

# **CHAPTER 5**

## **Consultation and Coordination**

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# SCOPING

In July 2000, we distributed preliminary information on LSR 267 restoration at local community functions. At the same time, we also mailed this information to over 200 persons or groups known to have interest in the local area. The purpose was to initiate issue identification and to open public dialogue regarding the proposed restoration plan. During 2001, BLM solicited public participation through a series of public meetings and field trips:

February 28, 2001	Public Meeting, Eugene BLM Office, Eugene, OR
March 23, 2001	Public Meeting, Lorane Grange, Lorane, OR
April 19, 2001	Presentation, Coast Provincial Advisory Council
May 19, 2001	Field Trip, Siuslaw River area
May 31, 2001	Field Trip, Perkins Creek area
June 14, 2001	Field Trip, Swing Log Creek area
July 12, 2001	Field Trip, Haight Creek area
July 21, 2001	Field Trip, Creat Road area
September 13, 2001	Public Meeting, Eugene BLM Office
October 25, 2001	Presentation, Coast Provincial Advisory Council
November 15, 2001	Field Trip, Monte Carlo Test Plots
March 12, 2002	Presentation, ONRC Action Team

In addition, BLM received six letters or e-mails in which the authors expressed concerns or made suggestions related to LSR restoration. BLM issued four newsletters about LSR restoration and this proposed plan announcing field trips or public meetings, addressing questions from the public, and describing preliminary issues and alternatives.

BLM published a Notice of Intent to prepare an EIS in the Federal Register on October 9, 2002, beginning the formal scoping period. The Notice of Intent requested comments on the scope of the analysis for this proposed plan. BLM mailed a letter and a copy of the Notice of Intent to each person and group on the LSR 267 mailing list. The letter explained that comments received prior to the formal scoping period would be used in conjunction with those received during formal scoping, and commentors did not need to restate their concerns during formal scoping to have them considered in the EIS. In response to the Notice of Intent, BLM received one letter from the Oregon Natural Resources Council (ONRC). Their comments were not specific to this EIS and did not substantively add to previous comments received from ONRC during informal scoping.

# SUMMARY OF SCOPING COMMENTS

During field trips and public meetings, or through written correspondence, BLM received many comments on the scope of the environmental analysis, possible alternatives, and issues for consideration. These comments, and how this draft EIS responds to them, are summarized below:

## **Commercial Timber Harvest**

Several commentors expressed concern that BLM should not use commercial timber harvest to achieve restoration projects. Commentors felt that “logging incentives” should be removed from restoration activities. Other commentors were concerned that a commercially viable product would be forgone unnecessarily. The range of alternatives in this draft EIS responds to these concerns: Alternative B would conduct restoration without commercial removal of cut trees, and other alternatives would have different levels of commercial timber harvest.

## **Risk of Fire and Bark Beetle Infestation**

Commentors were concerned that leaving cut trees in thinned stands would increase the risk of fire and insect infestations. Issue 3 explicitly addresses this concern; it compares the risk of fire and insect infestation among all alternatives.

## **Short-term Impacts vs. Long-term Benefits**

Many commentors felt BLM should address the trade-offs between short-term effects and long-term benefits to critical resources. Issues 6 and 7 address this concern. Issue 6 considers the effects of the alternatives on existing levels of northern spotted owl dispersal habitat and anticipated development of suitable owl habitat and target habitat conditions. Similarly for aquatic habitat, Issue 7 compares the short-term effects of restoration activities on sedimentation compared to long-term benefits to coho salmon habitat.

## **Need for New Roads**

Several commentors stated that BLM should not construct any more roads. Others were concerned about the effects of road closures on public access. The alternatives and several issues address these concerns. Each alternative would have different levels of new road construction, ranging from none (Alternatives A and B) to 15 miles (Alternative E). The alternatives would also decommission different lengths of existing road. Issue 1 addresses effects to road decommissioning and public access; Issue 2 addresses new road construction.

## **Multiple Silvicultural Trajectories**

A number of commentors expressed the opinion that there were many pathways for the development of late-successional forest structure, and that BLM should take this into account in developing a restoration program. The range of alternatives presented in this draft EIS compare a variety of different silvicultural trajectories. Only one alternative – Alternative A (No Action) – represents a single trajectory.

## **Maintaining Management Options**

Commentors suggested that an alternative be considered that maintains future management options, in part to preserve opportunities for adaptive management. All alternatives leave a substantial amount of forest untreated. If future management were to focus on different goals, a substantial land base would remain available under all alternatives.

## Restore Natural Processes and Let the Disturbances Happen

One commentor suggested that BLM restore natural processes and let natural disturbances occur. To some extent, Alternatives A and E address this comment. Alternative A (No Action) would do no active management of stands and streams and let current conditions continue. Alternative E would attempt to restore stand densities to within the natural range of variability as quickly as possible. However, an alternative that would do no active management and would let all disturbances happen (i.e., without wildfire suppression or salvage), is addressed in Chapter 2, as an alternative considered, but not analyzed in detail.

## CONSULTATION

BLM will consult under the Endangered Species Act with the Fish and Wildlife Service and NOAA Fisheries (National Marine Fisheries Service). BLM will likely initiate consultation following review of public comments on this draft EIS. Consultation will be completed prior to a Record of Decision on this proposed plan.

The EIS Core Team met with a group of federal scientists on April 9, 2002, to evaluate potential analysis parameters. This meeting was limited to a discussion of analytical techniques and did not include recommendations about management direction or seek consensus advice. Those present included:

Eric Forsman	Wildlife Biologist, USDA Forest Service, Pacific Northwest Research Station
Bob Gresswell	Fisheries Biologist, U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center
Joe Lint	Wildlife Biologist, Oregon State Office, BLM
Nathan Poage	Post-doctoral Research Associate, U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center
Christian Torgersen	Fisheries Biologist, U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center.

The team later consulted further with Eric Forsman and Joe Lint in September 2002 about northern spotted owl dispersal habitat in the planning area.

The EIS Core Team consulted with Bruce Hostetler, a Forest Service entomologist at the Westside Insect & Disease Service Center, on the effects of the alternatives on Douglas-fir bark beetles. The Westside Insect & Disease Service Center provides technical assistance to federal agencies responsible for forested lands in the Pacific Northwest. For more information on the Westside Insect & Disease Service Center, see <http://www.fs.fed.us/r6/nr/fid/staffweb/whowhat.shtml>. The EIS Core Team met with Bruce Hostetler and Darrell Ross of Oregon State University on May 23, 2002 to evaluate Douglas-fir bark beetle risk associated with coarse woody debris creation. This meeting was limited to a discussion of environmental effects of management actions and did not include recommendations about management direction or seek consensus advice. The EIS Core Team also met with Bruce Hostetler on September 19, 2002 for further evaluation of Douglas-fir bark beetle risk associated with coarse woody debris creation.

# AVAILABILITY AND DISTRIBUTION OF THE DRAFT EIS

The draft EIS will be available on the internet at : <<http://www.edo.or.blm.gov/lst>>

In addition, this draft EIS has been sent to the following agencies, organizations, and persons:

A.M. McCoy  
Al Pearn  
Alix and Bruce Mosieur  
Anna Morrison  
Barbara Beers  
Bob Freimark  
Bruce and Berneda McDonald  
Bureau of Indian Affairs  
Campbell Group, Pacific West Timberlands  
Charles Hurliman  
Confederated Tribes of Grand Ronde  
Confederated Tribes of Coos Lower Umpqua and Siuslaw Indians  
D.A. Eldridge  
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Don Carlton  
Douglas County Timber Operators  
Environmental Protection Agency  
Fabian Lawrence  
First Premier Properties  
George Brooks  
Hampton Tree Farms  
Joanne Vinton  
Lane County Land Management  
Linda Winter  
Nancy Nichols  
Oregon Department of Environmental Quality  
Oregon Department of Fish & Wildlife  
Oregon Department of Forestry, Western Lane  
Oregon Department of Land Conservation  
Oregon Natural Resources Council  
Pacific Rivers Council  
Paul Reed  
Phil Stenbeck  
R. Beers  
Ron Brainard  
Sierra Club - Many Rivers Group  
US Fish and Wildlife Service  
USFS Siuslaw National Forest  
EPA Region 10- Seattle WA  
Office of the Governor Attn: Natural Resource Staff  
Association of O and C Counties

# LIST OF PREPARERS

The following team was primarily responsible for preparing this EIS:

## EIS Core Team

Karin Baitis	Soil Scientist, BLM, 2 years; Soil Scientist, private industry, 8 years Education: BS Geography, University of Oregon MA Geography/Geomorphology, University of Oregon Expertise: geomorphology and soils Role: water quality, sedimentation
Kathy Barry	Wildlife Biologist, U.S. Fish and Wildlife Service, 22 years Education: BS, Wildlife Management, Humboldt State University Expertise: endangered species biology Role: wildlife biology and Section 7 Consultation
Alison Center	Wildlife Biologist, BLM, 13 years Education: BS, Zoology, University of Washington; MS, Wildlife Biology, Washington State University Expertise: endangered species biology Role: wildlife biology
Rick Colvin	Landscape Planner, BLM, 22 years Education: BS, Resource Recreation Management; MA, Interdisciplinary Studies, Oregon State University Expertise: outdoor recreation planning, landscape planning, NEPA Role: team leader, public involvement, road systems
Dave DeMoss	Forester, BLM, 25 years Education: BS, Forestry, University of California, Berkeley Expertise: timber management, silviculture Role: silviculture, modeling
Richard Hardt	Forest Ecologist, BLM, 9 years Education: BA, Natural Sciences, Johns Hopkins University; MLA, Landscape Architecture, Harvard University; PhD, Forest Resources, University of Georgia Expertise: forest ecology, planning, NEPA Role: forest ecology, primary author
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Mark Stephen	Forest Ecologist, BLM, 24 years Education: BS, Forestry, University of Kentucky Expertise: forest resources, forest ecology, silviculture Role: forest ecology, silviculture, noxious weeds
Debra Wilson	Resource Technician, BLM, 18 years Education: BS, Construction Management, Washington State University Expertise: contract administration, road management, desktop publishing Role: writer/editor, desktop publishing, road systems.

The EIS Core Team received technical analysis from the following specialists:

Darrell Ashcraft	Fuels Technician, U.S. Forest Service
Bruce Hostetler	Entomologist, U.S. Forest Service, Westside Insect & Disease Service Center.



# **Glossary**

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**Activity plan** - a document that describes management objectives, actions and projects to implement decisions of the RMP or other planning documents. Activity plans are usually prepared for one or more resources in a specific area.

**Adaptive management** - a continuing process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving implementation and achieving the goals of the selected alternative.

**Anadromous fish** - fish that are born and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce, e.g. coho salmon and steelhead trout.

**Basal area** - the total cross-sectional area of all trees in a stand, measured outside the bark at breast height, usually expressed in square feet/acre or square meters/hectare.

**Best Management Practices (BMP)** - a suite of techniques that guide, or may be applied to, management actions, to aid in achieving desired outcomes. Best management practices are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

**Canopy closure** - the degree to which the canopy blocks sunlight or obscures the sky.

**Clearcut** - a timber harvest in which all or almost all of the trees in a stand are removed in one cutting.

**Coarse woody debris** - a tree or a portion of a tree that has fallen or been cut and left in the stand.

**Coefficient of variation** - a statistical method of measuring the amount of variation in a group, calculated as the standard deviation/mean average.

**Cohort** - a group of trees of the same age within a stand.

**Commercial thinning** - the harvest of generally merchantable trees from a stand, usually to encourage growth of the remaining trees.

**Conformance** - means that a proposed action shall be specifically provided for in the land use plan or, if not specifically mentioned, shall be clearly consistent with the goals, objectives, or standards of the approved land use plan.

**Cooperating agency** - assists the lead federal agency in developing an EA or EIS. The Council on Environmental Quality regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any tribe or Federal, State, or local government jurisdiction with such qualifications can become a cooperating agency by agreement with the lead agency.

**Council on Environmental Quality (CEQ)** - an advisory council to the President established by the National Environmental Policy Act of 1969. CEQ reviews federal programs for their effects on the environment, conducts environmental studies, and advises the President on environmental matters.

**Critical habitat** - (1) Specific areas within the habitat occupied by a species at the time it is listed under the Endangered Species Act where there are physical or biological features (i) essential to the conservation of the species and (ii) that may require special

management considerations or protection, and (2) specific areas outside the habitat occupied by the species at the time it is listed upon the determination by the Secretary of the Interior that such areas are essential for the conservation of the species.

**Crown** - the upper part of a tree that carries the main system of branches and the foliage.

**Cumulative effects** - impacts on the environment resulting from the incremental effect of the action when added to effects of past, present, and reasonably foreseeable future actions regardless of the agency (federal or nonfederal) or person undertaking such other actions. Cumulative effects can result from individually minor, but collectively similar, actions occurring over a period of time.

**Decision Record** - a document separate from, but associated with, an environmental assessment, that states the management decision on a proposed action resulting in a Finding of No Significant Impact.

**Density-dependent mortality** - a source of tree death that increases as the number of trees in a given area increases, which typically kills the smaller trees in a stand, e.g., suppression by competition for light.

**Density-independent mortality** - a source of tree death that does not increase as the number of trees in a given area increases, e.g., lightning strikes.

**Diameter at breast height (dbh)** - the diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

**Differentiation** - the process by which individual trees in a cohort develop different growth rates and canopy positions.

**Draft Environmental Impact Statement (DEIS)** - the draft statement of environmental effects, which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review.

**Effects** - effects, impacts, and consequences, as used in this environmental impact statement, are synonymous. Effects may be direct, indirect, or cumulative and may fall in one of these categories: aesthetic, historic, cultural, economic, social, health, or ecological (such as effects on natural resources and on the components, structures, and functioning of affected ecosystems).

**Endangered species** - a species defined in accordance with the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range.

**Endangered Species Act (ESA)** - a federal law passed in 1973 to conserve species of wildlife and plants determined by the Director of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to be endangered or threatened with extinction in all or a significant portion of its range. Among other measures, ESA requires all federal agencies to conserve these species and consult with the U.S. Fish and Wildlife Service or National Marine Fisheries Service on federal actions that may affect these species or their designated critical habitat.

**Environmental Assessment (EA)** - a systematic analysis of site-specific activities used to determine whether such activities would have a significant effect on the quality of the human environment, whether a formal environmental impact statement is required, and also to aid agency compliance with the National Environmental Policy Act when no environmental impact statement is necessary.

**Environmental Impact Statement (EIS)** - a statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the CEQ guidelines, and directives of the agency responsible for the project proposal.

**Fire management plan** - a strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, replanned dispatch plans, prescribed fire plans, and prevention plans.

**Forest Ecosystem Management Assessment Team (FEMAT)** - an interagency, interdisciplinary team of scientists, economists, and sociologists led by Dr. Jack Ward Thomas and chartered in 1993 to review proposals for management of federal forests within the range of the northern spotted owl. The team produced a report in July 1993 assessing ten options in detail, which were used as a basis for developing the Northwest Forest Plan.

**Fragmentation** - a process of reducing size and connectivity of stands that compose a forest.

**Habitat** - a place or environment where a plant or animal naturally or normally lives and grows.

**Height: diameter ratio** - the ratio of tree height to tree diameter (dbh), which indicates the mechanical stability of the tree.

**Interdisciplinary team (ID team)** - a group of individuals with varying areas of specialty assembled to solve a problem or perform a task.

**Intermittent stream** - a non-permanent, flowing drainage feature having a definable channel and evidence of annual scour or deposition.

**Irretrievable** - applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

**Irreversible** - a term that describes the loss of future options. Applies primarily to the effects, or use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity that are renewable only over long periods of time.

**Issue** - a point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

**Landing** - a place on or adjacent to the logging site where logs are assembled for further transport.

**Known site** - historic and current location of a species reported by a credible source, available to field offices, and that does not require additional species verification or survey to locate the species.

**Land use allocation** - commitment of a given area of land or a resource to one or more specific uses (such as campgrounds or Wilderness). In the Northwest Forest Plan, one of

the seven allocations of Congressionally Withdrawn Areas, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, Administratively Withdrawn Areas, Riparian Reserves, or Matrix.

**Landscape** - a heterogeneous land area with interacting ecosystems repeated in similar form throughout .

**Late-successional forests** - forest stands consisting of trees, structural attributes, supporting biological communities, and processes associated with old-growth and/or mature forests. Forest seral stages that include mature and old-growth age classes. Age is not necessarily a defining characteristic but has been used as a proxy or indicator in some usages. Minimum ages are typically 80 to 130 years, more or less, depending on the site quality, species, rate of stand development, and other factors.

**Late-Successional Reserves (LSR)** - a land use allocation under the Northwest Forest Plan with the objective to protect and enhance conditions of late-successional and old-growth forest ecosystems that serve as habitat for late-successional and old-growth forest related species, including the northern spotted owl.

**Late-Successional Reserve Assessment** - a systematic management assessment that characterizes the conditions within an LSR (or group of LSRs) and establishes criteria for treatments.

**Management Recommendation** - an interagency document that addresses how to manage known sites and that provide guidance to agency efforts in conserving Survey and Manage species.

**Matrix** - a land use allocation under the Northwest Forest Plan of the federal lands outside of reserves, withdrawn areas, Managed Late-Successional Areas, and Adaptive Management Areas.

**Mature forest** - a subset of late-successional forests. Mature forests are characterized by the onset of slowed height growth, crown expansion, heavier limbs, gaps, some mortality in larger trees, and appearance of more shade-tolerant species or additional crown layers. In Douglas-fir forests west of the Cascade Mountains, this stage typically begins between 80 and 130 years, depending on site conditions and stand history.

**Mid-seral stands** - forest stands that are not yet late-successional, defined here as stands 51-80 years old.

**Mitigation measures** - modifications of actions taken to: (1) avoid impacts by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or, (5) compensate for impacts by replacing or providing substitute resources or environments.

**Monitoring** - a process of collecting information to evaluate if objectives and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned.

**National Environmental Policy Act (NEPA)** - a federal law passed in 1969 to declare a National policy that encourages productive and enjoyable harmony between humankind and the environment, promotes efforts that prevent or eliminate damage to the environment and biosphere, stimulates the health and welfare of humanity, enriches the understanding of the ecological systems and natural resources important to the nation, and established a Council on Environmental Quality.

**Non-shared road** - a cooperating party (landowner) to a reciprocal right-of-way agreement has an implied permitted right to use the road, but has not exercised this right, nor shared in the value of the road.

**Northwest Forest Plan** - coordinated ecosystem management direction incorporated into land management plans for lands administered by the Bureau of Land Management and the Forest Service within the range of the northern spotted owl. A Record of Decision was signed on April 13, 1994, by the Secretaries of the Department of Agriculture and the Department of Interior to adopt Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 1994b). The Record of Decision, including the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl is referred to as the Northwest Forest Plan. The Northwest Forest Plan is not a “plan” in the agency planning regulations sense; the term instead refers collectively to the 1994 amendment to existing agency unit plans or to the specific standards and guidelines for late- successional species incorporated into subsequent administrative unit plans.

**Noxious weed** - a plant specified by law as being especially undesirable, troublesome, and difficult to control.

**Old-growth associated species** - plant and animal species that exhibit a strong association with old-growth forests.

**Old-growth forest** - an ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species, composition, and ecosystem function. The Northwest Forest Plan SEIS and FEMAT describe old-growth forest as a forest stand usually at least 180 to 220 years old with moderate-to-high canopy closure; a multi-layered, multi-species canopy dominated by large overstory trees; high incidence of large trees, some with broken tops and other indications of old and decaying wood (decadence); numerous large snags; and heavy accumulations of wood, including large logs on the ground.

**Overstory** - trees that provide the uppermost layer of foliage in a forest with more than one roughly horizontal layer of foliage.

**Peak flow** - the highest amount of stream or river flow occurring in a year or from a single storm event.

**Perennial stream** - a stream that typically has running water on a year-round basis.

**Plantation** - a managed forest stand; defined in this EIS as a forest stand that has been established by planting or artificial seeding and has been pre-commercially thinned (or is too young to be pre-commercially thinned).

**Pre-commercial thinning (PCT)** - the silvicultural practice of cutting some of the trees less than merchantable size in a stand so that the remaining trees will grow faster, with the expectation of future commercial timber harvest. PCT is usually done in stands 10 - 20 years old.

**Prescribed fire** - a fire ignited by management actions to meet specific objectives.

**Quadratic mean diameter** - the average tree diameter of a stand, calculated as the square root of the sum of the squares of the tree diameters divided by the number of trees.

**Record of Decision** - a document separate from, but associated with, an environmental impact statement that: states the management decision, states the reason for that decision, identifies all alternatives including the environmentally preferable and selected alternatives, and also states whether all practicable measures to avoid environmental harm from the selected alternative have been adopted, and if not, why not.

**Relative Density** - a measure of the growing space available to the average tree in a stand; calculated as the basal area divided by the square root of the quadratic mean tree diameter (Curtis 1982).

**Resource Management Plan (RMP)** - a set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act. The effects of a proposed Resource Management Plan and alternatives are analyzed in an environmental impact statement (RMP EIS).

**Riparian Reserves** - a land use allocation under the Northwest Forest Plan of areas along streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis.

**Scoping** - a process defined, according to the provisions of the National Environmental Policy Act, as an early and open process for determining the scope of the issues to be addressed and for identifying the significant issues related to a proposed action.

**Sediment yield** - the quantity of soil, rock particles, organic matter or other debris transported through a cross section of stream in a given period of time.

**Seed tree system** - an even-aged silvicultural system in which all trees are cut except for selected trees left standing to provide a seed source for natural regeneration.

**Seral stages** - the series of relatively transitory plant communities that develop during ecological succession from bare ground to the climax stage.

**Shade-tolerant conifers** - conifer tree species capable of growing well in shade, e.g., western hemlock and western red-cedar.

**Shared Roads** - a cooperating party (landowner) to a reciprocal right-of-way agreement has a shared investment in the value of the road and a permitted right to use the road.  
**Site class** - a measure of an area's relative capacity for producing timber or other vegetation.

**Site index** - a measure of forest productivity expressed as the height of the tallest trees in a stand at an index age.

**Slash** - the branches, bark, tops, cull logs, and broken or uprooted trees left on the ground after logging.

**Snag** - a standing dead, partially dead, or defective (cull) tree.

**Special Forest Products** - firewood, shake bolts, mushrooms, ferns, floral greens, berries, mosses, bark, grasses, etc. that could be harvested in accordance with the objectives and guidelines in the RMP.

**Spur road** - a branch of a main or secondary road; limited in this EIS to a short (<200') segment of road, usually to facilitate yarding or to provide access to a landing.

**Stagnation** - cessation or severe decline of tree growth and development in a forest stand because of excessive tree density and/or poor growing conditions.

**Stand (tree stand)** - an aggregation of trees occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition to be distinguishable from the forest in adjoining areas.

**Stand density** - a measurement of the number and size of trees on a forest site, which may be expressed in terms of numbers of trees per acre, basal area, stand density index, or relative density.

**Stream order** - a hydrologic system of stream classification based on stream branching. Each small unbranched tributary is a 1<sup>st</sup>-order stream. Two 1<sup>st</sup>-order streams join to make a 2<sup>nd</sup>-order stream. Two 2<sup>nd</sup>-order streams join to form a 3<sup>rd</sup>-order stream, and so forth.

**Stream reach** - an individual 1<sup>st</sup>-order stream or a segment of another stream that has beginning and ending points at a stream confluence. Reach end points are normally designated where a tributary confluence changes the channel character or order. In this planning area, stream reaches are generally ½ to 1½ miles in length, except where channel character, confluence distribution, or management considerations require variance.

**Succession** - a series of dynamic changes by which one group of organisms succeeds another through stages leading to a potential natural community or climax. An example is development of a series of plant communities (called seral stages) following a major disturbance.

**Suppression** - the reduction in growth and development of trees as a result of competition with larger trees.

**Survey and Manage** - a mitigation measure adopted as a standard and guideline within the Northwest Forest Plan Record of Decision that is intended to mitigate impacts of land management efforts on those species that are closely associated with late-successional or old-growth forests and whose long-term persistence is a concern.

**Threatened species** - a species defined in accordance with the Endangered Species Act as being likely to become endangered throughout all or a significant portion of its range within the foreseeable future.

**Underplanting** - planting tree seedlings under an existing forest overstory.

**Understory** - the trees and other woody species growing under the canopies of larger adjacent trees.

**Watershed analysis** - a systematic procedure for characterizing watershed and ecological processes to meet specific management and social objectives. Watershed analysis provides a basis for ecosystem management planning that is applied to watersheds of approximately 20 to 200 square miles.

**Wildfire** - an unwanted wildland fire.

**Windthrow** - a tree or trees uprooted or felled by the wind.

**Yarding** - the act or process of moving logs to a landing.



# **Acronyms**

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### List of Acronyms and Abbreviations Used Within this Document

ACS - Aquatic Conservation Strategy  
 BOD - biological oxygen demand  
 BLM - Bureau of Land Management  
 BMP - Best Management Practice  
 CEQ - Council on Environmental Quality  
 CHU - Critical Habitat Unit  
 CFR - Code of Federal Regulations  
 CV - coefficient of variation  
 DEQ - Department of Environmental Quality  
 dbh - diameter breast height  
 DMA - Designated Management Agency  
 DNA - Documentation of Land Use Plan Conformance and NEPA Adequacy  
 DO - dissolved oxygen  
 EA - Environmental Assessment  
 EIS - Environmental Impact Statement  
 EPA - Environmental Protection Agency  
 ESA - Endangered Species Act  
 FEMAT - Forest Ecosystem Management Assessment Team  
 FOI - Forest Operations Inventory  
 FSEIS - Final Supplemental Environmental Impact Statement  
 FVS - Forest Vegetation Simulator  
 FWS - U.S. Fish and Wildlife Service  
 GIS - Geographic Information System  
 H:D - height:diameter ratio  
 LMS - Landscape Management System  
 LSR - Late-Successional Reserve  
 MBF - thousand board feet  
 NEPA - National Environmental Policy Act  
 NMFS - National Marine Fisheries Service (NOAA Fisheries)  
 NOAA - National Oceanic and Atmospheric Administration  
 ODEQ - Oregon Department of Environmental Quality  
 ODFW - Oregon Department of Fish and Wildlife  
 PCT - pre-commercial thinning  
 RD - relative density  
 ROD - Record of Decision  
 RMP - Resource Management Plan  
 RMP EIS - Resource Management Plan Environmental Impact Statement  
 SEIS - Supplemental Environmental Impact Statement  
 SVS - Stand Visualization System  
 T&E - threatened and endangered  
 TMDL - Total Maximum Daily Limit  
 TPA - trees per acre  
 USDA - United States Department of Agriculture  
 USDI - United States Department of the Interior



# References

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All of the following publications and documents are available for review at the Eugene District Office, in addition to the other sources listed.

Anderson, H.E. 1982. Aids to Determining Fuel Models for Estimating Fire Behavior. USDA Forest Service Res. Pap. INT-122. Intermountain Forest and Range Experiment Station. Ogden, Utah.

Anthony, R. G., M. C. Hansen, K. Swindle, and A. Ellingson. 2001. Effects of forest stand manipulations on spotted owl home range and habitat use patterns: a case study. Report to: Oregon Department of Forestry, Salem, Oregon by the Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University. 19 pp.

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