular boulders and old logs characterize these areas. Frequent channel scouring and deposition will largely be replaced by mossy aquatic growth on assorted sizes of tightly packed rocks.

ACRE EQUIVALENT - Used to adjust actual acres of habitat improvement or improvement structures to reflect overall habitat benefits derived. It reflects the zone of influence of the habitat improvement for the target species. For example, a single water development for upland game birds has an acre equivalent of 160, whereas a single water structure for big game has a value of 640 because it has a larger zone of influence for the more mobile big-game animals.

ACRE FOOT (ACF) - A unit for measuring a volume of water. Quantity of water required to cover 1 acre (43,560 square feet) to a depth of 1 foot.

ACRES OF DEGRADED WATERSHED CONDITION - represents existing soil/watershed areas which are degraded and contributing to loss in site productivity and/or creating water quality deterioration when hazardous events occur. The Soil/Water Restoration Inventory (1979) for the Ochoco National Forest (located at the Ranger District Offices) delineates these areas.

ACTIVITY - Actions, measures, or treatments that are undertaken that directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental quality objectives. Forest Service activity definitions, codes, and units of measure are contained in the Management Information Handbook (FSM 1309.11.).

ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP) - An independent advisory body established by the National Historic Preservation Act of 1966. The mission of the Council is to advise the President and Congress on national historic preservation policies, to encourage private and public interest in historic preservation, and to review and comment on Federal undertakings that might have an effect on properties listed on or eligible for the National Register of Historic Places.

ALL-TERRAIN VEHICLE (ATV) - An abbreviation whose initials stand for All-Terrain Vehicle, which is any motorized off-highway vehicle 50 inches or less in width. ATV's usually have a dry weight of 600 pounds or less, traveling on three or more low pressure tires and having a seat designed to be straddled by the operator.

AIRSHED - A geographical area that, because of topography, meteorology, and climate, shares the same air.

ALLOTMENT - see Range Allotment

ALLOWABLE SALE QUANTITY (ASQ) - (Comparable to programmed allowable harvest used in previous plans). 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 allowable sale quantity (ASQ) is usually expressed on an annual basis as the "average annual allowable sale quantity" (FSM 1900).

ALL-TERRAIN VEHICLE (ATV) - Any motorized, off-highway vehicle 50 inches or less in width, having a dry weight of 600 pounds or less that travels on three or more low pressure tires with a seat designed to be straddled by the operator. Low-pressure tires are 6 inches or more in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (psi) or less as recommended by the vehicle manufacturer.

ALTERNATIVE - One of several policies, plans, or projects proposed for decision making.

AMENITY - An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses. Amenity value is typically used in land-use planning to describe those resource properties for which market values (or noncash values) are not or cannot be established, such as hiking or scenic viewing.

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 - An area of land (not necessarily contiguous) which for FORPLAN analysis purposes has homogeneous timber management costs and vegetative responses to timber management activities.

ANALYSIS OF THE MANAGEMENT SITUATION (AMS) - A step required under the National Forest Management Act in which the Forest determines its ability to supply goods and services to meet society's demand for them.

ANIMAL UNIT (AU) - An animal unit is a 1,000 pound mature cow, or its equivalent based on an average daily forage consumption of 26 pounds dry matter per day.

ANIMAL UNIT MONTH (AUM) - The amount of forage required by an animal unit for one month.

ANNUAL PROGRAMMED HARVEST - That part of the potential timber yield that is scheduled for harvest in a specific year.

APPROPRIATE SUPPRESSION RESPONSE - The kind, amount, and timing of suppression action on a wildfire which most efficiently meets fire management direction under current and expected burning conditions. The action may be from prompt control to confinement (See definitions for confine, contain, and control.)

AQUEOUS - Of, relating to, or resembling water.

ARCHAEOLOGY - The scientific study of the physical characteristics of cultural resources in order to describe and explain former ways of life.

ARTERIAL ROAD - Roads comprising the basic access network for National Forest System administrative and management activities. These roads serve all resource elements to a substantial extent, and maintenance is not normally determined by the activities of any one element. They provide service to large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary

travel routes The location and standards are often determined by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually they are developed and operated for long-term land and resource management purposes and constant service.

B

Bacillus thuringiensis (B.t.) - A biological agent used to initiate insecticidal treatments of the western spruce budworm populations

BACKGROUND - The visible terrain beyond the foreground and middleground where individual trees are not visible, but are blended into the total fabric of the stand (See "Foreground" and "Middleground.")

BASALT - A dark gray to black, fine-grained igneous rock.

BENCHMARK - An analysis of the supply potential of a particular resource, or of a set of resources subject to specific management objectives or constraints.

BENEFIT COST RATIO - An economic indicator of efficiency, computed by dividing total priced benefits by priced costs. Usually both benefits and costs are discounted so that the ratio reflects efficiency in terms of the present value of future benefits and costs.

BEST MANAGEMENT PRACTICES (BMP) - A specific activity, measure, course of action, or treatment.

BIG GAME (BG) - Those species of large mammals normally managed for sport hunting, generally elk, deer, and antelope

BIOLOGICAL DIVERSITY - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

BIOLOGICAL POTENTIAL - The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.

BOARD FOOT - A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide.

*Board foot volume measurement varies with size of trees and is designed for certain product specifications and current technology. Young stands that have been regenerated cannot be measured in board foot or equivalent units of measurement, attempting to do so would underestimate the biological potential of timber producing lands and make future growth estimates impossible. See cubic foot.

BRECCIA - A rock made up of highly angular coarse fragments.

BROADCAST BURN - Allowing a prescribed fire to burn over a designated area within well-defined boundaries for reduction of fuel hazard or as silvicultural treatment, or both.

C

CANOPY CLOSURE - The progressive reduction of space between crowns as they spread laterally, increasing the canopy density.

CAPABILITY - The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils, and geology, as well as on the application of management practices, such as silviculture or protection from fire, insects, and disease.

CAPITAL INVESTMENT COST - Costs generally associated with construction such as trails, roads, and physical structures for range, recreation, and fish and wildlife. Other major functions include reforestation, timber stand improvement and prescribed burning

CAVITY - The hollow excavated in trees by birds or other natural phenomena, used for roosting and reproduction by many birds and mammals.

CINNABAR - A mineral (HgS) which is the principal ore of mercury.

CLEARCUTTING - The harvesting in one cut of all trees on an area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, strip, or stand large enough to be mapped or recorded as a separate class in planning for sustained yield.

COLLECTOR ROAD - Roads that serve smaller land areas than a Forest arterial road, and usually connected to a Forest arterial or public highway. Collect 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.

COMMERCIAL FOREST LAND (CFL) - 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; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting.

COMMERCIAL THINNING - A cut in a stand under rotation age designed to remove excess merchantable trees. The objective is to place the growth capability of the site on the remaining leave trees.

COMMODITY - A transportable resource product with commercial value; all resource products that are articles of commerce.

COMMON VARIETY MINERAL - Saleable minerals.

COMMUNITY COHESION - The degree of unity and cooperation evident in a community as it defines problems and attempts to resolve them.

COMMUNITY STABILITY - A community's capacity to handle change without major hardships or disruptions to component groups or institutions. Measurement of community stability requires identification of the type and rate of proposed change and an assessment of the community's capacity to accommodate that level of change.

COMPACTION, SOIL - The packing together of soil particles by forces exerted at the soil surface, resulting in increased soil density.

CONCERN - A point, matter, or question raised by management that must be addressed in the planning process.

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.

CONSTANT SERVICE - A road developed and operated for continuous or annual recurrent service

CONTAIN - To surround a fire, and any spot fires therefrom, with control line as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions

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

CONVERSION PERIOD - A transition period during which an unregulated forest structure is converted to a regulated one. When regulated, the forest will have a distribution of stand age and size classes, providing approximately equal periodic harvests.

CORD - A unit of volume measurement containing 128 cubic feet of solid wood. Generally a stack of round or split wood measuring 4 feet wide by 4 feet high by 8 feet long.

CORRIDOR - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.

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 cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of-return may be appropriate.

COVER/FORAGE RATIO - The ratio, in percent, of the amount of area in cover condition to that area in non-cover or forage condition; the criteria by which potential deer and elk use of an area is judged.

COVER - Vegetation used by wildlife for protection from predators, to ameliorate conditions of weather, or in which to reproduce.

CUBIC FOOT - In timber management a volume measured as a 1 foot cube of solid wood

*Growth and inventory of forest stands is measured in units of cubic foot volume because it is independent of numerous product requirements occurring within a locale, region, or the nation as a whole.

CULMINATION OF MEAN ANNUAL INCREMENT (CMAI) - The age at which a stand of trees no longer increases in average annual growth.

CULTURAL RESOURCES - The remains of sites, structures, or objects used by humans in the past--historical or archaeological.

CULTURAL RESOURCES - Physical remains of districts, sites, structures, buildings, networks, or objects used by humans in the past. They may be historic, prehistoric, archaeological, or architectural in nature. Cultural resources are land based and are nonrenewable.

CUMULATIVE EFFECTS - The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time

CURRENT DIRECTION - The direction contained within the following plans that has guided the recent management of the Forest and Grassland:

1. Ochoco-Crooked River Planning Unit Land Management Plan, 1979
2. Silvies-Maiheur Planning Unit Land Management Plan, 1978
3. Crooked River National Grassland Land Management Plan, 1980

4. South Fork Planning Unit Land Management Plan, 1978
5. Timber Resource Plan Ochoco National Forest, 1979

D

DATA - Any recorded measurements, facts, evidence, or observations reduced to written, graphical, tabular, or computer forms.

DATA RECOVERY - Collection of information through any of a variety of techniques (e.g., photography, mapping, archaeological excavation) conducted for purposes of No Adverse Effect or mitigating Adverse Effect. Data collection is designed to recover representative data from a cultural resource prior to its disturbance or destruction.

DBH - Diameter at *breast height*. Diameter of a tree 4 feet 6 inches above the ground.

DECISION CRITERIA - Essentially the rules or standards used to evaluate alternatives. They are measurements or indicators that are designed to assist a decisionmaker in identifying a preferred choice from an array of possible alternatives.

DECISION VARIABLE - A component of an alternative in which input costs, outputs and benefits are identified and used for analysis and decision making.

DEMAND - The amount of goods or services that will be consumed if offered over a given range of prices at a particular point in time.

DEMOGRAPHIC - Pertaining to the study of the characteristics of human populations, such as size, growth, density, distribution, and vital statistics.

DEPARTURE (DEP) - Timber harvest schedule which deviates from the principle of nondeclining even flow by exhibiting a planned decrease in the timber sale and harvest schedule in the future. A departure is characterized as a temporary increase over the base sale schedule without impairing the Forest's long-term sustained-yield.

DETERMINATION OF ELIGIBILITY - Formal determination by the Keeper of the National Register, Department of Interior, as to whether or not a cultural resource is eligible for listing on the National Register of Historic Places.

DETERMINATION OF EFFECT - Determination of the effect (No Effect, No Adverse Effect, Adverse Effect) a proposed undertaking will have on cultural resources listed on or eligible for the National Register of Historic Places. Requires consultation with the State Historic Preservation Officer and may require review by or consultation with the Advisory Council on Historic Preservation

DEVELOPED RECREATION - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of 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.

DISCOUNT RATE - The interest rate used in plan formulation and evaluation for discounting future benefits and computing costs, or otherwise converting benefits to a common time basis

DISPERSED RECREATION - A general term referring to recreation use outside a developed recreation site; this includes activities such as scenic driving, hunting, backpacking, and recreation in primitive environments

DISPERSION - To disperse the effects of timber harvest by distributing harvest units more or less uniformly throughout a drainage so that increased runoff and sediment from disturbed sites will be buffered by lower levels of runoff and sediment production from surrounding undisturbed lands

DISTRICT - See Ranger District.

DIVERSITY - The distribution and abundance of different plant and animal communities and species within the area

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) - The version of the statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for review and comment. It is a formal document which must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) Guidelines, and directives of the agency responsible for the project proposal.

E

EARNED HARVEST EFFECT (EHE) - An increase in the present harvest based on the expectation of increased yields in the future resulting from management practices such as planting genetically-improved stock and thinning.

ECONOMIC EFFICIENCY - See cost efficiency.

ECOSYSTEM - The interacting system of a biological community and its nonliving environment.

EDGE - The place where plant communities meet or where successional stages or vegetative conditions within plant communities come together. It often contains organisms from both communities as well as those restricted to the interface area. The number of species present is often greater than the surrounding communities.

EFFECTS - Environmental consequences as a result of a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in the 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, 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).

ELIGIBLE - Cultural properties that meet the criteria for listing on the National Register of Historic Places.

EMPIRICAL YIELD TABLE - A table reflecting the existing standing timber volumes today and how they would grow in the future, under various timber management regimes.

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.

ENDEMIC - A taxonomic category (e.g., genus, species, variety) whose natural occurrence is confined to a certain region and whose distribution is relatively limited.

ENDEMIC ORGANISM - A taxonomic category (e.g., genus, species, variety) whose natural occurrence is confined to a certain region and whose distribution is relatively limited.

ENHANCE - To improve, reinforce, enrich or strengthen the existing condition, value, or beauty of a resource.

ENHANCEMENT - Interpret cultural resources for the public benefit. Cooperate with museums, universities, and other recognized institutions, agencies, and knowledgeable persons in planning and constructing cultural resource exhibits involving National Forest System cultural resources. Coordinate these efforts with

interpretive Services people (FSM 2390). Enhancement efforts may include the full range of interpretive techniques. Because enhancement may affect the resource, comply with regulations set forth in FSM 2366. In all cases consider a determination of beneficial effect (FSM 2366.26).

ENVIRONMENT - The sum of all external conditions and influence affecting the life, development, and survival of an organism.

ENVIRONMENTAL ANALYSIS - An analysis of alternative actions and their predictable short- and long-term environmental effects, incorporating the physical, biological, economic, social, and environmental design arts and their interactions

ENVIRONMENTAL ASSESSMENT (EA) - A concise public document required by the regulations implementing the National Environmental Policy Act.

EPIDEMIC - An outbreak of sudden rapid spread, growth, or development.

EPITHERMAL MINERAL DEPOSIT - A deposit formed in rocks of shallow depth from low-temperature hydrothermal solutions.

EQUIVALENT CLEARCUT AREA (ECA) - That area which when harvested under any of the various silvicultural regimes produces hydrological effects similar to one acre of clearcut

EQUIVALENT HARVEST AREA (EHA) - The same as Equivalent Clearcut Area (ECA).

EROSION - The processes whereby earthy or rocky material is worn away, loosened, dissolved and removed from any part of the earth's surface

EVAPOTRANSPIRATION - Process by which water moves from the soil to the atmosphere by evaporation from the soil or transpiration through plants.

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.

EXCELLENT RIPARIAN CONDITIONS - An extremely shady and brushy riparian condition with an abundance of tall overstory conifer trees and shorter hardwoods of alder, willow and aspen will be present; the site has the potential to produce conifer and/or hardwood species. Gentle bank slopes, high plant densities, thick root masses, embedded angular boulders and old logs characterize these areas. Channel scouring will be minimized with deposition replaced by mossy aquatic growth on assorted sizes of tightly packed rocks

F

FAULT A fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture.

FAWNING AREAS - areas used regularly by female deer for fawning (and maintaining fawns for their first few days or weeks); optimum fawning habitat includes low shrubs or small trees under a tree overstory of about 50-percent closure, usually located on slopes of less than 15 percent where vegetation is succulent and plentiful in June and potable water is available within 183 meters (600 feet).

FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS) - The final version of the statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA). It is a revision of the Draft Environmental Impact Statement to include public and agency responses to the

draft. It is a formal document which must meet legal requirements and is the document used as a basis for judicial decisions concerning compliance with NEPA.

FIRE HAZARD REDUCTION - The treatment of fuels and residues, which reduces the potential fire's rate of spread or intensity.

FIRE MANAGEMENT EFFECTIVENESS INDEX (FMEI) - A number derived by totaling the cost of a fire protection organization and fire suppression cost with the net value change and dividing that figure by 1000 acres.

FIREWOOD - Wood, either round, split or sawn, and burned primarily for heating purposes.

FISCAL YEAR (FY) - October 1st to September 30th.

FLOODPLAIN - The lowland and relatively flat areas adjoining inland and coastal waters (including debris cones and floodprone areas of offshore islands) including, at a minimum, those areas subject to a one-percent or greater chance of flooding in any given year (100-year recurrence).

FORAGE (LIVESTOCK) - All grass and grass-like plants.

FORAGE (WILDLIFE) - All browse and herbaceous food that is available to wildlife for grazing.

FORBS

1. Any herbaceous plant other than those in the Gramineae (true grasses), Cyperaceae (sedges) and Juncaceae (rushes) families - i.e., any nongrass-like plant having little or no woody material on it.
2. A palatable, broad-leaved, flowering herb whose stem (above ground) does not become woody and persistent.

FOREGROUND - A term used in scenic management to describe the stand of trees immediately adjacent to a high-value scenic area, recreation facility, or forest highway (See "Background" or "Middleground.")

FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT OF 1974 (RPA) - An Act requiring the preparation of a program for the management of the National Forests' renewable resources and of Land and Resource Management Plans for units of the National Forest System. It also requires a continuing inventory of all forest, rangelands, and renewable resources nation-wide.

FOREST DEVELOPMENT ROADS (FDR) - Roads that are part of the Forest transportation system, which includes all existing and planned roads, as well as other special and terminal facilities designed as Forest development transportation facilities.

FOREST HEALTH - A condition where biotic and abiotic influences on the Forest (i.e. insects, diseases, atmospheric deposition, silvicultural treatments, harvesting practices) do not threaten management objectives either now or in the future.

FOREST INVENTORY PLAN - A plan, based on known cultural and environmental information, that delineates areas of varying degrees of suspected cultural resource potential.

FOREST PLAN - The National Forest Land and Resource Management Plan (Forest Plan) guides all natural resource management activities and establishes management standards and guidelines for the Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. It is prepared under the implementing regulations and requirements of NFMA.

FORESTRY PROGRAM FOR OREGON (FPFO) - A comprehensive forest management program developed by the State of Oregon for all forest lands in the state regardless of ownership.

FOREST STANDARD - A performance criterion indicating acceptable norms or specifications that actions must meet to maintain the minimum conditions for a particular resource. This type of standard applies to all areas of the Forest regardless of the other management area direction applied.

FOREST SUPERVISOR - The official responsible for administering the National Forest System lands in a Forest Service administrative unit. He or she reports to the Regional Forester.

FORPLAN - The forest planning model. A linear programming software package used to analyze planning decisions regarding land use patterns, capital investment, and timber harvest scheduling.

FUEL BREAK - A strategically located strip of land, usually 100 to 500 feet wide, that has been altered by removal of flammable vegetation so that fires burning into it can be more readily extinguished.

FUELS - Anything within the Forest that will burn. Usually live and dead woody vegetation (e.g., grass, shrubs, trees).

FUEL TREATMENT - The rearrangement or disposal of fuels to reduce the fire hazard.

G

GEOMORPHIC - Of, or pertaining to, the form of the earth, or its solid surface features

GEOHERMAL - Of, or pertaining to, the heat of the earth's interior.

GOAL - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

GOODS AND SERVICES - The various outputs, including on-site uses, produced from forest and rangeland resources.

GRAZING - Consumption of range or pasture forage by animals

GRAZING SEASON - 1. A period of grazing to obtain optimum use of the forage resource. 2. On public lands an established period for which grazing permits are issued.

GREEN DOT SYSTEM - A seasonal vehicular management program which visually indicates travel routes open to public use; roads not identified by the green dot, and cross-country travel, are closed to public use during the designated time period.

GROUND WATER - Water in a saturated zone of a geologic stratum

GROUP SELECTION - A modification of the selection system in which trees are removed in small groups at a time.

GUIDELINE - An indication or outline of policy or conduct that is not a mandatory requirement (as opposed to a standard, which is mandatory).

H

HABITAT - The sum total of environmental conditions of a specific place occupied by a wildlife or plant species or a population of such species.

HABITAT CAPABILITY INDEX (HCI) - A process used to determine habitat capability for big game by evaluating thermal cover and road density.

HABITAT DIVERSITY INDEX - A number that indicates the relative degree of diversity in habitat forest wide.

HABITAT EFFECTIVENESS (HE) - A combination of both quantity and quality of habitat, including both natural and introduced factors, which produces a specific habitat condition that either limits or generates habitat use by a wildlife species.

HARVEST CUTTING METHOD - The combination of management practices used to manipulate forest vegetation resulting in forests of distinctive form and character Harvest cutting methods are classified as even-aged and uneven-aged.

HEAP LEACH - A mineral extraction process in which a solution (commonly cyanide solution) percolates through a pile (heap) of ore, dissolving the metal being extracted. The solution is collected after it percolates through the heap, and the metal is recovered from the solution This is a common extraction process for low-grade deposits of gold, copper and silver

HERBACEOUS - Having little or no woody tissue and persisting usually for a single growing season.

HIGH CLEARANCE VEHICLES - Motorized vehicles that can drive over minor obstacles because of their elevated frame.

HISTORIC - Refers to the period of time for which there are written records (after European contact). In Region 6, the historic era begins at roughly 1800 A.D., with the first explorers who kept journals

HYDROLOGIC - Pertaining to the quantity, quality, and timing of water yield from forested lands

HYDROPHOBIC - Lacking affinity for water.

HYDROTHERMAL - An adjective applied to heated or hot aqueous-rich solutions, to the process in which they are concerned, and to the rocks, ore deposits, and alteration products produced by them.

1

IGNEOUS ROCK - Rock formed by the crystallization of once molten material called lava or magma.

IMPLAN - A Forest Service input-output model that is an economic model which predicts the behavior of an economy as certain portions of the economy are altered.

IMPROVED ROAD - A constructed or maintained vehicle way for the use of highway-type vehicles having more than two wheels.

INDICATOR SPECIES - A plant or animal species so highly adapted to a particular kind of environment that its mere presence is sufficient indication that specific conditions are also present. (W-W DEIS).

INTEGRATED PEST MANAGEMENT (IMP) - A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.

INTENSIVE FOREST MANAGEMENT - A high investment level of timber management that envisions initial harvest, regeneration with genetically improved stock, control of competing vegetation, fill-in planting, pre-commercial thinning as needed for stocking control, one or more commercial thinnings, and final harvest.

INTERDISCIPLINARY TEAM - A group of individuals with different training assembled to solve a problem or perform a task.

INTERMINGLED OWNERSHIPS - Lands within the National Forest boundaries or surrounded by National Forest lands that are owned by private interests or other government agencies. Because of early land grants, these lands frequently are in checkerboard ownership patterns.

INTERMITTENT SERVICE - A road developed and operated for periodic service and closed between periods of use.

INTERPRETATION - Educational activity which aims to reveal meaning and relationships of the natural and cultural environment through first-hand experience

IRRETRIEVABLE - Applies to losses of production, harvest, or use 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.

IRREVERSIBLE - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods. Irreversible also includes loss of future options.

ISSUE - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

J

JASPEROID - Agate, jasper, or thundereggs

K

KNUTSON - VANDENBERG ACT OF 1924 (K-V) - An act that allows for the use of receipts for National Forest timber to reforest, to conduct stand improvement work or to perform improvement projects for other resources on the area where timber was harvested.

L

LAND ALLOCATION - The decision to use land for various resource management objectives in order to best satisfy the planning process issues, concerns, and opportunities, and meet assigned forest output targets

LAND EXCHANGE - The conveyance of non-Federal land or interest in the land to the United States in exchange for National Forest System land or interest in the land.

LANDLINE LOCATION - Location of Forest property boundaries.

LIFESTYLE - A characteristic way of living which may be an individual variant within the cultural mainstream or may be an individual expression of a subculture.

LEASABLE MINERALS - Generally include minerals such as oil, gas, oil shale, coal, potassium, sodium, phosphates, sulphur, and geothermal

LOCAL ROADS - Local roads are usually one-lane roads constructed to serve a dominant use or resource. Local roads do not access large land areas since they are more site specific than arterial and collector roads

LOCATABLE MINERALS - These resources include gold, silver, lead, copper, and mercury, which are mined and processed for metals, and some uncommon nonmetallics.

LOGGING SYSTEMS -

Tractor Logging - A system of log transportation in which logs are pulled from the woods to a landing by means of a crawler tractor, skidder, or similar ground-based equipment.

High-Lead Logging - A system of cable logging in which the working lines are elevated at the landing area by a rigged wooden tree or portable steel spar.

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.

Balloon Logging - A system of cable logging in which the weight of the logs is counteracted by the lift provided by a lighter-than-air balloon.

Helicopter Logging - A system of transporting logs from the woods to a landing as an external load on a helicopter.

LONG-TERM EFFECTS - Those effects which will be significant beyond the RPA planning horizon of 50 years.

LONG-TERM SUSTAINED-YIELD TIMBER CAPACITY (LTSYC) - The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity consistent with multiple-use objectives

M

M - The Roman numeral for 1000.

MBF - One thousand board feet. Lumber or timber measurement.

MM - Million

MANAGED STAND - A stand of trees in which stocking level control is applied to achieve maximum growth.

MANAGED YIELD TABLE - A table showing, for a given species (or species mix) on a given site, the progressive development of a managed stand at periodic intervals covering the greater part of its useful life. It usually includes average diameter, basal area, number of trees, standing volume, and harvest volumes for a specific timber management regime.

MANAGEMENT AREA (MA) - A unit of land allocated to emphasize a particular resource, based on the capability of the area

MANAGEMENT CONCERN - An issue, problem or a condition which constrains the range of management practices identified by the Forest Service in the planning process

MANAGEMENT DIRECTION - A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

MANAGEMENT INDICATOR SPECIES (MIS) - A wildlife species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Population changes are believed to indicate effects of management activities on a number of other wildlife species

MANAGEMENT INTENSITY - A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.

MANAGEMENT PRESCRIPTION - Management practices selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

MANAGEMENT REQUIREMENT (MR) - Standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, soil and water and diversity, to be met in accomplishing National Forest System goals and objectives. (See 36 CFR 219.27)

MARGINAL COMPONENT - The portion of the commercial forest land on which it is presently not feasible (economically or technologically) to manage for timber crops but on which it may be possible in the future.

MASS-WASTING - A general term for a variety of processes by which large masses of earth material are moved by gravity either slowly or quickly from one place to another. (Dictionary of Geological Terms). Also *mass movement*.

MAXIMUM MODIFICATION - See "Scenic quality Objectives."

MEAN ANNUAL INCREMENT (MAI) - The total increment up to a given age divided by that age.

MEMORANDUM OF AGREEMENT (MOA) - A three-party agreement (responsible Forest Service Official, State Historic Preservation Officer, Executive Director of the Advisory Council on Historic Preservation) which documents an agreed-upon plan to mitigate a proposed project's adverse effect upon cultural resources listed on or eligible for the National Register of Historic Places.

METAMORPHIC ROCK - Rocks changed by heat and pressure causing recrystallization and loss of original characteristics

MIDDLEGROUND - *The visible terrain beyond the foreground where individual trees are still visible, but do not stand out distinctly from the stand (See "Foreground" and "Background.")*

MINERAL DEVELOPMENT - The activities and facilities associated with extracting a proven mineral deposit

MINERAL ENTRY - Filing a mining claim on public land to obtain the right to any minerals it may contain.

MINERAL EXPLORATION - The search for valuable minerals on lands open to mineral entry.

MINERAL RESERVE - That portion of a mineral resource from which a mineral commodity can be economically and legally extracted.

MINERAL RESOURCE - A concentration of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust in such a form that economic extraction of a mineral resource is currently or potentially feasible (BLM Manual 3031).

MINIMUM VIABLE POPULATION (MVP) - The low end of the viable population range

MITIGATION - To moderate the force or intensity of environmental effects To lessen or minimize an Adverse Effect upon a cultural resource listed on or eligible for the National Register of Historic Places The two categories of mitigation most often used are project modification and data recovery.

MIXED CONIFER (MC) - A stand of coniferous trees with a mixture of species. Ponderosa pine will usually make up 25 percent to 75 percent of the species composition.

MODIFICATION - See "Scenic Quality Objectives."

MONITORING - A process of collecting significant data from defined sources to identify departures or deviations from expected plan outputs

MOUNTAIN PINE BEETLE - A small insect (1/8 - 5/8 inch) that bores into the tree's cambium and deposits its eggs. Larvae emerge from the eggs and feed upon the cambial layer and thus disrupt the tree's translocation of food Frequent attacks on the host tree result in the tree's mortality

MORTALITY - The volume of sound wood dying from natural causes during a specified period.

MULTIPLE-AGED STANDS - An intermediate form of stand structure between even-/ and uneven-aged stands. These stands generally have two or three distinct tree canopy levels occurring within a single stand.

MULTIPLE USE - The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions, that some lands will be used for less than all of the resources, and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

N

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) - An act declaring a National policy to encourage productive harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality.

NATIONAL FOREST FUND (NFF) - An account that includes all receipts (to the U.S. Treasury) from proclaimed National Forests for timber, grazing, land use, power, minerals, and user fees.

NATIONAL FOREST MANAGEMENT ACT (NFMA) - A law passed in 1976 that amends the Forest and Rangeland Renewable Resources Planning Act and requires the preparation of Forest plans.

NATIONAL FOREST SYSTEM (NFS) LAND - Federal lands that have been designated by Executive order or statute as National Forests, National Grasslands, or Purchase Units, and other lands under the administration of the Forest Service, including Experimental Areas and Bankhead-Jones Title III lands.

NATIONAL RECREATION TRAILS - 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 in or reasonably accessible to urban areas.

NATIONAL REGISTER OF HISTORIC PLACES - A register of cultural resources of national, state, or local significance, maintained by the Department of the Interior.

NATIONAL WILD AND SCENIC RIVER SYSTEM - Rivers with outstanding scenic, recreational, geological, fish and wildlife, historic, cultural, or other similar values designed by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

NET PUBLIC BENEFIT - 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.

NO ACTION ALTERNATIVE (Alternative A) - The most likely condition expected to exist in the future if current management direction were to continue unchanged.

NONCOMMERCIAL SPECIES - Species that have no economic values at this time nor anticipated timber value within the near future.

NONDECLINING EVEN FLOW - A policy governing the volume of timber removed from a National Forest, which states that the volume planned for removal in each succeeding decade will equal or exceed that volume planned for removal in the previous decade.

NONFOREST LAND - Land that has never supported forests and lands formerly forested but now developed for such nonforest uses as crops, improved pasture, etc.

NONMARKET - (Noncash economic benefits). Products derived from National Forest resources that do not have a well-established market value, for example, wilderness, wildlife

NONPRICED OUTPUTS - Outputs for which there is no available market transaction evidence and no reasonable basis for estimating a dollar value commensurate with the market values associated with the priced outputs.

NONSTRUCTURAL RANGE IMPROVEMENT - Practices and treatments undertaken to improve range not involving construction of improvements (e.g., seeding, fertilizing, or prescribed burning).

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.

OBLITERATE - The action needed to close an unneeded road and return the land to production.

OFF-HIGHWAY TRAVEL MANAGEMENT OBJECTIVES - These objectives relate to the recreation opportunities for off-highway use on areas and trails on National Forest lands. The objectives, which include off-highway travel criteria, are developed from management area direction and access management objectives.

OFF-ROAD or OFF-HIGHWAY VEHICLES (ORV's or OHV's) - Any vehicle, including ATV's, which is restricted by law from operating on public roads reserved for general motor vehicle traffic.

OLD GROWTH STAND - An old-growth stand is defined as any stand of trees 10 acres or greater generally containing the following characteristics: 1) stands contain mature and overmature trees in the overstory and are well into the mature growth stage, 2) stands will usually contain a multilayered canopy and trees of several age classes; 3) standing dead trees and down material are present; and 4) evidence of man's activities may be present, but does not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand.

OPERATION AND MAINTENANCE COSTS - Costs associated with operating and maintaining facilities, program management, and support costs associated with management of other resources

ORE - A mineral deposit which can be extracted at a profit.

ORV CLOSURE - An administration order closing a land area to specified types of off-road vehicle travel yearlong.

ORV RESTRICTION - An administrative order restricting a land area to specified types of off-road vehicle travel during specific seasons or conditions.

OUTPUT - The goods, end products, or services that are purchased, consumed, or used directly by people. Goods, services, products, and concerns produced by activities that are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. A broad term for describing any result, product, or service that a process or activity actually produces

OVERMATURE - The stage at which a tree declines in vigor and soundness, for example, height growth has usually stopped and probability of mortality is high

OVERSTORY - The portion of trees in a forest which forms the upper most layer of foliage.

OVERSTORY REMOVAL - A type of harvest which is designed to remove all of the trees in the overstory. The objective is to release the acceptably stocked understory.

OVERVIEW - A report, based primarily on archival research, that organizes and summarizes cultural resource information from a particular National Forest or geographic area.

P

PACIFIC NORTHWEST REGION - A Forest Service organizational unit consisting of all the National Forests in Oregon and Washington.

PARTIAL CUT - Any cutting other than a clearcut. This may include thinning, selection shelterwood or an overstory removal.

PARTIAL RETENTION - See "Scenic Quality Objectives."

PERMITTED GRAZING - Use of a National Forest range allotment under the terms of a grazing permit.

PERSONS-AT-ONE-TIME (PAOT) - The number of people in an area or using a facility at the same time. Generally used as "maximum PAOT" to indicate the capacity of an area or facility to support peak usage within established user density standards and without degradation to biophysical resources.

PHYSIOGRAPHIC - Pertaining to physical geography.

PHYSIOGRAPHIC PROVINCE - Region of similar structure and climate that has had a unified geomorphic cycle.

PLANNING HORIZON - The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions.

PLANNING PERIOD - Generally one decade. The time interval within the planning horizon that is used to show incremental changes to yields, costs, effects, and benefits.

PLANNING RECORDS - A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment.

PLANT ASSOCIATION - Climax plant community type.

PLANT COMMUNITIES - A homogeneous unit in respect to the number and relationship of plants in the tree, shrub, and ground cover strata.

POTENTIAL YIELD - The maximum, perpetual, sustained-yield harvest attainable through intensive forestry on regulated areas considering the productivity of the land, conventional logging technology, standard cultural treatments, and interrelationships with other resource uses and the environment.

PRECOMMERCIAL THINNING - The practice of removing some of the trees less than merchantable size from a stand so that the remaining trees will grow faster.

PREHISTORIC - Relating to the period of time before written records (prior to European contact). In Region 6, before 1800 A.D., or before the advent of written records.

PRESCRIBED BURNING - Use of fire in forest management for hazard reduction and vegetative manipulation.

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. Plans for use of unplanned ignitions for this purpose must be approved by the Regional Forester.

PRESENT NET VALUE (PNV) - The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

PRESERVATION - See "Scenic Quality Objectives."

PRIMARY CAVITY EXCAVATOR - An animal that excavates a cavity in wood for nesting or roosting.

PRIME FARMLAND - All land which qualifies for rating as Class I or as Class II in the U S Soil Conservation Service land use capability classification.

PRIMITIVE ROADS - Roads constructed with no regard for grade control or designed drainage, sometimes by merely repeated driving over an area. These roads are single lane, usually with native surfacing and sometimes passable with 4-wheel drive vehicles only, especially in wet weather

PROGRAMMED ALLOWABLE HARVEST - That part of the potential yield scheduled for harvest in a specific year. It is based on demand, funding, management needs and multiple use considerations and, as a consequence, may vary over time

PUMICE - A volcanic glass full of cavities and very light in weight

PYROCLASTIC ROCK - A rock consisting of unreworked solid material explosively or aerially ejected from a volcanic vent.

PUBLIC ISSUE - A subject or question of widespread public interest relating to management of National Forest System.

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.

PURCHASER CREDIT - Credit earned by the purchaser of a National Forest timber sale by construction of contract-specified roads. Earned purchaser credit may be used by the purchaser as payment for National Forest timber removed

R

RANGE ALLOTMENT - A designated area available for livestock grazing upon which a specified number, kind of livestock and season of use may be grazed under a term grazing permit. The basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

RANGE CONDITION - The state or health of the range vegetation and soil to produce a stable biotic community based on the composition, density, and vigor of the vegetation and the physical characteristics of the soil. Condition is expressed as satisfactory or unsatisfactory.

RANGE IMPROVEMENT - Any structure or nonstructural improvement to facilitate management of rangelands or livestock.

RANGELAND - Land where the vegetation is predominantly grasses, grass-like plants, forbs, or shrubs suitable for livestock grazing and browsing

RANGE MANAGEMENT - The art and science of planning and directing range use to obtain sustained maximum animal production, consistent with perpetuation of the natural resource.

RANGER DISTRICT - Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

RARE II - See Roadless Area Review and Evaluation II.

REAL DOLLAR VALUE - A monetary value which compensates for the effects of inflation.

RECONSTRUCTION - Road or trail construction activities which take place on an existing road or trail and raise the standard of the road or trail. This can include relocation of the facility in a completely new location.

RECREATION CAPACITY - The number of people that can take advantage of the supply of a recreation opportunity during an established use period without substantially diminishing the quality of the recreation experience of the biophysical resources.

RECREATION INFORMATION MANAGEMENT (RIM) - A computer oriented system for the organization and management of information concerning recreation use, occupancy, and management of National Forest land.

RECREATION OPPORTUNITY SPECTRUM (ROS) - Land delineations that identify a variety of recreation experience opportunities categorized into six classes on a continuum from primitive to urban. Each class is defined in terms of the degree to which it satisfies certain recreation experience needs, based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area, and the relative density of recreation use. The six classes are:

1. *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.
2. *Semiprimitive Nonmotorized (SPNM)* - 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 uses. 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.
3. *Semiprimitive Motorized (SPM)* - 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 may be present, but would be subtle. Motorized recreation use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.
4. *Roaded Natural (RN)* - 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.
5. *Rural (R)* - Area is characterized by a natural environment that has been substantially modified by development of structures, vegetative manipulation, or pastoral agricultural development. Resource modification and utilization practices may be used 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 are designed for use by a large number of people. Facilities are often provided for special activities. Moderate user densities are present away from developed sites. Facilities for intensified motorized use and parking are available.

6. **Urban** - Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are often used to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans are predominant on site. 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 recreational use of an area. One recreation visitor day consists of 12 hours of recreation use of a site or area. Recreation visitor days are used as a recreation production or output capacity measure.

RECREATION WILDERNESS SPECTRUM (RWS) - This is associated with the recreation opportunity spectrum (ROS), a system used to classify or differentiate areas within wilderness to provide for a variety of management possibilities and wilderness opportunities. The objective of all classifications is to provide wilderness opportunities but to different degrees; from pristine to the semiprimitive transition.

REFORESTATION - The natural or artificial restocking of an area usually to produce timber and other wood products, but also to protect watersheds, prevent soil erosion, and improve wildlife, recreation and other natural resources. Natural reforestation includes site preparation to reduce competing vegetation and provide a mineral seed bed for seed provided by seed trees. Artificial reforestation is the planting of seedlings, cuttings or seeds by hand or mechanical means and may include site preparation.

REGENERATION CUT - The removal of trees intended for the purpose of assisting regeneration already present or to make regeneration of the stand possible.

REGION - The standard administrative unit of the Forest Service administered by a Regional Forester.

REGIONAL FORESTER - The official responsible for administering a single Region and preparing a Regional Guide.

REGIONAL GUIDE - The plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given region. It also disaggregates the RPA objectives assigned to the Region and to the Forest within that region.

REGULATIONS - Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers *management of the Forest Service*.

REHABILITATION - Actions taken to protect or enhance site productivity, water quality, or other values for a short period of time.

RESEARCH NATURAL AREAS (RNA's) - An area set aside by the Forest Service to preserve a representative sample of an ecological community; primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

RESOURCE - An aspect of human environment which renders possible or facilitates the satisfaction of human wants and the attainment of social objectives.

RESOURCE VALUES - The tangible and intangible worth of forest resources.

RESPONSIBLE LINE OFFICER - The Forest Service employee who has the authority to select and/or carry out a specific planning action.

RESTORATION - The long-term placement of land back into its natural condition or state of productivity.

RETENTION - A scenic quality objective which means human activities are not evident to the casual forest visitor.

REVEGETATION - The re-establishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of man - reforestation or range reseeding.

RIGHT-OF-WAY - The right to pass through another person's land as obtained by condemnation or purchase.

RIM - See Recreation Information Management.

RIPARIAN AREAS - The riparian ecosystem (area) is that land, next to water, where plants that are dependent on a perpetual source of water occur. Riparian sites include fluvial surfaces such as streambanks, active channel shelves, active floodplains, and overflow channels.

RIPRAP - A structure built of broken rock or other material used for protecting exposed soil from erosion along stream channels or road ditches.

ROAD DENSITY - The number of road miles per square mile of land area.

ROADLESS AREA - An area of undeveloped Federal land within which there are no improved roads maintained for travel by means of motorized vehicles intended for highway use.

ROADLESS AREA REVIEW AND EVALUATION (RARE II) - A comprehensive process directed by the Secretary of Agriculture to identify roadless and undeveloped land areas in the National Forest system and to determine their uses for either wilderness or other resource management and development and to determine areas that would require further planning to make such a decision.

ROADLESS ISLANDS - A roadless area that is surrounded by permanent waters, or that is markedly distinguished from surrounding lands by topographical or ecological factors such as precipices, canyons, thickets, or swamps.

ROAD MANAGEMENT OBJECTIVES - Road management objectives establish the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria.

ROS - See Recreation Opportunity Spectrum.

ROTATION AGE - The age of a stand when regeneration harvest occurs.

RPA - Forest and Rangeland Renewable Resources Planning Act of 1974.

ROCKHOUND - An amateur rock and mineral collector.

RVD - See Recreation Visitor Day.

S

SALEABLE MINERALS - Saleable minerals include common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay. In general, these minerals are of wide-spread occurrence and are of relatively low unit value. They are generally used for construction materials and for road building purposes. Saleable minerals, which have some property giving them distinct and special value, remain locatable. Before a deposit can be sold, a determination of "common variety" must be made by minerals staff and legal counsel.

SALVAGE HARVEST - Removal of dead or dying trees resulting from insect and disease epidemics or wildfire

SANITATION HARVEST - Removal of dead or dying trees to prevent spread of insects or disease.

SAWTIMBER - Trees that will yield logs suitable in size and quality for the production of dimension lumber.

SCENIC QUALITY OBJECTIVES - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

1. *Preservation* - Ecological change only.
2. *Retention* - Human activities are not evident to the casual Forest visitor.
3. *Partial Retention* - Human activity may be evident, but must remain subordinate to the characteristic landscape.
4. *Modification* - Human activity may dominate the characteristic landscape, but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.
5. *Maximum Modification* - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

SCENIC 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

SCOPING - Determination of the significant issues to be addressed in an EIS.

SEDIMENT - Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level

SEDIMENTARY ROCK - A rock made up of sediment.

SEED CUT - Removal of mature trees near rotation age in a shelterwood harvest to permanently open the stand and prepare the site for regeneration from the seed trees left for that purpose.

SEEDLING/SAPLING - A forest successional stage in which trees less than five inches in diameter are the predominant vegetation.

SELECTION CUTTING - The annual or periodic removal of trees (particularly the mature), individually or in small groups from an uneven-aged forest to achieve the balance among diameter classes needed for sustained yields, and in order to realize the yield, and establish a new crop of irregular constitution. NOTE: The improvement of the Forest is a primary consideration.

SELECTION SYSTEM - A silviculture system in which trees in an uneven-aged stand are removed individually, here and there, from a large area each year in order to achieve a balance among diameter classes needed for sustained yield by selection cutting - ideally over a whole forest or working circle, but from practical considerations almost always over the annual coupes of cutting series; regeneration mainly natural and crop ideally all-aged

SENSITIVE SPECIES - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Those species that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists

SERIAL - A plant and animal community which is transitional in stage of succession, being either short- or long-term. If left alone, the seral stage will pass, and another plant and animal community will replace it

SHELTERWOOD HARVEST - Silvicultural system used to harvest mature trees at rotation age in a series of preparatory, seed and removal cuts designed to regenerate a new even-aged crop under the shelter of the old crop.

SHORT-TERM EFFECTS - For timber management planning, those effects which will not be significant beyond the RPA planning horizon of 50 years; for DEQ water quality, short-term effects are defined as two days or less. Generally, short-term effects are within the planning period

SIGNIFICANT - Meeting the criteria for inclusion on the National Register of Historic Places (same as eligible).

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

SILVICULTURE - The science and art of growing and tending crops of forest trees to attain the desired level of marketable and unmarketable products.

SITE INDEX - A measure of the relative productive capacity of an area for growing wood. Measurement of site index is based on height of the dominant trees in a stand at a given age.

SITE PREPARATION - Removing unwanted vegetation and debris from a site and preparing the soil before reforestation

SITE PRODUCTIVITY - Production capability of specific areas of land

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 - Debris left after logging, pruning, thinning, or brush cutting, and large accumulations of debris resulting from windstorms. It includes logs, bark, branches, and stumps.

SMOLT HABITAT CAPABILITY INDEX (SHCI) - Smolt refers to the life history stage of anadromous salmonids in which physiological changes are taking place to adapt them for ocean survival and they are either migrating or will shortly migrate seaward. The three levels associated with this index are.

1. Existing SHC - The number of smolt being produced at the present time with existing escapement levels in existing freshwater habitat.
2. Potential SHC - The number of smolt that are capable of being produced assuming there is sufficient adult escapement to fully seed existing freshwater habitat.
3. Potential SHC with Full Enhancement - The number of smolt that are capable of being produced, assuming sufficient capital investments have been made to maximize the freshwater habitats and there is sufficient adult escapement to fully seed the existing and enhanced habitat.

SNAG - A nonliving standing tree. The interior of the snag may be sound or rotted

SNAG LEVEL - The number of snags per unit of area by d b.h. class selected as a management goal; the level is predicted on the theoretical number of snags per unit of area by diameter class needed to support nesting populations of woodpeckers at a selected density.

SOCIOECONOMIC - Pertaining to, or signifying the combination or interaction of, social and economic factors.

SOIL EROSION - The detachment and movement of soil from the land surface by wind, water, or gravity.

SOIL COMPACTION - Increase in soil bulk density

SOIL PRODUCTIVITY - The capacity of a soil, in its normal environment, to produce a specific plant or sequence of plants under a specific system of management.

SOIL RESOURCE INVENTORY (SRI) - An inventory of the soil resource based on landform, vegetative characteristics, soil characteristics, and management potentials

SPECIAL COMPONENT - The portion of the commercial forest land that needs special treatment of the timber resource to achieve other resource objectives (e.g., old growth, streamside protection, or visual corridors)

SPECIAL USE PERMITS - Permits and granting of easements (excluding road permits and highway easements) authorizing the occupancy and use of land.

STAND - An aggregation of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition as to be distinguishable from the forest in adjoining areas.

STANDARD - Performance criteria indicating acceptable norms or specifications that actions must meet. A principle requiring a specific level of attainment, a rule to measure against

STANDARD COMPONENT - The portion of the commercial forest land on which crops of industrial wood can be grown and harvested with adequate protection of the forest resources under the usual provisions of the timber sale contract.

STATE HISTORIC PRESERVATION OFFICER (SHPO) - An official appointed by the Governor of each State to direct implementation of the National Historic Preservation Act of 1966 and subsequent regulations and Executive Order. Responsibilities include: State-wide cultural resource inventory, development of a State Historic Preservation Plan, review of National Register of Historic Places nominations, administration of Federal historic preservation grants, and review of Federal undertakings which might affect cultural resources listed on or eligible for the National Register of Historic Places.

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.

STOCKING LEVEL CONTROL - The process of maintaining the desirable number of trees to achieve optimum growth and management.

STREAMFLOW - The discharge of water from a watershed that occurs in a natural stream channel

STRUCTURAL RANGE IMPROVEMENT - Improvement requiring construction or installation to improve the range, facilitate management, or control distribution and movement of livestock

SUITABILITY - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

SUITABLE TIMBER LAND - Forested lands that are available for timber management because they have not been withdrawn because of Law or Regulation, where irreversible damage would not occur, and where regeneration can be assured.

SUMMER RANGE - A portion of the total range on which big game animals normally find food and cover during summer months.

SUNK FUNDS - Monies already invested.

SUPPRESSION - The action of extinguishing or confining a fire.

SUSTAINED YIELD - The achievement and maintenance in perpetuity of a periodic output of the renewable resources without impairment of the productivity of the land.

T

TARGETS - Objectives assigned to the Forest by the Regional Plan.

TECTONIC - Of, pertaining to, or designating the rock structure and external forms resulting from the deformation of the earth's crust.

TEMPORARY ROADS - Temporary roads are low-level roads constructed for a single purpose and short-term use. Once use of the road has been completed, it is obliterated, and the land it occupied is returned to production.

THERMAL COVER - Cover used by animals to lessen the effects of weather; for elk the types of cover are:
Summer Range - A stand of coniferous trees at least 40 feet tall with an average crown closure of 40 percent or more.

Winter Range - A stand of coniferous trees 10 feet or more tall with an average crown closure of 40 percent or more.

THINNING - The practice of removing some of the trees in a stand so that the remaining trees will grow faster due to reduced competition for nutrients, water, and sunlight. Thinning may be done at two different stages:

1. *Commercial thinning* - Removing trees that have reached sufficient size to be manufactured into a product.
2. *Precommercial thinning* - Removing trees that are too small to make a merchantable product

THREATENED SPECIES - Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of the Interior as a threatened species.

THRESHOLD - The point or level of activity beyond which an undesirable set of responses begins to take place within a given resource system.

TIERING - Refers to the coverage of general matters in broad 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-specified statements), incorporating by reference the general discussions and concentrating solely on the issues specific to the statement in question.

TIMBER - A general term for the major woody growth of vegetation in a forest area.

TIMBER CLASSIFICATION - Forested 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.

1. *Nonforest* - Land that has never supported forests and land formerly forested where use for timber production is precluded by development or other uses.
2. *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

- 3 *Suitable* - Land to be managed for timber production on a regulated basis
- 4 *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
- 5 *Commercial Forest* - Forest land tentatively suitable for the production of continuous crops of timber and that has not been withdrawn

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. The term "timber production" does not include production of fuelwood.

TIMBER SALE PROGRAM QUANTITY - This includes all volume expected to be offered for sale. This includes "green" material, salvage, firewood and miscellaneous products. This is used to measure attainment of RPA budgeted target.

TIMBER STAND IMPROVEMENT (TSI) - Management activities conducted in an immature stand to accelerate diameter growth and improve the form of the trees that remain.

TOLERANCE - The ability of a tree to grow satisfactorily in the shade of, and in competition with, other trees.

TONS OF SUSPENDED PARTICULATES - A measure of the amount of solid material contributed to the airshed by smoke.

TRAILHEAD - The parking, signing, and other facilities available at the terminus of a trail.

TRAIL VEHICLE - Vehicles designed for trail use that are 40 inches wide or less, such as bicycles, snowmobiles, trail bikes, trail scooters, and all-terrain vehicles.

TRANSITORY RANGE - Land that is suitable for grazing use of a nonenduring or temporary nature over a period of time. For example, on particular disturbed lands, grass may remain in the area for a period of time before being replaced by trees or shrubs not suitable for forage.

TRANSPORTATION SYSTEM - All existing and planned roads and trails needed to access the Forest.

TUFF - A rock formed of compacted volcanic fragments, generally smaller than 4mm in diameter.

U

UNDERSTORY VEGETATION - Grass, small trees, shrubs, and other plants found beneath the overstory (the trees comprising the forest).

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.

UNIT PLANS - Land management plans prepared for multiple use management of land and resources on portions (units) of the National Forests, which do not necessarily fully incorporate NFMA requirements. "Units" do not always follow National Forest boundaries and, in some cases, include parts of two or more National Forests.

UNPLANNED IGNITION - A fire started at random by either natural or human causes, or a deliberate incendiary fire.

UNREGULATED - Timber land not managed on a sustained yield basis, such as administrative sites, campgrounds, and experimental forests.

UTILITY AND TRANSMISSION CORRIDOR - A strip of land designated for the transportation of energy, commodities, and communications by railroad, State highway, electrical power transmission (69 KV or above), oil and gas and coal slurry pipelines 10 inches in diameter and larger, and telecommunication cable and electronic sites for interstate use. Transportation of minor amounts of power for short distances, such as short feeder lines from small power projects including geothermal or wind, or to serve customer subservice substations along the line, are not to be treated within the Forest Plan effort.

UTILIZATION STANDARDS - Standards guiding the use and removal of timber, which is measured in terms of diameter at breast height (d.b.h.), top diameter inside the bark (top d.i.b.), and percent "soundness" of the wood.

V

VIABLE POPULATION - The number of individuals of a species required to ensure the long-term existence of the species in natural, self-sustaining populations adequately distributed throughout their region.

VIEWSHED - The total landscape seen or potentially seen from all or a logical part of a travel route, use area, or water body.

W

WATERSHED - The area that contributes water to a drainage or stream.

WETLANDS - Areas that are inundated by surface water or groundwater with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction (Executive Order 11990).

WILD AND SCENIC RIVERS - Those rivers or sections of rivers designated as such by congressional actions under the 1968 Wild and Scenic Rivers Act, as wild, scenic, or recreational by an act of the Legislature of the State or States through which they flow. Wild and scenic rivers may be classified and administered under one or more of the following categories:

1. *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. These represent vestiges of primitive America.
2. *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.
3. *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.

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. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature, with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition, and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

WILDERNESS ACT - Establishes a National Wilderness Preservation System to be composed of Federally-owned areas designated by Congress, administered for use and enjoyment as Wilderness, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as Wilderness

WILDERNESS RESOURCE SPECTRUM (WRS) - Classification used to further divide a wilderness into zones based on degrees of primitiveness. Areas of the Ochoco Wilderness will be managed under two classes of the WRS system:

1. *Primitive* - characterized by an essentially unmodified environment. Concentration of users is low and evidence of human use is minimal. The area is managed to be essentially free from *evidence of human-induced restrictions and controls*.
2. *Semiprimitive* - characterized by a predominately unmodified natural environment of moderate size. The concentration of users is low, but there is often evidence of other users. The area is managed in such a way that *minimum on-site controls and restrictions may be present, but are subtle*.

WILDFIRE - Any wildland fire that is not a prescribed fire. All wildfires require suppression.

WILDLIFE - All nondomesticated mammals, birds, reptiles, and amphibians living in a natural environment, including both game species and nongame species. Animals or their progeny, which once were domesticated but escaped captivity and are running wild (i.e., feral animals), such as horses, burros, and hogs, are not considered wildlife.

WILDLIFE AND FISH USER DAY (WFUD) - One WFUD consists of 12 hours of recreation that is the result of fish or wildlife.

WILDLIFE HABITAT DIVERSITY - The distribution and abundance of different plant and animal communities and species within a specific area.

WINTER RANGE - A range, usually at lower elevation, used by big game during the winter months; usually smaller and better-defined than summer ranges.

WITHDRAWAL - The withholding of an area of Federal land from settlement, sale, location, or entry, under some or all of the general land laws for the purpose of limiting activities under those laws in order to maintain other public values in the area.

WORKING GROUP - Comprises those parts of a forest that have generally the same growth potential and management opportunities.

Y

YARDING - The moving of logs from the stump where cut to a central concentration area or landing.

Z

ZONE OF INFLUENCE - The geographic area where most, but not all, of the direct social and economic effects of the Forest and Grassland's management occur.

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