U.S. Department of the Interior
Bureau of Land Management

Eugene District Office
2890 Chad Drive
Eugene, Oregon 97408

June 1995

Record of Decision and Resource Management Plan

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/PL-95/025+1792

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE
P.O. BOX 10226
EUGENE, OREGON 97440

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

Dear Public Land User:

This is a consolidated document that includes both the Record of Decision (ROD) and the Eugene Resource Management Plan (RMP), which was approved by the Oregon/Washington State Director on May 22, 1995. The ROD approves the Bureau of Land Management's (BLM) decisions for managing 317,500 acres in portions of Benton, Douglas, Lane, and Linn counties.

The Record of Decision was prepared in conformance with Section 40, Code of Federal Regulations, part 1505.2, which requires a concise document linking the manager's decision to the analysis presented in the Eugene District Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS), dated November 1994. The ROD shows how environmental impacts and other factors were considered in the decision-making process. The ROD also documents approval and adoption of the preferred alternative, as described in the Eugene PRMP/FEIS. Minor differences from the FEIS, Volume I, Chapter 2 - Proposed Action, or points of clarification in land use allocations or management direction have been incorporated in response to both public comment on the FEIS as well as ongoing staff review.

It should be noted that the Director of the Bureau of Land Management determined there were 9 valid protests on the Eugene PRMP/FEIS. After careful consideration of all points raised in those protests, the Director concluded that the planning team and decision-makers followed the applicable planning procedures, laws, regulations, policies, and resource considerations in developing the Eugene PRMP/FEIS. In addition, the Governor of Oregon was provided a formal opportunity to review the proposed plan for conformance with officially approved or adopted natural resource-related plans, programs or policies of the state or local governments. There were no objections from the Governor.

This document has been sent to all individuals and groups on the RMP mailing list for the Eugene District PRMP/FEIS. The full supporting record for the approved Eugene RMP is also available for inspection in the Eugene District Office, at the address shown above. Copies of draft and final EISs are also available for inspection in the public room at the BLM Oregon/Washington State Office, 1515 SW Fifth St. Portland, Oregon; and Eugene City library, (at 100 W 13th, Eugene, Oregon) during normal office hours. Due to the cost of publication and the expected long-term use of these documents, we urge you to retain your personal copies of each of these documents for future reference.

Although this document contains a map packet with critical information on major land use allocations and management prescriptions, some of the maps will require periodic updating as we implement the approved plans, collect and analyze more information, and practice adaptive management. In addition, a District map will be developed to provide more detailed information for Off-Highway-Vechicle management designations and made available to the public.

We are pleased to provide this copy for your reference and we extend our appreciation for your interest, cooperation and assistance during this planning process. We encourage you to stay informed and involved as we implement, monitor and evaluate the plan.

Sincerely,

Judy Ellen Nelson

District Manager

Enclosure

U.S. Department of the Interior
Bureau of Land Management

EUGENE DISTRICT

RECORD OF DECISION
and
RESOURCE MANAGEMENT PLAN

Prepared by
Eugene District Office

June 1995

Table of Contents

Tables

APPENDICES

Maps (enclosed packet)

1 - Land Use Allocations
2 - Land Status
3 - Existing and Potential Special Areas
4 - Suitable Wild and Scenic
5 - Existing and Planned Recreation
6 - Existing and Planned Trails
7 - Mineral Leasing Restrictions
8 - Locatable Mineral Restrictions
9 - Salable Mineral Restrictions
10 - Land Tenure Zones
11 - Communication Sites/Right-of-Ways
12 - Existing and Suitable W&S Rivers

EUGENE DISTRICT

RECORD OF DECISION

Record of Decision for the Eugene District Resource Management Plan

Prepared by the Bureau of Land Management Eugene District Eugene, Oregon

Introduction

In this Record of Decision we adopt and approve for immediate implementation the following Eugene District Resource Management Plan (RMP), based on the combination of this office's August 1992 Draft Environmental Impact Statement (DEIS) and the November 1994 Final Environmental Impact Statement (FEIS). It is also supported by and consistent with the July 1993 Draft and February 1994 *Final Supplemental Environmental Impact Statement (SEIS) on Management of Habitat of Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* and the April 1994 interagency *Record of Decision for Amendments to Forest Service And Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD). The RMP addresses resource management on 318,039 acres of Federal Land and 1,299 acres of reserved mineral estate administered by Bureau of Land Management in the Eugene District, which is primarily in Lane, Douglas, Linn, and Benton counties, Oregon.

The approved Resource Management Plan responds to the need for a healthy forest ecosystem with habitat that will support populations of native species (particularly those associated with late successional and old growth forests). It also responds to the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies, and contribute valuable resources to the national economy on a predictable and long-term basis. As guided by the April 1994 interagency Record of Decision, BLM managed lands are primarily allocated to Riparian Reserves, Late-Successional Reserves, Adaptive Management Area(s), Connectivity/Diversity Blocks and General Forest Management Areas (GFMA). An Aquatic Conservation Strategy will be applied to all lands and waters under BLM jurisdiction. Major land and resource allocations of the approved Resource Management Plan are displayed in Table 1, which may be found at the end of this Record of Decision.

Alternatives Considered and Rationale for Decision

Seven alternatives for management of the Bureau administered lands and resources in the District were analyzed in the final EIS, and 9 other alternatives in the final SEIS.

No Action: This alternative would not change the BLM management direction established in the current Eugene Management Framework Plans and associated timber management EIS.

Alternative A: This alternative would emphasize a high production of timber and other economically important values on all lands to contribute to community stability.

Alternative B: This alternative would emphasize the contribution of timber production on Oregon and California Revested Railroad (O&C) lands to community stability, consistent with a variety of other land uses. Public Domain (PD) lands with nontimber values and uses of greater importance than timber production would be managed primarily for those values and uses.

Alternative C: This alternative would emphasize retention and improvement of biological diversity while providing a sustained yield of timber to contribute to economic stability.

Alternative D: This alternative would emphasize management for plant and animal habitat diversity, dispersed nonmotorized recreation opportunities, and scenic resources. It would include a variety of other resource values or use including some timber production.

Alternative E: This alternative would emphasize protection of older forests and management and enhancement of values or uses such as dispersed, nonmotorized recreation activities and scenic resources.

Proposed Resource Management Plan: This alternative would emphasize ecosystem management. It would also respond to public comments, incorporate land use allocations and management direction from the interagency Record of Decision noted above, and allow the BLM to manage the natural resources under its jurisdiction to maintain healthy, diverse, and productive ecosystems.

The proposed action responds to multiple needs, the two primary ones being the need for forest habitat and the need for forest products. As stated in the Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS), on page 1-4:

> "The requirement for forest habitat is the need for a healthy forest ecosystem with habitat that will support populations of native species and include protection for riparian areas and waters. This need was emphasized by President Clinton at the April 2, 1993, Forest Conference in Portland, Oregon.
>
> "The need for forest products from forest ecosystems is the requirement for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies and contribute valuable resources to the national economy on a predictable and long-term basis. This need also was stated by President Clinton at the Forest Conference."

The Congressionally directed purposes for managing the Bureau of Land Management administered lands include both conserving the ecosystems upon which species depend and, at the same time, providing raw materials and other resources that are needed to sustain the health and economic well-being of the people of this country. To balance these sometimes conflicting purposes, we adopted the alternative that will both maintain the late-successional and old growth forest ecosystem and provide a predictable and sustainable supply of timber, recreational opportunities, and other resources at the highest level possible. The Proposed Resource Management Plan Alternative (PRMP Alternative) best meets these criteria.

The PRMP Alternative, unlike all of the other action alternatives, applies the same criteria for management of habitat on both Forest Service and BLM lands. This was done in order to accomplish most efficiently the dual objectives discussed above, that is, achieving the biological results required by law, while minimizing adverse impact on timber harvests and jobs. The inefficiencies involved in applying different criteria on Forest Service and BLM land have been noted in previous analyses. For example, in the Report of the Scientific Analysis Team ("SAT Report"), the team found that BLM's plans were relatively high-risk, when compared to the plans of the Forest Service, in terms of conserving the northern spotted owl. As a result, the SAT found that in order for the Forest Service to "make up for significantly increased risks," it would have to dramatically increase the size of protected areas on Forest Service land (SAT Report, pp. 12-13).

We have reviewed the alternatives discussed in the PRMP/FEIS and their predicted environmental, economic, and social consequences and the risks and safeguards inherent in them. The PRMP Alternative in the PRMP/FEIS is the best alternative for providing a sustainable level of human use of the forest resource while still meeting the need to maintain and restore the late-successional and old growth forest ecosystem. We, therefore, selected the PRMP Alternative based on a number of factors indicating it best responds to the purpose and need for the proposed action as expressed in the PRMP/FEIS.

Although management under Alternatives A, B, or the No Action Alternative would provide higher levels of timber supply than the PRMP Alternative, they would not provide adequate assurance that the processes and functions of late-successional and old growth forest ecosystems would be maintained and restored, and would not provide adequate assurance that the riparian habitat essential for many aquatic and terrestrial species would be maintained and restored. All alternatives **except** Alternative E and the PRMP Alternative would have a negative long-term impact on the northern spotted owl. The PRMP Alternative would have a beneficial impact on more Special Status Animal Species than any other alternative (see PRMP/FEIS, p. 4-71). The PRMP Alternative "provides the greatest protection of aquatic habitat," since it provides for wider riparian reserves and more protective measures for perennial and intermittent streams than other alternatives (see PRMP/FEIS, p. 4-67).

As to the No Action Alternative, that alternative is based on plans that existed prior to the listing of both

the northern spotted owl and the marbled murrelet, and it makes no specific provision for the recovery of those species. In addition, it reflects a relatively low level of riparian habitat protection. In view of these factors, BLM believes it is unlikely that Alternatives A and B and the No Action Alternative would be deemed to satisfy the requirements of the Endangered Species Act.

According to the PRMP/FEIS:

> Riparian zones also provide connectivity between blocks of suitable habitat when the uplands have been harvested. These links would be far less effective in Alternatives A, B, C, and the NA than they would be under Alternatives D, E, and the PRMP. The adverse effects of removing riparian zone habitat would be greatest under Alternative NA and slightly less under Alternatives A, B, and C (see PRMP/FEIS, p. 4-53).

The impacts to many species and groups of species of fish, wildlife, and plants are complex and difficult to summarize in this Record of Decision. They are described in detail in the Eugene PRMP/FEIS. Based upon this PRMP/FEIS and all of the information in the record, we have determined that the PRMP Alternative will continue to meet the needs of species influenced by Federal land management activities. We find it meets the requirements of the Endangered Species Act for the conservation of listed species. It also meets the requirements of laws directing the management of these forests for sustainable multiple-use, including the Federal Land Policy and Management Act, and the Oregon and California Lands Act. Moreover, it meets the requirements of acts that protect elements of the environment, and requirements for coordinated planning and consultation.

In addition, the PRMP Alternative offers one advantage that the other alternatives do not -- inclusion of an Adaptive Management Area. (Adaptive management involves experimentation, identifying new information, evaluating it, accounting for it in discretionary decisions, and determining whether to adjust plan direction). The object is to improve the implementation and achieve the goals of the selected alternative. The PRMP Alternative is the only one that specifically allocates an Adaptive Management Area that may be used to develop and test new management approaches to achieve the desired ecological, economic, and other social objectives. This AMA offers the opportunity for creative, voluntary participation in forest management activities by willing participants. We recognize that this will take time, effort, and a good-faith commitment to the goal of improved forest management. Many of the potentially participating communities and agencies have different capabilities for joining this effort. The BLM approach to implementing this initiative will recognize and reflect these differences as we seek to encourage and support the broadest possible participation.

Moreover, the PRMP Alternative allows silvicultural activities such as thinning young monoculture stands in Late-Successional Reserves when those activities will enhance late-successional conditions. Even when compared to Alternative E, the PRMP Alternative may in the future provide a better connected network of old growth forests. Furthermore, when compared to Alternative E, the PRMP Alternative provides nearly twice as much timber harvest to contribute to the long-term stability of the local and regional economies. (See Table 2, Summary of Environmental Consequences, Comparison of Alternatives.)

Environmental Preferability of the Alternatives

Environmental preferability is judged using the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council of Environmental Quality (CEQ). CEQ has stated that "the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Generally this means the alternative that causes the least damage to the biological and physical environment: it also means the alternative that best protects, preserves and enhances historic, cultural and natural resources." (Council on Environmental Quality, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations" (40 CFR 1500-1598), Federal Register Vol. 46, No. 55, 18026-18038, March 23, 1981: Question 6a.)

NEPA's Title 1, Section 101(b) establishes the following goals:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations (NEPA 101(b)(1)),

2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (NEPA 101(b)(2)),

3. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences (NEPA 101(b)(3)),

4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports a diversity and variety of individual choice (NEPA 101(b)(4)),

5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities (NEPA 101(b)(5)), and

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA 101(b)(6)).

The PRMP Alternative would allow for the smallest amount of directly human-induced effects on the physical environment. It would exclude timber management activity from old growth forest stands, preserving them from human management actions. It would set aside more existing older forest acres than any other alternative (78,000 acres). The PRMP Alternative would reserve for retention and development of older forest 224,400 acres of land, the most of any of the alternatives (see Eugene PRMP/FEIS, Table S-1, p. xix). The PRMP Alternative has more positive estimated effects on wildlife habitat than any other alternative (see Eugene PRMP/FEIS, Table 4-13, p. 4-55). In the long-term, the percentage of acres in riparian zones in good condition on BLM lands is expected to increase by 95 percent under the PRMP Alternative, compared to the existing condition (see Eugene PRMP/FEIS, p. 4-50). Based on the Probable Sale Quantity estimated, Bureau of Land Management forests in the planning area would produce about 6.1 million cubic feet (36 mmbf) of timber annually under the PRMP Alternative (see Eugene PRMP/FEIS, Table S-1, p. xxi). Based on these factors, we concluded that the PRMP Alternative is the "environmentally preferable alternative."

Implementation

Decisions in this plan will be implemented over a period of years. The rate of implementation is tied to the BLM's budgeting process. General priorities for overall management will be developed through long-term budgeting processes (and in consultation with other agencies, tribes and government units).

Specific priorities for geographic sub-units or for individual programs or projects will be established, in large part, after local watershed analysis and further environmental analysis, as appropriate. Those priorities will be reviewed annually to help develop the work plan commitments for the coming years. The procedures to implement, called Management Actions/Direction, are shown in the approved plan by major land use allocation and by resource program. Although the RMP implementing actions are described by individual resources, most activities will be consolidated in interdisciplinary multi-resource activity plans and based on watershed analysis.

Valid Existing Rights

This plan will not repeal valid existing rights on public lands. Valid existing rights are those rights or claims to rights that take precedence over the actions contained in this plan. Valid existing rights may pertain to mining claims, mineral or energy leases, rights-of-way, reciprocal right-of-way agreements, leases, permits, and water rights.

Administrative Actions

Various types of administrative actions will require special attention beyond the scope of this plan. Administrative actions are the day-to-day transactions required to serve the public and to provide optimum use of the resources. These actions are in conformance with the plan. They include, but are not limited to

- permits or sales for traditional or special forest products
- competitive and commercial recreation activities
- lands and realty actions, including issuance of grants, leases, and permits and resolution of trespass
- facility maintenance
- law enforcement and hazardous material removal or mitigation
- enforcement and monitoring of permit stipulations
- cadastral surveys to determine legal land or mineral estate ownership

- engineering support to assist in mapping, designing and implementing projects.

These and other administrative actions will be conducted at the Resource Area, District, or State level, sometimes in partnership with other landowners or agencies or entities. The degree to which these actions are carried out will depend upon BLM policies, available personnel, funding levels, and further environmental analysis and decision making, as appropriate.

Mitigation and Monitoring

All protective measures and other management direction identified in the plan will be taken to avoid or mitigate adverse impacts. These measures will be taken throughout implementation. All practical means to avoid or reduce environmental harm will be adopted, monitored, and evaluated, as appropriate. Monitoring will be conducted as identified in the approved plan. Monitoring and evaluations will be utilized to ensure that decisions and priorities conveyed by the plan are being implemented, that progress toward identified resource objectives is occurring, that mitigating measures and other management direction are effective in avoiding or reducing adverse environmental impacts, and that the plan is maintained and consistent with the ongoing development of BLM State Office, regional and national guidance.

Public Involvement

A notice announcing the formal start of the Eugene District RMP planning process was published in the Federal Register in August 1986, in the local news media, and through a mass mailer to all known interested parties. A long series of planning brochures and documents were distributed over the entire planning period to provide public input and feedback opportunities in the development of planning issues, goals, objectives, and data needs for the Eugene District planning effort.

In January 1991, copies of the Eugene District summary of the analysis of the management area and preliminary alternatives were mailed to interested agencies, organizations, and individuals. This document described a variety of alternatives, most of which had similar objectives to comparable alternatives in the other ongoing 5 BLM western Oregon RMP/EISs.

In August 1992, a Notice of Availability of the Draft RMP/EIS was published in the Federal Register by the BLM, in addition to an August 1992 notice by the Environmental Protection Agency. Newspaper and other media were also notified of the document availability, the length of the comment period, and the date, time and locations of public meetings. The DRMP/DEIS was sent to a list of individuals, organizations, and agencies. A total of 316 letters and 946 form letters or petitions signed by people were received by the end of the extended comment period.

A summary of public involvement associated with the July 1993 Draft and February 1994 *Final Supplemental Environmental Impact Statement (SEIS) on Management of Habitat of Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* is included on pages 58-73 of the April 1994 interagency *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* Record of Decision and is hereby incorporated by reference.

On November 18, 1994 a Notice of Availability of the Proposed RMP/FEIS was published in the Federal Register by the BLM. In addition a November 25, 1994 notice by the Environmental Protection Agency initiated the official protest and public comment period. Newspaper and other media were also notified of the document availability, the length of the protest period, and the dates, time, and locations of public meetings. The PRMP/FEIS was sent to a list of approximately 800 individuals, organizations, and agencies. A total of 13 letters or petitions signed by people were received by the District Manager. There were no objections or recommendations by the Governor on behalf of any State or local government entities. There are no known inconsistencies with officially approved or adopted natural resource related plans, policies, or programs of applicable State or local governments or Native American Tribes.

The official period to protest the proposed plan closed on December 27, 1994. A total of 9 valid protests were received, reviewed, and resolved by the Director. As a result of the protests and other comment letters, a number of (nonsubstantive) changes have been made in the text of the approved plan to reflect typographical corrections, improve clarity, or demonstrate consistency with various regulatory procedures or policies.

Table 1 - Summary of Land Allocations and Management Actions/Direction

(detailed management direction is described in the Resource Management Plan)

Major Land Allocations[1]	Acres
Late-Successional Reserves	136,500
Adaptive Management Area (Matrix)	16,200
General Forest Management Area	100,400
Connectivity/Diversity Blocks	58,000
Other[2]	3,000
Total	314,100

[1]Riparian Reserves underlie all of the allocations/classifications shown in this chart. Overlaps could not be eliminated due to limitations in the database. There are no overlaps in the other acres.
[2]District Designated Reserve

Riparian Reserves	Acres
Riparian Reserves	172,900

Old Growth and Mature Forest Habitat	Acres
Management Decision:	
Manage 70% of the land as Late-Successional Reserves. Manage 7.5% as Connectivity/ Diversity Blocks.	
Area managed for retention and development of older forest[1]	224,400
Area managed for maintenance of older forest characteristics[2]	23,800
Older forest retained end of first decade[3]	78,400

[1]Late-Successional Reserve and Riparian Reserves
[2]Connectivity/Diversity Blocks
[3]Forest 100 years and older

Timber[1]	Acres
Forest Management Allocations (acres of commercial forest land):	
Intensive or General Forest Management Area (GFMA)	42,000
Restricted	27,000
Enhancement of other uses or not available	233,000
Practices (assumed average annual acres for first decade):	
Regeneration harvest	570
Commercial thinning/density management harvest	730
Site Preparation	
Prescribed fire[2]	1,070
Other	350
Vegetation Control	340
Animal Damage Control	600
Precommercial Thinning	590
Brushfield/hardwood conversion	50
Planting/regular stock	0
Planting/genetically selected stock	680
Fertilization	1,670
Pruning	630
New road construction (miles/acres) first 10 years	8/42
Allowable Sale Quantity (million cubic feet)	6.1
Allowable Sale Quantity (million board feet)	36
Miscellaneous volume (million cubic feet) (unregulated)	.5
Miscellaneous volume (million board feet)	2.85

[1]Except for prescribed fire, these figures do not include any acres in the LSRs and Riparian Reserves. These figures represent only proposed future needs on operable lands based on modelled harvest levels — it does not include existing needs!
[2]This includes 990 acres needed for habitat maintenance, restoration, and hazard reduction throughout all land use allocations.

Special Status Species including Threatened and Endangered Species Habitat	Acres
Management Decision: Manage habitats of Federal Candidate, State Listed and Bureau Sensitive Species on all BLM administered lands.	
Areas managed so as not to contribute to "need to list"	314,100
Wildlife (including Fisheries) Habitat	
Special habitat buffers (feet)	100-300
Fish habitat improvement (miles)	54
Forage seeding (acres/year)	200-500

Table 1 - Summary of Land Allocations and Management Actions/Direction

(detailed management direction is described in the Resource Management Plan)

Special Areas	Number/Acres
Existing Special Areas	8/1,511
New Special Areas	7/1,345
Potential Special Areas	4/7,844
Total Special Areas[1]	15/2,856

[1]Does not include acreage in Potential Special Areas.

Recreation Resources	Number/Acres
Recreation sites	
Existing	13/94
Potential	6/1,171
Special Recreation Management Areas	
Existing	1/277
New[1]	6/24,454
Area open to Off Highway Vehicle use	—/80
Area limited to Off Highway Vehicle use	310,900
Area closed to Off Highway Vehicle use	—/3,120
Trails	
Existing (number/miles)	7/24
Potential (number)	19/78

[1]These acres can increase due to land exchanges and acquisitions.

Wild and Scenic Rivers	Number/Miles
River segments found suitable for designation as:	
Recreational	3/70
Scenic	0/0
Wild	0/0

Visual Resources	Acres
Management Decision:	
Manage high value, moderately sensitive areas as VRM Class II.	
Manage other areas as VRM Class III and IV.	
Area managed as VRM Class II	4,471
Area managed as VRM Class III	33,130
Area managed as VRM Class IV[1]	301,600

VRM = Visual Resource Management.

[1] Approximately

Land Tenure

Management Decision:

Make exchanges of O&C lands to contribute to biological diversity or to enhance timber management. Substantial acres of O&C forest land available for timber management would not be exchanged for lands to be managed for a single purpose.

Sell Public Domain lands and O&C lands other than available commercial forest land, meeting criteria of Federal Land Policy and Management Act section 203(a). Make leases toaccommodate other appropriate uses.

Land Use Allocations

Zone	Acres
Zone 1	78,175
Zone 2	238,398
Zone 3	36

Rights-of-Way	Acres
Rights-of-Way exclusion areas	1,367
Rights-of-Way avoidance areas	151,091

Energy and Mineral Resources	Acres
Area open to Leasable energy/mineral development	317,730
Area closed to Leasable energy/mineral development	52
Area open to Locatable energy/mineral development	302,552
Area closed to Locatable energy/mineral development	15,230

Rural Interface Area Management	Acres
Area considered for alternative management practices[1]	6,800+
Area managed for VRM Class II objectives	0
Area managed for VRM Class III objectives	0

VRM = Visual Resource Management.

[1]BLM administered lands adjacent to areas zoned for lots larger than 20 acres would also be considered for alternative management practices.

Table 2 - Summary of Environmental Consequences, Comparison of Alternatives

Effects	Alternatives								
	PRMP[8]	PA[2]	Baseline	NA[1]	A	B	C	D	E
Air Quality (1,000s of tons of fuel burned[3] annually in prescribed fires, 10 years)	26	26	142	64	68	60	26	34	36
Water Quality (10 years)[4]									
No. of watersheds probably improving[5]	4	4	N/A	2	2	2	4	4	4
No. of watersheds probably declining	5	5	N/A	6	10	6	4	5	5
No. of watersheds with no significant change	4	4	N/A	5	1	5	5	4	4
Biological Diversity									
After 10 years (acres)									
. mature forest	28,106	28,574	23,759	[7]	22,573	16,685	31,280	29,933	31,824
. old growth forest	38,038	38,841	38,266	[7]	8,671	19,330	37,161	40,861	43,493
After 100 years (acres)									
. mature forest	198,334	132,441	23,759	[7]	15,825	24,690	169,202	94,797	134,429
. old growth forest	58,014	54,675	38,266	[7]	11,256	26,820	56,258	57,851	69,319
Riparian Trend (200 years: +, -, 0)	+	0		0	-	0	0	+	+
Woodpecker Populations (% of potential, 10 years)	49[9]	49	44	38	36	41	48	49	49
Elk Habitat (10 years)[5]									
No. of habitat areas improving	2	1	N/A	0	0	0	0	0	0
No. of habitat areas unchanged	3	4	N/A	0	0	0	0	2	5
No. of habitat areas declining	0	0	N/A	5	5	5	5	3	0
Fish Populations, 10 Years (+,-,0)	+	+		+	0	+	+	+	+
Threatened and Endangered Species									
Spotted Owl Habitat BLM land (100 years) (thousand acres)	235	173	N/A	35	21	48	274	143	151
Potential bald eagle breeding sites protected	10	10	10	10	10	10	10	10	10
Potential bald eagle winter roost sites protected	2	2	2	2	2	2	2	2	2
Known marbled murrelet sites protected [11]	12	12	12	12	12	12	12	12	12
Visual Resources (10 years; +, -, 0)	+	+	-	-	-	+	+	+	+

Table 2 - Summary of Environmental Consequences, Comparison of Alternatives

Effects	Alternatives								
	PRMP[8]	PA[2]	Baseline	NA[1]	A	B	C	D	E
Wild and Scenic Rivers (assessed river segments, 10 years)									
Number of Outstandingly Remarkable Values (ORVs) beneficially affected	7	7		11	0	0	5	7	14
Number of ORVs unaffected	7	7		3	7	8	9	7	0
Number of ORVs adversely affected	0	0		0	7	6	0	0	0
Recreation Use (capability to meet 10-year demand[6])									
Off Highway travel	4	4		5	5	5	4	4	3
Motorized travel	4	4		3	3	3	3	3	3
Nonmotorized travel	4	4		2	1	1	3	4	4
Camping	4	4		2	1	1	3	4	4
Hunting	3	3		2	2	2	3	3	4
Picnicking, studying nature, etc.	4	4		2	1	1	3	4	4
Fishing	4	4		3	2	2	4	4	4
Boating	3	3		2	1	1	3	3	3
Swimming, general waterplay	5	5		3	2	2	5	5	5
Winter sports	1	1		1	1	1	1	1	1
Snowmobiling	0	0		0	0	0	0	0	0
Socioeconomic Conditions (10 years)									
Average annual O&C receipts distributed to counties ($ million) in Western Oregon.	25.771	14.589	13.170	23.742	34.900	32.970	10.606	11.207	12.535
Estimated Total Dependent Personal Income	11.560			47.521	71.624	65.417	21.005	24.228	24.403
Estimated Total Dependent Employment	735			2,677	3,934	3,509	1,214	1,398	1,403

[1]NA = No Action Alternative
[2]PA = Preferred Alternative
[3]Tons of slash burned correlates directly with the level of omissions.
[4]Cumulative effects, all ownerships.
[5]The planning area was divided into 5 elk habitat areas - 5 of those, where BLM administers substantial acreage, were analyzed.
[6]0 = no opportunity to meet demand, 1 = least able to meet demand, 5 = best able to meet demand
[7]Values are approximately between Alternatives A and B.
[8]PRMP - Proposed Resource Management Plan
[9]Population levels for the PRMP would exceed levels in the Draft RMP. Exact levels would depend upon the location of treatment units that will be decided through watershed analysis, and upon the degree of habitat enhancement that would occur under the PRMP in the short and long-term.
[10]Watershed restoration may mitigate some of these trends.
[11]Refers to either an activity center or nest.

Recommendations

With full knowledge of the commitment to resource and ecosystem management represented by the plan, the Eugene District recommends the adoption of the Eugene Resource Management Plan.

Judy Ellen Nelson, Eugene District Manager — Date: May 4, 1995

State Director Approval

I approve the Eugene District Resource Management Plan as recommended and hereby declare that, effective October 1, 1994 the annual productive capacity (allowable harvest level) of the Siuslaw River and Upper Willamette Master Units is 6.1 million cubic feet. This document meets the requirements for a Record of Decision as provided in 40 CFR 1505.2.

Elaine Zielinski, State Director, Oregon/Washington — Date: May 22, 1995

Eugene District

Resource Management Plan

The Planning Area

This Eugene District Resource Management Plan (hereafter referred to as the RMP) describes the management of approximately 318,000 acres of land administered by the U.S. Department of the Interior, Bureau of Land Management (BLM), Eugene District. Within the planning area there are also 1,299 acres of nonfederal land with Federal subsurface mineral estate administered by BLM.

BLM administered lands in the planning area are primarily located in the western foothills of the Cascade Range and in the Oregon Coast Range (see Maps 1 and 2). They are predominately forested with stands of Douglas-fir, and drain into the McKenzie, Siuslaw, and Willamette Rivers. Population is centered in and near the cities of Eugene and Springfield.

Table 3 summarizes BLM administered land in the planning area by county.

Purpose and Need

The Resource Management Plan (RMP) responds to needs for forest habitat and forest products as discussed in the *Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (hereafter referred to as the SEIS/ROD).

Table 3 - BLM Administered Land Acreage[1]

County	O&C[2]	Public Domain	Other	Total
Benton	200	0	0	200
Douglas	20,199	1,228	0	21,427
Lane	270,798	8,381	400	279,579
Linn	16,533	300	0	16,833
Totals	**307,730**	**9,909**	**400**	**318,039**

[1]Title Plat Acres
[2]Revested Oregon and California Railroad Lands

The requirement for forest habitat is the need for a healthy forest ecosystem with habitat that will support populations of native species and include protection for riparian areas and waters. This need was emphasized by President Clinton at the April 2, 1993, Forest Conference in Portland, Oregon.

The need for forest products from forest ecosystems is the requirement for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies and contribute valuable resources to the national economy on a predictable and long-term basis. This need also was stated by President Clinton at the Forest Conference.

The Resource Management Plan was developed after consideration of the following:

- public comments at open house meetings and in correspondence
- comments from other government agencies
- BLM staff analysis of the ocnsequences of alternatives
- legal mandates of Federal land executive orders.
- desicions made in the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* and its Attachment A (SEIS/ROD)
- requirements of Bureau policy

The Resource Management Plan was developed under the requirements of the Federal Land Policy and Management Act (FLPMA) through the use of an interdisciplinary planning process. This RMP document is written in compliance with the National Environmental Policy Act (NEPA) and related Council on Environmental Quality regulations.

The management of the O&C lands is governed by a variety of statutes, including the O&C Lands Act, FLPMA, the Endangered Species Act, and the Clean Water Act. The O&C Lands Act requires the Secretary of the Interior to manage O&C lands for permanent forest production; however, such management must also be in accord with sustained yield principles. Further, that Act requires that management of O&C lands protect watersheds,

regulate streamflow, provide for recreational facilities, and contribute to the economic stability of local communities and industries. The Act does not require the Secretary to harvest all old growth timber or all commercial timber as rapidly as possible or according to any particular schedule. The Secretary has discretion to determine how to manage the forest on a sustained-yield basis that provides for permanency of timber production over a long-term period. The Secretary must necessarily make judgments, supported by as much information as possible, about what kind of management will lead to permanent forest production that satisfies the principle of sustained yield.

O&C lands must also be managed in accordance with other environmental laws such as the Endangered Species Act and the Clean Water Act. Some provisions of these laws take precedence over the O&C Lands Act. For instance, the Endangered Species Act (ESA) requires the Secretary to ensure that management of O&C lands will not likely result in jeopardy to listed species or destruction or adverse modification of critical habitat. The ESA directs the Secretary and all Federal agencies to utilize their authorities to carry out programs for the conservation and recovery of listed species. Section 5(a) of the Act also directs: "the Secretary, and the Secretary of Agriculture with respect to the National Forest System, shall establish and implement a program to conserve fish, wildlife, and plants, including those which are listed as endangered species or threatened species pursuant to Section 4 of this Act." 16 U.S.C. § 1534(a). Although several northern spotted owl recovery plans have been proposed, the Secretary has not yet adopted final recovery plans for either the northern spotted owl or the marbled murrelet. The SEIS/ROD's Late-Successional and Riparian Reserve concepts are important building blocks in the development of recovery plans to achieve the conservation and recovery of those species.

One of the purposes of the Endangered Species Act is the preservation of ecosystems upon which endangered and threatened species depend. A forward-looking land management policy would require that Federal lands be managed in a way to minimize the need to list species under the ESA. Additional species listings could have the effect of further limiting the O&C Lands Act's goal of achieving and maintaining permanent forest production. This would contribute to the economic instability of local communities and industries, in contravention of a primary objective of Congress in enacting the O&C Lands Act. That Act does not limit the Secretary's ability to take steps now, which would avoid future listings and additional disruptions.

Protection of watersheds and regulating streamflow are explicit purposes of forest production under the O&C Lands Act. Riparian reserves, including those established on O&C lands under the RMP, are designed to restore and maintain aquatic ecosystem functions. Together with other components of the Aquatic Conservation Strategy, riparian reserves will provide substantial watershed protection benefits. Riparian Reserves will also help attain and maintain water quality standards, a fundamental aspect of watershed protection. Both Riparian Reserves and Late-Successional Reserves (LSR) will help regulate stream flows, thus moderating peak stream flows and attendant adverse impacts to watersheds.

Relationship of the RMP to BLM Policies, Programs, and Other Plans

The BLM in western Oregon developed 5 other Resource Management Plans. The 6 Resource Management Plans cover all BLM administered lands in western Oregon. Some lands administered by the Salem District to the north and the Roseburg and Coos Bay Districts to the south directly adjoin lands addressed in this plan; on other lands administered by these Districts there is shared management of certain resource or administrative features (e.g., watersheds, road networks). Cooperation is occurring in the management of these lands.

The Eugene District Draft RMP/EIS was supplemented by the SEIS/ROD. The SEIS/ROD, signed jointly by the Secretary of the Interior and the Secretary of Agriculture, required the BLM to incorporate the land use allocations and standards and guidelines in that decision in the BLM's RMPs for western Oregon. The RMP is intended to be consistent with the SEIS/ROD; any apparent inconsistencies are oversights or misinterpretations of SEIS/ROD language. The Final SEIS describes the environmental impacts that arise from those directions. It incorporates the analysis in that Final SEIS.

The RMP incorporates the following Records of Decisions by reference:

- *Northwest Area Noxious Weed Control Program*
- *Western Oregon Program-Management of Competing Vegetation*
- *Pacific Yew Management*

Any finding made in the Record of Decision for this RMP, that certain river segments studied herein are suitable for designation under the Wild and Scenic Rivers Act, is a preliminary administrative finding. The finding will receive further review and possible modification by the Director, BLM; Secretary of the Interior; or the President of the United States. To facilitate the review, after completion of this RMP and its Record of Decision, the BLM may elect or be required to prepare a study report to support recommendations to Congress for designation of specific rivers or river segments. Final decisions have been reserved by Congress unless the Governor nominates a river to the Secretary of the Interior, who may then decide to designate it.

Fish and Wildlife 2000 Plan

This plan is a program strategy for the management of biological resources for the Eugene District. It defines District priorities, based on BLM policy and legal mandates. Under this plan, biological program initiatives will be defined and evaluated within the context of BLM priorities at the regional and national levels to assure that limited BLM funds are directed toward those actions considered to be most urgent.

West Eugene Wetlands Plan

The 1992 West Eugene Wetlands Plan governs the management of lands (including BLM lands) located within the "West Eugene Wetlands Study Area" and "West Amazon Drainage Basin" as shown on Map 2, p. 17 of that plan.

Except for those provisions of this RMP found in the Resource Program sections for Energy and Minerals, Land Tenure Adjustments, Rights-of-Way, Access and Withdrawals, this RMP does not apply to the West Eugene Wetlands.

Planning Process

BLM's planning process involved 9 steps as shown below:

1. Identify issues, concerns, and opportunities
2. Develop planning criteria
3. Collect inventory data and information
4. Analyze the management situation
5. Formulate alternatives
6. Estimate effects of alternatives
7. Select the preferred alternative (and publish Draft RMP/EIS)
8. Select the Resource Management Plan

8a. Publish Proposed RMP/Final EIS

8b. Respond to any protests and publish RMP/ Record of Decision

9. Implement, monitor, and evaluate the RMP

Publication of this document constitutes completion of Step 8b. Public involvement occurred at several steps in the process.

The planning process is designed to help the BLM identify the uses of BLM administered lands desired by the public and consider those uses to the extent consistent with the laws established by Congress and the policies of the executive branch of the Federal government regarding management of those lands.

Where BLM manages only the subsurface mineral estate, the plan and EIS address only the management of BLM administered minerals.

Resource Management Plan

The Resource Management Plan was developed partially in response to public comments related to the Bureau of Land Management's August 1992 Draft Resource Management Plans for western Oregon. In addition, the plan incorporates the land use allocations and management direction from the SEIS/ ROD.

Finally, the plan was (slightly) modified in response to public comments and protests on the September 1994 proposed resource management plans for western Oregon.

The approved Resource Management Plan (RMP) incorporates the following nonsubstantive changes from the Proposed RMP:

- Language revisions intended to clarify some management direction.
- Language revisions intended to tighten the link between the approved RMP 1994 and the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.*
- Revisions that incorporate guidelines issued by the Regional Ecosystem Office (REO) since the issuance of the 1994 Record of Decision named above. Such guidelines may clarify or interpret the 1994 Record of Decision.

Vision

The Bureau of Land Management (BLM) will manage the natural resources under its jurisdiction in western Oregon to help enhance and maintain the ecological health of the environment and the social well-being of human populations.

There are several basic principles supporting this vision:

- Natural resources can be managed to provide for human use and a healthy environment.
- Resource management must be focused on ecological principles to reduce the need for single resource or single species management.
- Stewardship, the involvement of people working with natural processes, is essential for successful implementation.
- The BLM cannot achieve this vision alone but can, by its management processes and through cooperation with others, be a significant contributor to its achievement.
- A carefully designed program of monitoring, research, and adaptation will be the change mechanism for achieving this vision.

Strategy

Lands administered by the Bureau of Land Management will be managed to maintain healthy, functioning ecosystems, from which a sustainable production of natural resources can be provided. This management strategy, referred to as ecosystem management, involves the use of ecological, economic, social, and managerial principles to achieve healthy and sustainable natural systems. Ecosystem management emphasizes the complete ecosystem instead of individual components and looks at sustainable systems and products that people want and need.

The building blocks for this strategy are comprised of several major land use allocations: Riparian Reserves; Late-Successional Reserves; Adaptive Management Areas; and Matrix that includes General Forest Management Areas (GFMA) and Connectivity/ Diversity Blocks. These land use allocations have differing management direction and are located and configured in the landscape to support overall ecosystem functioning and to meet the vision for management of Federal lands in western Oregon. Other land use allocations that also support this vision are a variety of special purpose management areas such as recreation sites, Wild & Scenic Rivers (W&SR), and Visual Resource Management (VRM) areas.

Each land use allocation will be managed according to specific objectives and management actions/ direction. During initial implementation of the plan, the stated objectives and management actions/ direction will provide the direction and limits governing actions and the principles specifying the environmental conditions or levels to be achieved and maintained. As BLM gains experience in implementing the plan and applying the concepts of adaptive management, the stated objectives and management actions/direction will be refined for specific geographic areas.

The major land use allocations of the Resource Management Plan are as follows:

Major Land Allocations Acres[1]	
Late-Successional Reserves	136,500
AMA[2] (Matrix)	16,200
GFMA[3]	100,400
Connectivity/Diversity Blocks	58,000
Other[4]	3,000
Total	314,100

[1]There are 172,900 acres of Riparian Reserves underlying all of the allocations shown in this chart. Overlaps could not be eliminated due to limitations in the database. There are no overlaps in the other acres.
[2]AMA = Adaptive Management Area
[3]GFMA = General Forest Management Area
[4]District Designated Reserves (DDR)

There are 2 major management concepts underlying the objectives and management actions/direction - Ecological Principles for Management of Late-Successional Forests, and the Aquatic Conservation Strategy. These concepts are summarized below. A summary of all land allocations and management actions/direction is presented in Table 1.

Maps of RMP land use allocations are located in the accompanying map packet. (Riparian Reserves are not mapped.)

Ecological Principles for Management of Late-Successional Forests

One goal of this RMP is to maintain late-successional and old growth species habitat and ecosystems on Federal lands. A second goal is to maintain biological diversity associated with native species and ecosystems in accordance with laws and regulations.

All land use allocations described in this RMP will contribute to these 2 goals. For instance, Late-Successional and Riparian Reserves, and many Special Management Areas (e.g., Areas of Critical Environmental Concern) will be managed to enhance and/or maintain late-successional forest conditions. The General Forest Management Area and Connectivity/Diversity Blocks will be managed to retain late-successional forest legacies (e.g., coarse woody debris, green trees, snags, and late-successional forest patches). These and other land use allocations and resource programs are described in detail below.

See Appendix A, which references the SEIS/ROD, for additional information about ecological principles for management of late-successional forests.

Aquatic Conservation Strategy

The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy will protect salmon and steelhead habitat on Federal lands managed by the Forest Service and Bureau of Land Management.

The Aquatic Conservation Strategy is designed to meet the following objectives:

- Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.

- Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, up slope areas, headwater tributaries, and intact refugia. These lineages must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

- Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

- Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain in the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

- Maintain and restore the sediment regime under which an aquatic ecosystem evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

- Maintain and restore in stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing (i.e., movement of woody debris through the aquatic system). The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

- Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.

- Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration, and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

- Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

The components of the Aquatic Conservation Strategy are Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration.

Riparian Reserves

See Riparian Reserves in the Land Use Allocation section.

Key Watersheds

A system of Key Watersheds that serves as refugia is crucial for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species. These refugia include areas of high quality habitat and areas of degraded habitat. Key Watersheds with high quality conditions will serve as anchors for the potential recovery of depressed stocks. Those of lower quality habitat have high potential for restoration and will become future sources of high quality habitat with the implementation of a comprehensive restoration program.

There are 2 types of Key Watersheds - Tier 1 and Tier 2. Tier 1 watersheds contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program. Tier 2 watersheds do not contain at-risk fish stocks, but they are important sources of high quality water.

Key Watersheds overlay portions of all land use allocations in the District and place additional management requirements or emphasis on activities in those areas. The Bear/Marten watershed is the only Key Watershed that is entirely in the Eugene District. This watershed is part of the Central Cascade AMA and overlays both Matrix and Riparian Reserve land use allocations.

Key Watersheds and District ownership within them:

Key Watershed	Tier	BLM Acres	Total Acres
Bear/Marten Creeks	1	8,282	14,377
N. Fork Smith River	1	162	43,916
Steamboat Creek	1	290	145,257
Upper Lobster Creek	1	1,426	26,415
Upper Smith River	1	2,475	50,870
Total		**12,635**	**280,835**

See Map 2-19 in the PRMP/FEIS for location of Key Watersheds.

The noninterchangeable component of the Allowable Sale Quantity, attributable to Key Watersheds, is 460,000 cubic feet. Identification of this component was required by the SEIS Record of Decision, pages E-19 and E-20.

Management Actions/Direction

1. Prior to further resource management activity, including timber harvest, prepare watershed analyses in Key Watersheds. Until watershed analyses can be completed, proceed with minor activies, such as those categorically excluded under the National Environmental Policy Act (NEPA) regulations (except timber harvest), if they are consistent with Aquatic Conservation Strategy objectives. Apply Riparian Reserve management actions/direction.

2. Reduce existing road mileage within Key Watersheds. If funding is insufficient to implement reductions, neither construct nor authorize through discretionary permits a net increase in road mileage in Key Watersheds.

3. Give highest priority to watershed restoration in Key Watersheds.

Watershed Analysis

See Watershed Analysis (toward the end of this section) and the SEIS/ROD (see Appendix A) for requirements.

Watershed Restoration

Watershed restoration will be an integral part of a program to aid recovery of fish habitat, riparian habitat, and water quality. The most important components of a watershed restoration program are control and prevention of road-related runoff and sediment production, restoration of the condition of riparian vegetation, and restoration of in-stream habitat complexity. Other restoration opportunities include meadow and wetland restoration and mine reclamation.

Management Actions/Direction

1. Prepare watershed analyses and plans prior to restoration activities.

2. Focus watershed restoration on removing some roads and, where needed, upgrading those that remain in the system.

3. Apply silvicultural treatments to restore large conifers in Riparian Reserves.

4. Restore stream channel complexity. In-stream structures will only be used in the short-term and not as a mitigation measure.

Additional information about the Aquatic Conservation Strategy is found in the SEIS/ROD (Appendix A).

Land-Use Allocations and Resource Programs

This section provides a description of objectives, land-use allocations, and management actions/direction for the resource management plan. The term "land use allocations" is used in 2 ways. First, it pertains to the major land use allocation categories derived from the SEIS/ROD (Riparian Reserves and Late-Successional Reserves) and the other resource program allocations of this resource management plan. The second use pertains to data and text describing specific allocations (acres, miles, and number of sites) under each land use allocation and resource program.

The rest of this Land Use Allocations and Resource Programs description has 2 major parts:

- Specific land use allocations: objectives, allocations, and management actions/direction for each major land use allocation; and

- Resource programs: objectives, allocations, and management actions/direction for each resource program.

Although described separately, each of these elements contributes collectively and cumulatively to meeting the overall management strategy and must be considered together to accurately reflect the concept of ecosystem management. There is some duplication of objectives and management actions/direction for land use allocations and resource programs. A reader interested in either topic will find a basic package of related management guidance in one location.

All management actions/direction in this resource management plan are subject to refinement through

planning based on watershed analysis and the adaptive management process. In some areas, land use allocations overlap. A hierarchy of allocations and related management actions/direction will be used to guide plan implementation (see the SEIS/ ROD, Appendix A).

Most resource programs have basic requirements for activities such as inventory, site-specific analysis, planning, and Environmental Assessment prior to project implementation and monitoring after project implementation. Inherent in the RMP is a BLM commitment to continue these activities in the future. For the sake of simplifying text, these activities are generally not repeated in the management actions/ direction that follow.

A summary of the land use allocations and management actions/direction for the RMP is found in Table 1. Most land use allocations are shown on the maps in the accompanying packet.

Management Actions/ Direction for All Land Use Allocations and Resource Programs

The land use allocations developed for the SEIS Record of Decision and applicable to BLM administered lands in the Eugene District are Riparian Reserves, Late-Successional Reserves, Adaptive Management Areas, and Matrix.

The SEIS Record of Decision provides management guidance for a specific list of plant and animal species that are or may be found in the major land allocation areas (see Appendix B). In this Resource Management Plan, these species are referred to as "SEIS Special Attention Species." Management guidance is separated into 2 categories: "Survey and Manage" and "Protection Buffers."

All management actions/direction in this RMP are subject to refinement through planning based on watershed analysis and the adaptive management process. In some areas, land use allocations overlap. A hierarchy of allocations and related management actions/direction will be used to guide plan implementation (see Appendix A, Standards and Guidelines).

Land use allocation acres in the text are gross acres (i.e., overlaps with other allocations are not taken out).

Management Actions/ Direction -
Survey and Manage Amphibians, Mammals, Bryophytes, Mollusks, Vascular Plants, Fungi, Lichens, and Arthropods

Survey and manage for SEIS Special Attention Species within the range of the species and the particular habitats that they are known to occupy. Appendix B lists which species are covered by this provision, and which of the following 4 categories and management actions/direction are to be applied to each:

1. Manage known sites (highest priority).

   a. Acquire information on these sites, make it available to all project planners, and use it to design or modify activities.

   b. In most cases, protect known sites. For some species, apply specific management treatments such as prescribed fire.

   c. For rare and endemic fungus species, temporarily withdraw known sites from ground-disturbing activities until the sites can be thoroughly surveyed and site-specific measures prescribed.

2. Survey prior to ground-disturbing activities and manage sites.

   a. Continue existing efforts to survey and manage rare and sensitive species habitat.

   b. For species without survey protocols, start immediately to design protocols and implement surveys.

   c. Within the known or suspected ranges and within the habitat types of vegetation communities associated with the species, survey for Red tree voles.

This survey will precede the design of all ground-disturbing activities implemented in 1997 or later.

d. For the other species listed in Appendix B, begin development of survey protocols promptly and proceed with surveys,as soon as possible. These surveys will be completed prior to ground-disturbing activities that will be implemented in Fiscal Year 1999 or later. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS.

e. Conduct surveys at a scale most appropriate to the species.

f. Develop management actions/direction to manage habitat for the species on sites where they are located.

g. Incorporate survey protocols and proposed site management in Interagency Conservation Strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office (REO).

3. Conduct extensive surveys and manage sites

   a. Conduct extensive surveys for the species to find high-priority sites for species management. Specific surveys prior to ground-disturbing activities are not a requirement.

   b. Conduct surveys according to a schedule that is most efficient and identify sites for protection at that time.

   c. Design these surveys for efficiency and develop standardized protocols.

   d. Begin these surveys by 1996.

4. Conduct general regional surveys.

   a. Survey to acquire additional information and to determine necessary levels of protection for arthropods, fungi species that were not classified as rare and endemic, bryophytes, and lichens.

   b. Initiate these surveys no later than Fiscal Year 1996 and complete them within 10 years.

Management Actions/ Direction -

Protection Buffers for SEIS Special Attention Species (Amphibians, Nonvascular Plants, Birds, and Mammals)

Provide protection buffers for specific rare and locally endemic species and other species in the upland forest matrix. A list of these species and related management actions/direction are presented in Appendix B and the section on Special Status and SEIS Special Attention Species. These species are likely to be assured viability if they occur within reserves. However, there might be occupied locations outside reserves that will be important to protect as well.

Apply the following management actions/direction:

1. Develop survey protocols that will ensure a high likelihood of locating sites occupied by these species.

2. Following development of survey protocols and prior to ground-disturbing activities, conduct surveys within the known or suspected ranges of the species and within the habitat types or vegetation communities occupied by the species. See the previous Survey and Manage section for an implementation schedule.

3. When located, protect the occupied sites.

See Special Status and SEIS Special Attention Species section for additional details.

Specific Land Use Allocations

This section describes specific land use allocations developed for the SEIS/ROD.

Two of the allocations in the SEIS/ROD, Congressionally Reserved Areas and Administratively Withdrawn Areas, recognize existing and proposed BLM management. These allocations are fully incorporated in the resource program elements of this RMP. They are not described as separate land use allocations in this document.

There are no areas in the District that are Congressionally Reserved.

The types of administratively withdrawn areas, also known as District Reserves (DDR), are areas that include special resource values such as Bald Eagle Habitat Areas and Relic Forest Islands. These 3,000 acres include 1,821 acres of habitat encompassing Threatened or Endangered plants or animals, 575 acres representing Relic Forest Islands, 1,158 acres of Riparian Reserves, 274 acres of unmapped Late-Successional Reserves for spotted owls, and 187 acres of fragile sites. These acreages commonly overlap, which accounts for why they add up to over 3,000 acres if totaled.

In the Secretary's ROD, DDR are called "Administratively Withdrawn Areas." These areas (DDR) are opportunities where management emphasis precludes scheduled timber harvest and are not included in calculations of Probable Sale Quantity (PSQ).

Riparian Reserves

The following material summarizes Riparian Reserve direction. Details regarding this direction are found in the SEIS/ROD, Appendix A.

Objectives

See Aquatic Conservation Strategy objectives.

Provide habitat for Special Status Species, SEIS special attention, and other terrestrial species.

Land Use Allocations

There are approximately 173,000 acres of Riparian Reserves in the District. The Riparian Reserve portion of the District's land use allocations are as follows:

	Acres Riparian Reserve
Mapped/unmapped Late-Successional Reserves	84,920
Connectivity/Diversity Blocks	28,500
General Forest Management Areas	51,140
District Designated Reserves	1,158
Adaptive Management Area	7,240

Calculation of these acres is based on prescribed widths and estimated miles of stream in the various categories described in the SEIS/ROD. The widths are intended to provide a high level of fish, wildlife and plant habitat, and riparian protection until watershed and site analysis can be completed. Although Riparian Reserve boundaries on permanently flowing streams may be adjusted, they are considered to be the approximate widths necessary for attaining Aquatic Conservation Strategy objectives. Post-watershed analysis Riparian Reserve boundaries for permanently flowing streams will approximate the boundaries described below. Following watershed analysis, Riparian Reserve boundaries for intermittent streams may be different from the existing boundaries. Determination of final boundaries will be based on hydrologic, geomorphic, and ecologic processes in a watershed affecting intermittent streams. The widths of Riparian Reserves apply to all watersheds until watershed analysis is completed, a site-specific analysis is conducted and described, and the rationale for final Riparian Reserve boundaries is presented through the appropriate National Environmental Policy Act decision-making process.

The initial Riparian Reserve widths are as follows:

Fish-bearing streams - Riparian Reserves consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge; or to the outer edges of the 100-year flood plain; or to the outer edges of riparian vegetation; or to a distance equal to the height of 2 site-potential trees; or 300 foot slope distance (600 foot total, including both sides of the stream channel), whichever is greatest.

Permanently flowing nonfish-bearing streams - Riparian Reserves consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a distance equal to the height of 1 site-potential tree, or 150-foot slope distance, whichever is greatest.

Seasonally flowing or intermittent streams, wetlands less than one acre, and unstable and potentially unstable areas - This category applies to features with high variability in size and site-specific characteristics. At a minimum the Riparian Reserve will include:

- the extent of unstable and potentially unstable areas;

- the stream channel and the area extending to the top of the inner gorge;
- the stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation; and
- the area extending from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100-foot slope distance, whichever is greatest.

Constructed ponds and reservoirs, and wetlands greater than one acre - Riparian Reserves consist of the body of water or wetland and the area to the outer edges of the riparian vegetation; or the extent of seasonally saturated soil; or to the extent of unstable and potentially unstable areas; or to a distance equal to the height of one site-potential tree; or to 150-foot slope distance from the edge of a wetland greater than one acre; or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.

Lakes and Natural Ponds - Riparian Reserves consist of the body of water and the area to the outer edges of the riparian vegetation; or to the extent of seasonally saturated soil; or to the extent of unstable and potentially unstable areas; or to a distance equal to the height of 2 site-potential trees; or 300-foot slope distance, whichever is greatest.

Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these 2 physical criteria.

Management Actions/Direction

General - As a rule, management actions/direction for Riparian Reserves prohibit or regulate activities that retard or prevent attainment of Aquatic Conservation Strategy objectives. Watershed analysis and appropriate National Environmental Policy Act (NEPA) compliance will be required to change Riparian Reserves in all watersheds.

Implement the following management actions/ direction in Riparian Reserves. (Management actions/direction in this section are supplemented by Best Management Practices in Appendix C.)

Timber Management

Neither conduct nor allow timber harvest, including fuelwood cutting, in Riparian Reserves, with exception of the following:

Where catastrophic events, such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives.

Remove salvage trees only when watershed analysis determines that present and future woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected.

Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives.

Riparian Reserve acres are not included in calculations of the Allowable Sale Quantity.

Roads Management

Cooperate with Federal, State, and County agencies and work with private parties with road use agreements to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.

For each existing or planned road, meet Aquatic Conservation Strategy objectives by

1. completing watershed analyses including appropriate geotechnical analyses (i.e., examining soil and rock conditions in riparian and stream crossings) prior to construction of new roads or landings in Riparian Reserves;
2. minimizing road and landing locations in Riparian Reserves;
3. preparing road design criteria, elements, and standards that govern construction and reconstruction;
4. preparing operation and maintenance criteria that govern road operation, maintenance, and management;

5. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow;

6. restricting side casting, as necessary, to prevent the introduction of sediment to streams; and

7. avoiding wetlands entirely when constructing new roads.

Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:

1. reconstructing roads and associated drainage features that pose a substantial risk;

2. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected; and

3. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.

Design and construct new culverts, bridges and other stream crossings, and improve existing stream crossing structures determined to pose a substantial risk to riparian conditions. New structures and improvements will be designed to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

Minimize sediment delivery to streams from roads. Out sloping of the roadway surface is preferred, except in cases where outsloping will increase sediment delivery to streams or where outsloping is infeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hill slopes.

Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams (e.g., streams that can be made available to anadromous fish by removing obstacles to passage).

Develop and implement a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. At a minimum, this plan will include provisions for the following activities:

- Inspections and maintenance during storm events
- Inspections and maintenance after storm events
- Road operation and maintenance giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources
- Traffic regulation during wet periods to prevent damage to riparian resources
- Establishment of the purpose of each road by development of the Transportation Management Plan.

Grazing Management

The livestock grazing program has been cancelled since publication of the Eugene District Draft RMP/ EIS. Authorization for future grazing on the District is described in Appendix E.

Recreation Management

Design new recreational facilities within Riparian Reserves, including trails and dispersed sites, so as not to prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impacts to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.

Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy (ACS) objectives. Where adjustment measures, such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.

Address attainment of Aquatic Conservation Strategy objectives in Wild & Scenic River and Wilderness management plans.

Minerals Management

The following management actions/direction differ from the standards and guidelines in the SEIS/ROD, since the standards and guidelines are not all implementable under current laws and regulations. The stronger standards and guidelines in the SEIS/ROD (see Appendix A) will be adopted at such time as changes in current laws and/or regulations authorize their implementation.

For any proposed locatable mining operation in Riparian Reserves, other than notice level or casual use, require the following actions by the operator consistent with 43 Code of Federal Regulation (CFR) 3809:

Prepare a Plan of Operations, including a reclamation plan and reclamation bond for all mining operations in Riparian Reserves. Such plans and bonds will address the costs of removing facilities, equipment, and materials; recontouring of disturbed areas to an approved topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvaging and replacing topsoil; and revegetating to meet Aquatic Conservation Strategy objectives.

Locate structures, support facilities, and roads outside Riparian Reserves. If no alternative to siting facilities in Riparian Reserves exists, locate in a way compatible with Aquatic Conservation Strategy objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Roads will be constructed and maintained to meet road management standards and to minimize damage to resources in Riparian Reserves. When a road is no longer required for mineral or land management activities, it will be reclaimed. In any case, access roads will be constructed consistent with 43 CFR 3809 and acceptable road construction standards and will minimize damage to resources in Riparian Reserves.

Avoid locating solid and sanitary waste facilities in Riparian Reserves. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Reserves exists, if releases can be prevented, and if stability can be ensured, then:

- Analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.

- Locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long-term, prohibit such facilities in Riparian Reserves.

- Reclaim waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

- Monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

- Require reclamation bonds adequate to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

Where an existing operator is in noncompliance at the notice level (i.e., causing unnecessary or undue degradation), require actions similar to those stated above to meet the intent of 43 CFR 3809.

For leasable mineral activity in Riparian Reserves, prohibit surface occupancy for oil, gas, and geothermal exploration and development activities where leases do not exist. Where possible, adjust the stipulations in existing leases to eliminate impacts that retard or prevent the attainment of Aquatic Conservation Strategy objectives consistent with existing lease terms and stipulations.

Allow development of saleable minerals, such as sand and gravel, within Riparian Reserves only if Aquatic Conservation Strategy objectives can be met.

Develop inspection and monitoring requirements and include such requirements in exploration and mining plans and in leases or permits consistent with existing laws and regulations. Evaluate the results of inspection and monitoring to determine if modification of plans, leases, and permits is needed to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

Fire/Fuels Management

Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies will recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management activities could be damaging to long-term ecosystem function.

Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of Riparian Reserves. If the only suitable location for such activities is within the Riparian Reserve, an exemption may be granted following a review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements. Utilize an interdisciplinary team to predetermine suitable incident base and helibase locations.

Minimize delivery of chemical retardant, foam, or other additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist or, following a review and recommendation by a resource advisor, when an escape will cause more long-term damage.

Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives.

Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Aquatic Conservation Strategy objectives whenever Riparian Reserves are significantly damaged by a wildfire or a prescribed fire burning outside prescribed parameters.

Until watershed analysis is completed for a watershed, suppress wildfire to avoid loss of habitat and to maintain future management options.

Consider allowing some natural fires to burn under prescribed conditions. This decision will be based on additional analysis and planning.

Consider rapidly extinguishing smoldering coarse woody debris and duff.

Locate and manage water drafting sites (e.g., sites where water is pumped to control or suppress fires) to minimize adverse effects on riparian habitat and water quality as consistent with Aquatic Conservation Strategy objectives.

Lands

Identify in stream flows needed to maintain riparian resources, channel conditions, and fish passage.

Issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where legally possible, adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective and where legally possible, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way, and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.

Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives and facilitate restoration of fish stocks and other species at risk of extinction.

For proposed hydroelectric projects under the jurisdiction of the Federal Energy Regulatory Commission (the Commission), provide timely, written comments regarding maintenance of in stream flows and habitat conditions and maintenance/restoration of riparian resources and stream channel integrity. Request the Commission to locate proposed support facilities outside of Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to the Commission that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to the Commission that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves should be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.

For other hydroelectric and surface water development proposals in Tier 1 Key Watersheds, require in stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate State agencies. For other hydroelectric and surface water development proposals in all other watersheds, give priority emphasis to in stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate State agencies.

General Riparian Area Management

Identify and attempt to secure in stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.

Fall trees in Riparian Reserves when they pose a safety risk. Keep felled trees on site when needed to meet coarse woody debris objectives.

Apply herbicides, insecticides, other toxicant, and other chemicals only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in stream flows needed to maintain riparian resources, channel conditions, and fish habitat.

Watershed and Habitat Restoration

Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains Aquatic Conservation Strategy objectives.

Cooperate with Federal, State, local, and tribal agencies, and private landowners to develop watershed-based coordinated Resource Management Plans or other cooperative agreements to meet Aquatic Conservation Strategy objectives.

Prevent watershed and habitat degradation rather than relying on mitigation measures or planned restoration.

Fish and Wildlife Management

Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives.

Design, construct and operate fish and wildlife interpretive and other user enhancement facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives. For existing fish and wildlife interpretative and other user enhancement facilities inside Riparian Reserves, ensure that Aquatic Conservation Strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities.

Cooperate with Federal, State, and Native American wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.

Cooperate with Federal, State, and Native American fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest, and poaching that threaten the continued existence and distribution of native fish stocks inhabiting streams with adjacent or nearby Federal lands.

Late-Successional Reserves

The following summarizes Late-Successional Reserve direction. Details regarding this direction are found in the SEIS/ROD (see Appendix A).

Objectives

Protect and enhance conditions of late-successional and old growth forest ecosystems, which serve as habitat for late-successional and old growth forest-related species including the northern spotted owl and marbled murrelet.

Maintain a functional, interacting, late-successional and old growth forest ecosystem.

Land Use Allocations

There are 132,550 acres mapped of Late-Successional Reserves in the Eugene District. In addition, there are 3,904 unmapped acres. The 5 components of this reserve system are:

1. Mapped Late-Successional Reserves.

   These reserves incorporate Key Watersheds to the extent practicable; some or parts of the most ecologically significant and ecologically significant late-successional forests identified by the Scientific Panel on Late-Successional Forest Ecosystems;

and some or parts of the Designated Conservation Areas from the Final Draft Spotted Owl Recovery Plan.

2. Late-Successional/Old Growth 1 and 2 areas within Marbled Murrelet Zone 1, as mapped by the Scientific Panel on Late-Successional Forest Ecosystems.

3. Occupied Marbled Murrelet Sites.

   See Special Status and SEIS Special Attention Species section.

4. Known Spotted Owl Activity Centers (as of January 1, 1994).

   See Special Status and SEIS Special Attention Species section.

5. Protection Buffers.

   See Special Status and SEIS Special Attention Species section.

   See Map 1 for locations of Late-Successional Reserves. Occupied marbled murrelet sites, known spotted owl activity centers, and protection buffers are unmapped.

Management Actions/Direction

General - Apply the management actions/direction in the Special Status and SEIS Special Attention Species section.

Develop Late-Successional Reserve assessments prior to habitat manipulation (see Management Assessments and Plans for additional information).

These assessments may be developed as part of province-level planning or as stand-alone assessments. If developed to stand alone, the assessments will be clearly coordinated with subsequent watershed analysis and province-level planning. SEIS Record of Decision Standards and Guidelines should be refined at the province level prior to development of Late-Successional Reserve assessments. Late-Successional Reserve assessments will generally include:

- a history and inventory of overall vegetative conditions within the reserve;
- a list of known or suspected late-successional associated species within the Late-Successional Reserve and information on their locations;
- a history and description of current land use within the reserve;
- a fire management plan;
- criteria for developing appropriate treatments;
- identification of specific areas that could be treated under those criteria;
- a proposed implementation schedule tiered to higher order (i.e., large scale) plans; and
- proposed monitoring and evaluation components to help evaluate if future activities are carried out as intended and achieve desired results.

Only in unusual circumstances will silvicultural treatments, including prescribed fire, precede preparation of this management assessment. Late-Successional Reserve assessments are subject to review by the Regional Ecosystem Office (REO). Until Late-Successional Reserves assessments are completed, fire suppression activities will be guided by land allocation objectives in coordination with the local resource management specialist.

Projects and activities within Late-Successional Reserves (including restoration, recreation, projects for public safety, thinning and salvage) may proceed in fiscal years 1995 and 1996 using initial Late-Successional Reserve assessments done at a level of detail sufficient to assess whether the activities are consistent with the objectives of the Late-Successional Reserves.

Plan and implement nonsilvicultural activities inside Late-Successional Reserves that are neutral or beneficial to the creation and maintenance of late-successional habitat.

Using interdisciplinary teams, evaluate other activities not described below, and document appropriate guidelines.

Request review by the REO of all activities deemed to have potential adverse effects on Late-Successional Reserve objectives. The Regional Ecosystem Office may develop additional criteria for exempting some additional activities from review.

Silviculture

Plan and implement silvicultural treatments inside Late-Successional Reserves that are beneficial to the creation of late-successional habitat.

If needed to create and maintain late-successional forest conditions, conduct thinning operations in forest stands up to 80 years of age. This will be accomplished by precommercial or commercial thinning of stands regardless of origin (planted after logging or naturally regenerated after fire or blowdown).

Salvage

Limit salvage of dead trees in Late-Successional Reserves to areas where stand-replacing events exceed 10 acres in size and canopy closure has been reduced to less than 40 percent.

Retain all standing live trees including those injured (e.g., scorched) but likely to survive.

Retain snags that are likely to persist until late-successional forest conditions have developed and a new stand is again producing large snags.

Retain adequate coarse woody debris quantities in a new stand so that in the future it will still contain amounts similar to naturally regenerated stands. Watershed-level or province-level plans will establish appropriate levels of coarse woody debris to be used. Levels will be typical and will not require retention of all material where it is highly concentrated or too small to contribute to coarse woody debris over the long-term.

Remove snags and logs to reduce hazards to humans along roads and trails and in or adjacent to recreation sites. Leave some material where coarse woody debris is inadequate.

After disturbance in younger stands, develop diameter and biomass retention direction consistent with the intention of achieving late-successional forest conditions. Where green trees, snags, and logs are present following disturbance, the green tree and snag direction will be applied first and completely satisfied where possible. The biomass left in snags can be credited toward the amount of coarse woody debris biomass needed to achieve management objectives.

Retain logs present on the forest floor before a disturbance event. This will provide habitat benefits that are likely to continue.

Retain coarse woody debris to approximate the species composition of the original stand to help replicate preexisting suitable habitat conditions.

Deviate from these management actions/direction only to provide reasonable access to salvage sites and feasible logging operations. Limit deviations to as small an area as possible.

Road Construction and Maintenance

Construct roads in Late-Successional Reserves if the potential benefits of silviculture, salvage, and other activities exceed the costs of habitat impairment. If new roads are necessary to implement a practice that is otherwise in accordance with these guidelines, they will be kept to a minimum, be routed through unsuitable habitat where possible, and be designed to minimize adverse impacts. Alternative access methods, such as aerial logging, will be considered to provide access for activities in reserves.

Remove trees along rights-of-way if they are a hazard to public safety. Consider leaving material on site if available coarse woody debris is inadequate. Consider topping of trees as an alternative to felling.

Fuelwood Gathering

Permit fuelwood gathering only in existing cull decks, in areas where green trees are marked by silviculturists for thinning, in areas where blowdown is blocking roads, and in recently harvested timber sale units where down material will impede scheduled post-sale activities or pose an unacceptable risk of future large scale disturbance. In all cases, these activities will comply with management actions/ direction for salvage and silvicultural activities.

Mining

Assess the impacts of ongoing and proposed mining activities in Late-Successional Reserves.

Include stipulations in mineral leases and, when legally possible, require operational constraints for locatable mineral activities to minimize detrimental effects to late-successional habitat.

Developments (Facilities)

Neither construct nor authorize new facilities that may adversely affect Late-Successional Reserves.

Review on a case-by-case basis new development proposals that address public needs or provide significant public benefits. They may be approved when adverse effects can be minimized and mitigated. They will be planned to have the least possible adverse impacts on Late-Successional Reserves.

Locate new developments to avoid degradation of habitat and adverse effects on identified late-successional species.

Retain and maintain existing developments, such as campgrounds, utility corridors, and electronic sites, consistent with other management actions/ direction for Late-Successional Reserves.

Remove hazard trees along utility rights-of-way and trails and in other developed areas.

Land Exchanges

Consider land exchanges in Late-Successional Reserves if they provide benefits equal to or better than current conditions.

Consider land exchanges especially to improve area, distribution, and quality (e.g., connectivity, shape, and contribution to biodiversity) of Late-Successional Reserves, especially where public and private lands are intermingled.

Habitat Improvement Projects

Design projects to improve conditions for fish, wildlife, and watersheds if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible.

Design projects for recovery of threatened or endangered species, even if they result in some reduction of habitat quality for other late-successional species.

Design and implement watershed restoration projects consistent with Late-Successional Reserve objectives.

Fire Suppression and Prevention

As part of watershed analysis, plan fire management for each Late-Successional Reserve.

Emphasize maintaining late-successional habitat in wildfire suppression plans.

Use minimum impact suppression methods for fuels management,in accordance with guidelines for reducing risks of large-scale disturbances.

During actual fire suppression activities, consult an interdisciplinary team to ensure that habitat damage is minimized.

Until a fire management plan is completed for a Late-Successional Reserve or group of reserves, suppress wildfire to avoid loss of habitat and to maintain future management options.

Prepare a specific fire management plan prior to any habitat manipulation activities in Late-Successional Reserves. Specify how hazard reduction and other prescribed fire applications meet the objectives of the Late-Successional Reserve. Until the plan is approved, proposed activities will be subject to review by the Regional Ecosystem Office.

Apply prescribed fire in a manner that retains the amount of coarse woody debris determined through watershed analysis.

Consider allowing some natural fires to burn under prescribed conditions. This decision will be based on additional analysis and planning.

Consider rapidly extinguishing smoldering coarse woody debris and duff.

Special Forest Products

Evaluate whether special forest product harvest activities have adverse effects on Late-Successional Reserve objectives.

Prior to selling special forest products, ensure resource sustainability and protection of other resource values, such as special status plant or animal species.

Where special forest product activities are extensive, evaluate whether they have significant effects on late-successional habitat. Restrictions may be appropriate in some cases.

Recreational Uses

Use adjustment measures, such as education, use limitations, traffic control devices, or increased maintenance, when dispersed and developed recreation practices retard or prevent attainment of Late-Successional Reserve objectives.

Rights-of-Way, Contracted Rights, Easements, and Special/Temporary Use Permits

Consider access to nonfederal lands through Late-Successional Reserves and existing rights-of-way agreements, contracted rights, easements, and special/temporary use permits, as valid uses in Late-Successional Reserves.

For all new rights-of-way proposals, design mitigation measures to reduce adverse effects on Late-Successional Reserves. Consider alternative routes that avoid Late-Successional Reserves. If rights-of-way must be routed through a reserve, design and locate them to have the least impact on late-successional habitat.

Review all special/temporary use permits. When objectives of Late-Successional Reserves are not being met, reduce impacts through education or modification of existing permits.

Nonnative Species

If introduction of a nonnative species is proposed, complete an assessment of impacts and avoid any introduction that will retard or prevent achievement of late-successional objectives.

Evaluate impacts of nonnative species (plant and animal), existing within reserves.

Develop plans and recommendations for eliminating or controlling nonnative species, which are inconsistent with Late-Successional Reserve objectives. Include an analysis of effects of implementing such programs on other species or habitats within Late-Successional Reserves.

Protection Buffers - See the Special Status and SEIS Special Attention Species section.

Central Cascade Adaptive Management Area

The following material summarizes Adaptive Management Area (AMA) direction. Details regarding this direction are found in the SEIS/ROD (see Appendix A).

Objectives

Develop and test new management approaches to integrate and achieve ecological and economic health and other social objectives.

Contribute substantially to the achievement of SEIS/ROD objectives, including provision of well-distributed late-successional habitat outside reserves; retention of key structural elements of late-successional forests on lands subjected to regeneration harvest; restoration and protection of riparian zones; and provision of a stable timber supply.

Land Use Allocations

There are 16,174 acres of BLM administered land in the Central Cascades Adaptive Management Area (see Map 1).

Management Actions/Direction

Develop a plan for the Central Cascades Adaptive Management Area. Develop and emphasize new approaches to public involvement that focus on developing partnerships in the design and development of plans and actions.

An individual public, interagency approach to planning will be developed for the Adaptive Management Area. The plan will address or provide:

Shared vision of the Adaptive Management Area (e.g., the kind of knowledge the participants hope to gain). Identification of the desired future conditions may be developed in collaboration with communities, depending on the area;

- Learning that includes social and political knowledge, not just biological and physical information;

- Strategy to guide implementation, restoration, monitoring, and experimental activities;
- Short-term (3 to 5 year) timber sale plan and long-term yield projections;
- Education of participants;
- List of community strategies, and resources and partners being used;
- Inventory of community strategies, and resources and partners being used;
- Coordination with overall activities within the province;
- Funding strategy; and
- Integration of the community strategies and technical objectives.

Proceed with management activities in the Adaptive Management Area (AMA) while the plan is being developed. Initiation of activities will not be delayed by requirements for comprehensive plans or consensus documents beyond those needed to meet existing legal requirements for activities.

Apply the management actions/direction in the Special Status and SEIS Special Attention Species section.

Manage mapped and unmapped Late-Successional Reserves, in accordance with management actions/ direction stated previously. Management around these reserves will be designed to reduce the risk of natural disturbances.

Protect riparian areas in a manner comparable to that prescribed for other Federal land areas. Desired conditions may be achieved in a manner different than that prescribed for other areas, and research projects may be conducted within riparian zones. During analysis of Riparian Reserve widths, consider the contribution of these reserves to aquatic and terrestrial species. Through watershed analysis, take into account all species that were intended to benefit by the prescribed Riparian Reserve widths (fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls).

Manage coarse woody debris, green trees, and snags in a manner that meets the intent of the management actions/direction for the Matrix. There are no specific management actions/direction for these forest components in the Adaptive Management Area.

Modify site treatment practices, particularly the use of fire and pesticides, and modify harvest methods to minimize soil and litter disturbance.

1. Minimize intensive burning, unless appropriate for certain specific habitats, communities, or stand conditions. Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris.
2. Minimize soil and litter disturbance that may occur, as a result of yarding and operation of heavy equipment.
3. Reduce the intensity and frequency of site treatments.

Provide for old growth fragments in watersheds where little remains. The Matrix management action/ direction for retaining late-successional forest in fifth field watersheds (see Matrix section for details) will be considered as a threshold for analysis in AMA planning rather than a strict management action/ direction. The role of remaining late-successional forest stands will be fully considered in watershed analysis before they can be modified.

During AMA planning, review relevant objectives, land use allocations, and management actions/ direction for resource programs established in this PRMP. They may be modified in AMA plans based on site-specific analyses. Otherwise, management actions/direction will be developed to meet the objectives of the AMA and the overall strategy. Development of management guidance will be coordinated with the Regional Ecosystem Office (REO) through the Regional Interagency Executive Committee (RIEC).

Explore and support opportunities to research the role and effects of fire/fuels management on ecosystem functions.

Emphasize fire/fuels management cooperation across agency and ownership boundaries. Follow the hazard reduction management actions/direction in this PRMP (see Fire section) until the AMA plan is completed and approved.

Use accepted wildfire suppression strategies and tactics and conform to specific agency policy.

Conduct intensive research on ecosystem and landscape processes and its application to forest

management in experiments and demonstrations at stand and watershed levels.

Develop approaches for integrating forest and stream management objectives and implications of natural disturbance regimes.

Identify additional areas in the AMA where management practices can accelerate the development of late-successional conditions.

Matrix - (Connectivity/Diversity Blocks and General Forest Management Area)

Objectives

Produce a sustainable supply of timber and other forest commodities to provide jobs and to contribute to community stability.

Provide connectivity (along with other allocations such as Riparian Reserves) between Late-Successional Reserves.

Provide habitat for a variety of organisms associated with both late-successional and younger forests.

Provide important ecological functions, such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components, such as down logs, snags, and large trees.

Provide early-successional habitat.

Land Use Allocation

In the Matrix, there are approximately 37,860 acres of BLM administered land in the General Forest Management Area and 23,800 acres in Connectivity/ Diversity Blocks.

Connectivity/Diversity Blocks vary in size and are distributed throughout the Matrix. See Map 1 for the location of these lands and allocations.

Management Actions/Direction

Apply the management actions/direction in the Special Status and SEIS Special Attention Species section.

Conduct timber harvest and other silvicultural activities in that portion of the Matrix with suitable forest lands, according to management actions/ direction summarized below and in the Timber section.

Provide a renewable supply of large down logs well-distributed across the Matrix landscape in a manner that meets the needs of species and provides for ecological functions. Down logs will reflect the species mix of the original stand. Specific measures to accomplish this are as follows:

1. Leave 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. Logs less than 20 feet in length will not be credited toward this total. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of the original stand. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

2. In areas of partial harvest, apply the same basic management actions/direction, but they can be modified to reflect the timing of stand development cycles where partial harvest is practiced.

3. Retain coarse woody debris already on the ground and protect it to the greatest extent possible from disturbance during treatment (e.g., slash burning and yarding) that might otherwise destroy the integrity of the substrate.

Retain green trees and snags throughout the General Forest Management Area.

1. Retain 6-8 green conifer trees per acre in regeneration harvest units.

2. Retain snags within a timber harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels. Meet the 40 percent minimum throughout the Matrix with per acre requirements met on average areas no larger than 40 acres.

3. In addition to the previous green tree retention management action/direction, retain green trees for snag recruitment in timber harvest units where there is an identified, near-term (less than 3 decades) snag deficit. These trees do not count toward green-tree retention requirements.

Provide Connectivity/Diversity Blocks spaced throughout the Matrix. Manage the blocks as follows:

1. Maintain 25-30 percent of each block in late-successional forest at any point in time. Riparian Reserves and other allocations with late-successional forest count toward this percentage. Blocks may be comprised of contiguous or noncontiguous BLM administered land. The size and arrangement of habitat within a block will provide effective habitat to the extent possible.

2. Connectivity/Diversity Block standards or guidelines will be managed for 150-year area control rotations.

3. When an area is regeneration harvested, retain 12-18 green trees per acre.

Modify site treatment practices, particularly the use of fire and pesticides, and modify harvest methods to minimize soil and litter disturbance. Plan and implement treatments to:

1. Minimize intensive burning, unless appropriate for certain specific habitats, communities, or stand conditions. Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris.

2. Minimize soil and litter disturbance that may occur as a result of yarding and operation of heavy equipment.

3. Reduce the intensity and frequency of site treatments.

Retain late-successional forest patches in landscape areas where little late-successional forest persists. This management action/direction will be applied in 5th field watersheds (20 to 200 square miles) in which Federal forest lands are currently comprised of 15 percent or less late-successional forest. (The assessment of 15 percent will include all Federal land allocations in a watershed.) Within such an area, protect all remaining late-successional forest stands. Protection of these stands could be modified in the future when other portions of a watershed have recovered to the point where they could replace the ecological roles of these stands.

Retain 100 acres of the best northern spotted owl habitat as close as possible to a nest site or owl activity center for all known (as of January 1, 1994) spotted owl activity centers.

Additional information about Matrix management is found in the SEIS/ROD (see Appendix A).

Various Resource Programs

Air Quality

Objectives

Continue efforts to meet National Ambient Air Quality Standards, Prevention of Significant Deterioration Goals, and the Visibility Protection Plan.

Maintain and enhance air quality and visibility in a manner consistent with the Clean Air Act and the State Implementation Plan.

Reduce the potential for wildfire emissions through the use of prescribed fire and other fuels management techniques.

Land Use Allocations

None.

Management Actions/Direction

By the year 2000, reduce particulate matter emissions and impacts from prescribed burning by 50 percent from the baseline period (1976-1979). This will be accomplished by planning, conducting, monitoring and, if necessary, adjusting prescribed fire activities in accordance with the Oregon State Implementation Plan and the Oregon Smoke Management Plan (see Fire section).

Reduce broadcast burning in favor of lower intensity under burning. Use emission reduction mitigation measures and smoke dispersal techniques to the greatest extent practical. Wildfire hazard reduction, site preparation, and the use of prescribed fire for species habitat mitigation will be implemented in a manner consistent with ecosystem management.

Where needed, use dust abatement measures on roads during BLM timber harvest operations or other BLM commodity hauling activity. Encourage dust abatement measures when haulers use BLM roads under permits and right-of-way agreements.

Promote burning of dry fuel wood by making available copies of Oregon Department of Environmental Quality publications to fuel wood purchasers.

Consider alternative emission reduction techniques whenever they are compatible with land allocation objectives and other management actions/direction. See the Air Quality Analysis section of the SEIS/ROD for alternative treatments that may be considered during fuels management project design.

Water and Soils

Objectives

Meet Aquatic Conservation Strategy Objectives.

As directed by the Clean Water Act, comply with State Water Quality requirements to restore and maintain water quality to protect the recognized beneficial uses for the Mid Coast and Willamette basins.

Maintain or improve soil productivity.

Land Use Allocations

None specifically for water quality or soils. However, Riparian Reserves, Key Watershed provisions, and timber production capability classifications will assist in meeting water quality and soils management objectives.

Management Actions/Direction for Water

See Management Actions/Direction for Riparian Reserves and Key Watersheds (located in Aquatic Conservation Strategy section).

Continue to implement a nonpoint source management program in cooperation with the U. S. Environmental Protection Agency and the Oregon Department of Environmental Quality.

Continue coordination with the Oregon Department of Environmental Quality for implementation of Best Management Practices that protect beneficial uses of water.

Ensure consistency of management activities with Oregon's Statewide Water Quality Management Plan for forest practices and with Oregon's water quality criteria and guidelines (Oregon Administrative Rule 340-41).

Protect flood plains and wetlands in accordance with Executive Orders 11988 and 11990 and implement BLM's Riparian-Wetlands Initiative for the 1990s (USDI, BLM 1991a).

Design and implement watershed restoration projects that promote long-term ecological integrity of ecosystems, conserve the genetic integrity of native species, and attain Aquatic Conservation Strategy objectives. See Aquatic Conservation Strategy for additional guidance.

Cooperate with Federal, State, local, and tribal agencies and private landowners to develop watershed-based coordinated resource management plans or other cooperative agreements to meet Aquatic Conservation Strategy objectives.

Prevent watershed degradation rather than using mitigation or planned restoration to correct foreseeable problems caused by management activities. See Best Management Practices, Appendix C, for additional guidance.

Identify and attempt to obtain in stream flows needed to maintain riparian resources, channel conditions, aquatic habitat, and water quality.

Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.

Apply pesticides and other chemicals only if consistent with the attainment of Aquatic Conservation Strategy objectives.

Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives.

Apply for water rights to support the needs for fire suppression, construction/maintenance (e.g., pump chances, water holes and reservoirs), recreation and other programs.

Management Actions/Direction for Soils

Apply Best Management Practices during all ground and vegetation disturbing activities (see Appendix C for a list of practices).

Minimize disturbance of identified fragile sites. Appendix C contains a summary of management guidance for fragile sites.

Utilize silvicultural systems that are capable of maintaining or improving long-term site productivity of soils.

Design logging systems to avoid or minimize adverse impacts to soils.

In forest management activities involving ground-based systems, tractor (skid) trails, including existing trails, it will be planned to have insignificant growth-loss effect from compaction (2 percent or less of any treated unit area compacted after amelioration practices). Existing tractor trails would be used as much as possible and new trails would be limited to slopes less than 35 percent. Operation on these trails would minimize soil displacement and occur when soil moisture content provides the most resistance to compaction. Tractor trails, which could include those from previous entries, would be selectively tilled with a properly designed self-drafting winged subsoiler.

To help achieve the goal of insignificant growth-loss effects from compaction, use the following guidelines when using track-type equipment with a brush blade for mechanical site preparation: (1) restrict use to areas with suitable soil types and slopes less than 35 percent; (2) minimize piling of large woody material; (3) avoid displacing duff layers and topsoil into piles or windrows; (4) limit machine use to one round trip over the same area; and (5) operate at soil moistures that maximize resistance to compaction. A low ground pressure backhoe/loader grapple or other special equipment or techniques that would achieve the same insignificant soil compaction may be used instead of the preceding techniques. All areas compacted during site preparation would be tilled with properly designed equipment.

In most instances, avoid using prescribed fire on highly sensitive soils (those soils recognized as unusually erodible, nutrient deficient, or low organic matter). Any burning on such soils, if considered essential for resource management, would be

accomplished under site specific prescriptions to accomplish the resource objectives and minimize adverse impacts on soil properties. On other soils, prescribed fire prescriptions would be designed to protect beneficial soil properties.

Wildlife Habitat

Objectives

See Late-Successional Reserve, Riparian Reserve, Special Status/SEIS Special Attention Species, and Matrix objectives.

Enhance and maintain biological diversity and ecosystem health in order to contribute to viable wildlife populations.

BLM is directed to "ensure optimum populations and a natural abundance and diversity of wildlife resources on public lands by restoring, maintaining, and enhancing habitat conditions through management plans and actions integrated with other uses of public lands, through coordination with other programs, the States, by management initiatives, and through direct habitat improvement projects" (BLM Manual 6500.1).

Land Use Allocations

Wildlife habitat is provided across all land use allocations. The primary mechanism for the conservation of wildlife habitat will be through the application of ecosystem management principles to develop complex forest habitats under a variety of silvicultural prescriptions compatible with the objectives of each land use allocation.

Management Actions/Direction for All Land Use Allocations

Use the watershed analysis process to address wildlife habitat issues for individual watersheds. The analysis will help to resolve any concerns identified in applying management actions/direction in this section and those in the Special Status and SEIS Special Attention Species section. Where appropriate, wildlife habitat enhancement opportunities will be identified through this process.

Manage late seral habitat within Late-Successional Reserves and all other land use allocations (to the extent compatible with objectives for those allocations) to maintain regionally viable populations of species associated with habitat and components of late seral forests. Delineate distributions and develop management strategies and silvicultural prescriptions to maintain and enhance habitats for late seral associated species. Management will be directed toward the sustained availability of snags, down woody debris, multicanopy and multi-layered forest stands, structurally-diverse trees and other components important to these species.

Manage younger forest age classes to benefit the special status and priority wildlife associated with these habitats. These management actions will be compatible with the desired future condition of the land use allocation. Develop management strategies and silvicultural prescriptions towards the maintenance of snags; down woody debris; diverse communities of native shrubs and forbs; multi-layered, multi-canopied forest stands; and management for optimum configurations of patch/openings for the priority species identified. Utilize fire, vegetative manipulation techniques, road decommissioning, and planting to encourage high value forage areas, habitats that support prey species or highly diverse biological communities, or high populations of insects important to birds and mammals that feed in early seral forests.

Coordinate with the Oregon Department of Fish and Wildlife and other agencies and organizations during planning and implementation of wildlife habitat enhancement projects.

Cooperate with Federal, Tribal, and State wildlife management agencies to identify and eliminate impacts associated with habitat manipulation, poaching, and other activities that threaten the continued existence and distribution of native wildlife inhabiting Federal lands.

Develop and implement plans to acquire lands for which significant populations or habitat enhancement opportunities exist, through conservation easements, purchase, or exchange.

Provide and maintain interpretive sites to facilitate wildlife and habitat viewing by the public. Actively participate in environmental education programs and develop public/agency partnerships to enhance wildlife habitat.

Assist other agencies and cooperators in regional and national efforts to survey and monitor neotropical

migratory and resident nongame birds. Participate in regional and national initiatives following Partners in Flight priorities established for research, monitoring, habitat development, and public education. Develop strategies for the management and monitoring that emphasize species of concern and species indicating decline.

Cooperate with the Oregon Department of Fish and Wildlife to identify and maintain habitats significant to band-tailed pigeons and determine their potential for management. Develop cooperative strategies for management including habitat maintenance and enhancement, population surveys, acquisition, and public outreach.

Conserve native plant and animal communities. Promote the recovery of adversely affected populations. Enhance biological resources for human values through the use of native species for ecosystem restoration, species recovery or other actions involving plant, fish, and wildlife introductions on the District. Identify and implement actions to mitigate resource damage, promote wildlife habitat, reestablish or enhance populations and communities to maintain native biological diversity.

Down, dead woody material will be retained on areas from which timber is harvested to the extent compatible with the land use allocation, reforestation objectives, fire hazard reduction standards, special status habitat and Aquatic Conservation Strategy objectives. Gross yarding planned to meet these objectives will be constrained in accordance with the land use allocation to maintain dead and down woody debris. Salvage of down, dead material from other lands will also be constrained to meet appropriate land use allocation objectives for protection of dead and down woody debris.

Except where public safety is a concern, snags will be retained where they occur on lands not allocated to timber production. Unmerchantable snags will also be left in timber harvest units to the extent compatible with safety and other concerns such as fire hazard reduction needs and to meet or exceed minimal land use allocation objectives. Timber sale contracts will encourage loggers to retain all snags and nonmerchantable trees that can be left safely in timber harvest areas. In all land use allocations, guidelines will include retention of soft snags except where unacceptable for safety, logging systems, or burning considerations.

Individual green trees may be cut and moved from terrestrial sites in any land use allocation for placement in aquatic or riparian systems deficient in large woody debris. Only trees in excess of the land use allocation commitments for snags, down wood, and green tree retention can be moved. Excess trees can be transferred only if no adverse impact to the current or desired condition for special status or other priority wildlife would result from the transfer at either location. Follow SEIS/ROD guidance for target levels of snags, down wood, and green tree retention for each land use allocation. Down wood in excess of future conditions can be transferred from terrestrial sites to aquatic or riparian areas following the salvage guidelines.

Develop road management plans that address solutions or mitigation for road/access problems related to the wildlife resource including disturbance, erosion, trash, poaching, or shooting problems. Identify management recommendations to provide wildlife refugia; special and crucial habitats; seasonally or permanently-protected areas for species susceptible to disturbance, and alternatives for the public that wishes to enjoy wildlife viewing through nonmotorized means.

Wherever practical, new roads will avoid areas with high wildlife values. Access on spur roads unneeded for continued timber management will be controlled upon completion of logging and replanting. Some land use alternatives provide for additional access management to protect species sensitive to human intrusion. Close the roads identified under Off Highway Vehicle management (Appendix F) that were identified to meet wildlife objectives.

Implement long-term improvement and restoration of upland game bird habitat on BLM land (BLM Upland Game Bird Strategy 6500.1).

Identify wildlife enhancement opportunities in recreation plans (ideally in the design phase to preclude the need for mitigation), and plan Watchable Wildlife opportunities that minimize impacts to sensitive wildlife or its habitat.

Follow minerals management guidelines (Appendix G, Appendix H, and Appendix I) to protect, maintain, or reduce impacts to priority wildlife habitat.

Management Actions/ Direction for Special Habitats

Using interdisciplinary teams, identify special habitat areas and determine relevancy for values protection

or management on a case-by-case basis. Of particular importance in these determinations will be the habitat of species for which the SEIS/ROD provides protection buffers.

Use management practices, including fire, to obtain desired vegetation conditions in special habitats.

Maintain, enhance, and acquire oak, oak-conifer woodlands, and pine stands for associated wildlife species. Identify and map oak, oak-conifer woodlands, and pine stands as special habitats on the GIS resource inventory system by 1996. Implement a strategy to maintain, enhance, or acquire these particular habitats and identify management strategies including planting oak or pine, underburning, competitive conifer control, and restricting livestock grazing in these high value habitats. Manage the site within the range of known historical conditions.

Buffer special habitats as required by the SEIS/ROD as recommended to maintain climatic conditions (see Table 4). Manage these areas for the values that make them unique from the surrounding habitat types.

Special habitats such as cliffs, rock outcrops, talus slopes, meadows, ponds and wetlands will be managed to protect their primary habitat values to the extent consistent with alternative design features for buffers. Rock quarry development, and other activities, may occur on cliffs or talus slopes to the extent compatible with the protection of special status species.

Management Actions/Direction for Habitat Type/Enhancement Opportunities

Determine the desired current and future conditions necessary to maintain long-term viable populations of each priority species. Incorporate the silvicultural prescriptions, enhancement projects or other management actions that will produce these conditions into watershed analysis following priorities established through this document. Appropriate management techniques will be implemented where consistent with land use allocations, policy and law. All planned actions will be developed through an issue-identifying process involving interdisciplinary resource specialists. Projects will receive required interagency review (if any) and will comply with applicable NEPA procedures prior to implementation.

Management will be directed towards the sustained availability of snags; down woody debris; multi-species native mixes of trees, shrubs, and forbs; multicanopy/multilayer forest stands; structurally-diverse tree canopies high quality forage/feeding concentration areas (including prey concentrations); well-dispersed, clean, undisturbed water sources (for the species that require free water); well-distributed, undisturbed refugia, and crucial habitat areas; and optimum patch/opening habitat distributions/ configurations to benefit priority wildlife for which patch/edge recommendations are known.

A partial list of management techniques that may be used to meet these conditions will include tree girdling; topping; fungus injection; releasing selected trees from competition by removing adjacent trees (selective thinning);interplanting; pruning; seeding with natives; seedling protection treatments; creating potholes/wetlands/pools; incorporating gravel, burning, manual vegetation treatment; removal or control of exotic plants and/or animals; supplementing down wood by cutting trees and moving to down wood deficient areas; fertilizing; installing nest boxes or artificial structures for breeding or shelter; closing/decommissioning roads or otherwise restricting access; installing stream structures; restoring native species that have been extirpated from the watershed; and installing fencing or barriers. Approximately 15,000 to 20,000 of one or more of the above treatments may be implemented during the fiscal 10 years of this RMP, pending watershed analysis.

Protect or improve known habitat for prey and vegetative forage species of priority wildlife where compatible with other land use allocations and priorities. Incorporate fire, other disturbance techniques that simulate natural disturbance events, fertilization, density management, or seeding into areas where habitat enhancement for prey species or forage plants can benefit.

Roosevelt Elk, Bear, Mountain Lion, Deer, and other Big Game

Cooperate with the Oregon Department of Fish and Wildlife to develop and implement strategies identified in the Elk, Deer, Black Bear, and Mountain Lion Strategic Plans to the extent compatible with land allocation objectives, Bureau policy and law. Redefine the Eugene District elk emphasis areas identified in the BLM Fish and Wildlife 2000-Big Game Strategic Plan (6500.1) to reflect updated land use allocations and incorporate into the watershed analysis process. Identify, protect, and enhance

Table 4 - Buffering of Special Habitats

Special Habitat	Buffer (feet)
Natural Ponds/lakes/vernal pools/slump ponds Constructed water bodies > 1 acre	1-2 site trees or 300' slope distance (ROD, p. 9) 1 site tree or 150' slope distance (ROD, C-30, p. 9)
Bogs, Swamps	1 site tree or 100' slope distance (ROD, C-31)
Mesic (wet) Meadows/Prairie	1 site tree or 100' slope distance (ROD, C-31)
Moist Rock Gardens	1 site tree or 100' slope distance (ROD, C-31)
Dry Rock Gardens, Dry Meadows/prairie	100' to 200'
Rock Outcrops, Talus habitats	100' to 200'
Caves, Rock Overhangs	250' (if occupied by bats) (SEIS, p. D-10) or 100-200'
Mines	250' (if occupied by bats) (SEIS, p. D-10) or 100-200'
Man-made structures (bridges, buildings)	250' (if occupied by bats) (SEIS, p. D-10) or 100-200'
Mineral deposits (e.g., mineral springs, salt licks, etc.)	100-200' (or as required under wetland in SEIS/ROD)

Other unique vegetative types, geological features, and small patches of diverse habitat that occur within larger areas of more homogeneous habitat and that have special value to wildlife or plants (including sand dunes/ coastal deflation plains, ponderosa pine stands, oak and oak woodlands, ash swales, cottonwood patches, madrone woodlands, etc.) will be maintained throughout the landscape as compatible with land use objectives and special status species management. No inventories of these areas have been conducted with wildlife or plant requirements in mind, although TPCC areas have been delineated for timber purposes. As additional field work is conducted and unique areas are located, they will be identified as special habitats (BLM manual 6602.12D) and incorporated into watershed analysis. Although no standard buffer is recommended for these types, buffers are one of many management techniques that may be suggested through watershed analysis to maintain or protect the values that make these areas unique. See Chapter 3 description.

crucial habitats such as denning, calving, foraging sites, major migration routes, and significant refugia to the extent possible under land allocation objectives.

In elk habitat areas, close and rehabilitate roads unneeded for continued resource management or use. A general target for roads open to motorized use is 1.5 miles or less per square mile. Avoid constructing roads in areas with high elk value such as breeding sites.

Use seasonal restrictions on public use and management activities where needed to minimize disturbance and harassment.

Conduct forage seeding in habitat areas with appropriate seed mixtures and where compatible with other management objectives.

Golden Eagles, Owls, and Other Raptors (excluding those of special status), Herons, Key Raptor Areas

(See also Special Status/SEIS Special Attention Species Habitat section for bald eagles, spotted owls, peregrine falcons, and goshawks).

Contribute to regionally viable populations of all native raptor species consistent with BLM Fish and

Wildlife 2000 (6500.1) and the Raptor Research Report # 8 (BLM, 1989). Maintain nests, centers of activity, prey concentrations or foraging areas, and roost sites through seasonal protection, yarding mitigation, and/or the distribution of snags/green retention trees and reserve areas to the extent compatible with land use allocations. Meet or exceed Oregon State Board of Forestry Forest Practices Rules for raptor and heron protection.

Install nesting platforms, nest boxes, and other structures to enhance habitat

Evaluate and, if necessary, redefine the Eugene District Key Raptor Areas (Raptor Research Report #8, 1989). Specific objectives and desired future conditions identified for each Key Raptor Area will be incorporated into the watershed analysis process to meet raptor objectives.

Until strategies are developed for Key Raptor Areas that may update these buffer guidelines, active raptor and heron nests will be managed to maintain site integrity and comply with the Migratory Bird Treaty Act as follows:

Restrict activities that may disturb or interfere with breeding within 0.25 miles of the nest site or line-of-site up to 0.5 mile during the crucial nesting period. Nesting dates vary by species, the date the bird initiated nesting, the likelihood of the species to renest if the first nest fails, and variations in weather conditions but generally fall within the following periods:

Golden eagles	Nest	Jan. 1-Aug. 31
Winter roosts		Nov. 15-April 1
Owls, other raptors	Nest	March 1-Sept. 30
Winter	NA	
Herons	Nest	Feb. 15-Sept. 30
Winter	NA	

Protect nests from disturbance by maintaining the seasonal restriction through the last date that species has been known to nest or renest (approximately June 15). Allow the action to proceed if field exam indicates that nest is inactive on or after that date.

If these protection guidelines cannot be provided, e.g., in the case of time-restricted rights-of-ways or mineral leases, and the take (generally the mortality of a bird or its eggs) of a migratory bird under the Migratory Bird Treaty Act (as amended) may result, confer with USFWS regarding take regulations and proceed as advised.

In addition to seasonal protection for the above species, protect an area approximately 0.25 mile around active golden eagle and great blue heron nest sites from any activity that will adversely affect the nest stand. Protection measures will include no habitat removal.

Protect nests and nest stands of other priority species where possible and to the extent compatible with the land use objectives, through scheduling of harvest activities across the landscape, clumping of retention trees, placement of unthinned stands in harvest/density management actions, and by avoiding road construction or yarding disturbance around nest sites when compatible with other resource values.

Management Actions/Direction for Riparian Reserves

Design and implement wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives.

Design, construct, and operate wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives. For existing wildlife interpretative and other user-enhancement facilities inside Riparian Reserves, ensure that Aquatic Conservation Strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities.

Cooperate with Federal, Tribal, and State wildlife management agencies to identify and eliminate ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.

Manage all riparian and wetland habitat consistent with land use objectives to maintain, restore, and improve riparian habitat consistent with the BLM Riparian Initiative (6400.1), Riparian Area Management (BLM Technical Report 1737-11, 1994), and the 1987 Corps of Engineers Wetlands Manual. Manage riparian areas for a late seral stage unless watershed analysis identifies reasons for alternate objectives. Maintain the riparian/wetland conditions within the historic range of conditions as much as this can be determined. Identify and map wetlands and riparian areas on all lands within Eugene District watershed boundaries, incorporating remote sensing and GIS. Through watershed analysis evaluate the functional condition and beneficial uses of these areas and identify management actions to remedy

areas in poor condition. Maintain and enhance beaver populations, dams, and habitats to the extent compatible with Aquatic Conservation Strategy objectives.

Adaptive Management Process: Each implementation action will incorporate a monitoring plan that addresses consistency with Aquatic Conservation Strategy objectives, BLM Riparian Initiative 6400.1, and specific watershed goals for the basin. The monitoring plan will address completion of the action, the effectiveness of the action in meeting the resource objective(s), and will address follow-up modifications to revise, maintain, or adapt the management action to address the results of the effectiveness monitoring.

Pursue lands through conservation agreements or acquisition that will facilitate rehabilitation of priority streams or riparian systems.

Management Actions/Direction for Late-Successional Reserves

Design projects to improve conditions for wildlife if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible.

If introduction of a nonnative species is proposed, complete an assessment of impacts and avoid any introduction that will retard or prevent achievement of Late-Successional Reserve objectives.

Evaluate impacts of nonnative species existing within Late-Successional Reserves.

Develop plans and recommendations for eliminating or controlling nonnative species that are inconsistent with Late-Successional Reserve objectives. Include an analysis of effects of implementing such programs on other species within Late-Successional Reserves.

Management Actions/Direction for Matrix (General Forest Management Area)

Retain snags within a timber harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels. Meet the 40 percent minimum throughout the Matrix with per acre requirements met on average areas no larger than 40 acres.

Retain late-successional forest patches in landscape areas where little late-successional forest persists. This management action/direction will be applied in fifth field watersheds (20 to 200 square miles) in which Federal forest lands are currently comprised of 15 percent or less late-successional forest. (The assessment of 15 percent will include all Federal land allocations in a watershed.) Within such an area, protect all remaining late-successional forest stands. Protection of these stands could be modified in the future when other portions of a watershed have recovered to the point where they could replace the ecological roles of these stands.

Retain 6-8 green conifer trees per acre after regeneration harvest to provide a legacy bridging past and future forests. Retained trees will be distributed in variable patterns (e.g., single trees, clumps, and stringers) to contribute to stand diversity.

In addition to the previous green tree retention management action/direction, retain green trees for snag recruitment in harvest units where there is an identified, near-term (less than 3 decades) snag deficit. These trees do not count toward green tree retention requirements.

Leave 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. Logs less than 20 feet in length will not be credited toward this total. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of the original stand. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

Manage for species and habitat within the Matrix-General Forest that are compatible with early seral stages up to 80 years old. Use the 15 percent of the fifth field watershed retained as older forest to serve as refugia for species that will later colonize the managed forest, and to serve as dispersal patches for older seral associated species.

Management Actions/Direction for Matrix (Connectivity/ Diversity Blocks)

Retain snags within a timber harvest unit at levels sufficient to support species of cavity-nesting birds at a minimum of 40 percent of potential cavity-dweller

population levels. The number of trees necessary to meet the 40 percent level and the assumptions of the model used to calculate that number are described in Chapter 4, PRMP/FEIS. Meet the 40 percent minimum throughout the Matrix with per acre requirements met on average areas no larger than 40 acres. Retain all snags within the reserved portion of the Matrix-Connectivity block where compatible with the Aquatic Conservation Strategy and the SEIS/ ROD objectives.

Provide Connectivity/Diversity Blocks spaced throughout the BLM land base. Manage the blocks as follows:

1. Maintain 25 to 30 percent of each block in late-successional forest at any time. The percentage of habitat will include habitat in other allocations, such as Riparian Reserves. Blocks may be comprised of contiguous or noncontiguous BLM administered land. The size and arrangement of habitat within a block should provide effective habitat to the extent possible.

2. Retain 12-18 green conifer trees per acre when an area is regeneration harvested. Distribute the retained trees in variable patterns (e.g., single trees, clumps, and stringers) to contribute to stand diversity. The management goal for the retained trees and subsequent density management will be the recovery of old growth conditions in approximately 100 to 120 years.

3. Leave 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. Logs less than 20 feet in length will not be credited toward this total. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of the original stand. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

Fish Habitat

Objectives

See Aquatic Conservation Strategy objectives.

Maintain or enhance the fisheries habitat potential of streams and other waters consistent with the SEIS/ ROD, and with BLM's Fish and Wildlife 2000 Plan, the Bring Back the Natives initiative, and other nationwide direction.

Promote the rehabilitation and protection of at risk native aquatic vertebrate and invertebrate species, including fish stocks and their habitat.

Land Use Allocations

There are no specific land use allocations for the fisheries resource. However, Riparian Reserves, Key Watershed provisions, and timber production capability classifications will assist in meeting fish habitat management objectives.

Management Actions/Direction for Riparian Reserves

Design and implement fish habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives.

Design, construct, and operate fish interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives.

Cooperate with Federal, State, and Tribal fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest,and poaching that threaten the continued existence and distribution of native fish stocks inhabiting Federal lands.

Identify in stream flows needed to maintain riparian resources, channel conditions, and fish passage.

Management Actions/Direction for Late-Successional Reserves

Design projects to improve conditions for fish if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible.

Management Actions/Direction for All Land Use Allocations

Apply the management actions/direction in the Special Status and SEIS Special Attention Species section. Cooperate with appropriate Federal and State agencies in management of species listed as endangered or threatened, or in need of special management.

Use the watershed analysis process to address at-risk fish species and stocks and their habitat for individual watersheds. Where appropriate, fish habitat enhancement opportunities will be identified through this process.

To the extent funding is available, the District will implement the fisheries portion of the District Fish and Wildlife 2000 Plan. The Plan includes recommendations for the restoration and maintenance of habitat for resident and anadromous fish, and incorporates uncompleted projects from BLM's *A Five-Year Comprehensive Anadromous Fish Habitat Enhancement Plan for Oregon Coastal Rivers*, approved in 1985 and currently being updated. Elements of the fisheries portion of the FW 2000 Plan are summarized in Table 5.

Management of fish populations is a responsibility of the State of Oregon. BLM will continue to support State wild fish policies, and will cooperate with efforts at maintaining fish genetic diversity. Coordinate with the Oregon Department of Fish and Wildlife Wild Fish Policy during planning and implementation of fish habitat enhancement projects. Priority will be given to watersheds supporting at-risk fish species and stocks and those requiring extensive restoration.

As identified through watershed analysis, rehabilitate streams and other waters to enhance natural populations of anadromous and resident fish. Possible rehabilitation measures would include, but not be limited to, fish passage improvements, in stream structures using boulders and log placement to create spawning and rearing habitat, placement of fine and coarse materials for over-wintering habitat, and riparian rehabilitation to establish or release existing coniferous trees. See Table 5 for a list of possible fish enhancement projects.

Stream channel integrity would be protected during all activities. All large woody debris and snags in the channel and riparian areas adjacent to fishery streams would be retained during routine operations. Riparian reserves will be managed to maintain and restore riparian vegetation communities, including the reestablishment of communities of predominantly large conifers. Stream crossing structures would be installed with the least alteration possible to the channel so that fish passage is not impeded. Debris will be retained in the channel unless it blocks passage in a major anadromous fish migratory route, there is a threat to downstream structures such as bridges, or when it has the potential to cause serious or long-term degradation of the stream channel.

See the Special Status and SEIS Special Attention Species section and Best Management Practices (Appendix C) for additional fish habitat management actions/direction and conservation practices.

Special Status and SEIS Special Attention Species Habitat

Introduction - Special status species include plants and animals needing special attention due to local or regional rarity, or due to the limited availability of suitable habitat, as defined by law and policy. BLM policy also mandates the agency to manage for the conservation of species listed as sensitive by State governments consistent with Federal laws. Special status species include:

Those listed as threatened, endangered, proposed, or candidate under the Endangered Species Act.

Bureau Sensitive that includes species not currently being considered for listing under the Endangered Species Act, but for which there are management concerns and significant identifiable threats.

Assessment species that receive special management consideration due to their population status.

SEIS special attention species are those covered under the SEIS/ROD Standards and Guidelines. Many of these species are also classified in other special status categories. Special attention species are noted with (SA) in Table 6.

Table 5 - Fish Presence, Production Potential, and Project Location

Stream	Potential[1] Rating	Anad[2] CH	CO	ST	Resident[3] CT	RB	Other	Current[4] Projects	Proposed Projects[5] Struct	Ripar	Other
Upper Siuslaw											
Douglas	3		X		X					X	X
Hawley	2	X	X	X					X		X
Kelly	3	X	X	X					X	X	
Tucker	3	X	X	X					X	X	
Row River											
Mosby	2	X		X	X	X			X	X	X
Smith	3				X	X			X	X	
Sharps	3				X	X			X	X	
Clark	3				X	X			X	X	
Coast Fork Willamette											
Big River	1				X	X	X		X	X	
Martin	3			X	X				X	X	
Boulder	2				X	X			X	X	
Middle Fork Willamette											
Hills Creek	2			X	X	X			X	X	
Little Fall Cr.	1	X		X	X	X	X	X	X	X	
Anthony	2			X	X				X		
Middle	2			X	X				X		
Guiley	3			X	X				X		
Lost	1	X		X	X	X	X		X	X	
Central Valley											
Ferguson	3			X	X				X	X	X
Owens	3			X	X				X	X	
Brush	2			X	X				X	X	X
Mohawk											
McGowan	3			X	X	X			X	X	X
Nebo	3			X	X				X	X	
Cash	2			X	X	X			X	X	X
Shotgun	1	X		X	X	X	X	X	X	X	X
McKenzie											
Trout	3			X	X				X	X	
Finn	3			X	X	X			X	X	X
Gale	2			X	X	X			X	X	
Marten	1	X		X	X	X	X			X	X
Deer	1	X		X	X	X	X		X	X	X
Toms	2			X	X	X			X	X	
Smith River											
N. Fk Sister	1	X	X	X	X				X	X	
South Fork Alsea No projects identified at this time											
Lake Creek											
Rock	2	X		X	X				X		
Alpha	3		X		X				X		
S.Fk. Bear	2		X	X	X				X		
Raleigh	2		X		X				X	X	
Nelson	1		X	X	X			X	X	X	X

Table 5 - Fish Presence, Production Potential, and Project Location (continued)

Stream	Potential[1] Rating	Anad[2] CH	CO	ST	Resident[3] CT	RB	Other	Current[4] Projects	Proposed Projects[5] Struct	Ripar	Other
Fish	1	X		X	X			X	X	X	X
Greenleaf	1		X	X	X			X	X	X	X
Swamp	2		X		X		X		X	X	X
Little Lake	3		X		X		X		X	X	X
Swartz	2		X		X		X		X	X	
Congdon	1		X	X	X		X	X	X	X	
Upper Lake	1		X	X	X		X		X	X	X
Lower Siuslaw											
Walker	2		X		X				X	X	X
Upper Wildcat	2		X		X				X	X	
Whittaker	1		X	X	X		X	X	X	X	
N. Fk Whittaker	1		X		X			X	X	X	
Bounds	1		X	X	X			X	X	X	
Big Canyon	2		X		X			X	X	X	X
Esmond	1		X	X	X			X	X	X	X
Leopold	1		X	X	X			X	X	X	X
Siuslaw	1		X	X	X		X	X	X	X	X
Knowles	3		X		X				X		
Middle Siuslaw											
Pugh	2	X		X	X				X	X	
Trail	3		X		X				X	X	X
North	2		X	X	X				X	X	
Collins	3		X		X				X		
Clay	2	X		X	X				X	X	
Edris	3		X		X				X	X	
Bierce	2		X		X				X	X	
Oxbow	1		X	X	X			X	X	X	
Bear	2	X			X			X	X	X	
Haight	1		X		X				X		
Dogwood	1		X	X	X			X	X	X	
Jean	2	X			X				X	X	X
Bottle	3		X		X				X	X	X
Buck	1	X		X	X			X	X	X	
Russel	2		X		X				X	X	
Smith	1		X	X	X				X	X	
Siuslaw	1		X	X	X		X	X	X	X	X
Wolf Creek											
Saleratus	2		X	X	X			X	X	X	X
Bill Lewis	3		X	X	X				X		
Pittenger	3		X	X	X				X	X	X
Gall	2		X	X	X				X	X	X
Oat	1	X	X	X	X			X	X	X	X
Grenshaw	2		X	X	X			X	X	X	X
Eames	1	X	X	X	X			X	X	X	
Swamp	3		X	X	X				X	X	
Swing Log	3		X	X	X			X	X	X	
Wolf	1	X	X	X	X		X	X	X	X	X

[1]Potential Rating: A subjective rating of current and potential productivity for selected District salmonid streams. Many streams are not included, either because their potential is unknown or because the current potential is low or not economically viable at this time. Ratings are based on the size of the stream, gradient, channel stability, water quality, presence of or potential for creation of spawning areas, and presence of or potential for creation of rearing habitat. A **ONE** rating is highest, with **TWO** and **THREE** being the next two lowest ratings.

[2]Anadromous Salmonids: CO = Coho salmon; CH = Chinook salmon; ST = Steelhead trout

[3]Resident Fish: CT = Cutthroat trout; RB = Rainbow trout; OTHER = Non-salmonid native and introduced fish species

[4]Current Projects: Streams with recent habitat projects in place

[5]Proposed Projects: Streams with identified habitat and riparian improvement projects. STRUCT = Instream and channel structure modification or improvement; RIPAR = Riparian vegetation community modification; OTHER = Other habitat improvement opportunities, primarily fish migration passage improvements

Table 6 - Priority Wildlife Species in the Resource Management Plan Area[1]

Common Name	Scientific Name	Vulnerable Habitats & Limiting Factors [2]
Mollusks		
Blue-grey tail-dropper	*Prophysaon coeruleum*	U (SA)
Evening fieldslug	*Deroceras hesperium*	U (SA)
Oregon megomphix snail	*Megomphix hemphilli*	U (SA)
Papillose tail-dropper	*Prophysaon dubium*	U (SA)
Other Invertebrates		
American acetropis grass bug[SS]	*Acetropis americana*	NP
Beer's false water penny bettle[SS]	*Acneus beeri*	S
Beller's carabid beetle[SS]	*Agonum belleri*	P
California scutellarid (bug)[SS]	*Vanduzeeina borealis californica*	M
Cascade apatanian caddisfly[SS]	*Apatania tavala*	S
Fender's blue (butterfly)[SS]	*Icaricia icarioides fenderii*	SH
Foliaceous lace bug[SS]	*Deraphysia foliacea*	SA, M
Fort Dick limnephilus caddisfly[SS]	*Limnephilus atercus*	U
Hairy shore bug[SS]	*Saldula villosa*	SH
Insular blue (butterfly)[SS]	*Plebejus saepiolus insulanus*	SH
Obscure elfin (butterfly)[SS]	*Incisalia polia obscura*	M
One-spot rhyacophilan caddisfly[SS]	*Rhyacophila unipunctata*	S
Oregon giant earthworm[SS]	*Driloleirus macelfreshi*	SH
Oregon lygus bug[SS]	*Lygus oregonae*	SH
Oregon silverspot (butterfly)[SS]	*Speyeria zerene hippolyta*	SH
Piper's gazelle beetle[SS]	*Nebria piperi*	Z
Roth's blind carabid[SS]	*Pterostichus rothi*	F
Siskiyou caddisfly[SS]	*Tinodes siskiyou*	S
Siskiyou chloealtis grasshopper[SS]	*Chloealtis aspasma*	
Siuslaw sand tiger beetle[SS]	*Cicindela hirticollis siuslawensis*	U
Taylor's checkerspot butterfly[SS]	*Euphydryas editha taylori*	SH
Tombstone Prairie farulan cad'fly[SS]	*Farula reapiri*	WQ, OF, DD
Tombstone Prairie olig. cad'fly[SS]	*Oligophlebodes mostbento*	WQ
Vertree's ceraclean caddisfly[SS]	*Ceraclea vertreesi*	S
Vertree's ochrotrichian micro-caddisfly[SS]	*Orchrotrichia vertreesi*	S
Amphibians		
Cascades frog[SS]	*Rana cascadae*	WQ, SH, JX
Cascades (Olympic) salamander[3]	*Rhyacotriton cascadae*	SM,WQ,CM,SH,HW,OR
Clouded salamander[SS]	*Aneides ferreus*	SM,DD,CM,HD
Dunn's salamander	*Plethodon dunni*	SM,DD,CM,WQ,SH,OF
Foothill yellow-legged frog[SS]	*Rana boylii*	WQ, JX
Northern red-legged frog[SS]	*Rana aurora aurora*	WQ,CM,SH,RA,OR
Oregon slender salamander[SS]	*Batrachoseps wrightorum*	SM,DD,CM,OF,CM
Pacific giant salamander	*Dicamptodon tenebrosus*	SM,DD,CM,HD,HW,OR
Spotted frog[SS]	*Rana pretiosa*	O, SH, SM
Tailed frog[SS]	*Ascaphus truei*	WQ,SM,OR, CM, JX, OF
Variegated (Olympic) salamander[3]	*Rhyacotriton variegatus*	SM,WQ,CM,SH,HW,OR
Western redback salamander	*Plethodon vehiculum*	CM, DD
Reptiles		
Northwestern pond turtle[SS]	*Clemmys marmorata marmorata*	SM,SH,DD,SE, O
Painted turtle[SS]	*Chrysemys picta*	SM,SH,DD,SE,O
Sharptail snake[SS]	*Contia tenuis*	SM,SH

Table 6 - Priority Wildlife Species in the Resource Management Plan Area[1] (continued)

Common Name	Scientific Name	Vulnerable Habitats & Limiting Factors [2]
Herons, Ducks, Other Waterbirds		
Barrow's goldeneye[SS]	*Bucephala islandica*	SH,TC
Bufflehead[SS]	*Bucephala albeola*	SH,TC
Common merganser	*Mergus merganser*	TC,DT,OR,JX
Dusky Canada goose[SS]	*Branta canadensis occidentalis*	SH
Great blue heron[N]	*Ardea herodias*	LT,SE,OF,JX
Harlequin duck[SS]	*Histrionicus histrionicus*	TC,DT,WQ,OR,JX
Hooded merganser	*Lophodytes cucullatus*	TC,DT,JX
Marbled murrelet[SS]	*Brachyramphus marmoratus*	LT,OF
Wood duck	*Aix sponsa*	TC,DT,HD,OR,JX
Raptors		
American kestrel[N]	*Falco sparverius*	TC,DT,JX
American peregrine falcon[SS,N]	*Falco peregrinus anatum*	SH,SE,JX
Bald eagle[SS]	*Haliaeetus leucocephalus*	LT,OF,JX,SE
Barred owl	*Strix varia*	TC,OF
Black tailed kite[N]	*Elanus leucurus*	O
Cooper's hawk[N]	*Accipiter cooperii*	DS
Golden eagle	*Aquila chrysaetos*	LT,OF,JX
Great gray owl[SS]	*Strix nebulosa*	OF,TC,SH,JX
Merlin[SS]	*Falco columbaris*	O
Northern goshawk[SS]	*Accipiter gentilis*	OF
Northern pygmy-owl	*Glaucidium gnoma*	TC,DT,OF
Northern saw-whet owl[SS]	*Aegolius acadicus*	TC,OF
Osprey[N]	*Pandion haliaetus*	DT,OR,JX
Red-tailed hawk[N]	*Buteo jamaicensis*	LT,OF,JX
Sharp-shinned hawk[N]	*Accipiter striatus*	DS
Northern spotted owl[SS]	*Strix occidentalis caurina*	TC,OF
Western screech owl	*Otus kennicottii*	TC,DT,HD,OR
Upland Game Birds		
Band-tailed pigeon	*Columbia fasciata*	HD,SH,OF,JX
Blue grouse	*Dendragapus obscurus*	O
California quail	*Callipepla californica*	O
Mountain quail[SS]	*Oreortyx pictus*	HD
Mourning dove	*Zenaida macroura*	HD
Ruffed grouse	*Bonasa umbellus*	HD,RA,DD,OR
Wild turkey	*Meleagris gallopavo*	HD,OF
Woodpeckers		
Acorn woodpecker	*Melanerpes formicivorus*	TC,DD,SH
Downy woodpecker	*Picoides pubescens*	TC,DD
Hairy woodpecker	*Picoides villosus*	DT,HD,OF
Lewis' woodpecker[SS]	*Melanerpes lewis*	DT,HD
Northern flicker	*Colaptes auratus*	DT,HD,OF
Pileated woodpecker[SS]	*Dryocopus pileatus*	DT,DD,OF
Red-breasted sapsucker	*Sphyrapicus ruber*	DT,HD,OR
Passerines and Swifts		
Brown creeper	*Certhia americana*	TC,DT,OF
Chestnut-backed chickadee	*Parus rufescens*	TC,DT,OF
Common raven	*Corvus corax*	HD,OF
Evening grosbeak	*Coccothraustes vespertinus*	HD,OF
Golden-crowned kinglet	*Regulus satrapa*	HD,RA,OF
Gray jay	*Perisoreus canadensis*	OF

Table 6 - Priority Wildlife Species in the Resource Management Plan Area[1] (continued)

Common Name	Scientific Name	Vulnerable Habitats & Limiting Factors [2]
Hammond's flycatcher	*Empidonax hammondii*	HD,OF
Hermit thrush[N]	*Catharus guttatus*	OF
Hermit warbler	*Dendroica occidentalis*	OF
Loggerhead shrike[SSN]	*Lanius ludovicianus*	O
Olive-sided flycatcher[N]	*Contopus borealis*	HD,OF
Pine siskin	*Carduelis pinus*	OF
Purple finch	*Carpodacus purpureus*	HD,OF
Purple martin[SSN]	*Progne subis*	TC,DT
Pygmy nuthatch	*Sitta pygmaea*	TC
Red-breasted nuthatch	*Sitta canadensis*	DD,TC
Ruby-crowned kinglet	*Regulus calendula*	OF
Solitary vireo[N]	*Vireo solitarius*	HD,OF
Steller's jay	*Cyanocitta stellerii*	OF
Swainson's thrush[N]	*Catharus ustulatus*	RA,OF
Townsend's warbler[N]	*Dendroica townsendii*	OF
Tree swallow[N]	*Tachycineta bicolor*	TC,DT
Varied thrush	*Ixoreus naevius*	OF
Vaux's swift[N]	*Chaetura vauxi*	TC,DT,OF
Violet green swallow[N]	*Tachycineta thalassina*	TC,DT
Western bluebird[SS]	*Sialia mexicana*	TC,DT
Western flycatcher[N]	*Empidonax difficilis*	RA,OF
Western tanager[N]	*Piranga ludoviciana*	HD,OF
Western wood-pewee[N]	*Contopus sordidulus*	HD,OF
White-breasted nuthatch	*Sitta carolinensis*	DD,TC
Winter wren	*Troglodytes troglodytes*	DD,OF,OR
Bats		**(SA)**
Big brown bat	*Eptesicus fuscus*	TC,DT,DD,HD,SH,OF
California myotis	*Myotis californicus*	TC,DT,DD,HD,SH,OF
Hoary bat	*Lasiurus cinereus*	HD,OF
Little brown myotis	*Myotis lucifugus*	TC,DT,SH,SH,OF
Long-eared myotis	*Myotis evotis*	TC,DT,HD,OF
Long-legged myotis	*Myotis volans*	TC,DT,DD,HD,SH,OF
Pacific fringed myotis[SS]	*Myotis thysanoides thysanoides*	SH
Pacific pallid bat[SS]	*Antrozous pallidus*	SH,SE,TC
Pacific western Townsend's big-eared bat[SS]	*Plecotus townsendii townsendii*	SH,SE
Silver-haired bat	*Lasionycteris noctivagans*	TC,DT,HD,SH,OF
Yuma myotis	*Myotis yumanensis*	TC,DT,DD,HD,SH,OF
Carnivores		
American marten[SS]	*Martes americana*	TC,DD,OF
Black bear	*Ursus americanus*	DD,SH,SE,OF
Bobcat	*Lynx rufus*	DD,SH
Ermine	*Mustela erminea*	DD,O
Gray fox	*Urocyron cinereoargenteus*	DD,HD,RA
Long tailed weasel	*Mustela frenata*	DD,O
Mink	*Mustela vison*	O
Mountain lion	*Felis concolor*	SH,OF
Pacific fisher[SS]	*Martes pennanti pacifica*	TC,DD,SH,OF
Raccoon	*Procyon lotor*	TC,DD,HD,RA
River otter	*Lutra canadensis*	WQ,DD

Table 6 - Priority Wildlife Species in the Resource Management Plan Area[1] (continued)

Common Name	Scientific Name	Vulnerable Habitats & Limiting Factors [2]
Cervids		
Black-tailed deer	*Odocoileus hemionus*	HD,JX
Columbian white-tailed deer[SS]	*Odocoileus virginianus leucurus*	O
Elk	*Cervus elaphus*	HD,OF,SE,JX
Insectivores		
Dusky shrew	*Sorex monticolus*	SM,RA,OF
Pacific shrew	*Sorex pacificus*	SM,RA,OR
Pacific water shrew	*Sorex bendirii*	SM,HW,OR
Shrew-mole	*Neurotrichus gibbsii*	SM,RA,OF
Trowbridge's shrew	*Sorex trowbridgii*	SM,RA,OR
Rodents		
Beaver	*Castor canadensis*	DD
Bushy-tailed woodrat	*Neotoma cinera*	TC,DD,RA,SH,OF
Deer mouse	*Peromyscus maniculatus*	SM,DD,HD,SH,OF
Douglas squirrel	*Tamiasciurus douglasii*	TC,DT
Dusky-footed woodrat	*Neotoma fuscipes*	OR,DD
Northern flying squirrel	*Glaucomys sabrinus*	TC,DT,OF
Red tree vole	*Phenacomys longicaudus*[5]	OF,SM (SA)
Townsend's chipmunk	*Tamias townsendii*	DD,SH,HD
Western gray squirrel	*Sciurus carolinensis*	TC,DT,HD
Western red-backed vole	*Clethrionomys californicus*	SM,DD,OF
White-footed vole[SS]	*Phenacomys albipes*[5]	SM

[1]Includes most Special Status Species known or believed to occur within or adjacent to the Planning Area - with the exception of extirpated species not planned for recovery within the planning area by USFWS. Also includes other species associated with habitats that are vulnerable to management practices, game species, and other high-interest species such as raptors and herons. BLM Tracking species are not listed.
[2]Information derived from Brown, 1985, Appendices 8, 19, and 20, with limited modifications based on more recent literature and local observations. Symbols identify primary habitats vulnerable to intensive timber management and species-related limiting factors identified by District biologists.
[3]These species are called torrent salamanders by some researchers. They are 2 of 4 species that were formerly considered one species: the Olympic salamander, *R. Olympicus*.
[4]This species was erroneously called *wrightii,* but has been corrected to *wrightorum* (Intl. code of Zool. Nomenclature, Article 32, 1985).
[5]Genus sometimes listed as *Arborimus*.

LEGEND - Common Name

[SS] BLM Special Status Species based on Oregon State Office database of November 1994. Includes Federal Register Spp. to that date. Species accounts and effects are presented in sections on Special Status Species (Wildlife).
[N]Neotropical Migrants (at least some individuals winter in the tropics - Love, 1990.)

LEGEND - Vulnerable Habitats & Limiting Factors:

CM = Cool, moist microclimate is an essential life requirement.
DD= Large dead and down (fallen) trees essential/primary habitat for one or more life needs.
DS= Densely stocked stands of mid and late seral conifers required for reproduction.
DT= Dead tree (snag) primary habitat for foraging or reproduction.
HW = Headwater streams, (generally 3rd order and smaller) and their riparian zones, are primary habitat for one, or more, life needs.
HD= Hardwoods or conifer-hardwood stands - primary habitat for one or more life needs.
JX = Juxtaposition of two, or more, habitats required as primary habitat for all life needs.
LT = Large (green) tree/limbs required for nest substrate.
OF= Mature or old growth forests are primary habitat for one or more life needs. Natural (unmanaged) stands of the late seral stage may be suitable for some species. Stands younger than late seral are generally unsuitable for one, or more, life needs.
OR= Same as OF except species use is strongly oriented toward riparian (or other wetland).
RA= Red alder forest (pole-size and older) primary habitat for one, or more, life needs.
SH= Special (unique) habitats essential for one, or more, life needs.
SM= Small creatures with small home ranges and low mobility.
SE= Secretive species - highly sensitive to human intrusion - at least during critical periods of life cycle, or in crucial portions of home range.
TC= Cavity in tree (live or dead) required for reproduction.
WQ = High water quality (cold and clear) essential life requirement.
O = Vulnerable habitats or limiting factors (if any) are other than above.
U = Vulnerable habitats & limiting factors currently undetermined.
(SA) = SEIS/ROD Special Attention Species or (SA) Groups of Species
NP= Native Prairie
S = Springs
P = Ponds, bogs, marshes
M = Natural balds and meadows
Z = Riparian zones of large streams
F = soils in old forests

Plants

Objectives

See Late-Successional Reserve, Riparian Reserve, Matrix, and Special Area objectives. Protect, manage, and conserve Federal listed and Proposed species and their habitats to achieve their recovery in compliance with the Endangered Species Act, approved recovery plans, and Bureau Special Status species policies.

Manage for the conservation of Federal Candidate and Bureau Sensitive species and their habitats so as not to contribute to the need to list and to recover the species.

Manage for the conservation of State listed species and their habitats to assist the State in achieving management objectives.

Protect and manage Assessment species where possible so as to not elevate their status to any higher level of concern.

Protect SEIS Special Attention Species so as not to elevate their status to any higher level of concern.

Study, maintain, or restore community structure, species composition, and ecological processes of special status plant and animal habitat.

Land Use Allocations

All land use allocations in this plan are designed in part to benefit special status plant species and SEIS Special Attention Species.

Management Actions/Direction for Late-Successional Reserves/Riparian Reserves

Special Status Plant Species

In most cases, management for special status plant species will be consistent with the management of other late seral and riparian species. If conflicts arise, management for special status plant species will take priority, but the planned actions will be designed, where possible, to reduce adverse impacts to other late seral species.

Actions needed to manage for special status plant species will generally be those management prescriptions designed to mimic or create historical conditions/processes that special status plant species evolved under and or were maintained by, such as the creation and maintenance of forest gaps, etc. Many of these activities will be consistent with the general objectives of creating and maintaining the structure, composition, and processes of late-successional forests within these physiographic provinces.

In areas where timber harvest is not the focus, such as in Late-Successional Reserves, emphasis will be to establish Botanical Reserve areas for special status plants, where all activities, such as adaptive management techniques, etc., will be consistent with the management of the species. The long-term objectives within these areas, however, should be to diminish the concept of "reserve" boundaries and will be to manage for the species within the context of the entire land use allocation and not in isolated islands.

SEIS Special Attention Species

Management of SEIS Special Attention Species will be consistent with the Survey and Manage Guidelines/All Land Use Allocations as described later in this section (see Appendix B for a list of species to be considered).

Late-Successional Reserves/Riparian Reserves are designed to serve a number of purposes, including habitat for populations of species that are associated with late-successional forests and to help ensure that these species will be conserved (SEIS/ROD, 1994), including SEIS Special Attention Species. Actions carried out within these areas will focus on benefiting or, where necessary, mitigating impacts to SEIS Special Attention Species and associated habitat identified under the appropriate Survey and Manage Guidelines (Appendix B), such as silvicultural practices implemented to advance the development of late-successional forests and to restore riparian forest communities, etc.

Management Actions/Direction for Matrix

Special Status Plant Species

Where plant populations are located within Matrix lands or other areas with a timber emphasis, objectives of management of special status plants will

focus on protection, maintenance and enhancement of Botanical Reserve areas where these special status plant species are located. Maintenance of reserve integrity, adequate buffers to mitigate outside influences, and additional suitable habitat within reserve areas to maintain or recover species, will be primary objectives in these areas.

SEIS Special Attention Species

Management of SEIS Special Attention Species will be consistent with the Survey and Manage Guidelines/All Land Use Allocations as described later in this section.

Provisions such as 15 percent retention of late-successional forests in 5th field watersheds as well as 25 percent retention in Connectivity are designed to benefit SEIS Special Attention Species. Where analysis is done to determine which late-successional forests will be retained, SEIS Special Attention Species will be considered in this process.

Stand management within the Matrix will identify opportunities to provide such structural components as retention trees, course woody debris, etc., that will benefit SEIS Special Attention Species and associated habitat. Location of green trees, for example, along ridgelines are optimal locations for lichen dispersal (SEIS/ROD, 1994).

Management Actions/Direction for All Land Use Allocations

Special Status Plant Species

Management direction for current or future sites of special status plant species will be consistent with BLM Oregon State Office Manual 6840 and Instruction Memoranda No. OR-91-57 that directs the BLM to conserve threatened and endangered species (or species proposed for listing as threatened or endangered) and the ecosystems on which they depend, and to ensure that actions authorized on BLM administered lands do not contribute to the need to list any special status plant species.

All BLM administered lands will be managed for the conservation and protection of known and future sites for all Federal Candidate 1 and 2 plant species, State Listed and Bureau Sensitive plant species and their habitats. BLM Assessment species as well as the above categories will be actively managed where needed to prevent the increase in status listing. BLM Tracking plant species will be tracked to accurately assess the distribution and abundance of these species and need for any special management attention.

Approximately 1,044 acres of special status species plant habitat has currently been identified on the Eugene District. See Table 7, Sensitive Plant Protection by Species, for a list of those species currently identified within the District. It is expected that future sites for special status plant species will be identified as inventory continues.

The following actions will be implemented and are consistent with the protection, maintenance, and enhancement of special status plant species and associated habitat:

Review all proposed actions to determine whether or not special status plant species occupy or use the affected area or if habitat for such species is affected.

Modify, relocate, or abandon a proposed action to avoid contributing to the need to list Federal Candidate, State Listed species, Bureau Sensitive species, or their habitats.

Conduct field surveys prior to proposed actions according to protocols and other established procedures. This includes surveying during the proper season unless surveys are deemed unnecessary through watershed analysis, project planning, and environmental assessment. For example, field surveys may not be conducted in all cases depending on the number and timing of previous surveys conducted, whether previous surveys looked for all species that a new survey will, and the likelihood of potential habitat. The intensity of field surveys will also vary depending on the same factors.

Implement species specific inventories for special status plant species to determine the distribution, abundance and habitat requirements for these species; develop and implement inventory protocols for special status lichen, bryophyte, and fungi where not yet developed.

Consult/Conference with the U.S. Fish and Wildlife Service (USFWS) for any proposed action that may affect Federal Listed or Proposed species or their critical or essential habitat. Based on the results of consultation/conference, modify, relocate, or abandon the proposed action. Request technical assistance from one of these agencies for any proposed action that may affect Federal Candidate species or their habitat.

Table 7 - Sensitive Plant Reserve Protection by Species in the Eugene District

Species	Category	Reserved Acres
Lomatium bradshawii	FE	17
Abronia umbellata	FC[2]	1
Aster vialis	FC[2]	493
Montia howellii	FC[2]	7
Erigeron decumbens var. *decumbens*	FC[2]	79
Aster curtus	FC[2]	79
Frasera umpquaensis	FC[2]	29
Horkelia congesta ssp. *congesta*	FC[2]	17
Cimicifuga elata	FC[2]	521
Lycopodiella inundata	AS	6
Cicendia quadrangularis	AS	10
Utricularia gibba	AS	6
Campylopus schmidii	AS	1
Total Acres		**1,044**[1]

FE = Federal Endangered
FC = Federal Candidate
BS = BLM Bureau Sensitive
AS = BLM Assessment Species

[1]Column acres will not total 1,044. Several species occur together at the same sites, and were not counted twice for the same acres.

[2]In most cases all Special Status Plant sites include adequate buffers to protect and to manage the species. Reserve acres are expected to change as new sites are located.

Request technical assistance with USFWS on any action that may effect Federal Candidate or Bureau Sensitive species. Based on the results of technical assistance, modify, relocate, or abandon a proposed action to avoid contributing to the need to list Federal Candidate species or Bureau Sensitive species, or their critical or essential habitats.

Coordinate and cooperate with the State of Oregon to conserve State Listed species and State Candidates for listing.

Identify impacts of proposed actions to special status plant species as a whole and clearly describe impacts in environmental analyses. All special status plant species will be actively managed, including BLM Assessment species.

Coordinate with the USFWS and with other appropriate agencies and organizations and jointly endeavor to recover Federal Listed and Proposed plant species and their habitats; coordinate on the management of Federal Candidate and Bureau Sensitive plant species and their habitats.

Retain under Federal management, or other appropriate management organization, habitat essential for the survival or recovery of Listed and Proposed species. Retain habitat of Proposed, Federal Candidate, or Bureau Sensitive species where disposal will contribute to the need to list the species.

Where appropriate, pursue opportunities to increase the number of populations of special status plant species under BLM's management authority, through land acquisition and/or species reintroduction. Where appropriate opportunities exist, acquire land through exchange or purchase, in coordination with other responsible agencies, to contribute to recovery, reduce the need to list, or enhance special status species habitat. Where acquisition is not possible pursue conservation easements.

Develop and implement Conservation Strategies/ Plans for all special status plant species that identify actions necessary for the protection, management and enhancement of the botanical resource, including recovery plans for Threatened and Endangered plant species; Develop and implement Botany 2000.

Coordinate with other agencies and groups in the management of species across landscapes. Coordination will be accomplished through Interagency Conservation Plans or similar agreements that identify actions to conserve single or multiple species and/or habitats. Such strategies could preclude the need for intensive inventories or modifications to some projects where the conservation plan provides adequate protection for the species and meets the intent of policy.

Where plans exist for species no longer on the special status plant species list, continue with the prescribed conservation actions if required to avoid relisting or future consideration for listing. In the case of interagency plans or agreements this determination will be mutually decided. Such plans may be modified as needed based on adequacy of existing range-wide conditions and conservation management.

Develop a Public Outreach Program for botanical resources and pursue opportunities for public education about conservation of species; coordinate with U. S. Forest Service (USFS) in implementing Celebrating Wildflowers Program.

Identify and maintain adequate Botanical Reserves for the protection, maintenance and enhancement of special status plant resources. Implement only those activities within the botanical reserve areas that will be consistent with the conservation and management of these species.

Conservation and management measures for special status plant species will include, but will not be limited to, the following:

- Implement compliance, defensibility, ecological, and management treatment monitoring where necessary to track, manage for, and maintain viable special status plant populations.

- Implement silvicultural treatments through adaptive management to maintain or enhance special status plant populations.

- Implement prescribed burning where needed and where possible to maintain or enhance special status plant species habitat.

- Establish a data management program for tracking special status plant species distribution, abundance, and condition, using GIS and other relational and nonrelational databases; coordinate with other agencies in the development of these to assure consistency and to provide a mechanism for information sharing.

- Integrate special status plant species into watershed analysis to determine historical, existing, and potential habitat; identify opportunities for current and future management of special status plants, including protection, maintenance, and enhancement of populations.

- Collect seed/fruit for cryogenic seed storage for all special status plant species for long-term protection of the species, guarding against catastrophic events.

- Grazing by domesticated species will not be permitted within Botanical Reserve Areas unless identified as a viable tool in managing for a special status plant species. Emphasis, however, will first be given to utilizing other means that duplicate natural processes for maintaining or enhancing plant populations and habitat, such as prescribed fire, etc.

- Herbicide use will not be permitted within Botanical Reserve Areas, unless identified as a viable tool in managing for a special status plant species. Emphasis, however, will first be given to other means that utilize nonchemical methods for maintaining or enhancing plant populations and habitat, such as manual control, etc.

- Prohibit salvage and other timber management activities within Botanical Reserve Areas unless otherwise prescribed for the management of the special status plant species.

- Prohibit the collection of Special Forest Products within Botanical Reserve Areas.

- Implement public access restrictions to protect special status species plant populations, including gate installation and road decommissioning.

- Implement dust abatement restrictions, where necessary, during critical pollination times.

- Implement road maintenance restrictions for plant species found along roads where access will not be restricted and where maintenance for public safety is ongoing, including restrictions on mowing and brushing (seasonal restrictions); restrictions on ditching and blading; herbicide use will be prohibited.

- Implement noxious or exotic weed control where these species threaten special status plant

populations; emphasis will be on implementing nonchemical treatments such as manual control.

- Where populations are adjacent to private lands, work with adjacent landowners in identifying any activities occurring on private lands that could affect BLM populations and, where possible, seek through cooperative agreements with private landowners to mitigate these actions.

- Pursue negotiations with willing private parties involved in existing reciprocal right-of way agreements to protect special status plant species by removing public lands with populations of such plants from existing permits or by adding language to the agreements. Provide language protecting these plant resources in new reciprocal agreements.

- Identify and fill gaps in information and research that are needed for adequately managing special status plant species resource.

- Protect and manage for the variety of special habitat features on the District; such habitats have been defined as important for a variety of special status plant species.

- Leasable and locatable minerals will be managed consistent with the proposed management outlined in Appendix G and Appendix H. Salable minerals will be managed consistent with Appendix I.

Management Actions/Direction for All Land Use Allocations

SEIS Special Attention Species

This incorporates the "Survey and Manage" and "Protection Buffer" species and standards and guidelines from the SEIS/ROD.

Some species covered under SEIS Special Attention species will also be covered under the objectives and guidelines for special status plant species where these species are identified for management under BLM's Special Status Species Policy.

Survey and Manage - Implement the survey and manage provision of the SEIS/ROD within the range of SEIS Special Attention species and the particular habitats that they are known to occupy. Appendix B shows which species are covered by this provision, and which of the following 4 categories and management actions/direction are to be applied to each:

1. Manage known sites (highest priority).

   All species located on the Eugene District that are covered under this provision will be managed in the following manner:

   a. Acquire and manage information on these sites, make it available to all project planners, and use it to design or modify activities.

   b. Protect known sites. For some species, apply specific management treatments such as prescribed fire.

   c. For rare and endemic fungus species, temporarily withdraw 160 acres around known sites from ground-disturbing activities until the sites can be thoroughly surveyed and site-specific measures prescribed.

   Species that have been identified to date as currently or historically occurring within the District that will be covered under these guidelines include: *Allotropa virgata* (Candy stick), *Aster vialis* (Wayside aster), *Cypripedium montanum* (Mountain lady's slipper), *Choiromyces venosus* (Rare Truffle), *Buxbaumia viridis* (moss), *Buxbaumia piperi* (moss), and the following lichens: *Pannaria rubiginosa, Erioderma sorediatum, Leptogium brebissonii, Usnea hesperina, and Hypogymnia oceanica.* Management of *Aster vialis* (wayside aster) will also be covered under special status plant species objectives. Other species may be identified as inventories are implemented.

2. Survey prior to ground-disturbing activities and manage sites.

   a. Continue existing efforts to survey and manage rare and sensitive species habitat.

   b. For species without survey protocols, start immediately to design protocols and implement surveys.

   c. For the other species listed in Appendix B begin development of survey protocols promptly and proceed with surveys as soon as possible. These surveys will be completed prior to ground-disturbing activities that will be implemented in Fiscal Year 1999 or later. Work to establish habitat requirements and survey

protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS.

d. Conduct surveys at a scale most appropriate to the species.

e. Develop management actions/direction to manage habitat for the species on sites where they are located.

f. Incorporate survey protocols and proposed site management in interagency conservation strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office.

3. Conduct extensive surveys and manage sites.

   a. Conduct extensive surveys for the species to find high-priority sites for species management. Specific surveys prior to ground-disturbing activities are not a requirement.

   b. Conduct surveys according to a schedule that is most efficient and identify sites for protection at that time.

   c. Design these surveys for efficiency and develop standardized protocols.

   d. Begin these surveys by 1996.

4. Conduct general regional surveys.

   a. Survey to acquire additional information and to determine necessary levels of protection for fungi species that were not classed as rare and endemic, bryophytes, and lichens.

   b. Initiate these surveys no later than Fiscal Year 1996 and complete them within 10 years.

Protection Buffers - Provide protection buffers for specific rare and locally endemic species and SEIS special attention species in the upland forest matrix and all habitats identified in the SEIS/ROD. A list of these species and related management actions/ direction are presented in Appendix B and the section on Special Status and SEIS Special Attention Species. These species are likely to be assured viability if they occur within reserves. However, there might be occupied locations outside reserves that will be important to protect as well.

Apply the following management actions/direction:

1. Develop survey protocols that will ensure a high likelihood of locating sites occupied by these species.

2. Following development of survey protocols and prior to ground-disturbing activities, conduct surveys within the known or suspected ranges of the species and within the habitat types or vegetation communities occupied by the species. See the previous Survey and Manage section for an implementation schedule.

3. Maintain a spatially explicit database of all known sites.

4. Develop species or area management plans to be implemented under the guidance of regional botany programs.

5. Manage known habitat of Special Attention Species requiring protection buffers as follows and consistent with the SEIS/ROD for those species.

6. For newly discovered habitat of other Special Attention Species requiring protection buffers, apply the management actions/direction in the SEIS/ROD.

Nonvascular plants currently known to occur on the Eugene District covered under the protection buffer provision:

Buxbaumia viridis (Moss)

Maintain decay class 3, 4, and 5 logs and greater than 70 percent closed-canopy forest habitat for shade. Timber harvest including, shelterwood and thinning prescriptions will not be permitted. Implement survey and manage components 1 and 3 of SEIS/ROD for management of this species.

Listed and Proposed Endangered and Threatened Plant Species

General - Implement the land use allocations and management actions/direction of this Proposed Resource Management Plan that are designed to enhance and maintain habitat for all endangered and threatened species in all Land Use Allocations.

Bradshaw's lomatium (*Lomatium bradshawii*) (Federal endangered)

BLM will comply with implementing those actions identified in the 1993 Recovery Plan for *Lomatium bradshawii* (Bradshaw's lomatium). Specific management actions identified for BLM to implement will include:

Conserving Genetic Material:

- Determine genetic variability of populations.
- Determine impact of seed collection on populations.
- Collect seeds and store them at established seed bank facility.

Establishing management areas:

- Identify potential habitat in southeastern recovery area for Lomatium.
- Search potential habitat in southeastern recovery area.
- Assist USFWS in selecting recovery areas.
- Delineate boundaries of the management areas.
- Secure the habitat supporting each population.

Enhancing populations:

- Examine secondary succession or potential habitat modification at each population.
- Examine effects of competition within populations.
- Examine effects of tree roots on hardpan maintenance on Lomatium habitat.
- Determine impact of fungal diseases known to occur on Lomatium.
- Determine insects impacts on Lomatium plants.
- Determine human impacts on populations.
- Determine herbicide impacts where appropriate.
- Determine grazing impacts (geese, sheep and cattle) where appropriate.
- Determine impacts of exotic plants on populations.
- Determine hydrologic requirements of Lomatium.
- Examine inbreeding depression.
- Examine pollinator availability.
- Examine seed viability of Lomatium.
- Examine seed predators and parasites.
- Determine microhabitat for germination and seedling establishment.
- Write site-specific management plan for each management area.
- Implement site-specific management plans.

Monitoring populations:

- Establish permanent monitoring plots, photo points, and sampling techniques at Lomatium populations.
- Conduct periodic monitoring.
- Conduct demographic studies.

Management and implementation of this Recovery Plan will be in conjunction with other parties identified within the Recovery Plan, providing a consistent, integrated approach towards recovery of this species.

Animals

Objectives

See Late-Successional Reserve, Riparian Reserve, Matrix, and Special Area objectives.

Protect, manage, and conserve Federal listed and proposed species and their habitats to achieve their recovery in compliance with the Endangered Species Act, approved recovery plans, and Bureau special status species policies.

Manage for the conservation of Federal Candidate and Bureau Sensitive species and their habitats so as not to contribute to the need to list and to recover the species.

Coordinate and cooperate with the State of Oregon to conserve State Listed species. Manage for the conservation of State listed species and their habitats to assist the State in achieving management objectives.

Protect and manage assessment species so as to not elevate their status to any higher level of concern.

Protect SEIS special attention species so as to not elevate their status to any higher level of concern.

Maintain or restore community structure, species composition, and ecological processes of special status plant and animal habitat.

Land Use Allocations

In all land use activities and under all land allocations avoid, protect or mitigate for special status species populations and habitat so as to not contribute to the need to list the nonfederal listed species and to promote the recovery of Federal listed species.

The objectives for special status species will apply to all land use allocations. Acres of special status species habitat designated on the District will change throughout the life of the plan as inventories are conducted and the status of species change.

Listed and Proposed Federal Threatened and Endangered Species, Federal Candidate, State Listed, Bureau Sensitive and Assessment species will be managed across all land use allocations, based on the presence of occupied and potential habitat. Management actions or objectives that are specific to a special status category are listed under that subheading.

The management within each land use allocation will be consistent with policy and law and the specific guidance in the SEIS/ROD, and RMP. Decisions of how, where, how much, and when to manage for special status species (and priority wildlife covered in the Wildlife Habitat section) will be determined through watershed analysis, consistent with law, policy, and land use allocations.

Management Actions/Direction for Late-Successional Reserves/Riparian Reserves

Manage for the recovery of special status species consistent with management of late seral species when possible. If conflicts arise, management for the special status species should take priority but the planned actions should be designed to reduce adverse impacts to late seral species management to the degree possible.

Management emphasis in the Late-Successional Reserves and Riparian Reserves will be for those species whose preferred habitat is late seral stages, mature, and old growth forests. This allocation will retain mature and old growth habitat in these stands until younger forests develop the structural and functional components needed by species such as the spotted owl and marbled murrelet. The silvicultural prescriptions for younger aged stands that occur in the Late-Successional Reserve boundary are designed to develop more diverse structural characteristics and habitat components in a shorter time period than will occur under unmanaged conditions. Intermediate treatments in younger seral stages will improve habitat for special status species or priority wildlife associated with younger forest if the treatments are compatible with future desired conditions for the Late-Successional Reserves.

Protect and enhance Riparian Management Areas (including wetlands) to comply with the Aquatic Conservation Strategy so as to not adversely affect special status species dependent on these habitats. Specific actions will be identified through the watershed analysis process.

Management Actions/Direction for Matrix-Connectivity/Matrix-General Forest Management

Within the Matrix-Connectivity land use allocation, some harvest will occur in older forest stands. The 25 percent retention of the "best" habitat within the connectivity blocks and the retention of 12-18 green trees across the remaining block will help meet the needs of highly mobile species such as migratory birds and large mammals and will help provide refugia for the relatively nonmobile species such as invertebrates and small mammals. Within the Matrix-General Forest land use allocation the 15 percent late successional retention of older forest within each fifth-field watershed (SEIS C-44) and the 6-8 green tree retention will be designed through watershed analysis to help meet the maintenance and recovery needs of special status species and other priority wildlife. Ecological function will be maintained as consistent with objectives of each of these land use allocations.

Management Actions/Direction for All Land Use Allocations

Determine the occurrence and distribution of all special status and SEIS special attention species on BLM administered lands and evaluate the significance of these lands for the conservation of these species.

The primary mechanism for the conservation of special status species will be through the application of ecosystem management principles to develop complex forest habitats under a variety of silvicultural prescriptions. These silvicultural prescriptions are designed to create a variety of habitat conditions, including retention of large down woody material, snags and decadent green trees, the development of multilayered forest canopies, the retention or enhancement of conifer and hardwood species of special importance to the ecology of special status species, the protection and restoration of special habitats, and the protection and enhancement of riparian and other wetland systems (see Habitat Enhancement, Wildlife, Chapter 2, PRMP/FEIS).

Screen all proposed actions, including those permitted by BLM through rights-of-way or other agreements, to determine if special status/SEIS special attention species or their habitat may be affected. Mitigate actions to reduce or eliminate impacts. Where mitigation cannot eliminate adverse effects, follow the formal or informal consultation requirements for each status group (See Federal Endangered and Threatened, Federal Candidate/ State Listed species/Bureau Sensitive, etc. below.) Mitigation may include, but is not limited to the following:

> Reroute/close/decommission roads or restrict access; reclaim habitat through native seeding or natural recovery; relocate parts or all of the project area; implement seasonal or other timing restrictions; implement silvicultural practices to develop desired components of wildlife habitat; develop timber harvest prescriptions and timetables to develop a desirable mix of seral stages for wildlife; select and space reserve trees in the silvicultural system to meet special needs; treat reserved trees to create snags or special structural conditions; modify buffer widths or leave buffers where they will not normally be required; install/ erect artificial nest structures; implement measures to minimize or correct stream siltation, substrate, or water quality; use prescribed fire or manual vegetative treatment to create desired conditions; implement special yarding stipulations and corridor placement to avoid crucial habitat or important components; implement appropriate Best Management Practices; fence or screen sensitive areas; control exotic plant or animal species; work with ODFW to direct or curtail hunting and trapping in selected areas; use devices to reduce wildlife conflicts or mortality in campgrounds, pumpchances, roadways etc; implement silviculture prescriptions within thinnings to create desired future conditions; and retain priority forage species in road maintenance or vegetation/silvicultural treatment prescriptions.

Take actions to promote the evaluation, conservation and recovery of all native species (BLM Manual 6500.1).

Retain under Federal management, or other appropriate management organization, habitat essential for the survival or recovery of listed and proposed species. Retain habitat of proposed, Candidate, or Bureau Sensitive species where land transfer will contribute to the need to list the species. Where appropriate opportunities exist, acquire land to contribute to recovery, reduce the need to list, or enhance special status species habitat. Pursue opportunities to increase the number or extent of special status species populations and habitat through land acquisition and/or species reintroduction.

Coordinate with appropriate agencies and landowners to develop conservation plans or agreements to conserve single species, groups of species, communities, or habitats. Such strategies could provide adequate protection for the species or habitat(s) of concern without the need for intensive survey or site-by-site project modification.

Pursue opportunities for public education about conservation of species and habitat.

Record field observations of special status species on or near BLM lands. Analyze impacts of proposed actions and monitor mitigation measures that were imposed as a means to increase the knowledge base about the distribution and ecology of these species. Data on the occurrence of special status species and their habitat will be shared across the range of the species with other agencies and project planners.

Management Actions/Direction Specific to Special Status Species Categories (All Land Use Allocations)

General objectives and management actions pertaining to special status species and their habitats are presented below and are followed by management actions that are specific to particular species or habitats.

Listed and Proposed Threatened and Endangered Animal Species

Evaluate ongoing management actions to ensure that conservation measures for threatened and endangered species are being met. Ensure that all management actions are consistent with recovery plan objectives.

Proposed project areas will be surveyed for occupancy by species listed as Federally threatened or endangered and species proposed for Federal listing, using the best scientific protocol, where habitat conditions indicate potential occupancy by these species. Field surveys may not be conducted in all cases depending on the number and timing of previous surveys conducted in the proposed action area and the amount or likelihood of potential habitat present. The intensity of field surveys will also vary depending on the same factors.

If a project may adversely affect any listed or proposed Federal threatened or endangered species or its critical habitat, effort will be made to modify, relocate, or abandon the project in order to obtain a "no effect" determination. In any case where BLM determines that such a project cannot be altered to eliminate the potential adverse effect, and abandonment of the project is not considered appropriate, consultation with the U.S. Fish and Wildlife Service/National Marine Fisheries Service will be initiated. The terms and conditions of the Biological Opinion will be followed.

Manage proposed endangered, threatened species and proposed critical habitat with the same level of protection provided for listed species and designated Critical Habitat.

Columbian white-tailed deer (Federal endangered species)

All actions will be consistent with the objectives in the Columbian White-tailed Deer Recovery Plan (USFWS 1983).

The District will initiate consultations with the USFWS and Oregon Department of Fish and Wildlife to assess the potential for reestablishing one or more experimental populations within the District in accordance with the intent to reintroduce Columbian white-tailed deer to areas having suitable habitat within their historical home range.

American peregrine falcon (Federal endangered species)

Comply with the Peregrine Falcon Recovery Plan including the American Peregrine Falcon Rocky Mountain/Southwest Population Recovery Plan (USFWS 1984), Pacific Coast Recovery Plan for the American Peregrine Falcon (USFWS, 1982), the Technical Draft Addendum to the Pacific and Rocky Mountain/Southwest (Peregrine Falcon) Recovery Plans (USFWS, 1991), and existing site-specific habitat management plans.

The District will coordinate with the USFWS and other land managers of lands covered by the Peregrine Recovery Plan to develop and implement specific management strategies for peregrine recovery. Together with these agencies/groups assess the importance of cliff and roosting sites on District lands in meeting peregrine recovery goals and identify which areas to protect or enhance. Coordinate with ODFW and USFWS to determine if reported historical aeries are still suitable for nesting. Following the establishment of specific peregrine recovery areas on the District (if any), manage these sites to encourage peregrine occupancy and recovery.

If District sites qualify as potential recovery habitat, cliffs will be managed to provide for future population expansion. The cliffs themselves will be protected and enhanced if necessary. Protective actions may include restrictions on access, development, or other land uses. These potential nest sites will be retained under BLM administration.

Northern spotted owl (Federal threatened species)

Implement pertinent actions from the Final Draft Northern Spotted Owl Recovery Plan (USFWS 1992) to the extent that those actions are still valid. Emphasize owl recovery in Late-Successional Reserves. Continue to participate in regional research, monitoring, and management strategies for the northern spotted owl.

In the Matrix retain 100 acres of the best northern spotted owl habitat as close as possible to a nest site or owl activity center for all known (as of January 1, 1994) spotted owl activity centers on BLM land. These cores will be managed as Late-Successional Reserves throughout the life of the plan even if unoccupied. Consult with USFWS regarding all "may effect" determinations of owl pair, nest and single sites located after January 1, 1994.

General guidelines to avoid a "may effect" determination for northern spotted owls include:

A restriction of tree falling within one-quarter mile of all active northern spotted owl nest sites from approximately March 1 to September 30 to avoid disturbance and harm (incidental take) to young owls.

Human activities that could disturb owl nesting, especially use of large power equipment and explosives, will be prohibited within one-quarter mile of all active spotted owl nest sites from approximately March 1 to September 30.

Marbled murrelet (Federal threatened species)

Survey potential marbled murrelet habitat prior to any human disturbance. Follow USFWS protocol.

Where behavior indicates occupation (e.g., active nest, fecal ring, or eggshell fragments; and birds flying below, through, into, or out of the forest canopy within or adjacent to a stand), protect a 0.5 mile radius of all contiguous existing and recruitment habitat for marbled murrelets (i.e., stands that are capable of becoming marbled murrelet habitat within 25 years). These areas will be managed as Late-Successional Reserves. Until completion of the Marbled Murrelet Recovery Plan, neither conduct nor allow harvest of timber within occupied marbled murrelet habitat if a "may effect" determination will result.

During silvicultural treatments of nonhabitat within the 0.5-mile circle, protect or enhance suitable or replacement habitat.

Reduce adverse impacts to nesting murrelets during the critical nesting period (April 15 - September 30) through seasonal restrictions of disturbing activities.

Upon completion of the recovery plan for marbled murrelets, incorporate conservation and management strategies in District plans and actions. Amend or revise management actions as appropriate.

Bald eagle (Federal threatened species)

Comply with the Pacific Bald Eagle Recovery and Implementation Plans and existing, site-specific habitat management plans. Cooperate with other landowners to help meet bald eagle objectives.

Write site plans for each Bald Eagle Habitat Area (BEHA) complex in accordance with general recovery plan guidance and manage these areas as essential habitat for bald eagle recovery. Silvicultural prescriptions will be developed and implemented to promote the development of habitat conditions favorable to the species in and adjacent to these stands. The District proposes not to designate these stands as ACECs (Areas of Critical Environmental Concern) as suggested in the recovery plan.

The Eugene District chooses to maintain flexibility for the management of BEHAs through proactive site-specific management actions designed to meet the needs of bald eagles and will manage these sites as critical bald eagle habitat, while recognizing the possibility of the eagles establishing nest and roost sites in stands other than those nominated for ACEC status. Develop site plans to cover nests, established perch sites, and winter roosts for occupied eagle habitat not in BEHAs. Follow USFWS Region 1 buffer zones as minimal guidance until site plans are completed (Recovery Objective 1.3331). Core areas will be designated fire fuel management areas to reduce the risk of loss during a wildfire. Fire control activities will be analyzed on a site-by-site basis to reduce disturbance to the site.

Manage the Coburg Hills Bald Eagle Complex consistent with recovery plan objectives. Address the following in a Habitat Management Plan:

> Potential threats to the occupied bald eagle winter roost from public use of an existing road
>
> Potential adverse impacts to the roost that may result from development on adjacent, intermingled lands in nonfederal ownership
> Identification of key foraging areas for the wintering bald eagle.

Through interagency and cooperative actions, identify alternative food sources in the event of a change in the livestock-oriented agriculture that maintains the eagles using this site.

Exclude logging, construction, habitat improvement, and low level BLM aircraft operations within 400 m (or 800 m line of site) of nests and roosts during critical nesting and wintering periods. Nesting activity

generally occurs between January 1 and August 31. Key wintering periods are generally from November 15 through April 1.

Oregon chub (Federal endangered species)
Coho salmon (under status review)
Steelhead trout (under status review)
Cutthroat trout (proposed--Federal endangered (Umpqua Basin)

The integrity of stream channels and ponds used by these fish and their associated riparian vegetation will be protected through implementation of the Aquatic Conservation Strategy. The District will continue to cooperate with Federal recovery and State management efforts for these species.

Federal Candidate, State Listed Species, Bureau Sensitive Species

Modify, relocate, or abandon potentially impacting proposed actions to avoid contributing to the need to list Federal Candidate species, State Listed species, Bureau Sensitive species, SEIS Special Attention species or their essential habitats. Coordinate with the USFWS, NMFS, and other appropriate agencies and organizations and jointly endeavor to recover Federal listed and proposed plant and animal species and their habitats and ecosystems.

Coordinate with appropriate agencies, landowners and managers in the region to assess the distribution, abundance, ecology and potential impacts of Candidate and Bureau Sensitive species and their habitat. Active management could include protection, acquisition, habitat enhancement, reintroduction, control of exotic species, and the development/ implementation of interagency cooperative plans. Continue with prescribed conservation actions for species dropped from the special status list (such as Federal C3 species) if Federal land management actions were a factor in considering the species no longer eligible for listing. Conservation plans for delisted species may be modified as needed based on adequacy of existing rangewide conditions and conservation management.

Management emphasis will be to accumulate ecological information and distributional data to enhance our ability to protect and manage these species in the future.

Bureau Assessment and Tracking Species

Assessment species will be considered in all Environmental Analyses where impacts will be clearly identified for the population and the species as a whole. As species conservation dictates, active management for assessment species will be undertaken to assure survival of these species in Oregon. They will be included in all field inventory and clearance work. All new locations will be documented.

Bureau policy (Oregon/Washington Special Status Species Policy - Extended) provides guidance for Tracking Species. These species, while not considered special status species, are identified as species for which some management concerns are identified. These concerns primarily reflect the lack of substantial ecological and habitat information, and the fact that there are possible management impacts. The management emphasis for these species is to record observations of these species and review the scientific literature to better evaluate status and future planning options. For a complete list of Tracking Species (see Table 8).

Management Actions/Direction for SEIS Special Attention Species (All Land Use Allocations)

Survey and Manage - Implement the Survey and Manage Provision of the SEIS/ROD (pages C-4 through C-6) throughout any land allocation but direct the Provision to the range of the SEIS special attention species and the particular habitats that they are known to occupy. Appendix B shows the species covered by the 4 Survey and Manage categories. The standard and guideline contains 4 components. Priorities differ among them as noted.

1. Manage known sites (highest priority). All species located on the Eugene District that are covered under this provision will be managed in the following manner:

    a. Acquire and manage information on these sites, make it available to all project planners, and use it to design or modify activities.

Table 8 - Special Status Animal Species Known or Suspected to Occur in the Eugene District

Common Name	Scientific Name	Federal Status	BLM Status	Occurrence[1]
Invertebrates				
Alsea ochrotrichian micro-caddisfly	*Ochrotrichia alsea*		BTO	U
American acetropis grass bug	*Acetropis americana*		BSO	U
American boreostolus (bug)	*Boreostolis americanus*		BTO	S
Ashlock-Obrien's seed bug	*Malezonotus obrieni*		BTO	S
Beer's false water penny beetle	*Acneus beeri*	FC2		U
Beller's carabid beetle	*Agonum belleri*	FC2		U
Blue-grey tail dropper (slug)	*Prophysaon coeruleum*		BSO	S
California scutellarid (bug)	*Vanduzeeina borealis californicus*		BAO	S
Cascades apatanian caddisfly	*Apatania tavala*	FC2		U
Corvallis diving beetle	*Hydroporus corvallis*		BTO	U
Cryptic beach carabid beetle	*Bembidion tigrinum*		BTO	U
Dendrocoris stink bug	*Dendrocoris arizonensis*		BTO	U
Douglas-fir platylygus (bug)	*Platylygus pseudotsugae*		BTO	S
Essig's macrotylus plant bug	*Macrotylus essigi*		BTO	S
Evening fieldslug	*Deroceras hesperium*		BSO	U
Fender's blue (butterfly)	*Icaricia icarioides fenderi*	FC2		D
Fender's rhyacophilan caddisfly	*Rhyacophila fenderi*		BTO	S
Foliaceous lace bug	*Derephysia foliacea*		BAO	S
Fort Dick limnephilus caddisfly	*Limnephilus atercus*	FC2		S
Hairy shore bug	*Saldula villosa*		BAO	U
Hatch's snail-eating carbid beetle	*Scaphinotus hatchi*		BTO	S
Heidemann's nabid (bug)	*Hoplistoscelis heidemanni*		BTO	U
Hemphill's hydrobiid (water snail)	*Pristinicola hemphilli*		BTO	S
Indian paintbrush polymerus (bug)	*Polymerus castilleja*		BTO	S
Insular blue (butterfly)	*Plebejus saepiolus insulanus*		BSO	S
Lillianis moss bug	*Acalypta lillianis*		BTO	S
Marsh carabid beetle	*Acupalpus punctulatus*		BTO	U
Marsh nabid (bug)	*Nabicula propinquua*		BTO	U
Martin's water-measurer (bug)	*Hydrometra martini*		BTO	U
Montane bog dragonfly	*Tanypteryx hageni*		BTO	S
Mt. Hood primitive brachycentrid caddisfly	*Eobrachycentrus gelidae*	FC2		U
Mulsant's water treader (bug)	*Mesovelia mulsanti*		BTO	U
Obscure elfin (butterfly)	*Incisalia polios obscurus*		BAO	U
One-spot rhyacophilan caddisfly	*Rhyacophila unipunctata*	FC2		S
Oregon giant earthworm	*Driloleirus macelfreshi*	FC2		S
Oregon lygus bug	*Lygus oregonae*		BSO	S
Oregon megomphix (land snail)	*Megomphix hemphilli*		BSO	U
Oregon silverspot (butterfly)	*Speyeria zerene hippolyta*	FT		S
Oregon sixeonotus plant bug	*Sixeonotus* sp. nov.		BTO	U
Oregon trunk-inhabiting plant bug	*Eurychilopterella* sp. nov.		BTO	U
Pale teratocoris sedge bug	*Teratocoris paludum*		BTO	U
Papillose tail-dropper (slug)	*Prophysaon dubium*		BSO	S
Potentilla root-borer beetle	*Chrysobothris potentillae*		BAO	U
Roth's blind carabid beetle	*Pterostichus rothi*	FC2		U
Salien plant bug	*Criocoris saliens*		BTO	U
Schuh's micrancanthia shore bug	*Micracanthia schuhi*		BTO	U
Siskiyou caddisfly	*Tinodes siskiyou*	FC2		U
Siskiyou chloealtis grasshopper	*Chloealtis aspasma*	FC2		U
Siuslaw sand tiger beetle	*Cicindela hirticollis siuslawensis*		BTO	U
Taylor's checkerspot (butterfly)	*Euphydryas editha taylori*		BSO	H
Tombstone Prairie farulan caddisfly	*Farula reaperi*	FC2		S

Table 8 - Special Status Animal Species Known or Suspected to Occur in the Eugene District

Common Name	Scientific Name	Federal Status	BLM Status	Occurrence[1]
Tombstone Prairie oligophlebodes caddisfly	*Oligophlebodes mostbento*	FC2		S
True fir pinalitus	*Pinalitus solivagus*		BTO	S
Umbrose seed bug	*Atrazonotus umbrosus*		BTO	U
Vertree's ceraclean caddisfly	*Ceraclea vertreesi*	FC2		U
Vertree's ochrotrichian micro-caddisfly	*Ochrotrichia vertreesi*	FC2		U
Willamette cave cricket	*Ceuthophilus perplexus*		BTO	S
Fish				
Bull trout	*Salvelinus confluentus*	FC1		D
Chum salmon	*Oncorhynchus keta*		BSO	S
Coastal cutthroat trout	*Oncorhynchus clarki clarki*	PE		D
Coho salmon	*Oncorhynchus kisutch*	FC2		D
Oregon chub	*Oregonichthys (= Hybopsis) cramari*	FE		D
Pacific lamprey	*Lampetra tridentata*	FC2		D
River lamprey	*Lampetra ayresi*	FC2		H
Steelhead trout	*Orncorhynchus gairdneri*	FC2		S
Amphibians				
Cascades (Olympic) salamander	*Rhyacotriton cascadae*		BTO	D
Cascades frog	*Rana cascadae*	FC2		U
Clouded salamander	*Aneides ferreus*		BAO	D
Foothill yellow-legged frog	*Rana boylii*	FC2		D
Northern red-legged frog	*Rana aurora aurora*	FC2		D
Oregon slender salamander	*Batrachoseps wrightorum*		BSO	U
Variegated (Olympic) salamander	*Rhyacotriton variegatus*	FC2		D
Spotted frog (western)	*Rana pretiosa*	FC1		U
Tailed frog	*Ascaphus truei*	FC2		D
Western toad	*Bufo boreas*		BTO	S
Reptiles				
Northwestern pond turtle	*Clemmys marmorata marmorata*	FC2		D
Painted turtle	*Chrysemys picta*		BAO	U
Sharptail snake	*Contia tenuis*		BAO	D
Birds				
Bald eagle	*Haliaeetus leucocephalus*	FT		D
Barrow's goldeneye	*Bucephala islandica*		BTO	V
Black phoebe	*Sayornis nigricans*		BTO	S
Black tern	*Chlidonias niger*	FC2		D
Black-chinned hummingbird	*Archilochus alexandri*		BTO	V
Black-shouldered kite	*Elanus leucurus*		BTO	D
Bufflehead	*Bucephala albeola*		BAO	D
Cackling Canada goose	*Branta canadensis minima*		BTO	V
California condor	*Gymnogyps californianus*	FE		H
Caspian tern	*Sterna caspia*		BTO	S
Dusky Canada goose	*Branta canadensis occidentalis*		BTO	V
Ferruginous hawk	*Buteo regalis*	FC2		V
Flammulated owl	*Otus flammeolus*		BSO	S
Franklin's gull	*Larus pipixcan*		BAO	V
Grasshopper sparrow	*Ammodramus savannarum*		BT	D
Great egret	*Casmerodius albus*		BT	D
Great gray owl	*Strix nebulosa*		BT	S

Table 8 - Special Status Animal Species Known or Suspected to Occur in the Eugene District

Common Name	Scientific Name	Federal Status	BLM Status	Occurrence[1]
Greater yellowlegs	*Tringa melanoleuca*		BAO	S
Harlequin duck	*Histrionicus histrionicus*	FC2		D
Horned grebe	*Podiceps auritus*		BT	S
Least bittern	*Ixobrychus exilis*	FC2		V
Lesser scaup	*Aythya affinis*		BTO	S
Lewis' woodpecker	*Melanerpes lewis*		BSO	H
Loggerhead shrike	*Lanius ludovicianus*		BT	V
Long-billed curlew	*Numenius americanus*		BT	V
Marbled murrelet	*Brachyramphus marmoratus*	FT		D
Merlin	*Falco columbarius*		BAO	V
Mountain quail	*Oreortyx pictus*		BTO	D
Northern goshawk	*Accipiter gentilis*	FC2		D
Northern pygmy-owl	*Glaucidium gnoma*		BTO	D
Northern spotted owl	*Strix occidentalis caurina*	FT		D
Northern waterthrush	*Seiurus noveboracensis*		BTO	D
Peregrine falcon, American	*Falco peregrinus anatum*	FE		D
Pileated woodpecker	*Dryocopus pileatus*		BSO	D
Purple martin	*Progne subis*		BSO	D
Ring-necked duck	*Anthya collaris*		BTO	S
Snowy egret	*Egretta thula*		BAO	V
Swainson's hawk	*Buteo swainsoni*		BT	V
Tricolored blackbird	*Agelaius tricolor*	FC2		S
Tule white-fronted goose	*Anser albifrons elgasi*		BTO	V
Vesper swarrow	*Pooecetes gramineus affinis*		BTO	D
Western bluebird	*Sialia mexicana*		BT	D
Yellow-billed cuckoo	*Coccyzus americanus*		BAO	V
Mammals				
Columbian white-tailed deer	*Odocoileus virginianus leucurus*	FE		H
Marten	*Martes americana*		BSO	S
Pacific fisher	*Martes pennanti pacifica*	FC2		H
Pacific (fringed) bat	*Myotis thysanodes thysanodes*		BSO	S
Pacific pallid bat	*Antrozous pallidus pacificus*		BT	S
Pacific western (Townsend's) big-eared bat	*Plecotus townsendii townsendii*	FC2		D
Ringtail	*Bassariscus astutus*		BTO	S
Spotted bat	*Euderma maculatum*	FC2		U
White-footed vole	*Phenacomys (= Arborimus) albipes*	FC2		D

Legend:

[1] = occurrence within the BLM Planning Area
D = documented
S = suspected
H = historic (not currently known to occur within the District)
V = vagrant (occurs irregularly in District - nonresident, accidental)
U = unknown (known to occur outside Eugene District)

Federal Status:
FC1 = Federal Candidate 1
FC2 = Federal Candidate 2
FE = Federal Endangered
FT = Federal Threatened
PE = Proposed Federal Endangered

BLM Status:
BS or BSO = Bureau Sensitive in Oregon
BA or BAO = Bureau Assessment in Oregon
BT or BTO = Bureau Tracking in Oregon

b. Protect known sites. For some species, apply specific management treatments such as prescribed fire.

2. Survey prior to ground-disturbing activities. Manage sites. (The red-tree vole is the only applicable wildlife species currently known to occur on the Eugene District under this Survey and Manage category).

   a. Continue efforts to survey and manage rare and sensitive species habitat where such habitat exists.

   b. For species without survey protocols, start immediately to design protocols and implement surveys.

   c. Survey within the known or suspected ranges of the red tree vole and the habitat types of vegetation communities associated with the species. These surveys will precede the design of all ground-disturbing activities that will be implemented in 1997 or later.

   d. For the other species listed in Appendix B, begin development of survey protocols promptly and proceed with surveys as soon as possible. These surveys will be completed prior to ground-disturbing activities that will be implemented in Fiscal Year 1999 or later. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS.

   e. Conduct surveys at a scale most appropriate to the species.

   f. Develop management actions/direction to manage habitat for the species on sites where they are located.

   g. Incorporate survey protocols and proposed site management in interagency conservation strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office.

3. Conduct extensive surveys. Manage sites. (There are no wildlife species thought to occur on the Eugene District under this Survey and Manage Category).

4. Conduct general regional surveys. (There are no wildlife species thought to occur on the Eugene District under this Survey and Manage Category).

Roosting Bats - Conduct surveys to determine the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. Surveys will be conducted according to protocol defined in the SEIS/ROD and in any subsequent revision to the protocol.

As an interim measure, allow no timber harvest within 250 feet of sites containing bats. Develop mitigation measures in project or activity plans involving these sites. The intent of these measures is to protect sites from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. Consider the potential disturbance from road use and recreational activities

When Townsend's big-eared bats are found on Federal land, notify the Oregon Department of Fish and Wildlife. Develop management prescriptions for these sites that include special consideration for potential impacts on this species.

Special Areas

Objectives

Retain existing Areas of Critical Environmental Concern (ACEC), including Research Natural Areas (RNA) that meet the criteria for designation. Retain other Special Areas including Environmental Education Areas (EEA). Provide new Special Areas where needed to maintain or protect important values.

Maintain, protect, or restore relevant and important value(s) of ACEC and other Special Areas, including EEA.

Preserve, protect, or restore native species composition and ecological processes of biological communities (including Oregon Natural Heritage Plan terrestrial and aquatic cells) in ACEC. ACEC, especially RNA (Research Natural Areas), will be available for short or long-term scientific study, research, and education, and will serve as a baseline against which human impacts on natural systems can be measured.

Provide for recreation uses and environmental education in ACEC/Outstanding Natural Areas (ONA). Manage uses to prevent loss of outstanding values.

Provide and maintain environmental education opportunities in EEA. Control uses to minimize disturbance of educational values.

Provide management guidelines to protect human life and safety in those areas identified as safety or hazard ACEC.

Land Use Allocations

Identification of new Special Areas and the management of known Special Areas would occur in all land use allocations.

See Map 3 for locations of the Special Areas.

Descriptions of Special Areas

Areas of Critical Environmental Concern

Coburg Hills, Cottage Grove Lake and Dorena Lake Relict Forest Islands (RFI) ACEC (876) Acres

Relict Forest Islands provide examples of old growth and mature forest ecosystems on the fringes of the Willamette Valley. The areas provide representative examples of mature and old growth plant communities found in low elevation forests adjacent to the Valley. The areas also provide late-successional refugia for species that may later recolonize adjacent lands managed for timber. The areas are also important habitats for various wildlife species, including several species of raptors.

Cougar Mountain Yew Grove ACEC (10 Acres)

Cougar Mountain Yew Grove exhibits a population of large *Taxus brevifolia* (Pacific yew) trees on the Eugene District. Because of the high interest in Pacific yew as a pharmaceutical, this area was identified as an important reserve for this species.

Grassy Mountain ACEC (74 Acres)

Grassy Mountain ACEC is one of the finest representative examples of a grassy bald on the western margin of the Cascades that remains today. The site has had very little disturbance, and is a fine example of a native *Festuca idahoensis* (Idaho fescue) grassland community with a variety of herb species adapted to seasonal moisture fluctuations. The ACEC also includes a *Pseudotsuga menziesii* (Douglas-fir) forest with mixed *Arbutus menziesii* (Pacific madrone) and associated shrubs and herbs.

Hult Marsh ACEC (167 Acres)

Hult Marsh ACEC, an old log pond, now exhibits a botanically rich assemblage of aquatic, bog, marsh, and riparian vegetation, including habitat for 2 BLM Assessment plant species. Such uncommon aquatic plant species were probably transported into the lake by waterfowl, which utilize the area. The wetland supports a number of fish and wildlife species. Portions of Lake Creek within the ACEC are spawning areas for coho salmon and cutthroat trout. Osprey have nested in the area and bald eagles have also been observed in the area.

Long Tom ACEC (7 Acres)

The Long Tom ACEC was designated an ACEC in 1984. The ACEC occurs within the Willamette Valley Physiographic Province. The area exhibits a small remnant of presettlement native plant community. Less than 1 percent of this plant community exists today. Three different native plant communities are present:

The *Deschampsia cespitosa* (tufted hairgrass) wet prairie community occupies a portion of the site. This type of grassland is considered one of the rarest and most endangered of all natural ecosystems in Oregon.

The *Quercus garryana* (Garry oak)/*Fraxinus latifolia* (Oregon ash) woodland, with various shrubs and herbs, is scattered throughout portions of the ACEC.

The third type of community identified on the tract includes *Fraxinus latifolia* (Oregon ash)/*Quercus garryana* (Garry oak)/*Carex obnupta* (slough sedge), which occurs in the low-lying areas within the ACEC, that flood in rainy weather.

The site has had extensive research on the use of prescribed fire for management of the native grassland and the associated special status plant species, which occur on this tract.

Areas of Critical Environmental Concern/Research Natural Areas

Camas Swale ACEC/RNA (314 Acres)

The Camas Swale ACEC/RNA was first established in 1984 as a Research Natural Area to provide an example of a dry-site, mature *Pseudotsuga menziesii* (Douglas-fir) forest in the Willamette Valley foothills. This site also incorporates a small, xeric, meadow community that, in the absence of fire, is slowly being invaded by several shrub and tree species.

The site is dominated by *Pseudotsuga menziesii* (Douglas-fir). On north slopes, the forest has a closed canopy; on south and west slopes, the forest is more open, and trees of all age classes are present.

The major associate in this forest is *Calocedrus decurrens* (Incense cedar). Scattered large individuals occur on south and west exposures. A few individuals of *Pinus ponderosa* (ponderosa pine) are found at the driest sites in the northwest corner of the RNA. At the wettest sites a few *Abies grandis* (grand fir) are present. There is one gentle, wet slope where *Fraxinus latifolia* (Oregon ash) occurs (Curtis, 1986).

Fox Hollow ACEC/RNA (160 Acres)

Fox Hollow ACEC/RNA was established as a Research Natural Area in 1984 to provide an example of dry-site, mature *Pseudotsuga menziesii/ Pinus ponderosa* (Douglas-fir/ponderosa pine) forest in the Willamette Valley foothills.

The mature forest at Fox Hollow ACEC/RNA is dominated by large *Pseudotsuga menziesii* (Douglas-fir). East-west ridges cross the ACEC/RNA, produce an alternation of forest stands on south and north aspects. A mixed stand of *Pseudotsuga menziesii* (Douglas-fir) and *Pinus ponderosa* (ponderosa pine) occurs on the south slopes and ridge tops, with minor amounts of *Calocedrus decurrens* (incense cedar) and *Quercus garryana* (Garry oak). This forest was originally more open as illustrated by the scattered, open-grown old trees (Curtis, 1986).

Horse Rock Ridge ACEC/RNA (378 Acres)

Horse Rock Ridge ACEC/RNA was designated as an ACEC in 1984. The site has recently been nominated for RNA status. The area is located on a steep, south-facing slope in the Coburg Hills, which lies on the eastern edge of the Willamette Valley.

There are 2 primary natural communities recognized at the ACEC/RNA, the grassland community and the forest community. Within each of these broadly defined communities, there exist a number of plant associations:

> Grasslands occupy the south-facing slopes at Horse Rock Ridge, usually occurring in more shallow soils than the forested areas. The grassland community consists of 3 distinct plant associations: *Elymus glaucus* (blue wild rye) association; *Festuca idahoensis* (Idaho fescue) association; and *Stipa lemmonii/Rhacomitrium canescens* (Lemmon's needlegrass/moss) associations.
>
> The forest community is classified as a *Pseudotsuga menziesii/Tsuga heterophylla* (Douglas-fir/western hemlock) association with an understory dominated by small *Berberis nervosa* (Oregon grape), *Gaultheria shallon* (salal), and *Symphoricarpos alba* (snowberry). The forest occurs on the deepest soils within the natural area (Vander Schaaf, 1993).

Mohawk ACEC/RNA (292 Acres)

Mohawk ACEC/RNA was established in 1984 as a Research Natural Area to provide an example of old growth *Pseudotsuga menziesii* (Douglas-fir) and *Tsuga heterophylla* (western hemlock) forest in the Willamette Valley foothills. The site also incorporates several small marsh communities and areas that were previously logged, and now support a younger forest.

The northern and eastern portions of the ACEC/RNA consist of moderately sloping benches. Several intermittent streams and tributaries of McGowan Creek flow through or originate in the ACEC/RNA. West of the benches is a steep slope with a small rock outcrop.

The ACEC/RNA is uniformly forested with large, old growth conifers and few deciduous trees (Curtis, 1986).

Upper Elk Meadows ACEC/RNA (223 Acres)

Upper Elk Meadows ACEC/RNA was established in 1984 as a Research Natural Area to exemplify the diversity of species in the valleys and mountains of the Cascade Range and the Coast Range. The ACEC/RNA incorporates a remnant of the old growth forest that once was prevalent west of the Cascade Range in Oregon.

The ACEC/RNA is a mosaic of open and shrub covered wetlands surrounded by old growth forest. Open wet *Carex* (sedge) meadows occupy approximately 11 acres; wet *Alnus sinuata/Salix/ Crataegus douglasii* thickets occupy 30 acres; an open forest dominated by old growth *Abies amabilis/ Abies grandis* occupies 74 acres; and a closed old growth forest dominated by *Pseudotsuga menziesii* (Douglas-fir) occupies approximately 66 acres. In addition, there is a cutover area and a very small nonforested site (Curtis, 1986).

Areas of Critical Environmental Concern/Outstanding Natural Areas

Heceta Sand Dunes ACEC/ONA (218 Acres)

Heceta Sand Dunes ACEC/ONA contains several plant communities representative of the Coastal Province of Oregon. Different stages of dune stabilization and vegetation succession are present. A portion of the tract is made up of dynamic dune formations. Here plant species adapted to shifting sand can be found. Species that are more tolerant of sand burial can be observed, including BLM Tracking species *Abronia latifolia* (yellow sand verbena). More heavily vegetated areas occur on stabilized areas such as deflation plains, where tree and shrub communities have become established.

A large portion of the tract is dominated by wetlands, both permanent and ephemeral. The site offers excellent opportunities for studying various aspects of dune ecology. BLM Assessment species, *Campylopus schmidii* (moss), also can be found on the ACEC/ONA.

Various wildlife, scenic, and recreational values have been identified on the tract.

Lake Creek Falls ACEC/ONA (58 Acres)

The Lake Creek Falls ACEC/ONA was designated an ACEC in 1984. The area contains important recreational and scenic values. It is also the location of a natural hazard area along and within Lake Creek for which the area was designated. The area is visually appealing with the canyon walls rising from Lake Creek. Riparian vegetation and cascading water flowing over this boulder strewn stream course have been identified as key visual resources.

Water play and sunbathing activities are popular activities in the area. Swimming hazards, including unseen boulders in pools, were identified as serious public hazards needing special management attention through ACEC designation.

A fish ladder has been constructed in the area to provide upstream anadromous fish passage, making the area a popular attraction and interpretive facility.

Environmental Education Areas

McGowan Creek EEA (79 Acres)

McGowan Creek EEA is an excellent example of low-elevation old growth adjacent to and similar to Mohawk ACEC/RNA (see description for Mohawk ACEC/RNA). The area is adjacent to McGowan Creek and provides outstanding environmental education opportunities.

Potential Special Areas

The following nominations were received between the draft and final RMP. They have gone through BLM's internal review process and qualify for Special Area status. Because these areas have not gone through the required public review period, the areas will not be designated during this planning process but will be carried forward as Potential Special Areas. Interim management of these areas will be provided, where necessary, to protect the relevant and important values for which the areas were nominated.

Cottage Grove Old Growth Potential EEA (80 Acres)

The Cottage Grove Old Growth potential EEA represents a predominantly *Pseudotsuga menziesii* (Douglas-fir) old growth stand separated by a small area of Columbus Day Storm blow down. Multiple canopy layers represent the late-successional stage of mesic Douglas-fir plant community with some existing older trees representing ages of 500 years old or more. The understory vegetation is a composite of a number of species including, moss, lichens, fungi, and flowering plants such as Federal Candidate plant species *Cimicifuga elata*. Large woody debris is numerous at this site. The Cottage Grove School system has indicated a strong interest in developing the area for environmental education purposes.

Dorena Prairie Potential ACEC (8 Acres)

Dorena Prairie potential ACEC is considered a small remnant of native *Festuca rubra* (red fescue) bottomland habitat. The area has been classified as an *Agropyron caninum/Festuca rubra/Koeleria valley* grassland. It is thought that only a handful of sites remain today in what was once a grassland community that covered over 200,000 acres of bottomland and hillslope habitat within the Willamette Valley.

The site is dominated by *Festuca rubra* (red fescue) and other native grasses including, *Danthonia californica* (California oat grass), *Koeleria cristata* (June grass) and *Poa scabrella* (rough bluegrass). Native forbs and shrubs are also present on the site (The Nature Conservancy, 1987).

Research is on-going to determine the quality of this grassland. Genetic information on the origin of the *Festuca rubra* (red fescue) at this site is being collected.

Lorane Ponderosa Pine Potential ACEC (106 Acres)

The Lorane Ponderosa Pine potential ACEC was identified for the remnant population of native ponderosa pine within the Willamette Valley Physiographic Province. The Willamette Valley population of *Pinus ponderosa* (ponderosa pine) is considered a separate and distinct population from other ponderosa pine populations within Oregon. Historical logging of low elevation forests along the Valley margins and subsequent elimination of much of the Valley pine have pointed to the need to maintain and manage remaining naturally occurring populations of ponderosa pine within this mixed coniferous forest community.

The area will provide excellent baseline information to describe this type of plant community, not yet classified on the District; to study historic fire frequency of the area; and to implement experimental prescribed fires and other adaptive management techniques to enhance the native pine on the site.

Low Elevation Headwaters of the McKenzie River Potential ACEC (7650 Acres)

The Low Elevation Headwaters of the McKenzie River potential ACEC is a large block of minimally disturbed forests in late and mature seral stages with small, scattered patches of old growth islands. The area supports habitat essential for maintaining endangered, threatened, and sensitive fish and wildlife species. The area also includes the intact low elevation Bear Martin Key Watershed, representing excellent conditions for water quality and other riparian values.

Management Actions/Direction

All previously designated Special Areas will be retained (1,511 acres). Additions to 4 existing Special Areas (Camas Swale ACEC/RNA, Upper Elk Meadows ACEC/RNA, Horse Rock Ridge ACEC, and Lake Creek Falls ACEC/ONA) will be implemented, totaling an additional 292 acres. Horse Rock Ridge ACEC, which is proposed for RNA status, will be designated as such. McGowan Creek EEA will be reduced to 79 acres to better define the primary values of the area. Seven new Special Areas will be designated (1,344 acres), including Coburg Hills RFI (Relic Forest Island) ACEC; Cottage Grove Reservoir RFI ACEC; Cougar Mountain Yew Grove ACEC; Dorena Reservoir RFI ACEC; Grassy Mountain ACEC; Heceta Sand Dunes ACEC; and Hult Marsh ACEC. The Cougar Mountain Yew Grove ACEC will be adjusted to 10 acres and the boundaries of the Relict Forest Islands will be adjusted to better define the relevant and important values.

Four potential Special Areas (Cottage Grove Old Growth EEA; Lorane Ponderosa Pine ACEC; Low Elevation Headwaters of the McKenzie River ACEC; and Dorena Prairie ACEC) will not be designated in

this planning process. They will be carried forward as potential Special Areas until a plan amendment is implemented or until a new planning process is initiated. Interim management will be provided for these areas, where necessary, to protect the relevant and important values for which the areas were nominated. This includes, but is not limited to, actions outlined in Table 9, Management of Proposed Special Areas. Where needed, interim management plans will be developed to provide guidelines for resource protection and management.

Proposed Bald Eagle Habitat Areas ACEC will not be designated under the RMP but will be managed in accordance with the Bald Eagle Recovery Plan (See Special Status Species/Wildlife). Row River EEA will be managed for special status plants. Vik Road EEA (58 acres) will be dropped from EEA consideration. Cannery Dunes will be considered for transfer to the City of Florence, Oregon. Fawn Creek, Coburg Hill, and Bunker Hill did not qualify for ACEC status and were dropped from Special Area consideration.

Areas dropped from further consideration as Special Areas will be managed under various land use allocation(s).

All previously designated Special Areas will be managed in accordance with approved management plans and, where obsolete, new management plans will be prepared to more accurately reflect the management needs of these areas. All designated ACEC will be managed to maintain and/or enhance the primary resource value(s) for which the area has been designated. Management plans specific to ACEC that have been nominated as hazard areas will be developed or revised, where necessary, identifying specific actions to protect human health and safety. If management plans have not been prepared for previously designated areas, management will be in accordance with the guidelines in Table 9, Management of Proposed Special Areas. Additional interim management measures will also be implemented, where necessary, to protect the relevant and important values for which the areas were designated until new management plans are prepared.

Special Area management plans will be developed for new Special Areas as needed. Resource values will be protected in new Special Areas pending completion of management plans, including, but not limited to, implementation of those actions outlined in Table 9, Management of Proposed Special Areas.

Plans will identify where prescribed fire could enhance or maintain Special Area values. Fire suppression plans will be developed where it is determined that natural fire would diminish the resource values for which the area was designated, identifying the use and restrictions for fire suppression equipment within the Special Area.

Monitoring plans will be developed that address ecological, compliance, defensibility and management treatment monitoring where needed to track, protect, and manage for Special Area values.

Research needs will be identified for the management of Special Area values, and site-specific inventory needs will be identified and implemented where such inventories are incomplete to provide baseline information from which to monitor changes within these areas.

Public access will be regulated, where necessary, to maintain primary values within Special Areas. Gate closures, road closures or limits, and road decommissioning will be identified, implemented, and maintained to protect Special Area values. Public visits into Special Areas will be regulated if Special Area values are being negatively impacted.

Negotiations will be pursued with willing private parties involved in existing reciprocal right-of-way agreements to protect Special Areas by removing public lands with these sites from existing permits or by adding language to the agreements. Language protecting these areas will be added to new reciprocal agreements.

Public outreach opportunities will be addressed, focusing on educating the public on the importance of these areas for research and education; as genetic reserves for native species, and as baseline areas against which other human influenced landscapes can be compared.

Opportunities for research and education will be made available within Research Natural Areas. Education will be defined as primarily those activities associated with secondary/college-level projects. Other public uses within RNA will in general be considered incompatible with the primary mandate for research and education unless such uses are otherwise shown not to degrade RNA values through site-specific monitoring designed to quantify these activities.

Noxious weed or other nonnative pest plants will be controlled to maintain or restore Special Area values.

Table 9 - Management of Special Areas and Potential Special Areas

Name	Acres	Off Highway Vehicle Designation	Leasable Mineral Entry	Locatable Mineral Entry	Salable Mineral Entry	Timber Harvest
Camas Swale ACEC/RNA	314	Closed	Open - NSO	Closed	Closed	No
Coburg Hills RFI ACEC	804	Closed	Open - NSO	Closed	Closed	No
Cottage Grove[1] Old Growth Potential EEA	80	Closed	Open - NSO	Closed	Closed	No
Cottage Grove Lake RFI ACEC	53	Closed	Open - NSO	Closed	Closed	No
Cougar Mountain Yew Grove ACEC	10	Closed	Open - NSO	Closed	Closed	No
Dorena[1] Prairie Potential ACEC	8	Closed	Open - NSO	Closed	Closed	NA[2]
Dorena Lake RFI ACEC	18	Closed	Open - NSO	Closed	Closed	No
Fox Hollow ACEC/RNA	160	Closed	Open - NSO	Closed	Closed	No
Grassy Mountain ACEC[1]	74	Closed	Open - NSO	Closed	Closed	No
Heceta Sand Dunes ACEC	218	Closed	Open - NSO	Closed	Closed	No
Horse Rock Ridge ACEC/RNA	378	Closed	Open - NSO	Closed	Closed	No
Hult Marsh ACEC	167	Closed[4]	Open - NSO	Closed	Closed	No
Lake Creek Falls ACEC/ ONA	58	Closed[4]	Open - NSO	Closed	Closed	No
Long Tom ACEC	7	Closed	Open - NSO	Closed	Closed	NA[2]
Lorane[1] Ponderosa Pine Potential ACEC	106	Closed	Open - NSO	Closed	Closed	Potential[3]
Low Elevation[1] Headwaters of the McKenzie River Potential ACEC	7,650	[5]	Open - NSO	Closed	Limited	Potential[3]
McGowan Creek EEA	79	Closed	Open - NSO	Closed	Closed	No
Mohawk ACEC/RNA	292	Closed	Open - NSO	Closed	Closed	No
Upper Elk Meadows ACEC/RNA	223	Closed	Open - NSO	Closed	Closed	No

[1]These ACEC nominations were received between the Draft and Final RMP. Through an ACEC screening process it was determined they qualify as potential ACEC.

Because they have not received the required public review, they will be considered as potential ACEC/EEA until a RMP ammendment is implemented or until a new planning process occurs. Areas will receive interim management where necessary to protect the relevant and important values until such a time as designation is possible.

[2]Some removal of conifers and hardwoods may occur in order to maintain the prairie conditions for which these areas were nominated.
[3]Any potential timber harvest within these areas will be permitted only if such actions are consistent with maintaining or enhancing the primary values of the ACEC nomination areas.
[4]See OHV Appendix F for further discussion. Hult Marsh and Lake Creek ACEC Limited designated roads.
[5]The Low Elevation Headwaters of the McKenzie River Potential ACEC will need further analysis during the OHV planning process before any designation can be assigned to provide interim management for this area.

Restoration of Special Area values will be implemented where needed, and genetically adapted native plant materials will be used.

Future potential for land acquisitions, exchanges, conservation easements, or donations to enhance or add to Special Area habitat/values will be identified and pursued where possible.

Collection of seed or other plant materials within Special Areas for use in restoration activities by BLM on Eugene District lands will be restricted and/or regulated where necessary to maintain primary values. Where collection is permitted, guidelines for collection will be developed so special area values will not be degraded.

Special Forest Products removal will not be permitted within RNA. Collection of Special Forest Products within other special areas will be prohibited where vegetation and plant communities have been identified as relevant and important values.

Grazing and the use of herbicides would be prohibited in RNA. Grazing and herbicide use in other special areas would not be permitted unless such activities were being used to maintain or enhance identified special area values. Emphasis would first be on using nonchemical and other natural processes, including fire and manual removal methods, to control exotic or competing vegetation, etc.

Off Highway Vehicle, mineral withdrawals, and timber harvest will be consistent with Table 9. Plans will identify where adaptive management techniques will enhance or maintain special area values; no salvage logging will be permitted in special areas.

Special status plant or animal species that occur within special areas, will be managed consistently with BLM's Special Status Species Policy. Management of special area values will also be considered when identifying management actions needed for special status species so the primary values for which the special area was designated will not be degraded.

Inventories will be implemented to identify additional special areas where such values warrant special area protection/management. This includes Research Natural Areas, which will meet objectives for identifying representative examples of Oregon's ecosystem listed in the Oregon Natural Heritage Plan.

Existing special areas will be identified in the watershed analysis process for protection and management of the primary values for which the area was designated.

Coordination with other agencies in the protection and management of Research Natural Areas will continue.

Cultural Resources Including Native American Values

Objectives

Identify cultural resource localities and/or manage them for scientific and cultural heritage purposes.

Conserve and protect designated cultural resources for future generations.

Support ecosystem management by providing information on long-term environmental change and the interactions between humans and the environment in the past.

Continue to fulfill government-to-government and trust responsibilities to appropriate American Indian tribes regarding heritage and religious concerns.

Land Use Allocations

Sites with significant values will be protected during management actions and from vandalism to the extent possible. Cultural resource sites are not mapped in this plan or described in detail due to the sensitivity of resource values.

The Eugene District manages 2 cultural resource sites eligible for inclusion on the National Register of Historic Places.

Management Action/Direction

Evaluate cultural resource sites to determine their potential for contributing to public, cultural heritage, and/or scientific purposes.

Investigate landscape features such as bogs, ponds, and packrat middens, and cultural sites that contain information regarding long-term environmental change.

Develop mechanisms for describing past landscapes and the role of humans in shaping those landscapes.

Address the management of cultural resources through watershed analyses and project plans.

Develop educational and interpretive programs to increase public awareness and appreciation of cultural resources as part of the "Adventures in the Past" initiative.

Develop partnerships with local American Indian tribes and other interested parties to accomplish cultural resource objectives.

Take appropriate law enforcement or other actions when necessary to protect cultural resources. (Such actions may include physical protection measures such as riprapping and barrier installations to reduce deterioration).

Develop memoranda of understanding with Federally recognized American Indian tribes so their heritage and religious concerns may be appropriately considered. These tribes include the Confederated Tribes of Siletz, Confederated Tribes of Grand Ronde, Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, and Confederated Tribes of Warm Springs.

Acquire significant cultural resource properties for public, cultural heritage, and scientific purposes.

Visual Resources

Objectives

Manage all BLM administered land to meet the following visual quality objectives:

VRM Class I areas - Preserve the existing character of landscapes.

VRM Class II areas - Retain the existing character of landscapes.

VRM Class III areas - Partially retain the existing character of landscapes.

VRM Class IV areas - Allow major modifications of existing character of landscapes.

Emphasize management of scenic resources in selected high-use areas to retain or preserve scenic quality.

Land Use Allocations

VRM Class	Acres
I	0[1]
II	4,471[2]
III	33,130[2]
IV	rest of District

[1] refer to summary of major changes of Chapter 2, PRMP/FEIS
[2] GIS VRM acres

See Map 2-12 in the PRMP/FEIS for the location of visual resource management classes. The following lists areas that are included in each VRM Class on the Eugene District:

VRM Class I:
none

VRM Class II:
Existing recreation sites: Clay Creek, Sharps Creek, and Whittaker Creek
All proposed recreation sites within their viewsheds. Refer to the proposed recreation sites listed in Table 10.
Existing Shotgun Special Recreation Management Area (SRMA)
The McKenzie River SRMA
The McKenzie River, Segment A corridor to W&SR

VRM Class III:
SRMAs: Row River, Upper Lake Creek, Lower Lake Creek, Siuslaw River, and Gilkey Creek
Any BLM administered lands within a quarter of a mile of Rural Interface Areas (1-20 acre lots)

BLM administered land allocated to meet Rural Interface Area (RIA) objectives, unless lands within RIAs are already allocated to some other higher level of protection (e.g., Wild & Scenic Rivers, SRMAs, etc.).

VRM Class IV:
The remaining BLM lands

Table 10 - Proposed Recreation Trails and Sites in the Eugene District

Proposed Trail Name	Length of Trail	Comments
Blachly-Lane Flume	1.0 mile[1]	
Big Canyon	1.0 mile	
Clay Creek	1.0 mile	
Coburg Hills	23.0 miles	
Coburg Hills Connector	6.0 miles	
Deadwood-Windy Peak	6.0 miles	
Fish Creek	3.0 miles	
FS Trail (no number)	0.5 mile	(portion on BLM)
Greenleaf Creek	3.0 miles	
Haskins Creek	4.0 miles	
Hult Equestrian Loop	2.0+ miles	
Lake Creek	1.0 mile	
Overland	2.0 miles	
Marten Creek	4.0 miles	
South Bank McKenzie	6.0 miles	
Row River Expansion	5.0 miles	
Sharps Creek	1.0 mile	
Shotgun additions (2 trails)	1.5 miles	
Siuslaw River	2.0 miles	
Whittaker Creek Falls	3.0 miles	
Other Trails		Ongoing in all Resource Areas. Potential to develop additional trails that would be consistent with the other provisions of the PRMP.
Total: 20 trails (79 miles)		

Proposed SRMAs	Type of Site	Comments
Gilkey Creek	day use	
Lower Lake Creek	camping/day use	
McKenzie River	camping/day use	some PD lands
Row River	camping/day use	
Siuslaw River	camping/day use	
Upper Lake Creek	camping/day use	
Other SRMAs		Ongoing in all Resource Areas. Potential to develop additional SRMAs that would be consistent with the other provisions of the PRMP.
Total: 6 SRMAs		

Table 10 - Proposed Recreation Trails and Sites in the Eugene District (continued)

Proposed Rec Sites/Areas	Type of Site	Comments
Blachly-Lane Flume Trailhead	day use	
Culp Creek Trailhead	day use	
Disston Trailhead	day use	
Doe Creek	day use	
Esmond Lake	camping	
Edwards Creek	camping/day use	
Fall Creek Reservoir	day use	
Fall Creek	day use	
Frying Pan	camping	
Haight Creek*	camping/day use	
Heceta Sand Dunes	day use (PD lands)	proposed ACEC/ONA
Homestead	camping	
Hult Pond	camping/day use	
Lake Creek*	camping/day use	
Marten Rapids*	day use	R&PP lease
Mosby Creek Trailhead	day use	
N. Fork Gate Creek	camping/day use	
Oxbow	camping	
Overland Trailhead	day use	
Red Bridge Trailhead	day use	
Saleratus	day use	
Sharps Creek Expansion	camping/day use	
Sidog	camping/day use	
Siuslaw Bend	camping/day use	
Whitewater Park*	day use	R&PP lease
Wolf Creek Falls	day use	
Other recreation sites		Ongoing in all Resource Areas. Potential to develop additional recreation sites that would be consistent with the other provisions of the PRMP.

Total: 26 sites

Note: Cannery Dunes ACEC/ONA, Mohawk Wayside, and Row River Environmental Education Area were all dropped as proposed recreation sites in the PRMP.

[1]Miles are rounded from GIS calculations, and reflect total trail miles on BLM and private land. The type of trail, hiking, nonmechanical, etc. will deterimined when preparing the trail plan.

*These sites are also listed as existing because they have been operational in the past.

Management Actions/Direction

Address Visual Resource Management issues when conducting watershed analysis.

Use the visual resource contrast rating system during activity and/or project level planning to determine what and how proposed activities would meet VRM objectives. Use mitigation measures to reduce visual contrasts.

Manage VRM Class II lands for low levels of change to the characteristic landscape. Management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Manage VRM Class III lands for moderate levels of change to the characteristic landscape. Management activities may attract attention but should not dominate the view of the casual observer. Changes

should repeat the basic elements of form, line color, texture, and scale found in the predominant natural features of the characteristic landscape. Refer to the Rural Interface section for management constraints.

Manage VRM Class IV lands for moderate levels of change to the characteristic landscape. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the effect of these activities through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture. No specific timber management constraints would apply to lands managed for VRM Class IV objectives. However, mitigation of visual effects would be incorporated where consistent with efficient timber harvest or other management activities.

Wild and Scenic Rivers

Objectives

Manage designated segments of the National Wild and Scenic Rivers System by protecting their Outstandingly Remarkable Values (ORV) and maintain and enhance the natural integrity of river related values.

Find important and manageable river segments suitable for designation where such designation would contribute to the National Wild and Scenic Rivers System.

Protect Outstandingly Remarkable Values identified on BLM administered lands within the study corridors of eligible river segments studied and found suitable for inclusion as components of the National Wild and Scenic Rivers System.

Provide interim protective management for ORV identified on BLM administered lands along river segments determined eligible but not studied for inclusion as components of the National Wild and Scenic Rivers System.

Manage the natural integrity of river related values to maintain or enhance the highest tentative classification determined for rivers found eligible or studied for suitability.

Land Use Allocations

River Segments Found Suitable for Inclusion in the National System:

River Segment	Class.	Miles	BLM Acres
Siuslaw River, Segment B	Rec.	46	4,390
Siuslaw River, Segment C	Rec.	13	1,151
McKenzie River, Segment A	Rec.	11	1,194

See Map 4 for segment locations. The corridor width for rivers found eligible or studied for suitability is generally defined as one-quarter mile on either side of the river (approximately one-half mile wide corridor). Technically these are not land use allocations at this time. If Congress passes legislation to designated them, they will be automatically added to the allocations of the resource management plan.

Several river segments were found eligible but not assessed for suitability. BLM ownership along these segments ranges from less than 1 percent to 14 percent. These segments were placed in interim management and are shown on Map 3-9 and in Table 3-55 (Chapter 3, PRMP/FEIS) and are listed as follows:

Fall Creek	Lake Creek, Segment B
Nelson Creek	McKenzie River, Segment B
Willamette River	North Fork Gate Creek
	South Fork Gate Creek

Management Actions/Direction

Provide interim protective management on BLM administered land within the one-half mile corridor so that no actions would be authorized that would adversely effect the identified Outstandingly Remarkable Values, which resulted in rivers being found eligible/suitable. This interim protective management would also comply with the Aquatic Conservation Strategy. Interim protection on river segments found eligible or suitable for inclusion as components of the National Wild and Scenic Rivers System would include interim protective management for potential segments and would:

- Exclude timber harvest in the Riparian Reserves
- Restrict development of leasable and salable minerals

- Protect the segment's free flowing values
- Protect the segment's identified Outstandingly Remarkable Value(s)

Apply the standards set forth in the "Management Guidelines and Standards for National Wild and Scenic Rivers" to segments under interim management.

Exploration and development of locatable minerals would be conducted in a manner that would prevent unnecessary and undue degradation on all river segments designated. Salable mineral development would not be allowed on designated river segments unless the authorized officer determines that impacts from a proposed development are acceptable or can be adequately mitigated. Leasable mineral activities would be subject to a controlled surface use special leasing stipulation.

Upon completion of the ROD for this resource management plan, release from interim protection all river segments found not suitable for inclusion as components of the national system.

Rural Interface Areas

Objectives

Consider the interests of adjacent and nearby rural landowners, including residents, during analysis, planning, and monitoring related to managed Rural Interface Areas (RIA). These interests include personal health and safety, improvements to property,and quality of life. Determine how landowners might be or are affected by activities on BLM administered lands.

Land Use Allocations

Managed Rural Interface Areas encompass approximately 6,800 acres of BLM administered land within one-quarter mile of private lands zoned for 1-5 acre or 5-20 acre lots located throughout the District (refer to Table 11 for acres, and Map 2-16 in the PRMP/FEIS for locations).

Management Actions/Direction

Work with local governments to (1) improve the BLM database regarding private land planning/zoning designations and residential development near BLM administered land; (2) provide information to local planners regarding BLM land allocations in RIAs and the management objectives and guidelines for these lands; (3) develop design features and mitigation measures that will minimize the possibility of conflicts between private and Federal land management; and (4) monitor the effectiveness of design features and mitigation measures in RIAs.

As a part of watershed analysis and project planning, work with local individuals and groups, including fire protection districts, to identify and address concerns related to possible impacts of proposed management activities on Rural Interface Areas.

Use design features and mitigation measures to avoid/minimize impacts to health, life and property, and quality of life. Examples include different harvest regimes, hand application rather than aerial application of herbicides and pesticides, and hand piling slash for burning as opposed to broadcast burning. Monitor the effectiveness of design features and mitigation measures.

Table 11 - BLM Acres in Rural Interface Areas (RIA)

	Within 1/4 Mile of:		Within 1/2 mile of:	
County	0 to 5 Acre Lots	6 to 20 Acre Lots	0 to 5 Acre Lots	6 to 20 Acre Lots
Lane	4,485	2,156	14,652	4,557
Linn	38	89	181	260
Totals	**4,523**	**2,245**	**14,833**	**4,817**

Eliminate or mitigate public hazards.

Manage RIA using VRM Class III standards (unless an area is classified as VRM Class II). This will allow moderate levels of change to the landscape without dominating the view of the casual observer.

Use dust abatement measures on roads during BLM timber harvest operations or other BLM commodity hauling. Encourage and enforce dust abatement measures when haulers use BLM roads under permits and right-of-way agreements.

Reduce natural fuel hazards on BLM administered lands in Rural Interface Areas.

Forest management practices may be constrained within RIA as follows:

- Harvest regimes will leave 12-18 trees per acre, not evenly distributed, at final harvest.
- Permit only hand piling and burning.
- Protect streams utilized for domestic water sources (see Water section in this chapter).

Socioeconomic Conditions

Objectives

Contribute to local, State, National, and international economies through sustainable use of BLM managed lands and resources and use of innovative contracting and other implementation strategies.

Provide amenities (recreation facilities, protected special areas, and high quality fisheries) that enhance communities as places to live and work.

Land Use Allocations

There are no specific land use allocations related to socioeconomic conditions. However, allocations such as the General Forest Management Area (GFMA) and Adaptive Management Area (AMA) can assist in meeting socioeconomic objectives.

Management Actions/Direction

Support and assist the State of Oregon Economic Development Department's efforts to help rural, resource based communities develop and implement alternative economic strategies as a partial substitute for declining timber based economies. Aid and support could include: (1) increased coordination with State and local governments and citizens to prioritize BLM management and development activities; (2) increased emphasis on management of special forest products; and (3) recreation development and other activities identified by BLM and the involved communities as benefiting identified economic strategies.

Improve wildlife and fish habitat to enhance hunting and fishing opportunities and to increase the economic returns generated by these activities.

Improve viewing opportunities for Watchable Wildlife and Celebrating Wildflowers.

Plan and design forest management activities to produce a sustained yield of products to support local and regional economic activity. A diversity of forest products (timber and nontimber) will be offered to support large and small commercial operations and provide for personal use.

Recreation

Objectives

Provide a wide range of developed and dispersed recreation opportunities that contribute to meeting projected recreation demand within the planning area.

Manage scenic, natural, and cultural resources to enhance visitor recreation experience expectations and produce satisfied public land users.

Support locally sponsored tourism initiatives and community economic strategies by providing recreation projects and programs that benefit short and long-term implementation.

Manage Off Highway Vehicle (OHV) use on BLM administered land to protect natural resources, provide visitor safety, and minimize conflicts among various users.

Enhance recreation opportunities provided by existing and proposed Watchable Wildlife areas, wildflower areas, and National Back Country Byways.

Continue to provide nonmotorized recreation opportunities and create additional opportunities where consistent with other management objectives.

Manage special and extensive recreation management areas in a manner consistent with BLM's Recreation 2000 Implementation Plan and Oregon-Washington Public Lands Recreation initiative.

Land Use Allocations

Recreation & Public Purpose Leases: There are currently 4 Recreation & Public Purpose Leases (R&PP) leases for recreational facilities within the District - two with Lane County, one with Linn County, and one with the State of Oregon. The 2 leases with Lane County, (Whitewater and Marten Rapids County Parks) may be relinquished in the near future and, if so, would be managed as part of the McKenzie River Special Recreation Management Area (SRMA) in accordance with the provisions of the McKenzie River Recreation Area Management Plan (RAMP). Unanticipated events may lead to the development of other R&PP leases, in which case, they would be consistent with the other provisions of this RMP.

Special Recreation Management Areas: In addition to the continuing management of the only existing SRMA, Shotgun Recreation Site, 6 new SRMAs would be designated. Constraints and opportunities would be identified through the watershed analysis and would be consistent with the objectives of the Aquatic conservation strategy. The 6 new SRMAs are;

Upper Lake Crk.	Gilkey Crk.	McKenzie R.
Lower Lake Crk.	Row River	Siuslaw River

Note: The ROW River SRMA boundary has been adjusted on the northern end to reflect the boundaries of watershed analysis. The focus of the northern portion is on developing a major trail system. The southern portion of the Row River SRMA remains the same with the focus on the proposed Sharps Creek Recreation mining area.

Recreation Sites/Facilities: Continue management of the existing sites listed on Table 12. Five of these sites (Turner Creek, Lake Creek, Whitewater, Marten Rapids, and Haight Creek) are currently closed. These sites were closed during the early 1980s due to vandalism, budget constraints, and isolated locations (in some instances). These sites were retained for future recreational opportunities when management conditions were favorable. All could be reopened except Turner Creek, which will be returned to the land base. With other nearby recreation facilities, Turner Creek's location does not make it a valued choice for reopening.

Development of 22 proposed additional recreational sites could be accomplished within management needs. These sites would meet a variety of different recreational needs. Refer to Table 10 for a list of proposed sites. All existing trails would remain and 26 proposed trails would be retained for future development. All proposed sites, and facilities are not limited to those listed in the tables. Unanticipated events may lead to the development of additional sites, and facilities, in which case they would be consistent with the other provisions of this RMP. Constraints and opportunities would be identified through the watershed analysis and would be consistent with the objectives of the Aquatic Conservation Strategy. Refer to Maps 5 and 6 for locations.

Back Country Byways: There are no existing Back Country Byways within the District but 9 proposed Back Country Byways would be designated. Unanticipated events may lead to the development of additional sites, and facilities, in which case they would be consistent with the other provisions of this RMP. Constraints and opportunities would be identified through the watershed analysis and would be consistent with the objectives of the Aquatic Conservation Strategy. These Byways are listed below under each respective Resource Area:

McKenzie	Coast Range	South Valley
Coburg Hills	Alsea	Calapooya Divide
Shotgun Cr.	Oxbow	Blue Mountain
Lost Creek	Siuslaw R.	
	Whittaker Cr. Area	

Off Highway Vehicle Use Areas: Existing OHV closures would continue within existing ACECs and in the Shotgun Recreation SRMA to protect their resource values. Additional closures would occur in some proposed ACECs and in one environmental education area to also protect resource values. These closures would be determined upon completion of the District's OHV plan based upon watershed analysis and within the constraints of the

Table 12 - Existing Recreation Trails and Sites in the Eugene District

Existing Trails	Type of Trail
Eagle's Rest	Hiking (0.7 mile[1])
FS Trail #3462 (portion on BLM)	Hiking (0.2 mile)
Row River	Hiking/bicycling/equestrian (14 miles)
Shotgun Trail System	Hiking (5.7 miles)
Tyrrell Forest Succession Interpretive	Hiking (1 mile)
Whittaker Creek Old Growth Ridge	Hiking (1 mile)
Total: 6 trails (23 miles)	

Existing SRMA	Type of Site
Shotgun Recreation Site	day use

Existing Sites/Areas	Type of Site
Clay Creek Campground	camp/day use
Willamette Greenway Tract (leased to State)	Greenway use (R&PP lease)
Haight Creek Campground*	camp/day use (closed)
Lake Creek Campground*	camp/day use (closed)
McKercher Park (County Park)	day use (R&PP lease)
Marten Rapids (County Park)*	day use (closed, R&PP lease)
Rennie Landing	boat landing
Sharps Creek Campground	camp/day use
Silver Creek Landing	boat landing
Taylor Landing	boat landing
Whitewater Park (County Park)*	day use (closed, R&PP lease)
Whittaker Creek Campground	camp/day use
Whittaker Creek Landing	boat landing
Total: 13 sites	

Note: It was decided in the PRMP to keep Turner Creek closed and return it to the land base.

[1]Miles are rounded from GIS calculations and reflect total trail miles on BLM and private land
*Also on Table 11 as these sites are currently not maintained and closed, and are proposed to be reopened. Refer to the text.

Aquatic Conservation Strategy. Two 40-acre sand dune lots would be designated open and the rest of the District would be designated as limited.

Management Actions/Direction for Riparian Reserves

Design new recreational facilities within Riparian Reserves, including trails and dispersed sites to meet Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impacts to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.

Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.

Management Actions/Direction for Late-Successional Reserves

Retain and maintain existing recreation developments consistent with other management actions/direction for Late-Successional Reserves (LSR).

Use adjustment measures, such as education, use limitations, traffic control devices, or increased maintenance, when dispersed or developed recreation practices retard or prevent attainment of LSR objectives.

Neither construct nor authorize new facilities that may adversely affect LSRs.

Review on a case-by-case basis new recreation development proposals. They may be approved when adverse effects can be minimized and mitigated.

Locate new recreation developments to avoid degradation of habitat and adverse effects on identified late-successional species.

Remove hazard trees along trails and in developed recreation areas if mitigating measures (e.g., for wildlife tree) can not accomplish visitor safety.

Management Actions/Direction for All Land Use Allocations

In addition to the guidelines for Late-Successional and Riparian Reserves, manage recreation resources in accordance with the following guidelines:

Recreation & Public Purpose Leases (R&PP) - Continue to manage current R&PP leases within the lease guidelines. The BLM lands within the State Willamette River Greenway would be managed to comply with the State's regulations. The County R&PP leases would be managed to comply with their stipulations. When existing leases expire, reevaluate their relevance, on a case-by-case basis in light of current BLM management objectives. Develop future R&PP leases when necessary within the guidelines of this RMP.

Special Recreation Management Areas - Manage SRMAs in a manner consistent with BLM's Recreation 2000 Implementation Plan and Oregon-Washington Public Lands Recreation Initiative. Address special recreation management area issues and prioritized projects in watershed analyses. Prepare RAMPS or Activity Plans for the proposed SRMAs and related project plans as needed. Activity Plans could be developed for other recreation sites or areas on a resource areawide basis, a logical geographic area, or for individual sites/areas as appropriate.

Recreation Sites and Trails - Continue to operate and maintain developed recreation sites/facilities and developed trails. Some sites/facilities and trails could be maintained and managed through partnerships or agreements with other agencies or groups (see Table 11 for a listing of these sites/facilities and trails).

Develop potential sites/facilities and trails as funding becomes available. Develop these facilities and trails to minimize adverse effects to other resource values (see Table 10).

Continue mining withdrawals for existing developed recreation sites and pursue new mining withdrawals for proposed recreation sites. Pursue revocation of existing withdrawal for Turner Creek site.

Manage timber within developed recreation sites for purposes of removing hazardous trees, providing space for additional facilities and activity areas, and providing desired regeneration of the forest canopy within the integration of management of other resources. A wildlife assessment will be considered prior to tree removal unless safety issues prevail.

Continue to provide nonmotorized recreation opportunities and create additional opportunities where consistent with other management objectives.

Extensive Recreation Management Areas - Manage ERMAs in a manner consistent with BLM's Recreation 2000 Implementation Plan and Oregon-Washington Public Lands Recreation Initiative. Through watershed analysis address extensive recreation management area issues and prioritized projects. Prepare project plans as needed.

Back Country Byways - Designate and facilitate use of 9 new Back Country Byways. Coordinate management of Back Country Byways with County governments, chambers of commerce, regional tourism alliances, and the U. S. Forest Service.

Off Highway Vehicles - Work with OHV groups to develop areas specifically for OHV activity.

Develop an OHV plan that identifies areas, roads and trails for OHV use. This OHV plan would be adopted through a formal designation action that will specify where, when, how and what types of OHVs may be used on the District's public lands. Impacts on special status species and wildlife habitats would be part of the development of the analysis pursued during the process. Watershed analysis and the Aquatic Conservation Strategy will also guide the development of this plan. BLM would seek active cooperation in the development of the plan from all affected public parties and other agencies (see Appendix F for more information).

Recreational Mining - The portions of the Row River SRMA (formerly named Sharps Creek SRMA) that were proposed for withdrawal in the RMP/EIS from future entry under the mining laws subject to valid existing rights, will be formally withdrawn. Lands within the proposed withdrawal area (shown on Map 7) not affected by valid mining claims will be available for recreational mining. A Recreation Area Management Plan will be prepared with public input and will be available for public comment prior to establishment of the recreation facility (see Appendix L).

General: Enhance travel and recreation management through increased emphasis on interpretive and informational signs, maps and brochures to support State and local tourism strategies.

Manage recreation areas to mitigate disturbance to a number of fungus and lichen if species are known to occur within these areas. Follow survey and management actions/direction as stated in the Land Use Allocations and Resource Programs sections.

Timber Resources

Objectives

- Provide a sustainable supply of timber and other forest products.
- Manage developing stands on available lands to promote tree survival and growth and to achieve a balance between wood volume production, quality of wood, and timber value at harvest.
- Manage timber stands to reduce the risk of stand loss from fires, animals, insects, and diseases.
- Provide for salvage harvest of timber killed or damaged by events such as wildfire, windstorms, insects, or disease, consistent with management objectives for other resources.

Land Use Allocations

Acres available for scheduled timber harvest are as follows:

Matrix

General Forest Management Areas 37,900
(including VRM Class II,
RIA, TPCC restricted, and District
Designated Reserves)

Connectivity/Diversity Blocks 23,800

Adaptive Management Area 5,500

Lands with no scheduled harvest are as follows:

Late-Successional Reserves (LSR)
(See discussion of these in the previous section, Silviculture Appendix D, Wildlife section, and Special Status/SEIS Special Attention Habitat section.)

Riparian Reserves
(See Special Status/SEIS Special Attention Habitat section)

Management Actions/Direction For Matrix (General Forest Management Area and Connectivity/Diversity Blocks)

Determine the probable level of harvest based on the productivity of lands available for timber production and on the silvicultural treatments planned for these lands.

Maintain an early and mid-seral forest and plant communities/associations across the Matrix.

Apply silvicultural systems that will produce, over time, forests that have desired species composition, structural characteristics, and distribution of seral or age classes. All silvicultural systems will be sustainable, economically practical, and capable of maintaining the long-term health and productivity of the forest ecosystem (see Appendix E for discussion of silvicultural systems and harvest methods).

Develop plans for the locations and specific designs of timber harvests and other silvicultural treatments within the framework of watershed analyses.

Select logging systems based on the suitability and economic efficiency of each system for the successful implementation of the silvicultural prescription, for protection of soil and water quality, and for meeting other land use objectives.

Schedule regeneration harvests to assure that, over time, harvest will occur in stands at or above the age of volume growth culmination (i.e., Culmination of Mean Annual Increment). This refers to the age range that produces maximum average annual growth over the lifetime of a timber stand. In the planning area, culmination usually occurs between 70 and 90 years of age but varies due to stand conditions and treatments. During the first decade, regeneration harvests may be scheduled in stands as young as 56 years old, in order to develop a desired age class distribution across the landscape and to provide some commodity output.

Base silvicultural treatments and harvest designs on the functional characteristics of the ecosystem and on the characteristics of each forest stand and site. Treatments will be designed, as much as possible, to match historical stand conditions such as species composition. The principles of integrated pest management and integrated vegetation management will be employed to avoid the need for direct treatments. Herbicides will be used only as a last resort. Utilize genetically improved planting stock when available (see Forest Genetics Program, Appendix M). Maintain long-term soil productivity and protect water and soil resources. Implement Eugene District's Best Management Practices (see Appendix C for a detailed discussion of BMPs).

Encourage full utilization of harvested timber while reserving structural components, such as snags and coarse woody debris, consistent with objectives for wildlife management, biological diversity, site productivity, and compatible with safety, fire concerns, and watershed objectives. Plan harvest of marketable hardwood stands in the same manner as conifer stands, if the land is not otherwise constrained from timber management. Volume from projected hardwood harvest will be included in the probable sale quantity estimate. Where hardwood trees became established following previous harvest of conifers, plan to reestablish a conifer stand on the site.

Retain late-successional forest patches in landscape areas where little late-successional forest persists. This management action/direction will be applied in 5th field watersheds (20 to 200 square miles) in which Federal forest lands are currently comprised of 15 percent or less late-successional forest. The assessment of 15 percent will include all Federal land allocations in a watershed. Within such an area, protect all remaining late-successional forest stands. Protection of these stands could be modified in the future when other portions of a watershed have recovered to the point where they could replace the ecological roles of these stands.

Provide a renewable supply of large down logs well-distributed across the Matrix landscape in a manner that meets the needs of species and provides for ecological functions. Down logs will reflect the species mix of the original stand.

Management Actions/Direction for Timber Harvest

Declare an annual Allowable Sale Quantity (ASQ) of 36 million board feet (6.1 million cubic feet).

The Allowable Sale Quantity for the Resource Management Plan is an estimate of annual average timber sale volume likely to be achieved from lands allocated to planned, sustainable harvest. Harvest of this approximate volume of timber is considered sustainable over the long-term. This is based on assumptions that the available land base remains fixed, and that funding is sufficient to make planned

investments in timely reforestation, plantation maintenance, thinning, genetic selection, forest fertilization, timber sale planning, related forest resource protection, and monitoring.

The Allowable Sale Quantity represents neither a minimum level that must be met nor a maximum level that cannot be exceeded. It is an approximation because of the difficulty associated with predicting actual timber sale levels over the next decade, given the complex nature of many of the management actions/direction. It represents BLM's best assessment of the average amount of timber likely to be awarded annually in the planning area over the life of the plan, following a start-up period. The actual sustainable timber sale level attributable to the land allocations and management direction of the Resource Management Plan may deviate by as much as 20 percent from the identified Allowable Sale Quantity.

As inventory, watershed analysis, and site-specific planning proceed in conformance with that management direction, the knowledge gained will permit refinement of the Allowable Sale Quantity. The separable component of the Allowable Sale Quantity attributable to lands in Key Watersheds carries a higher level of uncertainty due to the greater constraints of Aquatic Conservation Strategy objectives and the requirement to prepare watershed analyses before activities can take place.

During the first several years, the annual Allowable Sale Quantity will not likely be offered for sale. The RMP represents a new forest management strategy. Time will be required to develop new timber sales that conform to the Resource Management Plan.

Management Actions/Direction for General Forest Management Area

Design silvicultural systems to meet a high level of timber production within a framework of mitigating measures and project design features which protect environmental quality, special status species and habitats, biological diversity, and wildlife habitat.

Retain snags within a timber harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels. Meet the 40 percent minimum throughout the Matrix with per acre requirements met on average areas no larger than 40 acres.

Retain 6-8 green conifer trees per acre after regeneration harvest to provide a legacy bridging past and future forests. Retained trees will be distributed in variable patterns (e.g., single trees, clumps and stringers) to contribute to stand diversity.

In addition to the green tree retention management action/direction, retain green trees for snag recruitment in harvest units where there is an identified, near-term (less than 3 decades) snag deficit. These trees do not count toward green-tree retention requirements.

Perform commercial thinnings that are designed to maintain the volume productivity of stands (see Silvicultural Appendix E).

In a cutting area, leave a minimum of 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. Logs less than 20 feet in length will not be credited toward this total. Existing decay class 1 and 2 count toward this requirement. Down logs will reflect the species mix of the original stand. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

Management Actions/Direction for Connectivity/Diversity Blocks

Maintain 25 to 30 percent of each block in late-successional forest at any time. The percentage of habitat will include habitat in other land use allocations, such as Riparian Reserves. Blocks may be comprised of contiguous or noncontiguous BLM administered land. To the extent possible, the size and arrangement of forest habitat within a block should provide effective and dispersal habitat for late successional species.

Plan to regeneration harvest at a rate of approximately 1/15 of the available acres in the connectivity part of a sustained yield unit per decade. Because of the limited size of operable areas within any given block, up to three decades of harvest could be removed at any one time from a single block in order to make viable harvest units. Eventually each connectivity block will have 4 to 5 different 10-year age classes represented. The future desired condition across the entire sustained yield unit would

have up to 15-16 different 10-year age classes represented.

Perform density management thinnings to accelerate growth of trees, which would later provide large-diameter snags and down logs, to promote development of understory vegetation and multiple canopy layers; to produce larger, more valuable logs; to harvest mortality of small trees as the stand develops; to maintain good crown ratios and stable, wind firm trees; and to manage species composition (see Silvicultural Appendix E).

Retain 12-18 green conifer trees per acre when an area is regeneration harvested. Distribute the retained trees in variable patterns (single trees, clumps, and stringers) to contribute to stand diversity. The management goal for the retained trees and subsequent density management would be the recovery of old growth conditions in approximately 100 to 120 years.

Leave 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. Logs less than 20 feet in length will not be credited toward this total. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of original stand. Where this management action/ direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

Central Cascades Adaptive Management Area

Manage for a level of timber harvest in accordance with an Adaptive Area Management Plan developed in an interagency setting with extensive public participation.

Manage young and mature stands to accelerate development of late-successional conditions, particularly in an experimental or research setting.

Develop and test innovative and experimental sale and harvesting methods, and provide a geographic focus for demonstrating these techniques. As new techniques are proven, expand these to locations outside the Adaptive Management Area.

To the extent allowed by regulation, ensure local processing of timber resources to support local communities, providing social and economic benefits to these areas.

Mitigate the effects of reduced harvest levels to communities by encouraging the local development of innovative approaches to balancing economic and social needs with management on a landscape or ecosystem basis.

For additional discussion of Eugene District AMAs see Adaptive Management Area.

Special Forest Products

Objectives

Manage for the sustainable production and sale of Special Forest Products (SFP) when demand is present and where actions taken are consistent with primary objectives for the land use allocation.

Use the principles of ecosystem management to guide the management and harvest of Special Forest Products.

Land Use Allocations

No land use allocations are made specifically for Special Forest Products.

Management Actions/Direction for All Land Use Allocations

Allow harvest of SFPs throughout the District but complete a NEPA assessment to help determine if additional restrictions may be necessary for specific areas and species.

Establish specific guidelines for the management of individual SFPs using interdisciplinary review as needed. Management guidelines will be based on the ecological characteristics of the SFP species and the requirements of associated plant, animal, and fungal species. Guidelines will include provisions that minimize changes in site productivity. Monitoring of harvest activities and the effects of harvest will be part of SFP management. Feasibility to harvest newly identified SFP species will receive interdisciplinary review.

In appropriate areas consistent with special habitat values (e.g., the Matrix) manage natural hardwood stands for the continued production and sale of hardwood timber and products.

Management Actions/Direction for Riparian Reserves

Where catastrophic events result in degraded riparian conditions, allow fuelwood cutting consistent with Aquatic Conservation Strategy objectives.

Management Actions/Direction for Late-Successional Reserves

Permit fuelwood gathering only in existing cull decks, in areas where green trees are marked by silviculturists for thinning, in areas where blowdown is blocking roads, and in recently harvested timber sale units where down material will impede scheduled post-sale activities or pose an unacceptable risk of future large scale disturbance. In all cases, these activities will comply with management actions/ direction for Late-Successional Reserves.

Evaluate whether Special Forest Product harvest activities have adverse effects on Late-Successional Reserve objectives. Prior to selling Special Forest Products, ensure resource sustainability and protection of other resource values such as special status plants or animal species. Where Special Forest Products activities are extensive, evaluate whether they have significant effects on late-successional habitat. Restrictions may be appropriate in some cases.

Energy and Minerals

Objectives

Maintain exploration and development opportunities for leasable and locatable energy and mineral resources.

Provide opportunities for extraction of salable minerals by other government entities, private industry, individuals, and nonprofit organizations.

Continue to make available mineral resources on the reserved Federal mineral estate.

Land Use Allocations

All Minerals - The reserved Federal mineral estate (Federal minerals underlying nonfederal surface estate) will continue to be open for mineral exploration and development.

Leasable Minerals - Lands under Fern Ridge and Lookout Point Reservoir will be opened to oil and gas and geothermal leasing. By law, all lands within city limits, including the Danebo Office site, some of the West Eugene Wetlands Project lands, and a 40-acre tract north of Florence, Oregon, are closed to oil and gas leasing. The Dorena Seed Orchard and other acquired lands (including the Walton Maintenance Site) will be open to mineral leasing. All other lands in the operating area will be open for oil and gas or geothermal leasing (refer to Map 7).

Locatable Minerals - Lands under Fall Creek, Fern Ridge, and Lookout Point Reservoirs, and the Oregon Islands National Wildlife Refuge (NWR) will remain closed to locatable mineral entry. Lands with acquired land status such as the Walton Maintenance Site and the Dorena Seed Orchard are closed to locatable mineral entry by law. The Tyrrell Seed Orchard; Danebo Office Site and other West Eugene Wetlands Project lands; Recreation & Public Purposes (R&PP) leases; existing and future Recreation Sites; Special Areas; the Whites Creek Maintenance Site; and McGowan Environmental Education Area (EEA) will be closed to future locatable mineral entry. Portions of the Row River Special Recreation Management Area (SRMA), Lower and Upper Lake Creek SRMAs, and McKenzie River SRMA will be closed to future locatable mineral entry, subject to valid existing rights. All other lands in the operating area will be open for locatable mineral exploration and development (refer to Map 8).

Salable Minerals - Lands under Fall Creek, Fern Ridge, and Lookout Point Reservoirs will be closed to salable mineral disposals. The Oregon Islands NWR; Danebo Office Site; Walton and Whites Creek Maintenance Sites; Tyrrell and Dorena Seed Orchards; progeny test sites; Regional Forest Nutritional Study Installations; R&PP leases; Recreation Sites; Special Areas (except Low Elevation Headwaters of the McKenzie River); great blue heron rookeries and osprey nest sites will also be closed to salable mineral development. All other lands in the operating area will be open for salable mineral development if such development does not conflict with directives requiring protection of other surface resources (refer to Map 9).

Management Actions/Direction

General - See Tables 13, 13a, 14, and 15 for acres affected by the following Management Actions/ Direction and for restrictions on energy and mineral activities. The acreages given in these tables are approximate. Overlapping restrictions from different land use allocations have been considered and, where this occurs, the most restrictive constraint was used. See Appendix G for leasing stipulations and Appendix H for operating standards pertinent to locatable minerals. Salable minerals will be managed consistent with Appendix I.

Management Actions/Direction for Riparian Reserves

The following management actions/direction differ from the standards and guidelines in the SEIS/ROD, since the standards and guidelines are not all implementable under current laws and regulations. The stronger standards and guidelines in the SEIS/ ROD will be adopted at such time as changes in current laws and/or regulations authorize their implementation. The Standards and Guidelines from the SEIS/ROD are referenced in Appendix A.

Any proposed locatable mining operation in Riparian Reserves, other than notice level or casual use, require the following actions by the operator to be consistent with 43 CFR 3809:

> Prepare a Plan of Operations, including a reclamation plan and reclamation bond for all mining operations in Riparian Reserves. Such plans and bonds will address the costs of removing facilities, equipment, and materials; recontouring of disturbed areas to an approved topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvaging and replacing topsoil; and revegetating to meet Aquatic Conservation Strategy objectives.

Locate structures, support facilities, and roads outside Riparian Reserves. If no alternative to siting facilities in Riparian Reserves exists, locate in a way compatible with Aquatic Conservation Strategy objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Roads will be constructed and maintained to meet road management standards and to minimize damage to resources in Riparian Reserves. When a road is no longer required for mineral or land management activities, it will be reclaimed. In any case, access roads will be constructed consistent with 43 CFR 3809 and acceptable road construction standards and will minimize damage to resources in Riparian Reserves.

Avoid locating solid and sanitary waste facilities in Riparian Reserves. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Reserves exists, and releases can be prevented, and stability can be ensured, then:

> Analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.
>
> Locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long-term, prohibit such facilities in Riparian Reserves.
>
> Reclaim waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.
>
> Monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

Require reclamation bonds adequate to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

Where an existing operator is in noncompliance at the notice level (i.e., causing unnecessary or undue degradation), require actions similar to those stated above to meet the intent of 43 CFR 3809.

For leasable minerals, prohibit surface occupancy for oil, gas, and geothermal exploration and development activities where leases do not exist. Where possible, adjust the stipulations in existing leases to eliminate impacts that retard or prevent the attainment of Aquatic Conservation Strategy objectives consistent with existing lease terms and stipulations.

Allow development of salable minerals, such as sand and gravel, within Riparian Reserves only if Aquatic Conservation Strategy objectives can be met.

Develop inspection and monitoring requirements and include such requirements in exploration and mining

Table 13 - Oil and Gas Lease Restrictions (1,000 acres)

Mineral Restrictions	Mineral Potential Low/Unknown	Moderate	High	Total
Closed: Nondiscretionary[1]	0	<0.1	0	<0.1
Closed: Discretionary	0	0	0	0
Open: No Surface Occupancy[2]	56	121	0	177
Open: Standard Lease Terms	0	0	0	0
Open: Additional Restrictions[3]	43	95	0	138

[1]Lands within city limits.

[2]Fall Creek Reservoir; Fern Ridge Reservoir; Lookout Point Reservoir; Oregon Islands National Wildlife Refuge; Tyrrell and Dorena Seed Orchards; Walton and Whites Creek Maintenance Sites; Land Use Authorizations; Recreation Sites; Special Areas; Riparian Reserves; great blue heron rookeries; osprey nest sites.

[3]Special Recreation Management Areas; Suitable and Eligible Recreational Rivers; Powersite Withdrawals; Corps of Engineers Withdrawals; VRM Class II lands; Fragile Slopes; mineral springs utilized by band-tailed pigeons; Federal Mineral Estate Only; Late-Successional Reserves; Special Status Species.

Table 13a - Geothermal Resource Availability (1,000 acres)

Mineral Restrictions	Mineral Potential Low/Unknown	Moderate	High	Total
Closed: Nondiscretionary[1]	0	0	0	0
Closed: Discretionary	0	0	0	0
Open: No Surface Occupancy[2]	177	0	0	177
Open: Standard Lease Terms	0	0	0	0
Open: Additional Restrictions[3]	139	0	0	139

[1]Fall Creek Reservoir; Fern Ridge Reservoir; Lookout Point Reservoir; Oregon Islands National Wildlife Refuge; Tyrrell and Dorena Seed Orchards; Walton and Whites Creek Maintenance Sites; Land Use Authorizations; Recreation Sites; Special Areas; great blue heron rookeries; osprey nest site; Riparian Reserves.

[2]Special Recreation Management Areas; Suitable and Eligible Recreational Rivers; Powersite Withdrawals; Corps of Engineers Withdrawals; VRM Class II lands; Fragile Slopes; mineral springs used by band-tailed pigeons; Federal Mineral Estate only; Late-Successional Reserves; Special Status Species.

Table 14 - Locatable Mineral Availability (1,000 acres)

Mineral Restrictions	Mineral Potential Low/Unknown	Moderate	High	Total
Closed: Nondiscretionary[1]	<0.4	0	0	<0.4
Closed: Discretionary[2]	9	6	<0.3	<15.3
Open: Standard Requirements	281	7	2.6	290.6
Open: Additional Restrictions[3]	9.5	<0.5	0	<10.0

[1]Fall Creek Reservoir; Fern Ridge Reservoir; Lookout Point Reservoir; Oregon Islands National Wildlife Refuge; Dorena Seed Orchard; Walton Maintenance Site; Other Lands with Acquired Land Status.

[2]Pending BLM applications for withdrawal; R&PP classifications; Danebo office site; Tyrrell Seed Orchard; Recreation Sites; Special Areas; Whites Creek Maintenance Site.

[3]Progeny Test Sites; Regional Forest Nutritional Study Installations; Community Pits; Designated and Suitable Recreational River segments; Threatened and Endangered Species; Federal Mineral Estate only; Powersite Classifications (placer operations only).

Table 15 - Salable Mineral Availability (1,000 acres)

Mineral Restrictions	Mineral Potential Low/Unknown	Moderate	High	Total
Closed: Nondiscretionary[1]	<0.1	0	0	<0.1
Closed: Discretionary[2]	8	0.4	<0.7	<9.1
Open: Standard Requirements	0	<0.1	<0.1	<0.2
Open: Additional Restrictions[3]	292	12	3	307

[1]Fall Creek Reservoir; Fern Ridge Reservoir; Lookout Point Reservoir; Oregon Islands National Wildlife Refuge.

[2]Danebo Office site; Tyrrell and Dorena Seed Orchards; Walton and Whites Creek Maintenance Sites; Progeny Test sites; Regional Forest Nutritional Study Installations; R&PP Classifications; Recreation sites; Special Areas Except Low Elevation Headwaters of the McKenzie River; great blue heron rookeries; osprey nest sites.

[3]Federal Mineral Estate Only; Special Recreation Management Areas; VRM Class II lands; mineral springs used by band-tailed pigeons; Special Status Species; Suitable and Eligible Recreational Rivers; Riparian Reserves; Late-Successional Reserves; Low Elevation Headwaters of the McKenzie River Special Area.

plans and in leases or permits consistent with existing laws and regulations. Evaluate the results of inspection and monitoring to determine if modification of plans, leases and permits is needed to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

Management Actions/Direction for Late-Successional Reserves

Assess the impacts of ongoing and proposed mining activities in Late-Successional Reserves.

Include stipulations in mineral leases and, when legally possible, require operational constraints for locatable mineral activities to minimize detrimental effects on late-successional habitat.

Management Actions/Direction for All Land Use Allocations

All Minerals - Conveyances of mineral estate owned by the United States where the surface is or will be in non-Federal ownership could be made to the existing or proposed owner of the surface estate consistent with FLPMA Section 209(b). This determination must find that there are no known mineral values in the land, or that the reservation of mineral rights in the United States would interfere with or preclude nonmineral development of the land, and that such development is a more beneficial use of the land than mineral development.

The consolidation of the surface and mineral estates on split estate lands will be pursued through exchange, purchase, or any other legal means available.

Land obtained under future land exchanges, donations or other means of acquisition will be managed with regard to leasable, locatable, and salable minerals in the same manner as those lands with comparable resource values.

Leasable Minerals - All lands open to mineral leasing will be subject to the standard lease terms, a lease notice for cultural resources, and the Special Status Species special leasing stipulation shown in Appendix G.

Some areas will also be leased subject to additional special leasing stipulations.

Appendix G describes provisions for exceptions, modifications or waivers of these special leasing stipulations. No Surface Occupancy stipulations will be used rather than not leasing, on certain parcels where any surface disturbance would be unacceptable. Lands under Fern Ridge, Lookout Point, and Fall Creek Reservoirs, Oregon Islands NWR, the Tyrrell and Dorena Seed Orchards, Walton and Whites Creek Maintenance Sites, Land Use Authorizations, Recreation Sites, Special Areas, Riparian Reserves, and great blue heron rookeries and osprey nest sites will be leased subject to no surface occupancy. A Timing stipulation will be utilized on a parcel with mineral springs frequented seasonally by the band-tailed pigeon. Controlled Surface Use stipulations will be used to prevent excessive soil erosion, control visual impacts, protect or restore old growth forest, or enhance recreational opportunities. Lands with fragile soils, VRM Class II lands, Special Recreation Management Areas, Late-Successional Reserves, and Suitable and Eligible Recreational Rivers will be subject to the controlled surface use stipulations. A Controlled Surface Use stipulation is used instead of the more restrictive No Surface Occupancy stipulation because there are existing roads through these tracts and leasable mineral exploration and development could be conducted using these roads.

Locatable Minerals - Mining activities on lands open to locatable mineral entry will be regulated under 43 CFR 3809 to prevent unnecessary or undue degradation of the public lands. All surface disturbance from such operations will be reclaimed at the earliest feasible time. Operating standards for locatable mineral activities are described in Appendix H.

If the McKenzie A, Siuslaw B, and Siuslaw C river segments are designated as recreational rivers under the Wild & Scenic Rivers Act, locatable mineral operations will be required to be conducted to minimize unnecessary surface disturbance, sedimentation, pollution, and visual impairment, based on guidance in BLM Manual 8351.5(c)(2)(d). Until these segments are designated by Congress, locatable mineral operations must be conducted in a manner to prevent unnecessary and undue degradation, as required under the regulations in 43 CFR 3809.

Salable Minerals - The public demand for salable minerals will be met from the 12 existing designated community pits or the 63 other quarries not yet designated as community pits. New common use areas or community pits could be designated and developed if consistent with the management

objectives of other resource values. Great blue heron rookeries, osprey nest sites, McKenzie A, Siuslaw B, and Siuslaw C river segments (if designated as recreational rivers) will be closed to salable mineral development unless the Authorized Officer determines that impacts from a proposed development are acceptable or can be adequately mitigated. Salable mineral resources within SRMAs and the Low Elevation Headwaters of the McKenzie River Special Area may be utilized if the impacts of the proposed use are acceptable to the Authorized Officer. Salable mineral resources in Riparian Reserves may be utilized if the impacts of the proposed development meet the Aquatic Conservation Strategy. Salable mineral resources within Late- Successional Reserves may be utilized if the impacts from the proposed use are acceptable or can be adequately mitigated. Federally listed and proposed threatened and endangered, Federal Candidate, and Bureau Sensitive species will be protected at salable mineral sites. Seasonal restrictions will be utilized near mineral springs frequented by the band-tailed pigeon. General guidelines for the development of salable mineral resources are found in Appendix I.

Contracts for mineral materials, including commercial use of petrified wood, will be issued pursuant to the 43 CFR 3604 or 3610 regulations where the disposal is deemed to be in the public interest. Free Use Permits (FUP) are considered on a case-by-case basis and issued at the discretion of the Authorized Officer. Free use of petrified wood for noncommercial purposes is permitted pursuant to the regulations in 43 CFR 3622.

Reclamation of salable mineral sites will be conducted at the earliest feasible time after the site is depleted of usable mineral materials.

Land Tenure Adjustments

Objectives

Make land tenure adjustments to benefit a variety of uses and values. Emphasize opportunities that conserve biological diversity or enhance timber management opportunities. As a matter of practice, O&C forest lands allocated to timber management would only be exchanged for lands to be managed for multiple-use purposes.

Meet the following objectives for the 3 land tenure adjustment zones:

Zone 1: generally, retain these lands under BLM administration.

Zone 2: "block up" areas in Zone 2 with significant resource values and exchange other lands in Zone 2 to "block up" areas in Zones 1 and 2 with significant resource values.

Zone 3: retain lands with unique resource values; dispose of other lands in this zone using appropriate disposal mechanisms.

Make BLM administered lands in Zones 1, 2, and 3 available for a variety of uses as authorized by Section 302 of the Federal Land Policy and Management Act, the Recreation and Public Purposes Act, and special recreation permits.

Manage newly acquired lands for the purpose for which they are acquired or consistent with the management objectives for adjacent BLM administered lands. If lands with unique or fragile resource values are acquired, protect those values until the next plan revision.

Eliminate unauthorized use of BLM administered land.

Land Use Allocations

Zone	Acres
Zone 1	80,875
Zone 2	237,088
Zone 3	30

See Map 10 for location of land tenure zones.
See Table 16 for legal descriptions of Zone 3 lands.

Management Actions/Direction for Riparian Reserves

Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives and facilitate restoration of fish stocks and others species at risk of extinction.

Table 16 - Land Tenure Zone 3 Lands

Township	Range	Section	Subdivision	Status	County	Public Acres
14S	2W	13	Lots 4-5 (part)[2]	O&C	Linn	2.00[1]
17S	3W	15	Lots 6, 9	O&C	Lane	1.30[3, 4]
16S	5W	33	Lots 4-8	O&C	Lane	6.57
17S	1W	3	Lot 6	O&C	Lane	0.37[4]
18S	1W	5	Lot 8 (part)	O&C	Lane	0.50[1]
18S	1W	26	Lots 7-10	PD	Lane	2.89
18S	7W	11	NE1/4NE1/4 (part)	O&C	Lane	3.00[1]
18S	10W	11	Lot 9	PD	Lane	6.24
19S	3W	35	Lot 3[2]	O&C	Lane	2.79
19S	4W	29	NE1/4SW1/4 (part)	O&C	Lane	0.36[1]
21S	1W	31	Lot 6 (part)	O&C	Lane	3.62[1, 4]
21S	1W	35	Lot 2	O&C	Lane	0.28

[1]Acreage is approximate until cadastral survey is completed.
[2]Tract may be sold only to current R&PP lessee so long as lease is in effect.
[3]Actual acreage may vary due to erosion and accretion.
[4]Changed from PRMP/FEIS to reflect completion of cadastral survey, transfer of ownership or correction of error in legal description.

All tracts specified meet the sale criteria at 43 CFR 2710.0-3(a)(3) that "Such tract, because of its location or other characteristics, is difficult or uneconomical to manage as part of the public lands and is not suitable for management by another Federal department or agency."

In addition, all O&C tracts specified are not ". . . more suitable for management and administration for permanent forest protection and other purposes as provided for in the Acts of August 28, 1937 (50 Stat. 874; 43 U.S.C. 1181(a); May 24, 1939 (53 Stat. 753); and Section 701(b) of the . . ." Federal Land Policy and Management Act of 1976, and are thus not excepted from sale eligibility by 43 CFR 2710.0-8(a)(1).

Management Actions/Direction for Late-Successional Reserves

Consider land exchanges when they will provide benefits equal to or better than current conditions.

Consider land exchanges especially to improve area, distribution, and quality (connectivity, shape, and contribution to biodiversity) of Late-Successional Reserves and where public and private lands are intermingled.

Management Actions/Direction for All Land Use Allocations

Use the land tenure adjustment criteria shown in Appendix J when conducting environmental analyses for site-specific proposals. Application of these criteria may result in retention of some Zone 3 lands.

Maintain or increase public land holdings in Zone 1 by retaining public lands and acquiring nonfederal lands and interests in land with high public resource values. The primary mode of acquisition will be through exchange of BLM administered lands in Zones 2 and 3. Utilize purchases and donations if exchange is not feasible. All fee acquisitions will be with willing sellers.

Consult with County governments prior to completing any exchange.

Consider the effect of land tenure adjustments on the mineral estate. If the lands are not known to have mineral potential, or in an exchange if the mineral potential is deemed equal, the mineral estate will normally be transferred simultaneously with the surface estate.

Minimize impact on local tax base by emphasizing exchanges rather than fee purchase.

Make exchanges to enhance public resource values and/or improve land patterns and management capabilities of both private and BLM administered land within the planning area by consolidating ownership and reducing the potential for land use conflict.

Consider transfer of BLM administered land to other Federal agencies or acquisition of other Federal lands where consistent with public land management policy and where improved management efficiency would result. Those tracts specifically identified for transfer to or from other Federal agencies are listed

in Table 17. Consider conveying the subsurface mineral interest owned by the United States to the existing or proposed owner of the surface estate consistent with FLPMA Section 209(b).

Prohibit disposal of Zone 2 lands through sales under Section 203(a) of FLPMA. Zone 2 lands may be transferred to other public agencies or managed under some form of cooperative agreement. Nonfederal lands and interests in land with high public resource values may be acquired in Zone2. The primary mode of acquisition will be through exchange of BLM administered lands in Zones 2 and 3. Utilize purchases and donations if exchange is not feasible. All fee acquisitions will be with willing sellers.

Dispose of Zone 3 lands through sale under Section 203(a) of FLPMA if no viable exchange proposals can be identified. Zone 3 lands could also be transferred to another Federal agency or State or local government as needed, to accommodate community expansion or other public purposes.

Acquire nonfederal mineral interests for lands where the Bureau owns the surface estate only by exchange, donation, or other means available by State law.

Where the Bureau's objectives can be met with less than fee ownership, conservation easements may be considered and acquired. Acquisitions of lands and interests in lands may be made anywhere within Land Tenure Zones 1 and 2 when consistent with management objectives. Where directed by Congress, including through the appropriation of Land and Water Conservation Funds, lands and interests in land may be acquired anywhere within the District.

Table 17 - Lands Recommended for Transfer To or From Other Public Agencies

Township	Agency Range	Agency Section	Public Subdivision	From	To	Acres
14S	2E	11	S1/2	USFS	BLM	320.00
14S	2E	15	NE1/4SE1/4	USFS	BLM	40.00
14S	2E	21	S1/2NE1/4,SE1/4NW1/4,NE1/4SW1/4	USFS	BLM	160.00
16S	2E	25	NE1/4NW1/4	USFS	BLM	40.00
16S	9W	35	S1/2NE1/4NE1/4SE1/4, N1/2SE1/4NE1/4SE1/4, SE1/4SE1/4NE1/4SE1/4, S1/2SW1/4SE1/4, SW1/4NE1/4SE1/4SE1/4, NE1/4NW1/4SE1/4SE1/4, S1/2NW1/4SE1/4SE1/4, SW1/4SE1/4SE1/4, W1/2SE1/4SE1/4SE1/4	USFS	BLM	57.50
17S	9W	3	Portion of Lot 1 lying East of Deadwood County Road	USFS	BLM	40.00[1]
17S	11W	19	Lot 1	BLM	USFS	44.82
18S	10W	3	Lot 5	BLM	USFS	39.12
18S	10W	10	S1/2SW1/4	BLM	USFS	80.00
18S	10W	14	SW1/4SW1/4	BLM	USFS	40.00
20S	1E	17	SE1/4NE1/4, NE1/4SE1/4	BLM	USFS	80.00
20S	2W	31	M&B in DLC 39	BLM	USFS	75.69[1]
20S	2W	32	M&B in DLC 38, DLC 39	BLM	USFS	95.07[1]
20S	2W	32	M&B in DLC 39	BLM	COE	1.00[2]
20S	2W	32	M&B in DLC 39	COE	BLM	1.00[2]
21S	2W	5	M&B in DLC 38, DLC 39 and Lot 5	BLM	USFS	119.51[1]
21S	2W	6	M&B in DLC 39	BLM	USFS	45.87[1]

[1]Actual acreage transferred may be less than the full tract.
[2]Acreage is approximate. May also be transferred to USFS.
Abbreviation Key:
M&B = Metes and Bounds
DLC = Donation Land Claim
USFS = U.S. Forest Service
COE = U.S. Army Corp of Engineers

Approve disposals under the Color-of-Title Act, as amended, when an applicant can establish that the legal requirements of the Act have been met for Class 1 claims in all zones. For Class 2 claims, approve disposals in Zones 2 and 3 when the requirements of the Act are met, unless important recreation, wildlife, watershed, threatened or endangered species habitat and/or cultural values are identified during disposal clearance reviews for individual tracts.

Approve disposals under the Recreation and Public Purposes (R&PP) Act in Zones 2 and 3 based upon the site-specific application of the land ownership adjustment criteria, where the proposal is otherwise consistent with the provisions of the plan. One tract in Section 15, T.18 S., R.12W., W.M. (Cannery Dunes parcel) is specifically identified as suitable for transfer to the City of Florence under the R&PP Act.

To accommodate the entitlement of the State of Oregon to select additional lands to fulfill the grant made upon its entry into the Union in 1859 as provided in a 1992 court decision, make public domain lands in Zones 2 and 3 available for "in lieu" selection by the Division of State Lands. Process selection applications in accordance with the procedures and policy specified in Bureau Manual 2621 and give them favorable consideration to the greatest extent possible within the constraints of applicable law. Find any selected lands containing threatened or endangered species or their critical habitat for which the U.S. Fish and Wildlife Service renders a jeopardy opinion upon consultation unsuitable for transfer to the State.

Approve new land use authorizations in all zones to resolve agricultural and occupancy trespasses provided that such authorizations would be consistent with other provisions of the plan and would not adversely impact important recreation, wildlife, watershed, threatened or endangered species habitat and/or cultural values. Do not approve any other land use authorizations for agricultural or residential occupancy purposes.

Do not approve leases or permits under any authority for landfills or other solid waste disposal facilities, nor for any proposals involving the use, storage or disposal of hazardous materials.

Realign the Salem/Eugene District boundaries and sustained yield unit boundaries to administratively transfer jurisdiction of Salem District lands in the Lake Creek watershed to the Eugene District and Eugene District lands in the Lobster Creek watershed, as well as all Eugene District ownership in Sections 17 and 21 of Township 15 South, Range 8 West, to the Salem District.

Rights-of-Way

Objectives

Continue to make BLM administered lands available for needed rights-of-way where consistent with local comprehensive plans, Oregon Statewide planning goals and rules, and the exclusion and avoidance areas identified in this RMP.

Ensure that all rights-of-way for hydroelectric development are consistent with the Northwest Power Planning Council guidance, which recommends prohibiting future hydroelectric development on certain rivers and streams with significant fisheries and wildlife values.

Land Use Allocations

Allocation of lands to existing rights-of-way will continue.

Rights-of-Way Corridors - The following areas are designated as right-of-way corridors (areas identified as the preferred locations for future right-of-way grants):

- Utility/transportation routes for electric transmission lines and pipelines 10 inches in diameter or larger as shown on Map 11
- Existing and potential communication sites as shown on Map 11
- Existing railroads
- Existing Federal, State, and Interstate highways

Nominal corridor width is 1,000 feet on each side of the centerline of the existing facilities unless constrained by exclusion areas.

Exclusion Areas - Subject to valid existing rights and with the exception of buried lines in rights-of-way

of existing roads, exclude rights-of way in the following areas:

Exclusion Area	Acres
Research Natural Areas	1,367
Wild Rivers (suitable and designated)	0
VRM Class I Areas	0

Avoidance Areas - With the exception of buried lines in rights-of-way of existing roads, avoid locating rights-of-way in the following areas:

Avoidance Area	Acres
Recreation Sites (existing and proposed)	1,220
Areas of Critical Environmental Concern (except RNAs)	1,410
Scenic and Recreational Rivers (suitable and designated)	6,735
Sensitive Species Habitat (plants)	1,044
Visual Resource Management Class II Areas	4,471
Late-Successional Reserves	136,211

Future rights-of-way may be granted in avoidance areas when no feasible alternative route or designated right-of-way corridor is available (subject to NEPA review). Acreages shown above include overlaps.

Management Actions/Direction for Riparian Reserves

Issue rights-of-way to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where legally possible, adjust existing rights-of-way to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective and where legally possible, eliminate the activity. Priority for modifying existing rights-of-way will be based on the actual or potential impact and the ecological value of the riparian resources affected.

For proposed hydroelectric projects under the jurisdiction of the Federal Energy Regulatory Commission (the Commission), provide timely, written comments regarding maintenance of in stream flows and habitat conditions and maintenance/restoration of riparian resources and stream channel integrity. Request the Commission to locate proposed support facilities outside of Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to the Commission that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to the Commission that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves should be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.

For other hydroelectric and surface water development proposals in Tier One Key Watersheds, require in stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate State agencies. For other hydroelectric and surface water development proposals in all other watersheds, give priority emphasis to in stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate State agencies.

Management Actions/Direction for Late-Successional Reserves

Retain and maintain existing developments, such as utility corridors and electronic sites, consistent with other management actions/direction for Late-Successional Reserves.

Neither construct nor authorize new facilities that may adversely affect Late-Successional Reserves.

Review on a case-by-case basis new development proposals. They may be approved when adverse effects can be minimized and mitigated.

Locate new developments to avoid degradation of habitat and adverse effects on identified late-successional species.

Remove hazard trees along utility rights-of-way and in other developed areas.

Management Actions/Direction for Other Land Use Allocations

Encourage location of major new right-of-way projects in existing utility/transportation routes and other previously designated corridors.

Encourage applicants to consult the Western Regional Corridor Study in planning route locations.

Consider new locations for rights-of-way projects on a case-by-case basis. Applications may be approved where the applicant can demonstrate that use of an existing route or corridor would not be technically or economically feasible; and the proposed project would otherwise be consistent with this RMP and would minimize damage to the environment.

Allow expansion of communications facilities on existing communication sites. All communication sites with approved communication site management plans would be managed according to the provisions of the plans.

Consider new communication sites on a case-by-case basis. Applications may be approved where the applicant can demonstrate that use of an existing, developed communication site would not be technically feasible; and the proposed facility would otherwise be consistent with this RMP and would minimize damage to the environment.

Access

Objectives

Acquire access to public lands to assist various programs to meet management objectives.

Land Use Allocations

None

Management Actions/Direction

This section provides direction for access acquisition. For direction regarding road management, see the Roads section of this chapter.

Acquire access by obtaining easements (including fee easements), entering into new reciprocal right-of-way agreements, or amending existing reciprocal right-of-way agreements. Condemnation for access will be pursued when necessary.

Acquire perpetual exclusive easements whenever possible to provide for public access and BLM control. Acquire nonexclusive easements, which do not provide for public access, consistent with management objectives and where no public access is needed. Acquire temporary easements only when other options are not available.

Continue to obtain access across lands of private companies or individuals who are a party (permittee) to existing reciprocal right-of-way agreements through use supplements and amendments to the agreements. Whenever a willing permittee is identified and it is determined there is a need for public access, negotiations could be started to provide for the acquisition of public access rights.

Emphasize acquisition for public access on major travel routes.

Acquire access when needed for such facilities as trails, boat ramps, and in-stream fisheries enhancement structures, as well as roads.

Consider acquisition of conservation easements where the Bureau's objectives can be met with less than fee ownership. Such easements may be appropriate to protect populations of special status plants and animals, important wetlands, and other special resources.

Easements, including fee easements, to provide legal and physical access (administrative and/or public) to Bureau administered land may be acquired anywhere within the District. Other easements, including conservation easements, may be acquired anywhere within Land Tenure Zones 1 and 2 when consistent with management objectives. Where directed by Congress, including through the appropriation of Land and Water Conservation Funds, easements of any type may be acquired anywhere within the District.

Withdrawals

Objectives

Protect lands with important resource values and/or significant levels of investment by withdrawing them from the operation of public land and mineral laws. Withdrawal is necessary to avoid irreparable damage that may be caused by nondiscretionary activities.

Land Use Allocations

Recommendations for revocation or modification of existing withdrawals are shown in Table 18. Those portions of the listed withdrawals not recommended for revocation or modification are recommended for continuation.

Recommendations for the establishment of new withdrawals are shown in Appendix L. In addition, new withdrawals from the public land laws, including location under the mining laws but not leasing under the mineral leasing laws, are recommended for lands acquired in the future for the West Eugene Wetlands Land and Water Conservation Fund (LWCF) Project, for any other LWCF projects, for the extension of the Row River Trail eastward from Culp Creek to the Umpqua National Forest boundary and also for any lands acquired in the future for management primarily for recreation sites, Special Status Species, or SEIS Special Attention Species.

All existing classifications shown in Appendix K are recommended for continuation as long as the existing Recreation and Public Purposes Act leases are in effect.

Management Actions/Direction

See Management of Newly Acquired Lands (toward the end of this chapter).

Complete the review of existing withdrawals to determine whether continuation of the withdrawal is consistent with the statutory objectives of the programs for which the lands were dedicated and with other important programs.

Terminate unnecessary or duplicative withdrawals and continue those which still meet the intent of the withdrawal.

Implement the BLM proposed withdrawals listed under land use allocations. This will involve recommendations to and approval by the Secretary of the Interior.

Evaluate future withdrawal proposals for compliance with program objectives and Federal law and recommend appropriate action to the Secretary of the Interior.

Limit withdrawals to the minimum area needed and restrict only those activities that would be detrimental to the purposes of the withdrawal.

Terminate the classification for any Recreation and Public Purposes Act lease that is relinquished or otherwise terminated in the future.

Upon the revocation, partial revocation, modification or termination of any existing withdrawal or classification shown in Appendix K, manage the lands released as provided elsewhere in this plan.

Upon the modification of existing withdrawals as shown in Table 18 to open them to leasing under the mineral leasing laws, open the lands for leasing, subject to the restrictions and stipulations specified elsewhere in this plan and also subject to the recommendations of the withdrawal agency.

Roads

Objectives

Develop and maintain a Transportation Plan that meets Aquatic Conservation Strategy objectives and also serves the needs of users in an environmentally sound manner. Arterial and major collector roads will form the backbone of the transportation system in the planning area.

Correct problems associated with high road density by emphasizing the reduction of minor collector and local road densities where those problems exist.

Manage roads to meet the needs identified under other resource programs (e.g., seasonal road closures for wildlife). Road management is mentioned or implied primarily under Aquatic Conservation Strategy Objectives, Riparian Reserves, Late-Successional Reserves, Water Quality and Soils, Wildlife, Fish Habitat, Special

Table 18 - Land Withdrawals and Recommendations to Continue or Revoke Withdrawals[1]

Authority[2] Rationale	Location	Acreage	Purpose/Name	Segregative Effect[3]	Surface Management Agency[4]	Recommendation to Continue or Revoke and
ANS 58-1[6]	T.15S., R.7W.	40.00	Air navigation/ Prairie Mtn.	A	FAA/BLM	Revoke 40 acres where only FAA facility is a road that can be protected by a right-of-way reservation. FAA concurs in revocation.
PLO 497	T.17S., R.5W. Sec. 27,28	5.27	Reservoir/ Fern Ridge	A	COE	Modify withdrawal to restore land to mineral leasing laws. Continue rest of withdrawal as it is still serving purpose for which withdrawn. Leasing is discretionary and leases may be conditioned or denied to protect COE improvements and resource values.
PLO 727	T.19S., R.1E. Sec. 34	1.37	Reservoir/ Lookout Pt.	A	COE	Modify withdrawal to restore land to mineral leasing laws. Continue rest of withdrawal as it is still serving purpose for which withdrawn. Leasing is discretionary and leases may be conditioned or denied to protect COE improvements and resource values.
PLO 3610	T.18S., R.1E. Sec. 31 T.19S., R.1E. Sec. 6	81.20	Reservoir/ Fall Creek	B	COE/BLM	Revoke 33.50 acres not used or needed for reservoir. Continue 44.70 acres still serving purpose for which withdrawn. COE concurs in partial revocation.
PLO 3869	T.16S., R.7W. Sec.19 T.18S., R.8W. Sec. 21 T.19S., R.7W. Sec. 19 Sec. 35 T.22S., R.1W. Sec. 15	440.12	Recreation Sites/ Lake Creek, Whittaker Creek, Turner Creek, Clay Creek, Haight Creek, Sharps Creek	B	BLM	Revoke 40.00 acres (Turner Creek) as site is no longer needed for recreation. Continue 400.12 acres as these lands are still being used for the purpose for for which they were withdrawn.
PLO 4395[6]	T.16S., R.12W. Sec. 33	1.00	Wildlife Refuge/ Oregon Islands	B	USFWS	Continue - Land is still needed for the purpose for which it was withdrawn.

Table 18 - Land Withdrawals and Recommendations to Continue or Revoke Withdrawals[1]

Authority[2] Rationale	Location	Acreage	Purpose/Name	Segregative Effect[3]	Surface Management Agency[4]	Recommendation to Continue or Revoke and
PLO 5229	T.15S., R.1W. Sec. 29-32	260.00	Recreation Site/ Shotgun Creek	B	BLM	Continue - Lands are still being used for the purpose for which they were withdrawn.
PLO 5490[6]	[5]	9,055.90	Reserved for Multiple Use Management	D	BLM	Continue - Reservation is still needed to assure Public Domain will not be subject to entry under agricultural land laws and will remain in public ownership for management with adjoining O&C lands.
PLO 6287[6]	T.16S., R.12W. Sec. 33	1.00	Wildlife Refuge/ Oregon Islands	B	USFWS	Continue - Land is still needed for the purpose for which it was withdrawn.
PLO 6662	T.20S., R.5W. Sec.9,15,21	832.50	Tyrrell Seed Orchard	B	BLM	Continue - Lands are still being used for the purpose for which it was withdrawn.
PSC 287	T.18S., R.6W. Sec. 5	120.00	Protect Electric Transmission Line	C	BLM/FERC	Revoke - Powerline has been removed. Land not needed for future hydropower development.

[1]Does not include withdrawals located within National Forest boundaries or powersite withdrawals that have not yet been reviewed under FLPMA withdrawal review authority. See Appendix L for complete listing of withdrawals affecting BLM lands in the Eugene District.
[2]Authority Abbreviations: ANS - Air Navigation Site; PLO - Public Land Order; PSC - Power Site Classification
[3]Segregative Effect:
A - Withdrawn from operation of the general land laws, the mining laws and the mineral leasing laws.
B - Withdrawn from operation of the general land laws and the mining laws.
C - Withdrawn from operation of the general land laws only.
D - Withdrawn from operation of the general land laws, but not from the R&PP Act, sales or exchanges.
[4]Agency Acronyms: FAA - Federal Aviation Administration; BLM - Bureau of Land Management; COE - U.S. Army Corp of Engineers; USFWS - U.S. Fish and Wildlife Service; FERC - Federal Energy Regulatory Commission.
[5]All public domain lands in and west of Range 8 East and all lands within that area that become public domain lands in the future.
[6]Location, acreage and recommendations shown pertain only to that portion of the withdrawal within the Eugene District.

Status and SEIS Special Attention Species Habitat, Timber Resources, and Recreation.

Land Use Allocations

There are approximately 2,000 miles of roads on BLM administered land in the Eugene District.

Management Actions/Direction for Riparian Reserves

Cooperate with Federal, State, and County agencies and work with parties with road use agreements to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.

For each existing or planned road, meet Aquatic Conservation Strategy objectives as follows:

1. Complete watershed analyses, including appropriate geotechnical analyses (i.e., examining soil and rock conditions in riparian and stream crossings) prior to construction of new roads or landings in Riparian Reserves;

2. Minimize road and landing locations in Riparian Reserves;

3. Prepare road design criteria, elements, and standards that govern construction and reconstruction;

4. Prepare operation and maintenance criteria that govern road operation, maintenance, and management;

5. Minimize disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow;

6. Restrict side casting as necessary to prevent the introduction of sediment to streams; and

7. Avoid wetlands entirely when constructing new roads.

Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by

1. reconstructing roads and associated drainage features that pose a substantial risk;

2. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affects; and

3. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short and long-term transportation needs.

Design and construct new culverts, bridges, and other stream crossings and improve existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions. New structures and improvements will be designed to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

Minimize sediment delivery to streams from roads. Out sloping of the roadway surface is preferred, except in cases where Out sloping would increase sediment delivery to streams or where Out sloping is infeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hill slopes.

Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams (e.g., streams that can be made available to anadromous fish by removing obstacles to passage).

Develop and implement a Transportation Management Plan that meets the Aquatic Conservation Strategy objectives. As a minimum, this plan will include provisions for the following activities:

1. Inspections and maintenance during storm events

2. Inspections and maintenance after storm events

3. Road operation and maintenance giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources

4. Traffic regulation during wet periods to prevent damage to riparian resources

5. Establish the purpose of each road by developing the road management objective.

Management Actions/Direction for Late-Successional Reserves

Road construction in Late-Successional Reserves for silvicultural, salvage, and other activities generally is not recommended unless potential benefits exceed the costs of habitat impairment. If new roads are necessary to implement a practice that is otherwise in accordance with these guidelines, they will be kept to a minimum, be routed through unsuitable habitat where possible, and designed to minimize adverse impacts. Alternative access, such as aerial logging, should be considered to provide access for activities in reserves.

Remove trees along rights-of-way if they are a hazard to public safety. Consider leaving material on-site if available coarse woody debris is inadequate. Consider topping of trees as an alternative to felling.

Key Watersheds - Reduce existing road mileage within key watersheds. If funding is insufficient to implement reductions, neither construct nor authorize through discretionary permits a net increase in road mileage in Key Watersheds.

Management Actions/Direction for All Land Use Allocations

The Management Actions/Direction listed under Riparian Reserves also apply to all land use allocations.

Prepare a District wide Transportation Management Plan after approval of the RMP. The management plan will specifically address recreation use, road densities, road closures, wildlife protection, water quality, timber management, construction and maintenance standards, fire suppression, and coordination with adjacent landowners. Address road management planning on a watershed basis consistent with Late-Successional Reserves, Riparian Reserves, and other major allocations. Specific road closures will be determined in the watershed analysis process.

Determine standards for new road construction during the project planning process. Standards will be the minimum necessary to meet resource and allocation objectives (recreation site, timber sale, key watershed, etc.) while having minimal impacts on the environment.

Minimize new road construction in areas with fragile soils to reduce impacts to soils, sensitive resources, water quality, and fisheries. Stabilize existing roads where they contribute to significant adverse effects on these resources.

Locate, design, construct, and maintain roads to standards that meet management objectives in accordance with the District Transportation Management Plan.

Site and schedule road construction to avoid mass movement of slopes.

Where appropriate to the anticipated use, surface roads to minimize sedimentation.

Vegetate cuts and fillslopes using native species capable of supporting vegetation to stabilize them prior to winter rains.

Stabilize temporary roads prior to winter rains and rehabilitate them after use.

Follow Best Management Practices (see Appendix C) for water quality and soil productivity to mitigate adverse effects on soils, water quality, fish, and riparian habitat during road construction and maintenance.

Reduce road density by closing minor collector and local roads in areas or watersheds where water quality degradation, big game harassment, or other road related resource problems have been identified.

Acquire water rights for road management purposes.

Specifically address, in either the Transportation Management Plan or in a watershed analysis, stabilizing existing roads located on fragile soils. These would include watersheds with water quality limited streams and other areas of the District where soil/water quality problems are known to exist.

Avoid road construction in special areas, i.e., ACECs and RNAs, and special habitats.

Noxious Weeds

Objectives

Contain and/or reduce noxious weed infestations on BLM administered land using an integrated pest

management approach. Some noxious weeds expected to be subject to control are:

Common Name	Scientific Name
meadow knapweed	*Centaurea jacea x nigra*
tansy ragwort	*Senecio jacobaeae*
Canada thistle	*Cirsium arvense*
St.-Johns-wort	*Hypericum perforatum*
Scotch broom	*Cytisus scoparius*
French broom	*Cytisus monspessulanus*
gorse	*Ulex europaeus*
diffuse knapweed	*Centaurea diffusa*
spotted knapweed	*Centaurea maculosa*
purple loosestrite	*Lythrum salicaria*
puncture vine	*Tribulus terrestris*
bull thistle	*Cirsium vulgare*
distaff thistle	*Carthamus lanatus*

Avoid introducing or spreading noxious weed infestations in any areas.

Land Use Allocations

No allocations are made for noxious weeds in the planning process.

Management Actions/Direction

Implement an integrated noxious weed control program. Develop a Prevention Plan and identification of Weed Free Areas. Site-specific plans will be prepared for 5-year periods. Control methods or combinations of methods proposed are dependent upon size, location, species, and type of weed infestation.

Evaluate impacts of nonnative plants (weeds) growing in all land use allocations.

Develop plans and recommendations for eliminating or controlling nonnative plants (weeds) that adversely affect Late-Successional Reserve objectives. Include an analysis of effects of implementing such programs on other species or habitats within reserves.

Continue to survey BLM administered land for noxious weed infestations, report infestations to the Oregon Department of Agriculture (ODA) and work with ODA to reduce infestations.

Use control methods that do not retard or prevent attainment of Aquatic Conservation Strategy objectives.

Apply integrated pest management methods (chemical, mechanical, manual and/or biological) in accordance with BLM's multistate Environmental Impact Statement, Northwest Area Noxious Weed Control Program, 1985, as supplemented in 1987, and the related ROD.

Hazardous Materials

Objectives

Eliminate known hazardous materials on BLM administered lands.

Land Use Allocations

No allocations are made for hazardous material sites in the planning process.

Management Actions/Direction

Identify, investigate, and arrange for removal of hazardous substances on BLM administered land in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act. Emergency response will be as specified in the District Hazardous Materials Contingency Plan. The response will include cleanup, proper notifications, criminal investigations, risk assessment, and other actions consistent with the Act and the nature of the emergency.

Store, treat, and dispose of hazardous materials in accordance with the Resource Conservation and Recovery Act and other appropriate regulations.

Use the Emergency Planning and Community Right-To-Know Act to coordinate emergency planning with State and local jurisdictions concerning hazardous materials, emergency notifications, and routine reporting of hazardous materials inventories.

Remove and replace, if appropriate, all existing underground storage tanks with above ground storage facilities following State and Federal regulations.

Until hazardous materials on BLM administered land are removed, protect employees and the public from exposure to these materials.

Provide information to the public regarding the need to properly dispose of hazardous materials and the danger of becoming exposed to hazardous materials.

Fire/Fuels Management

Objectives

Provide appropriate fire suppression responses to wildfires that will help meet resource management objectives and minimize the risk of large-scale, high-intensity wildfires.

Use prescribed fire to meet resource management objectives. This will include but not be limited to fuels management for wildfire hazard reduction, restoration of desired vegetation conditions, management of habitat, management of fire dependent/adapted species, and silvicultural treatments.

Adhere to smoke management/air quality standards of the Clean Air Act and State Implementation Plan for prescribed burning.

Continue fire suppression strategies to provide protection of life and property, and the safety of fire fighting personnel.

Determine the role of fire at the landscape level. Identify fire regime(s), protection standards required to meet resource objectives, the effects of fire exclusion, and the need to use prescribed fire. Minimize the impacts of wildfire suppression actions.

Develop landscape objectives for coarse woody debris, down logs, green tree retention, and snags, consistent with the natural role of fire and protection standards for each land allocation unit.

Identify the appropriate suppression responses to wildfires based on land use allocation objectives.

Land Use Allocations

None specifically for fire/fuels management.

Management Actions/Direction - General

Apply the management actions/direction in the Special Status and SEIS Special Attention Species section.

Address Fire/Fuels Management for all land use allocations as part of watershed analysis and project planning. This will include determinations of the role of fire and the risk of large-scale, high intensity wildfires at the landscape level.

Describe the need to use prescribed fire or other fuel management treatments to reduce fuel hazards and the risk of large-scale, high-intensity fire, while maintaining coarse woody debris, down logs, green tree retention, and snags consistent with the natural role of fire and protection standards for each land allocation unit.

Coordinate fire management activities in Rural Interface Areas with local governments, agencies, and landowners. During watershed analysis, identify additional factors that may affect hazard reduction goals. Minimize the impacts of wildfire suppression actions.

Management Actions/Direction for Riparian Reserves

Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives and to minimize disturbance of riparian ground cover and vegetation. Strategies will recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management activities could be damaging to long-term ecosystem function.

Locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of Riparian Reserves. If the only suitable location for such activities is within the Riparian Reserve, an exemption may be granted following a review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements.

Minimize delivery of chemical retardant, foam, or other additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist or, following a

review and recommendation by a resource advisor, when an escape would cause more long-term damage.

Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives.

Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Aquatic Conservation Strategy objectives whenever Riparian Reserves are significantly damaged by a wildfire or a prescribed fire burning outside prescribed parameters.

Allow some natural fires to burn under prescribed conditions. This decision will be based on additional analysis and planning.

Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements.

Locate and manage water drafting sites (e.g., sites where water is pumped to control or suppress fires) to minimize adverse effects on riparian habitat and water quality as consistent with Aquatic Conservation Strategy objectives.

Management Actions/Direction for Late-Successional Reserves

Emphasize maintaining late-successional habitat in wildfire suppression plans.

Use minimum impact suppression methods for fuels management in accordance with guidelines for reducing risks of large-scale disturbances.

During fire suppression activities, consult with an interdisciplinary team to ensure that habitat damage is minimized.

Until a fire management plan is completed for a Late-Successional Reserve or group of reserves, suppress wildfire to avoid loss of habitat and to maintain future management options. Some natural fires may then be allowed to burn under prescribed conditions.

Prepare a specific fire management plan prior to any habitat manipulation activities in Late-Successional Reserves. Specify how hazard reduction and other prescribed fire applications meet the objectives of the Late-Successional Reserve. Until the plan is approved, proposed activities will be subject to review by the Regional Ecosystem Office.

Apply prescribed fire in a manner that retains the amount of coarse woody debris determined through watershed analysis.

Consider rapidly extinguishing smoldering coarse woody debris and duff.

Management Actions/Direction for Adaptive Management Areas

Explore and support opportunities to research the role and effects of fire management on ecosystem functions.

Emphasize fire/fuels management cooperation across agency and ownership boundaries.

Follow fire/fuels management actions/direction in this RMP until Adaptive Management Area plans are completed and approved.

Use accepted wildfire suppression strategies and tactics and conform with specific agency policy.

Management Actions/Direction for Matrix

Plan and implement prescribed fire treatments to minimize:

- Intensive burning, unless appropriate for certain specific habitats, communities, or stand conditions
- Consumption of litter and coarse woody debris
- Disturbance of soil and litter that may occur as a result of heavy equipment operation
- The frequency of treatments

Management Actions/Direction for All Land Use Allocations

Wildfire Suppression - Minimize the direct negative impacts of wildfire suppression on ecosystem management objectives.

Respond to all wildfires by taking appropriate suppression responses. In most cases, responses will consist of aggressive initial attack to extinguish fires at the smallest size possible.

For wildfires hat escape initial attack, perform a Wildfire Situation Analysis to develop a suppression strategy to evaluate the damage induced by suppression activities compared to expected wildfire damage. Suppression tactics will consider:

- Public and firefighting personnel safety
- Protection of specific attributes of each land use allocation
- Coordination of wildfire suppression activities to avoid causing adverse impacts on Federal and nonfederal lands
- Appropriate use of suppression tools such as aircraft, dozers, pumps, and other mechanized equipment, and clear definitions of any restrictions relating to their use
- The potential adverse affects on meeting ecosystem management objectives
- Protection of structural components such as snags, duff, and coarse woody debris to the extent possible.

Fuels Management (including Hazard Reduction) Using Prescribed Fire - Modify fuel profiles in order to lower the potential of fire ignition and rate of spread; protect and support land use allocation objectives by lowering the risk of high intensity, stand-replacing wildfires; and adhere to smoke management and air quality standards.

Reduce hazards through methods such as prescribed burning, mechanical or manual manipulation of forest vegetation and debris, removal of forest vegetation and debris, and combinations of these methods. Hazard reduction plans will be developed through an interdisciplinary team approach and will consider the following:

- Safety of fire fighting personnel
- Identification of levels of coarse woody debris and snags of adequate size and in sufficient quantities to meet habitat requirements of species of concern
- Developing a fuel profile that supports land allocation objectives

- Reducing the risk of wildfire in a cost efficient manner
- Interagency cooperation to assure cost effective fuel hazard reduction across the landscape
- Adherence to smoke management and air quality standards
- Consistency with objectives for land use allocations
- Maintenance or restoration of ecosystem processes or structure
- The natural role of fire in specific landscapes, current ecosystem needs, and wildfire hazard analysis included in the fire management plan

Management of forest fuels is important for preventing and controlling wildfire. In managing forest lands this involves the manipulation of the forest fuels (vegetative materials) either by mechanical or manual methods, or through prescribed fire. Fuels treatment is an especially important consideration in the Rural Interface Areas where forest fuels are in close proximity to private dwellings, businesses, and other structures. Mechanical and manual methods would be used in these areas and in areas where air quality considerations require reduced smoke emissions. Partial entry of prescribed fire may be initiated into natural stands where severe natural fuels buildup would contribute to high intensity stand destroying wildfire.

Prescribed Fire Use for Ecosystem Maintenance and Restoration - The use of prescribed fire will be based on the risk of high intensity wildfire and the associated cost and environmental impacts of using prescribed underburning to meet protection, restoration, and maintenance of critical stands that are currently susceptible to large-scale catastrophic wildfire.

Underburning will be reintroduced in areas over a period of time to create a mosaic of stand conditions. Treatments should be site-specific because some species with limited distributions are fire intolerant. The use of prescribed burning will be based on an interdisciplinary evaluation. Funding authority, therefore, must reflect the range of objectives identified for using fire under ecosystem management.

Use prescribed fire to manage seral stage diversity through the development of fire resistant stand mosaics by timing the application of fire (e.g., every 5 to 10 years).

Develop project level prescribed fire plans using an interdisciplinary team approach. Plans will address (1) adherence to smoke management and air quality standards; (2) meeting stated objectives for the land use allocations; (3) maintaining or restoring ecosystem processes or structure; and (4) the role of natural fire in specific landscapes, current ecosystem needs, and wildfire hazard analysis included in the fire management plan.

Prescribed fire is used to emulate the natural role of fire to achieve resource objectives for wildlife enhancement, plant species maintenance, forest land biodiversity, and site preparation. Prescribed underburning some proportion of homogeneous plant communities would be dependent on the type and amount of complexity that would be needed for any one plant community. The types of plant communities that may be targeted for underburning would be stands where extensive or connected old growth sites exist or where 50 to 80 year old contiguous monotypic stands are located in order to promote more diversity or heterogeneity. Fire would be the preferred method of disturbance for biological reasons, but other methods of disturbance may produce similar results, i.e., swamper burning or manipulation by machine.

In order to assure that resource objectives such as wildlife, and botanical species maintenance are met and that forest land biodiversity elements are perpetuated, it will be necessary for the Eugene District to employ applications of natural cycle related cool fires such as in understory burning. Understory burning is defined here as in under or near conifer, deciduous, and brush species.

There are approximately 200,000 acres of the District land base that could lend themselves to fire entry under prescription. It is reasonable to assume that at least an annual average of 700 acres of understory related burning may be necessary to meet resource objectives. This would assume an approximate 30 to 50-year rotation cycle on some sites throughout the 200,000 acre land base. It is not possible nor desirable to burn every acre on a 30 to 50-year cycle. Some sites would not benefit positively from the entry of either prescribed fire or wildfire. However, many would. Resource specialists must develop specific resource objectives and develop extensive activity plans to determine specific sites where benefits can occur. The need for prescribed fire varies for each resource. For example, botanical enhancement fires may need to be introduced on an annual basis on

some sites. On other sites, such as under old growth stands, the rotational burning could be up to 60 plus years depending on the particular site, soil structure, or other mixed plant communities. As specific area studies are developed, the need for fire applications upon a particular site will be clearly defined and activity plans developed accordingly.

Factors other than ecological needs will also determine how many acres can be burned. The 2 most important factors are air quality and budget constraints. Air quality considerations are established through regulation and the Oregon Smoke Management Plan. Budget considerations are based on fiscal year considerations.

There has been a target established for the westside of Oregon to reduce total prescribed fire emissions by 50 percent of the baseline emissions by the year 2000. The Eugene District met the 50 percent reduction in 1991. In order to ensure that this reduction is maintained, it is not planned to introduce prescribed understory burning unless all air quality considerations can be met. It is reasonable to assume at this time that an average prescribed fire regime (see Table 21) can be implemented so understory burning does not add or exceed established air quality standards.

The following figures represent past, present, and estimated future emissions release from burning practices on the Eugene District. The emission factor measurements are based on the latest research methods available. It is estimated that the hand pile burn emission estimates may be approximately 50 percent less than indicated on the emissions tables. The information presented in Tables 19, 20, and 21 clearly shows that the Eugene District can meet the emission standards established for the year 2000, treat available sites for reforestation, and target towards 700 acres of prescribed burning to help meet resource objectives for biodiversity, wildlife, and forest fuel hazard abatement.

Table 19 - Average Emission Factors (lb. PM emission per ton of fuel consumed)

Type of Burn	Particulate Matter(PM)
Broadcast	34 lbs/ton
Tractor Pile	20
Handpile	12
Underburn	29

Table 20 - Average Consumption Rates (in tons per acre)

Broadcast Burning	
Baseline (1976-1979)	63.6
Current	28.0
Pile Burning	
Tractor Pile	25.0
Hand Pile	12.0
Underburning	14.0

Table 21 - Acres by Treatment Method

	Baseline	PRMP
Method:		
Tractor Pile	65	360
Broadcast	2,238	190
Underburn	0	550
Handpile	0	320
Consumption:		
Total Tons	**143,962**	**25,860**
PM Emission:		
Total Tons	**2,436**	**370**

Fuels Management for Hazard Reduction - Modify fuel profiles in order to lower the potential of fire ignition and rate of spread; protect and support land allocation objectives by lowering the risk of high intensity, stand-replacing wildfires; and adhere to smoke management and air quality standards.

Reduce hazards through methods such as prescribed burning, mechanical or manual manipulation of forest vegetation and debris, removal of forest vegetation and debris, and combinations of these methods. Hazard reduction plans will be developed through an interdisciplinary team approach and will consider the following:

- Providing for the safety of firefighting personnel
- Identification of levels of coarse woody debris and snags of adequate size in sufficient quantities to meet habitat requirements of species of concern
- Developing a fuel profile that supports land allocation objectives and seeking a balance between reducing the risk of wildfire and the cost efficiency consistent with meeting land allocation objectives.

Coordination and Consultation

The implementation of this RMP and the overriding SEIS/ROD calls for a high level of coordination and cooperation among agencies. A formal procedure for interagency coordination has been created by a Memorandum of Understanding for Forest Ecosystem Management that has been entered into by the White House Office on Environmental Policy, the Department of the Interior (USDI), the Department of Agriculture (USDA), the Department of Commerce (DOC), and the Environmental Protection Agency (EPA). The Memorandum of Understanding created several interagency groups, including the Interagency Steering Committee (ISC), Regional Interagency Executive Committee (RIEC), and Regional Ecosystem Office (REO). A detailed description of these groups is included in Attachment A, Section E, Implementation, of the SEIS/ROD.

Consultation under the Endangered Species Act will emphasize an integrated ecosystem approach. This will include involving the Fish and Wildlife Service (USF&W) and the National Marine Fisheries Service (NMFS) in all relevant implementation planning so their views can be made known. Actions proposed to implement this RMP will undergo consultation, either formal or informal, as appropriate. Consultation for the northern spotted owl on activities that are consistent with the standards and guidelines of the SEIS/ROD and that would not result in "take" of a listed species is expected to be informal. If take would result, incidental take statements will be provided through formal consultation.

Concurrent coordination with the Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (DEQ) on water quality standards and beneficial use requirements of the Clean Water Act will minimize project impacts. Similar coordination with the EPA, DEQ, and U.S. Forest Service on minimizing impacts of emissions from prescribed burning will occur.

Use of the Completed Plan

Many of the management activities described in this RMP/EIS would be accomplished through contracts and permits. Performance standards are developed and included in a contract or permit. They require the contractor or permittee to comply with applicable laws, regulations, policies, and plans. Selection of performance standards is governed by the scope of the action to be undertaken and the physical characteristics of the specific site. The standards, which include design features and mitigating measures, must be followed in carrying out an action.

Site-specific planning by interdisciplinary teams (IDTs) will precede most on-the-ground management activities. IDTs are comprised of relevant resource management disciplines. The IDT process includes field examination of resources, selection of alternative management actions, analysis of alternatives, and documentation to meet National Environmental Policy Act requirements. Adjacent land uses will be considered during site-specific land management planning.

Potential minor changes, refinements, or clarifications in the plan may take the form of maintenance actions. Maintenance actions respond to minor data changes and incorporation of activity plans. Such maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan. Plan maintenance will not result in expansion of the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved resource management

plan. Maintenance actions are not considered a plan amendment and do not require the formal public involvement and interagency coordination process undertaken for plan amendments. Needed plan maintenance will be documented in the annual District Planning Process Report or its equivalent. A plan amendment may be initiated because of the need to consider monitoring findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan.

In addition to being routinely monitored, the RMP will be formally evaluated at the end of every third year after implementation begins, until such time as preparation of new plans that would supersede the RMP over a substantial majority of its area, is well under way. The reason for the formal evaluation is to determine whether there is significant cause for an amendment or revision of the plan. Evaluation includes a cumulative analysis of monitoring records, with the broader purpose of determining if the plan's goals and objectives are being or are likely to be met, and whether the goals and objectives were realistic and achievable in the first place.

Evaluation will also assess whether changed circumstances, such as changes in the plans of other government agencies or American Indian tribes, or new information have altered activities or expected impacts on water, wildlife, socioeconomic conditions, etc. The environmental consequences of the plan may paint a substantially different picture than those anticipated in this RMP.

As part of these 3rd year evaluations, the Allowable Sale Quantity (ASQ) will be reevaluated, to incorporate the results of watershed analyses; monitoring; further inventory; and site-specific, watershed-specific or province-level decisions.

If an evaluation concludes that the plan's goals are not achievable, a plan amendment or revision will be initiated. If the evaluation concludes that land use allocations or management direction need to be modified, a plan amendment or revision may be appropriate. An analysis will address the need for either. If the analysis determines that amending the plan is appropriate, the amendment process set forth in 43 CFR 1610.5-5 or 1610.5-6 will be followed. If amendment is not appropriate, NEPA procedures will still be followed before the modification is approved. If SEIS/ROD standards and guidelines or land use allocations would be modified, the amendment process would be coordinated through the Regional Ecosystem Office (REO) and the Regional Interagency Executive Committee (RIEC). Figure 1 shows how monitoring and/or evaluation could lead to a revision of management direction or other changes in the RMP.

No additional evaluations of this type will be done unless some changed circumstance or unusual event causes the continuing validity of the plan to be questioned. Following completion of each plan evaluation, a summary of its findings will be included in the District's annual program summary.

In future years, new plans may be prepared that would substantially supersede the RMP. If the new plan is well underway and if some circumstances change or unusual events occur of a magnitude that question BLM's ability to meet some of the remaining plan objectives, interim management adjustments may be made to meet those objectives, without a plan amendment. The kind of circumstance that could lead to such an adjustment might be an announcement of research findings clearly establishing that some of the plan's goals and objectives are unlikely to be met. The kind of unusual event that could lead to such an adjustment might be a major catastrophe such as a wildfire or windstorm causing extensive damage to forest stands. Similar interim adjustments can be made at any time during the life of the plan, pending evaluation and possible plan amendment.

Potential minor changes, refinements or clarifications in the plan may take the form of maintenance actions. Maintenance actions respond to minor data changes and incorporation of activity plans. Such maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan. Plan maintenance will not result in expansion of the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved RMP. Maintenance actions are not considered a plan amendment and do not require the formal public involvement and interagency coordination process undertaken for plan amendments. Significant plan maintenance will be documented in the annual District Planning Progress Report or its equivalent. A plan amendment may be initiated because of the need to consider monitoring findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in the scope of resource used or a change in the terms, conditions, and decisions of the approved plan.

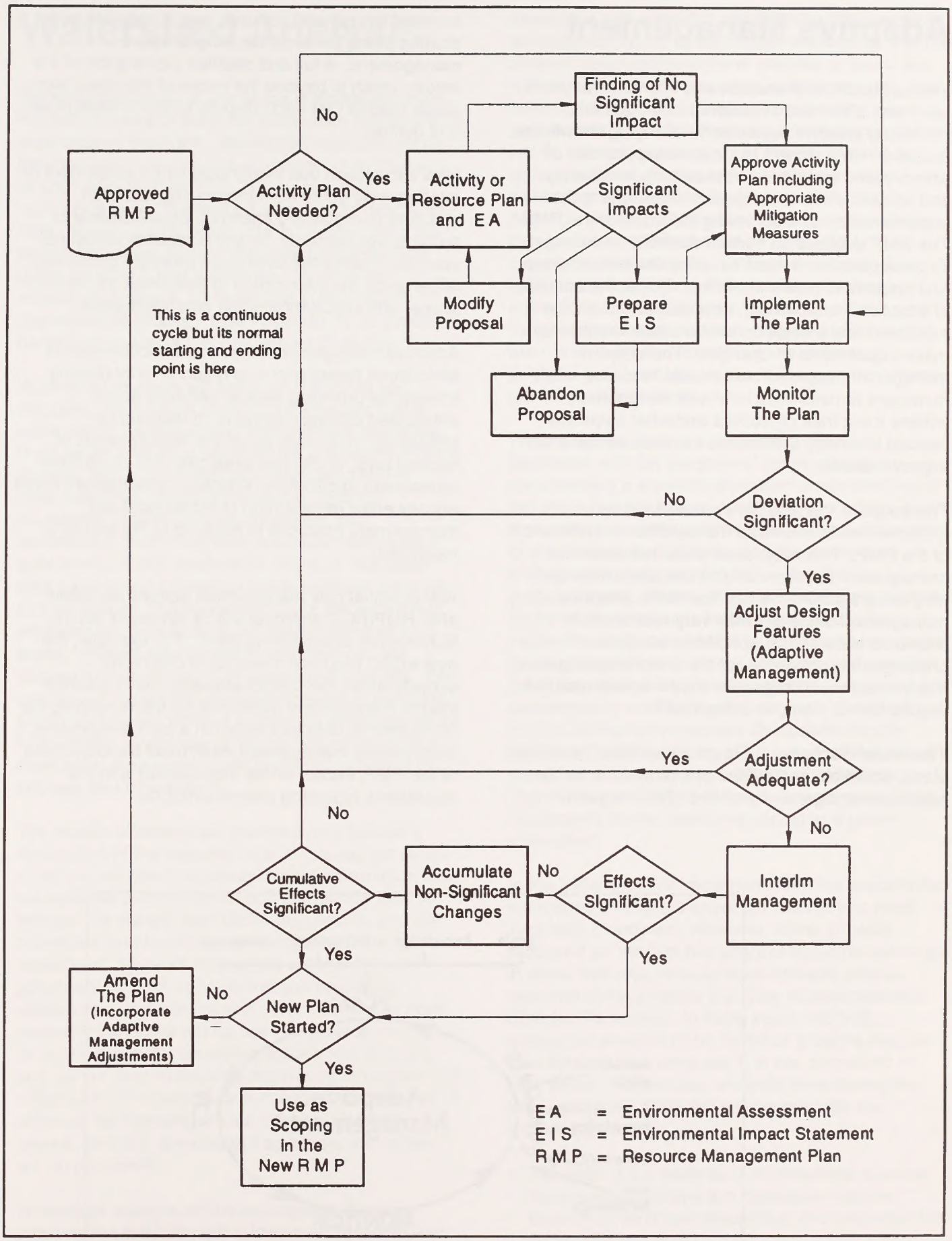

Figure 1. *Process for Changing the RMP.*

Adaptive Management

This approach to evaluation and interim adjustment will frame a process of adaptive management, permitting effective response to changing knowledge. Adaptive management is a continuing process of action-based monitoring, researching, evaluating, and adjusting with the objective of improving the implementation and achieving the goals of the RMP. The RMP is based on current scientific knowledge. To be successful, it must have the flexibility to adapt and respond to new information. Under the concept of adaptive management, new information will be evaluated and a decision will be made whether to make adjustments or changes. The adaptive management approach will enable resource managers to determine how well management actions meet their objectives and what steps are needed to modify activities to increase success or improve results.

The adaptive management process will be implemented to maximize the benefits and efficiency of the RMP. This may result in the refinement of management direction or land use allocations that may require amendment of the RMP. Adaptive management decisions may vary in scale from individual watersheds, specific forest types, physiographic provinces, or the entire planning area. Many adaptive management modifications may not require formal changes to the RMP.

The model displayed in Figure 2 identifies the various steps, activities, and outline of a procedure for the adaptive management process. This diagram conveys the general concept, and is valuable as a starting point, for understanding adaptive management. A full and detailed explanation of the model, which is beyond the scope of this discussion, would require that each step be further broken down and defined.

New information that would compel an adjustment of strategy may come from monitoring, research, statutory or regulatory changes, organizational or process assessments, or any number of additional sources. During the evaluation process, personnel will analyze the information to determine the nature, scope, and importance of the new information.

Adaptive management could entail modification of silvicultural prescriptions to respond to increasing knowledge providing greater certainty about anticipated climate change or to respond to increasing knowledge about the habitat needs of spotted owls, to cite two examples that could have widespread application. Adaptive management could equally entail modification of rather localized management practices to respond to the results of monitoring.

Any potential new management actions identified after RMP/ROD approval will be reviewed before BLM moves to implement them. For example, if a new ACEC proposal meets BLM criteria for consideration, the District Manager may prescribe interim management measures for the remaining life of the plan or until addressed in a plan amendment. Such interim management must meet the objectives of the RMP, except where inconsistent with the regulations regarding potential ACECs.

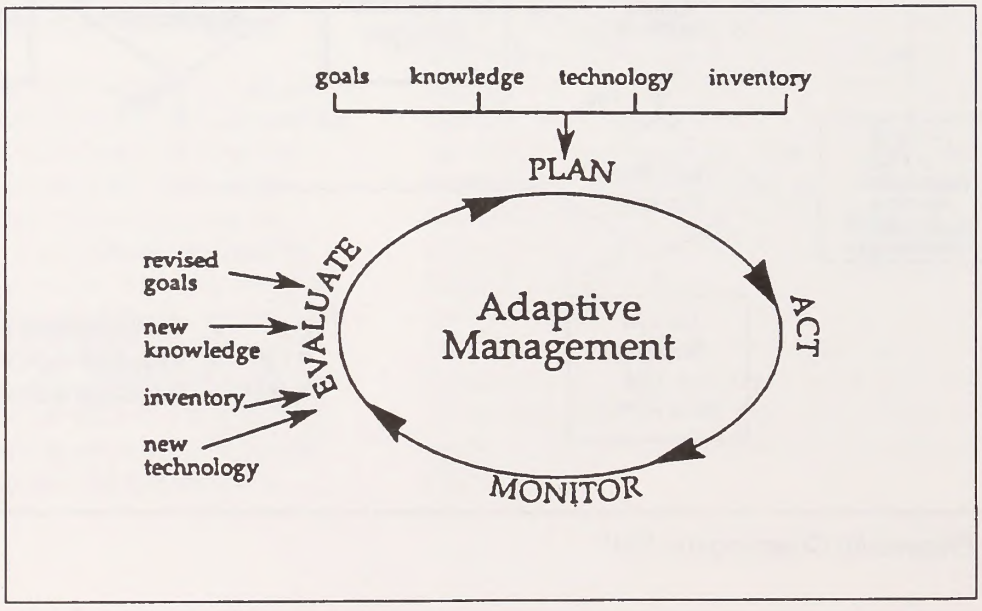

Figure 2. Basic Adpative Management Model.

Watershed Analysis

Watershed analysis is one of the principal analyses that will be used to meet the ecosystem management objectives of this RMP. Watershed analyses will be the mechanism to support ecosystem management at approximately the 20 to 200 square mile watershed level. Watershed analysis, as described here, focuses on its broad role in implementing the ecosystem management objectives prescribed by these standards and guidelines. The use of watershed analysis, as described in the Aquatic Conservation Strategy (see Appendix A), is a more narrow focus and is just one aspect of its role.

Watershed analysis will focus on collecting and compiling information within the watershed that is essential for making sound management decisions. It will be an analytical process, not a decision-making process with a proposed action requiring NEPA documentation. It will serve as the basis for developing project-specific proposals, and determining monitoring and restoration needs for a watershed. Some analysis of issues or resources may be included in broader scale analyses because of their scope. The information from the watershed analyses will contribute to decision-making at all levels. Project-specific NEPA planning will use information developed from watershed analysis. For example, if watershed analysis shows that restoring certain resources within a watershed could contribute to achieving landscape or ecosystem management objectives, then subsequent decisions will need to address that information.

The results of watershed analyses may include a description of the resource needs, issues, the range of natural variability, spatially explicit information that will facilitate environmental and cumulative effects analyses to comply with NEPA regulations, and the processes and functions operating within the watershed. Watershed analysis will identify potentially disjunct approaches and conflicting objectives within watersheds. The information from watershed analysis will be used to develop priorities for funding and implementing actions and projects, and will be used to develop monitoring strategies and objectives. The participation in watershed analysis of adjacent landowners, private citizens, interest groups, industry, government agencies, and others will be promoted.

Watershed analysis will be an ongoing, iterative process that will help define important resource and information needs. As watershed analysis is further developed and refined, it will describe the processes and interactions for all applicable resources. It will be an information-gathering and analysis process, but will not be a comprehensive inventory process. It will build on information collected from detailed, site-specific analyses. Information gathering and analysis will be related to management needs, and not be performed for their own sake. While generally watershed analysis will organize, collate, and describe existing information, there may be critical information needs that must be met before completing the analysis. In those instances, the additional information will be collected before completing the watershed analysis. In other instances, information needs may be identified that are not required for completing the watershed analysis but should be met for subsequent analyses, planning, or decisions.

Watershed analysis is a technically rigorous procedure with the purpose of developing and documenting a scientifically-based understanding of the ecological structures, functions, processes, and interactions occurring within a watershed. The scope of the analysis for implementing the ecosystem management objectives of these standards and guidelines may include all aspects of the ecosystem. Some of these aspects include beneficial uses; vegetative patterns and distribution; flow phenomena such as vegetation corridors, streams, and riparian corridors; wind; fire (wild and prescribed fire, and fire suppression); wildlife migration routes; dispersal habitat; terrestrial vertebrate distribution; locally significant habitats; human use patterns throughout the ecosystem; cumulative effects; and hydrology. The number and detail of these aspects considered will depend on the issues pertaining to a given watershed.

In the initial years of implementation, the process for watershed analysis is expected to evolve to meet long-term objectives. However, some projects proposed for the first few years of implementation are in areas that require watershed analysis prior to approval of the projects (i.e., Key Watersheds and Riparian Reserves). In fiscal years 1995-96, watershed analysis done for these projects may be less detailed than analyses that are completed in later years. Regardless, analysis done during the initial years (FY 1995-96) will comply with the following guidance:

- The goal of the analysis is to determine whether the proposed actions are consistent with the objectives, land use allocations, and management direction of the RMP.

- Existing information will be used to the greatest extent possible with new information collected, to the maximum extent practicable, to fill crucial data gaps.

- Analysis will address the entire watershed, even though some areas may be analyzed at a lower level of precision, and the analysis of issues may be prioritized.

- Information from the analysis will flow into the NEPA documentation for specific projects, and will be used where practicable to facilitate Endangered Species Act and Clean Water Act compliance.

- Restoration opportunities will be identified.

A regional pilot watershed analysis program has been initiated to develop and test an effective long-term process. A scientifically peer-reviewed Watershed Analysis Guide will be finalized based on experiences gained in the pilot program.

The results of watershed analysis will influence final decisions both on timing of land-disturbing activities such as timber sales and on application of design features and mitigating measures, including Best Management Practices (BMP) for water quality protection. Monitoring and evaluating the effectiveness of BMPs is required by Oregon's Nonpoint Source Management Plan to ensure that water quality standards are achieved and that beneficial uses are maintained. When monitoring identifies previously unanticipated impacts, the information gained from that monitoring will be used in subsequent development of mitigating measures, including BMPs, and considered in future watershed analyses.

Factored into these decisions on land-disturbing activities, where appropriate, will be an assessment of compliance with the antidegradation policy of Oregon's Water Quality Standards (OAR 340-41-026(1) (a). These standards apply to existing high quality waters that exceed those levels necessary to support recreation and the propagation of fish, shellfish and wildlife.

Proposed timber sales and other land-disturbing activities will incorporate the interactive (adaptive management) process for developing, implementing, and evaluating nonpoint control (BMPs) to determine if water quality goals have been met. Modification of nonpoint source controls, including BMPs, will be adjusted based upon sound scientific evidence. Where necessary, appropriate actions to mitigate adverse effects on water quality will be taken to protect designated beneficial uses.

Requirement for Further Environmental Analysis

Site-specific planning by Interdisciplinary Teams (IDT) would precede most on-the-ground management activities. IDTs are comprised of relevant resource management disciplines. The IDT process includes field examination of resources, identification of alternative management actions, and analysis. Adjacent land uses would be considered during site-specific land management planning.

Site-specific environmental analysis and documentation (including Environmental Assessments (EA), Categorical Exclusions or administrative determinations where appropriate, and RMP conformance determination) would be accomplished for each action or type of treatment under consideration. Where the action is to be accomplished by a contractor or timber sale purchaser, the EA or other environmental analysis is a primary means for determining appropriate contract stipulations. Where the action is to be accomplished by BLM personnel, the environmental analysis is a primary means for determining how it will be conducted. When determining whether activities retard or prevent attainment of Aquatic Conservation Strategy objectives, the scale of analysis typically will be BLM analytical watersheds or similar units.

Watershed analysis or province analysis will often precede environmental analysis of specific proposals, and the findings of such preceding analyses will be addressed in documentation of the environmental analyses. Similarly, Late-Successional Reserve assessments will precede activities in those reserves and their findings will be addressed in environmental analysis of those activities. Ultimately, watershed analysis will serve as the basis for developing project-specific proposals and determining monitoring and restoration needs for a watershed. Project-specific NEPA planning will use information developed from watershed analysis. By improving understanding of the ecological structures, functions, processes and interactions occurring within a watershed, watershed analysis will enhance the ability to predict direct, indirect and cumulative impacts of specific proposals in that watershed.

General

Analyses of proposals for the use of prescribed fire will adhere to the requirements of the Clean Air Act and the State Implementation Plan (including the Visibility Protection Plan and Smoke Management Plan). Conformity determinations to evaluate whether BLM actions comply with the State Implementation Plan will be conducted in association with site-specific environmental analysis where emissions can be most reasonably forecasted in quantified terms. These analyses will specifically evaluate the effects of project specific prescribed burning on nonattainment areas.

Accurate assessment of local and airshed level air quality effects of ecosystem management may require cumulative effects analysis reflecting all relevant BLM actions as well as expected actions of other parties. Coordination with other agencies is implicit. Cumulative effects analysis will include consideration of the effects on visibility and regional haze. Where extensive fuel hazard reduction by prescribed burning is considered, the analysis also will consider the impact of prescribed burning on wildfire emissions. This will be done in a quantified tradeoff analysis, comparing emissions from prescribed fire with potential emissions from wildfires if prescribed burning is not accomplished. Factors considered when establishing the geographic boundaries for a cumulative effects analysis include whether the action will result in impacts that cross administrative boundaries, and whether the action will affect sensitive air quality regions (i.e., Class I areas and nonattainment areas). Resultant analysis may be based on airsheds.

Interdisciplinary impact analysis will be tiered within the framework of applicable Environmental Impact Statements (EIS). Tiering is used to prepare more specific documents without duplicating relevant parts of previously prepared general documents. The more specific EA or other environmental analysis cannot lead directly to a change in the decisions based on the more general EIS to which it is tiered. It could, however, result in some interim management direction pending plan revision, or a proposal to amend the plan. If an EA indicates potential for significant impacts that are seriously different from those described in an existing EIS, a new EIS (or supplement to an existing EIS) may be required.

Specific proposals for treatment to manage competing vegetation and for control of noxious weeds will be addressed in site-specific EAs.

Availability of EAs for public review will be announced in a minimum of one, and generally all, of the following ways:

- News release distributed to the newsroom of area newspapers, TV, and radio stations;
- Notices posted in the public area at the Eugene District Office;
- Mailings to known interested/affected people, groups, Native Americans, governmental agencies, and businesses. These mailings may include, but are not limited to the "Eugene District Project and Planning Focus" newsletter; and
- Legal notices in one or more newspapers circulated in the project area.

Management of Newly Acquired Lands

Lands may come under BLM administration after completion of the RMP/ROD through exchange, donation, purchase, revocation of withdrawals of other Federal agencies, or relinquishment of Recreation and Public Purpose Act leases. Newly acquired or administered lands or interests in lands will be managed for their highest potential or for the purposes for which they are acquired. For example, lands acquired within "Special Management Areas" with Congressional or RMP allocation/direction will be managed in conformance with guidelines for those areas. If lands with unique or fragile resource values are acquired, it may be appropriate to protect those values until the next plan revision.

Lands acquired with no identified special values or management goals will be managed in the same manner as surrounding or comparable BLM administered lands. This implies typical timber harvest opportunities, intensive timber management practices, management of the mineral estate, standard operating procedures and precommitted mitigation measures.

The Budget Link

The initial annual cost of implementing the RMP is reflected in the Presidents' Fiscal Year 1995 budget, approximately $12.3 million for the Eugene District. There is not yet, however, a clear understanding of

what the management needs and costs of the ecosystem management approach will be, so future year budget estimates may differ as experience is gained in implementing the RMP.

Timber sale levels and associated programs will be reduced if annual funding is not sufficient to support the relevant actions assumed in the plan, including mitigation and monitoring. The extent of the reduction will be based on the principle of program balance as envisioned in the plan. For example, if funding in a given year is sufficient only to support half of planned annual investments in precommercial thinning, the otherwise anticipated timber sale volume for that year will be reduced by half of the portion of the declared Allowable Sale Quantity (ASQ) attributable to precommercial thinning. If, in subsequent years, budget levels permit BLM to eliminate the backlog of unfunded investments that have accumulated, timber sale levels will be adjusted upward to the extent that the work can be accomplished. If subsequent budget levels create a cumulative shortfall over a few years, the ASQ will be adjusted downward.

This principle will apply similarly to management of roads and other facilities. If maintenance of such facilities is not adequately funded, some of them may be closed to scale back management commitments to the level that is budgeted.

Monitoring

The BLM planning regulations (43 CFR 1610.4-9) call for the monitoring and evaluation of Resource Management Plans at appropriate intervals.

Monitoring is an essential component of natural resource management because it provides information on the relative success of management strategies. The implementation of the RMP will be monitored to ensure that management actions:

- follow prescribed management direction (implementation monitoring);
- meet desired objectives (effectiveness monitoring); and
- are based on accurate assumptions (validation monitoring) (see Appendix D).

Some effectiveness and most validation monitoring will be accomplished by formal research.

Monitoring will be an integral component of many new management approaches such as adaptive management and ecosystem management.

Adaptive management is based on monitoring that is sufficiently sensitive to detect relevant ecological changes. In addition, the success of adaptive management depends on the accuracy and credibility of information obtained through inventories and monitoring. Close coordination and interaction between monitoring and research are essential for the adaptive management process to succeed. Data obtained through systematic and statistically valid monitoring can be used by scientists to develop research hypotheses related to priority issues. Conversely, the results obtained through research can be used to further refine the protocols and strategies used to monitor and evaluate the effectiveness of RMP implementation.

Monitoring results will provide managers with the information to determine whether an objective has been met, and whether to continue or modify the management direction. Findings obtained through monitoring, together with research and other new information, will provide a basis for adaptive management changes to the plan. The processes of monitoring and adaptive management share the goal of improving effectiveness and permitting dynamic response to increased knowledge and a changing landscape. The monitoring program itself will not remain static. The monitoring plan will be periodically evaluated to ascertain that the monitoring questions and standards are still relevant, and will be adjusted as appropriate. Some monitoring items may be discontinued and others may be added as knowledge and issues change with implementation.

Watershed analysis is one of the principal analyses that will be used to meet the ecosystem management objectives. Information from watershed analysis will also be used in developing monitoring strategies and objectives. Specific to monitoring, the results and findings from watershed analysis are used to reveal the most useful indicators for monitoring environmental change, detect magnitude and duration of changes in conditions, formulate and test hypotheses about the causes of the changes, understand these causes and predict impacts, and manage the ecosystem for desired outcomes. Watershed analysis will provide information about patterns and processes within a watershed and provide information for monitoring at that scale.

The monitoring process will collect information in the most cost-effective manner, and may involve sampling or remote sensing. Monitoring could be so

costly as to be prohibitive if it is not carefully and reasonably designed. Therefore, it will not be necessary or desirable to monitor every management action or direction. Unnecessary detail and unacceptable costs will be avoided by focusing on key monitoring questions and proper sampling methods. The level and intensity of monitoring will vary, depending on the sensitivity of the resource or area and the scope of the proposed management activity.

RMP monitoring will be conducted at multiple levels and scales. Monitoring will be conducted in a manner that allows localized information to be compiled and considered in a broader regional context, and thereby address both local and regional issues. At the project level, monitoring will examine how well specific management direction has been applied on the ground and how effectively it produces expected results. Monitoring at broader levels will measure how successfully projects and other activities have achieved the objectives for those management areas.

Monitoring will be coordinated with other appropriate agencies and organizations in order to enhance the efficiency and usefulness of the results across a variety of administrative units and provinces. The approach will build on past and present monitoring work. In addition, specific monitoring protocols, criteria, goals, and reporting formats will be developed, subject to review and guidance of the Regional Ecosystem Office. This guidance will be used to augment and revise the monitoring plan and facilitate the process of aggregating and analyzing information on provincial or regional levels.

Monitoring results will be reported in an "Annual Program Summary," which will be published starting the 2nd year following initial implementation of this RMP. The Annual Program Summary will track and assess the progress of plan implementation, state the findings made through monitoring, specifically address the Implementation Monitoring Questions posed in each section of the Monitoring Plan, and serve as a report to the public.

Each Resource Area will be responsible for the collection, compilation and analysis of much of the data gained through monitoring activities. The District Resource Areas will report their findings and will integrate recommendations to the District for consolidation and publication in the Annual Program Summary.

The monitoring plan for the RMP is tiered to the Monitoring and Evaluation Plan for the SEIS Record of Decision. That Monitoring and Evaluation Plan is not yet fully refined. Therefore, the RMP Monitoring Plan is not complete. As components of the regional (SEIS) monitoring and evaluation plan are completed or refined, the RMP will be conformed to the regional plan. BLM has been, and will continue to be, a full participant in the development of the SEIS Monitoring and Evaluation Plan. Ongoing BLM effectiveness and validation monitoring will continue where it is relevant to Resource Management Plan (RMP) direction (i.e., stocking surveys, threatened and endangered species studies, and water quality measurements).

The SEIS and RMP monitoring plans will not identify all the monitoring the Eugene District will do. Activity and project plans may identify monitoring needs of their own.

Research

A research plan will be developed by the Research and Monitoring Committee identified in the SEIS/ ROD.

Ongoing research in Riparian Reserves will be analyzed to ensure that significant risk to the watershed does not exist. If significant risk is present and cannot be mitigated, study sites will be relocated. Some activities not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of the President's Forest Plan; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities will be considered only if there are no equivalent opportunities outside of Riparian Reserves and Key Watersheds.

Glossary

Activity Plan - A document that describes management objectives, actions and projects to implement decisions of the RMP or other planning documents. Usually prepared for one or more resources in a specific area.

Adaptive Management Areas - Landscape units designated for development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives.

Administratively Withdrawn Areas - 1.7 million acres of Federal lands that have been withdrawn from timber harvest to create experimental areas, research areas, recreation areas, or scenic areas. They also include areas where regeneration is difficult and timber productivity is low, plus areas of special concern for individual species. **Age Class** - One of the intervals into which the age range of trees is divided for classification or use.

Airshed - A geographical area that shares the same air mass due to topography, meteorology, and climate.

Allowable Sale Quantity (ASQ) - The gross amount of timber volume, including salvage, that may be sold annually from a specified area over a stated period of time in accordance with the management plan. Formerly referred to as "allowable cut."

Anadromous Fish - Fish that are born and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce. Salmon, steelhead, and shad are examples.

Analysis of the Management Situation (AMS) - A document that summarizes important information about existing resource conditions, uses and demands, as well as existing management activities. It provides the baseline for subsequent steps in the planning process, such as the design of alternatives and affected environment.

Analytical Watershed - For planning purposes, a drainage basin subdivision of the planning area used for analyzing cumulative impacts on resources.

Animal Damage -Injuries inflicted upon forest tree seed, seedlings, and young trees through seed foraging, browsing, cutting, rubbing, or trampling; usually by mammals and birds.

Aquatic Ecosystem - Any body of water, such as a stream, lake, or estuary, and all organisms and nonliving components within it, functioning as a natural system.

Aquatic Habitat - Habitat that occurs in free water.

Archaeological Site - A geographic locale that contains the material remains of prehistoric and/or historic human activity.

Area Control Rotation - The harvest of a forested area based upon harvesting a set proportion of the total forest area annually. Harvest at an annual even flow of cubic feet of timber is not a consideration in this system. This is in contrast to the generally more accepted common method of harvesting the growth in cubic feet at a sustainable constant rate by the year or decade without regard to the number of acres harvested or thinned (see Area Regulation).

Area of Critical Environmental Concern (ACEC) - An area of BLM administered lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources or other natural systems or processes; or to protect life and provide safety from natural hazards. (Also see Potential ACEC.)

Area of Critical Mineral Potential - An area nominated by the public as having mineral resources or potential important to the local, regional, or national economy.

Area Regulation - A method of scheduling timber harvest based on dividing the total acres by an assumed rotation.

Automated Resource Data (ARD) - Computerized map data used for the management of resources.

Available Forest Land - That portion of the forested acres for which timber production is planned and included within the acres contributing to the Probable Sale Quantity (PSQ). This includes both lands allocated primarily to timber production and lands on which timber production is a secondary objective.

Back Country Byway - A road segment designated as part of the National Scenic Byway System.

Basal Area - The area of the cross section of a tree stem near its base, generally at breast height, 4.5 feet above the ground and inclusive of bark.

Baseline - The starting point for Analysis of Environmental Consequences; may be the conditions at a point in time (e.g., when inventory data is collected) or may be the average of a set of data collected over a specified period of years.

Basin Programs - Sets of State administrative rules that establish types and amounts of water uses allowed in the State's major river basins and form the basis for issuing water rights.

Beneficial Use - The reasonable use of water for a purpose consistent with the laws and best interest of the peoples of the State. Such uses include, but are not limited to, the following: instream, out of stream and ground water uses,

domestic, municipal, industrial water supply, mining, irrigation, livestock watering, fish and aquatic life, wildlife, fishing, water contact recreation, aesthetics and scenic attraction, hydropower, and commercial navigation.

Best Management Practices (BMP) - Methods, measures, or practices designed to prevent or reduce water pollution. Not limited to structural and nonstructural controls, and procedures for operations and maintenance. Usually, BMPs are applied as a system of practices rather than a single practice.

Big Game - Large mammals that are hunted, such as Roosevelt elk, black-tailed deer and black bear.

Biological Corridor - A habitat band linking areas reserved from substantial disturbance.

Biological Diversity - The variety of life and its processes, including a complexity of species, communities, gene pools, and ecological functions.

BLM Operating Area - Portions of the Planning Area where BLM administered lands lie. (see definition for planning area).

Biological Legacies - Components of the forest stand (e.g., large trees, down logs, and snags) reserved from harvest to maintain site productivity and to provide structure and ecological functions in subsequent forest stands.

Board Foot (BF) - A unit of solid wood, one foot square and one inch thick.

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

Bureau Assessment Species - Plant and animal species on List 2 of the Oregon Natural Heritage Data Base, or those species on the Oregon List of Sensitive Wildlife Species (OAR 635-100-040), which are identified in BLM Instruction Memo No. OR-91-57, and are not included as Federal Candidate, State Listed or Bureau Sensitive species.

Bureau Sensitive Species - Plant or animal species eligible for Federal Listed, Federal Candidate, State Listed, or State Candidate (plant) status, or on List 1 in the Oregon Natural Heritage Data Base, or approved for this category by the State Director.

Candidate Species - Those plants and animals included in Federal Register "Notices of Review" that are being considered by the Fish and Wildlife Service (FWS) for listing as threatened or endangered. There are two categories that are of primary concern to BLM. These are:

Category 1. Taxa for which the FWS has substantial information on hand to support proposing the species for listing as threatened or endangered. Listing proposals are either being prepared or have been delayed by higher priority listing work.

Category 2. Taxa for which the FWS has information to indicate that listing is possibly appropriate. Additional information is being collected.

Casual Use - Activities ordinarily resulting in negligible disturbance of Federal lands and resources.

Cavity Excavator - A wildlife species that digs or chips out cavities in wood to provide a nesting, roosting, or foraging site.

Cavity Nesters - Wildlife species, most frequently birds, that require cavities (holes) in trees for nesting and reproduction.

Class I (air quality) Areas - Special areas (i.e., National parks, certain wilderness areas) protected for their air quality related values.

Characteristic Landscape - The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Clear Cut Harvest - A timber harvest method in which all trees are removed in a single entry from a designated area, with the exception of wildlife trees or snags, to create an even-aged stand.

Coastal Oregon Productivity Enhancement Program (COPE) - A cooperative research and education program to identify and evaluate existing and new opportunities to enhance long-term productivity and economic/social benefits derived from the forest resources of coastal Oregon.

Commercial Forest Land - Land declared suitable for producing timber crops and not withdrawn from timber production for other reasons.

Commercial Thinning - The removal of merchantable trees from an even-aged stand to encourage growth of the remaining trees.

Commercial Tree Species - Conifer species used to calculate the commercial forest land PSQ. They are typically utilized as saw timber and include species such as Douglas-fir, hemlock, spruce, fir, pine and cedar. (Also see Noncommercial Tree Species).

Commodity Resources - Goods or products of economic use or value.

Community Stability - The capacity of a community (incorporated town or county) to absorb and cope with change without major hardship to institutions or groups within the community.

Community Water System - See Public Water System.

Concern - A topic of management or public interest that is not well enough defined to become a planning issue, or does not involve controversy or

dispute over resource management activities or land use allocations, or lend itself to designating land use alternatives. A concern may be addressed in analysis, background documents, or procedures, or in a noncontroversial decision.

Congressionally Reserved Areas - Areas that require Congressional enactment for their establishment, such as national parks, wilderness, and wild and scenic rivers.

Connectivity - A measure of the extent to which conditions between late-successional/old growth forest areas provide habitat for breeding, feeding, dispersal, and movement of late-successional/old growth associated wildlife and fish species.

Consistency - Under the Federal Land Policy and Management Act, the adherence of BLM resource management plans to the terms, conditions and decisions of officially approved and adopted resource related plans, or in their absence, with policies and programs of other Federal agencies, State and local governments and American Indian tribes, so long as the plans are also consistent with the purposes, policies and programs of Federal laws and regulations applicable to BLM administered lands. Under the Coastal Zone Management Act, the adherence to approved State management programs to the maximum extent practicable, of Federal agency activities affecting the defined coastal zone.

Core Area - That area of habitat essential in the breeding, nesting, and rearing of young, up to the point of dispersal of the young.

Cover - Vegetation used by wildlife for protection from predators, or to mitigate weather conditions, or to reproduce. May also refer to the protection of the soil and the shading provided to herbs and forbs by vegetation.

Critical Habitat - Under the Endangered Species Act, (1) the specific areas within the geographic area occupied by a Federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a listed species when it is determined that such areas are essential for the conservation of the species.

Crucial Habitat - Habitat that is basic to maintaining viable populations of fish or wildlife during certain seasons of the year or specific reproduction periods.

Cubic Foot - A unit of solid wood, one foot square and one foot thick.

Cull - A tree or log that does not meet merchantable specifications.

Culmination of Mean Annual Increment (CMAI) - The peak of average yearly growth in volume of a forest stand (total volume divided by age of stand).

Cultural Resource - Any definite location of past human activity identifiable through field survey, historical documentation, or oral evidence; includes archaeological or architectural sites, structures, or places, and places of traditional cultural or religious importance to specified groups whether or not represented by physical remains. **Cultural Site** - Any location that includes prehistoric and/or historic evidence of human use or that has important sociocultural value.

Cumulative Effect - The impact that results from identified actions when they are added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Debris Torrent - Rapid movement of a large quantity of materials (wood and sediment) down a stream channel during storms or floods. This generally occurs in smaller streams and results in scouring of streambed.

Density Management - Cutting of trees for the primary purpose of widening their spacing so that growth of remaining trees can be accelerated. Density management harvest can also be used to improve forest health, to open the forest canopy, or to accelerate the attainment of old growth characteristics, if maintenance or restoration of biological diversity is the objective.

Departure (from even flow) - A timber sale level that deviates from sustainable sale levels through a planned temporary increase or decrease in the PSQ. Must be economically and biologically justified.

Designated Area - An area identified in the Oregon Smoke Management Plan as a principal population center requiring protection under State air quality laws or regulations.

Designated Conservation Area (DCA) - A contiguous area of habitat to be managed and conserved for spotted owls as described in the U.S. Fish and Wildlife Service's Final Draft Recovery Plan for the Northern Spotted Owl.

Developed Recreation Site - A site developed with permanent facilities designed to accommodate recreation use.

Diameter At Breast Height (dbh) - The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

Dispersed Recreation - Outdoor recreation in which visitors are diffused over relatively large areas.

Where facilities or developments are provided, they are primarily for access and protection of the environment rather than comfort or convenience of the user.

District Designated Reserves (DDR) - Areas designated for the protection of specific resources, flora and fauna, and other values. These areas are not included in other land use allocations nor in the calculation of the PSQ.

Domestic Water Supply - Water used for human consumption.

Donation Land Claim - A tract of land originally surveyed and patented out of Federal ownership under authority of laws passed by Congress between 1850 and 1853 granting lands to early settlers of the Oregon Territory.

Economically Feasible - Having costs and revenues with a present net value greater than zero.

Ecological Health - The condition of an ecosystem in which processes and functions are adequate to maintain diversity of biotic communities commensurate with those initially found there.

Ecosystem - An interacting natural system including living organisms and the nonliving environment. Ecosystems may vary in size. For example, the community of microorganisms in water; the lake that contains the water; the watershed where the lake is situated; and the mountain range where the watershed is located.

Ecosystem Diversity - The variety of species and ecological processes that occur in different physical settings.

Ecosystem Management (EM) - The management of lands and their resources to meet objectives based on their whole ecosystem function rather than on their character in isolation. Management objectives blend long-term needs of people and environmental values in such a way that the lands will support diverse, healthy, productive, and sustainable ecosystems. (Source: IB OR 93-339 to all employees from the State Director.)

Edge Effect - An ecologically biological effect that occurs in the transition zone where two plant communities or successional stages meet and mix.

Effective Old Growth Habitat - Old growth forest largely unmodified by external environmental influences (for example, wind, temperature, encroachment of nonresident species) from nearby, younger forest stands. Also referred to as interior habitat. For purposes of analysis, assumed to be at least 400 feet from an edge with an adjacent stand younger than age class 70.

Eligible River - A river or river segment found, through interdisciplinary team and, in some cases, interagency review, to meet Wild and Scenic River Act criteria of being free flowing and possessing one or more Outstandingly Remarkable Values.

Endangered Species - Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

Environmental Assessment (EA) - A systematic analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment; and whether a formal Environmental Impact Statement is required; and to aid an agency's compliance with NEPA when no EIS is necessary.

Environmental Impact - The positive or negative effect of any action upon a given area or resource.

Environmental Impact Statement (EIS) - A formal document to be filed with the Environmental Protection Agency that considers significant environmental impacts expected from implementation of a major Federal action.

Ephemeral Streams - Streams that contain running water only sporadically, such as during and following storm events.

Equivalent Clear Cut Acres - A hydrological term that describes the runoff from a watershed in terms of the number of acres of recent clear cut, which would be required to yield the same total amount of runoff. Following a clear cut harvest, runoff increases to a peak level, then gradually declines for 20 years. Stands of trees 20 years and older are considered to yield the same runoff as any fully forested site.

Established Stand - A reforestation unit of suitable trees that are past the time when considerable juvenile mortality occurs. The unit is no longer in need of measures to ensure survival but is evaluated for measures to enhance growth.

Even-Aged Management - A silvicultural system that creates forest stands, which are primarily of a single age or limited range of ages.

Existing Stand Condition (ESC) - An artificial classification that groups forest stands with similar management potential into categories matched to tables expressing yield at various stand ages under various combinations of silvicultural treatment.

Extensive Recreation Management Areas (ERMAs) - All BLM administered lands outside Special Recreation Management Areas. These

areas may include developed and primitive recreation sites with minimal facilities.

Forest Canopy - The cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

Forest Health - The ability of forest ecosystems to remain productive, resilient, and stable over time and to withstand the effects of periodic natural or human-caused stresses such as drought, insect attack, disease, climatic changes, flood, resource management practices and resource demands.

Forest Land - Land that is now, or is capable of becoming, at least I0 percent stocked with forest trees and that has not been developed for nontimber use.

Forest Succession - The orderly process of change in a forest as one plant community or stand condition is replaced by another, evolving towards the climax type of vegetation.

Fragile Nonsuitable - A TPCC classification indication forest land having fragile conditions, which if harvested would result in reduced future productivity; even if special harvest or restrictive measures are applied. These fragile conditions are related to soils, geologic structure, topography, and ground water.

Full Log Suspension - Suspension of the entire log above the ground during yarding operations.

General Forest Management Area (GFMA) - Forest land managed on a regeneration harvest cycle of 60-110 years. A biological legacy of 6 to 8 green trees per acre would be retained to assure forest health. Commercial thinning would be applied where practicable and where research indicates there would be gains in timber production.

Genetic Diversity - The variety within populations of a species.

Green Tree Retention - A stand management practice in which live trees as well as snags and large down wood, are left as biological legacies within harvest units to provide habitat components over the next management cycle.

- **High Level** - A regeneration harvest designed to retain the highest level of live trees possible while still providing enough disturbance to allow regeneration and growth of the naturally occurring mixture of tree species. Such harvest should allow for the regeneration of intolerant and tolerant species. Harvest design would also retain cover and structural features necessary to provide foraging and dispersal habitat for mature and old growth dependent species.
- **Low Level** - A regeneration harvest designed to retain only enough green trees and other structural components (snag, coarse woody debris, etc.) to result in the development of stands, which meet old growth definitions within 100-120 years after harvest entry, considering overstory mortality.

Habitat Diversity - The number of different types of habitat within a given area.

Habitat Fragmentation - The breaking up of habitat into discrete islands through modification or conversion of habitat by management activities.

Habitat Management Plan - See Activity Plan.

Hardwood Site - A forest site occupied by hardwoods that is unsuitable for the production of conifer species.

Hazardous Materials - Anything that poses a substantive present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

Hiding Cover - Generally, any vegetation used by wildlife for security or to escape from danger; however, more specifically, any vegetation capable of providing concealment (e.g., hiding 90 percent of an animal) from human view at a distance of 200 feet or less.

Historic Site - A cultural resource resulting from activities or events dating to the historic period (generally post AD I830 in western Oregon).

Home Range - The area that an animal traverses in the scope of normal activities; not to be confused with territory, which is the area an animal defends.

Hyporheic Zone - The area under the stream channel and flood plain that contributes to the stream.

Impact - A spatial or temporal change in the environment caused by human activity.

Improved Seed - Seed originated from a seed orchard or selected tree(s) whose genetic superiority in one or more characters important to forestry has been proven by tests conducted in specific environments.

Infiltration (soil) - The movement of water through the soil surface into the soil.

Integrated Pest Management (IPM) - A systematic approach that uses a variety of techniques to reduce pest damage or unwanted vegetation to tolerable levels. IPM techniques may include natural predators and parasites, genetically resistant hosts, environmental modifications and, when necessary and appropriate, chemical pesticides or herbicides.

Integrated Vegetation Management - See Integrated Pest Management.

Intensively Managed Timber Stands - Forest stands managed to obtain a high level of timber volume or quality through investment in growth enhancing practices, such as precommercial thinning, commercial thinning, and fertilization. Not to be confused with the allocations of "lands

available for intensive management of forest products."

Intensive Forest Management Practices - The growth enhancing practices of release, precommercial thinning, commercial thinning, and fertilization, designed to obtain a high level of timber volume or quality.

Intensive Timber Production Base - All commercial forest land allocated to timber production and intensively managed to obtain a high level of timber volume or quality.

Intermittent Stream - Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Irreversible or Irretrievable Commitment of Resources - Effect of an action or inaction that cannot be reversed within a reasonable time.

Issue - A matter of controversy or dispute over resource management activities that is well defined or topically discrete. Addressed in the design of planning alternatives.

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

Landscape - A heterogeneous land area with interacting ecosystems that are repeated in similar form throughout.

Landscape Diversity - The size, shape and connectivity of different ecosystems across a large area.

Landscape Features - The land and water form, vegetation, and structures that compose the characteristic landscape.

Land Tenure Adjustments -

Zone 1 lands include areas currently identified as having high public resource values which merit long-term public ownership under BLM administration. They do not meet the criteria for sale under Section203(a) of FLPMA and would be retained in public ownership.

Zone 2 lands include areas that meet criteria for exchange because they form discontinuous ownership patterns, are less efficient to manage, and may not be accessible to the general public. These BLM administered lands may be exchanged for other lands in Zones 1 or 2, transferred to other public agencies, or given some form of cooperative management. These lands do not meet the criteria for sale under Section 203(a) of FLPMA. Most lands in this zone would remain under BLM administration.

Zone 3 includes lands that are scattered and isolated with low resource values. They meet the criteria for sale under Section 203(a) of FLPMA, if important recreation, wildlife, watershed, threatened or endangered species habitat and/or cultural values are not identified during disposal clearance reviews. Oregon and California (O&C) lands assigned to Zone 3 are not suitable commercial forest land. Most lands in Zone 3 would be sold, exchanged, or transferred out of BLM administration over time. Zone 3 lands are specifically identified in Table 2-19.

Land Use Allocations - Allocations that define allowable uses/activities, restricted uses/ activities, and prohibited uses/activities. They may be expressed in terms of area such as acres or miles, etc. Each allocation is associated with a specific management objective.

Late-Successional Forests - Forest seral stages that include mature and old growth age classes.

Late-Successional Reserve - A forest in its mature and/or old growth stages that has been reserved.

Leasable Minerals - Minerals that may be leased to private interests by the Federal government. Includes oil, gas, geothermal resources, and coal.

Locatable Minerals - Minerals subject to exploration, development and disposal by staking mining claims as authorized by the Mining Law of l872 (as amended). This includes valuable deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Log Decomposition Class - Any of 5 stages of deterioration of logs in the forest; stages range from essentially sound (class 1) to almost total decomposition (class 5).

Long-Term - The period starting l0 years following implementation of the Resource Management Plan. For most analyses, long-term impacts are defined as those existing 100 years after implementation.

Long-Term Soil Productivity - The capability of soil to sustain inherent, natural growth potential of plants and plant communities over time.

Long-Term Sustained Yield (LTSY) - Estimated timber harvest that can be maintained indefinitely, once all stands have been converted to a managed state under a specific management intensity.

Lumber and Wood Products, Except Furniture - An industrial classification that includes logging contractors engaged in cutting timber and pulpwoods: merchant sawmills, lath mills, shingle mills, planing mills, plywood mills, and veneer mills engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood or wood substitutes. Certain types of establishments producing wood products

are classified elsewhere, e.g., furniture and office and store fixtures are in a different classification.

Major Plant Grouping - An aggregation of plant associations with similar management potential and with the same dominant late seral conifer species and the same major early seral species. Late seral rather than climax species are used because late seral species are usually present rather than climax communities, and because most old growth plant communities on BLM administered lands are made up of late seral species rather than climax species in the upper canopy.

Managed Pair Areas - In some portions of the northern spotted Owl's range it is necessary to provide additional protection in the matrix for pairs of owls and territorial singles. This consists of delineating a core habitat area, plus additional acreage of suitable habitat around the core. The acreage to be delineated around the core varies throughout the range, based on data for pairs in the area. The suitable acreage must be delineated in a area equal to the mean home range for that physiographic province. Appropriate silvicultural treatment is encouraged in suitable and unsuitable habitat in the acreage around the core.

Management Actions/Direction - Measures planned to achieve the stated objective(s).

Management Activity - An activity undertaken for the purpose of harvesting, traversing, transporting, protecting, changing, replenishing, or otherwise using resources.

Management Framework Plan (MFP) - A land use plan that established coordinated land use allocations for all resource and support activities for a specific land area within a BLM District. It established objectives and constraints for each resource and support activity and provided data for consideration in program planning. This process has been replaced by the Resource Management Planning process.

Management Objectives - Expressions of what BLM wants to accomplish with its management efforts.

Mass Movement - The downslope movement of earth caused by gravity. Includes but is not limited to landslides, rock falls, debris avalanches, and creep. It does not include surface erosion.

Master Title Plat - A map compiled for each township from the official government land surveys on which is shown Federal land ownership, acreages, and various land status information such as withdrawals, easements, rights-of-way, and leases.

Matrix Lands - Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels.

Metes and Bounds - A description of the boundaries of a tract of land utilizing courses and distances between specific objects such as survey monuments.

MICRO*STORMS - A microcomputer database system providing background information and recommended treatment for each operations inventory unit.

Mineral Estate - The ownership of the minerals at or beneath the surface of the land.

Mineral Potential Classification System - Method for assessing the potential for the presence of a concentration of one or more energy and/or mineral resources.

Minimum Harvest Age - The lowest age of a forest stand to be scheduled for final harvest.

Minimum Stocking - Reforestation level lower than target stocking. Does not achieve full site occupancy in young stands but is capable of achieving optimal final harvest yield and reduced commercial thinning yield.

Minimum Streamflow - The quantity of water needed to maintain the existing and planned in-place uses of water in or along a stream channel or other water body, and to maintain the natural character of the aquatic system and its dependent systems.

Mining Claims - Portions of public lands claimed for possession of locatable mineral deposits, by locating and recording under established rules and pursuant to the 1872 Mining Law.

Mitigating Measures - Modifications of actions that (a) avoid impacts by not taking a certain action or parts of an action; (b) minimize impacts by limiting the degree or magnitude of the action and its implementation; (c) rectify impacts by repairing, rehabilitating or restoring the affected environment; (d) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or (e) compensate for impacts by replacing or providing substitute resources or environments.

Monitoring - The 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.

Multiple Use - Management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future 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; the use of some land for less than all of the

resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

National Ambient Air Quality Standards (NAAQS) - Standards designed to protect public health and welfare, allowing an adequate margin of safety. For particulate matter less than l0 microns in size (PM_{10}), 50 micrograms per cubic meter annual average and l50 micrograms per cubic meter, 24-hour average, not to be exceeded more than once per year.

Nonattainment - Failure of a geographical area to attain or maintain compliance with ambient air quality standards.

Nonattainment Area - A geographical area that has failed to attain or maintain compliance with air quality standards. Nonattainment area boundaries are commonly the same as city, standard metropolitan statistical area or County boundaries.

Noxious Plant/Weed - A plant specified by law as being especially undesirable, troublesome, and difficult to control.

O&C Lands - Public lands granted to the Oregon and California Railroad Company and subsequently revested to the United States, which are managed by the Bureau of Land Management under the authority of the O&C Lands Act.

Objectives - Expressions of what are the desired end results of management efforts.

Off Highway Vehicle (OHV) - Any motorized track or wheeled vehicle designed for cross country travel over natural terrain. The term, "Off Highway Vehicle" will be used in place of the term "Off-Road Vehicle" to comply with the purposes of Executive Orders 11644 and 11989. The definition for both terms is the same.

Open: Designated areas and trails where Off Highway Vehicles may be operated subject to operating regulations and vehicle standards set forth in BLM Manuals 834l and 8343.

Limited: Designated areas and trails where Off Highway Vehicles are subject to restrictions limiting the number or types of vehicles, date, and time of use; limited to existing or designated roads and trails.

Closed: Areas and trails where the use of Off Highway Vehicles is permanently or temporarily prohibited. Emergency use is allowed.

Old Growth Conifer Stand - Older forests occurring on western hemlock, mixed conifer, or mixed evergreen sites that differ significantly from younger forests in structure, ecological function, and species composition. Old growth characteristics begin to appear in unmanaged forests at 175 to 250 years of age. These characteristics include (a) a patchy, multilayered canopy with trees of several age classes; (b) the presence of large living trees; (c) the presence of larger standing dead trees (snags) and down woody debris; and (d) the presence of species and functional processes that are representative of the potential natural community.

For purposes of inventory, old growth stands on BLM administered lands are only identified if they are at least 50 percent stocked with trees of 200 years or older and are 10 acres or more in size. For purposes of habitat or biological diversity, the BLM uses the appropriate minimum and average definitions provided by Pacific Northwest Experiment Station publications 447 and GTR-285. This definition is summarized from the 1986 interim definitions of the Old Growth Definitions Task Group.

Outstanding Natural Area (ONA) - An area that contains unusual natural characteristics and is managed primarily for educational and recreational purposes.

Outstandingly Remarkable Values (ORV) - Values among those listed in Section 1 (b) of the Wild and Scenic Rivers Act: "scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values . . ." Other similar values that may be considered include ecological, biological or botanical, paleontological, hydrological, scientific, or research.

Partial Cutting - Removal of selected trees from a forest stand.

Particulates - Finely divided solid or liquid (other than water) particles in the air.

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 has running water on a year-round basis under normal climatic conditions.

Plan Amendment - A change in the terms, conditions or decisions of a resource management plan.

Plan Maintenance - Any documented minor change that interprets, clarifies, or refines a decision within a Resource Management Plan but does not change the scope or conditions of that decision.

Plan Revision - A new Resource Management Plan prepared by following all steps required by the regulations for preparing an original Resource Management Plan.

Planning Area - All of the lands within the BLM management boundary addressed in a BLM Resource Management Plan; however, BLM planning decisions apply only to BLM administered lands and mineral estate.

Planning Issue - See Issue.

Potential ACEC - An area of BLM administered land that meets the relevance and importance criteria for ACEC designation, as follows:

(1) Relevance. There shall be present a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard.

(2) Importance. The above described value, resource, system, process, or hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property.

Potential Natural Community - The community of plants and wild animals that would become established if all successional sequences were completed without interference by man under present environmental conditions. For forest communities, the potential natural community is an old growth conifer stand.

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

Prescribed Fire - A fire burning under specified conditions that will accomplish certain planned objectives.

Probable Sale Quantity (PSQ) - Probable Sale Quantity estimates the allowable harvest levels for the various alternatives that could be maintained without decline over the long-term if the schedule of harvests and regeneration were followed. "Allowable" was changed to "probable" to reflect uncertainty in the calculations for some alternatives. Probable Sale Quantity is otherwise comparable to Allowable Sale Quantity (ASQ). However, Probable Sale Quantity does not reflect a commitment to a specific cut level. Probable Sale Quantity includes only scheduled or regulated yields and does not include "other wood" or volume of cull and other products that are not normally part of Allowable Sale Quantity calculations.

Progeny Test Site - A test area for evaluating parent seed trees by comparing the growth of their offspring seedlings.

Proposed Threatened or Endangered Species - Plant or animal species proposed by the U.S. Fish & Wildlife Service to be biologically appropriate for listing as threatened or endangered, and published in the Federal Register. It is not a final designation.

Public Domain Lands - Original holdings of the United States never granted or conveyed to other jurisdictions, or reacquired by exchange for other public domain lands.

Public Water System - A system providing piped water for public consumption. Such a system has at least 15 service connections or regularly serves at least 25 individuals.

Rearing Habitat - Areas in rivers or streams where juvenile salmon and trout find food and shelter to live and grow.

Recovery Plan - A plan for the conservation and survival of an endangered species or a threatened species listed under the Endangered Species Act, to improve the status of the species to make continued listing unnecessary.

Recreation Opportunity Spectrum (ROS) - A fundamental Recreation planning tool that recognizes the critical link between the setting of an activity and the subsequent experience it provides. The ROS provides a framework for defining the types of outdoor recreation opportunities the public might desire, and identifies that portion of the spectrum a given agency might be able to provide. The spectrum has 7 categories ranging from Primitive to Urban.

Recreational River - See Wild and Scenic River System.

Reforestation - The natural or artificial restocking of an area with forest trees; most commonly used in reference to artificial stocking.

Regeneration Harvest - Timber harvest conducted with the partial objective of opening a forest stand to the point where favored tree species will be reestablished.

Regeneration Period - The time it takes to reforest an area to adequate stocking following a timber sale.

Regional Ecosystem Office (REO) - The main function of this office is to provide staff work and support to the Regional Interagency Executive Committee (RIEC) so the standards and

guidelines in the forest management plan can be successfully implemented.

Regional Interagency Executive Committee (RIEC) - This group serves as the senior regional entity to assure the prompt, coordinated and successful implementation of the forest management plan standards and guidelines at the regional level.

Regulated Forest - A forest that comprises an even distribution of age classes or tree sizes, when the growth equals the cut (at the highest level sustainable) and when the level of growing stock remains relatively constant.

Research Natural Area (RNA) - An area that contains natural resource values of scientific interest and is managed primarily for research and educational purposes.

Reserved Federal Mineral Estate - Land on which the Federal government has ownership of minerals but the surface estate is private or other nonfederal ownership.

Reserved Pair Areas - In those portions of the species' range where habitat and owl populations are inadequate to apply the criteria creating designated conservation areas, then individual pair areas were also reserved. These are areas of suitable habitat identified for pairs and territorial single owls. The acreage of these areas varies throughout the range, based on data for pairs in each physiographic province. All suitable habitat is reserved in an area equal to the mean home range for that province.

Residual Habitat Area - An area about 100 acres in size of nesting, roosting, and foraging habitat encompassing the known activity center for a pair of owls or a territorial single owl. The intended purpose is to protect the core areas in the short-term and to provide potential nest sites in the long-term. These areas have now been added to the LSR system as unmapped reserves.

Resource Management Plan (RMP) - A land use plan prepared by the BLM under current regulations in accordance with the Federal Land Policy and Management Act.

Right-of-Way - A permit or an easement that authorizes the use of public lands for specified purposes, such as pipelines, roads, telephone lines, electric lines, reservoirs, and the lands covered by such an easement or permit.

Riparian Management Area - An area allocated in the plan primarily to protect the riparian and/or streamside zone.

Riparian Reserves - Designated riparian areas as described in the SEIS/ROD.

Ripping - The process of breaking up or loosening compacted soil to assure better penetration of roots of young tree seedlings.

Rotation - The planned number of years between establishment of a forest stand and its regeneration harvest.

Rural Interface Areas - Areas where BLM administered lands are adjacent to or intermingled with privately owned lands zoned for 1 to 20-acre lots or that already have residential development.

Salable Minerals - High volume, low value mineral resources including common varieties of rock, clay, decorative stone, sand, and gravel.

Scarification - Mechanical removal of competing vegetation or interfering debris prior to planting.

Scenic Quality - The relative worth of a landscape from a visual perception point of view.

Scenic River - See Wild and Scenic River System.

Scribner Short Log - A log measurement rule constructed from diagrams that shows the number of 1-inch boards, which can be drawn in a circle representing the small end of a 16-foot-long log, assumes a 1/4-inch saw kerf groove, makes a liberal allowance for slabs, and disregards log taper.

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. Measured in dry weight or by volume. Consists of suspended sediment and bedload.

Seed Tree Cutting Method - An even-aged reproductive cutting method in which all mature timber from an area is harvested in one entry except for a small number of trees left as a seed source for the harvested area.

Seed Orchard - A plantation of clones or seedlings from selected trees; isolated to reduce pollination from outside sources, weeded of undesirables, and cultured for early and abundant production of seed.

Selection Cutting - A method of uneven-aged management involving the harvesting of single trees from stands (single-tree selection) or in groups (group selection) without harvesting the entire stand at any one time.

Sensitivity Analysis - A process of examining specific tradeoffs that would result from making changes in single elements of a plan alternative.

Sensitivity Levels - Measures (e.g., high, medium, and low) of public concern for the maintenance of scenic quality.

Seral Stages - The series of relatively transitory plant communities that develop during ecological succession from bare ground to the climax stage. There are five stages:

Early Seral Stage - The period from disturbance to crown closure of conifer stands usually

occurring from 0-15 years. Grass, herbs, or brush are plentiful.

Mid Seral Stage - The period in the life of a forest stand from crown closure to ages 15-40. Due to stand density, brush, grass, or herbs rapidly decrease in the stand. Hiding cover may be present.

Late Seral Stage - The period in the life of a forest stand from first merchantability to culmination of mean annual increment. This is under a regime including commercial thinning, or to 100 years of age, depending on wildlife habitat needs. During this period, stand diversity is minimal, except that conifer mortality rates will be fairly rapid. Hiding and thermal cover may be present. Forage is minimal.

Mature Seral Stage - The period in the life of a forest stand from Culmination of Mean Annual Increment to an old growth stage or to 200 years. This is a time of gradually increasing stand diversity. Hiding cover, thermal cover, and some forage may be present.

Old Growth - This stage constitutes the potential plant community capable of existing on a site given the frequency of natural disturbance events. For forest communities, this stage exists from approximately age 200 until when stand replacement occurs and secondary succession begins again. Depending on fire frequency and intensity, old growth forests may have different structures, species composition and age distributions. In forests with longer periods between natural disturbance, the forest structure will be more even-aged at late mature or early old growth stages.

Shelterwood Cutting - A regeneration method under an even-aged silvicultural system. A portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration. The mature stand is removed in two or more cuttings.

Short-Term - The period of time during which the RMP will be implemented; assumed to be 10 years.

Silvicultural Prescription - A professional plan for controlling the establishment, composition, constitution, and growth of forests.

Silvicultural System - A planned sequence of treatments over the entire life of a forest stand needed to meet management objectives.

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.

Site Preparation - Any action taken in conjunction with a reforestation effort (natural or artificial) to create an environment that is favorable for survival of suitable trees during the first growing season. This environment can be created by altering ground cover, soil or microsite conditions, using biological, mechanical, or manual clearing, prescribed burns, herbicides or a combination of methods.

Skid Trail - A pathway created by dragging logs to a landing (gathering point).

Skyline Yarding - A cable yarding system using one of the cables to support a carriage from which logs are suspended and then pulled to a landing.

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

Slope Failure - See Mass Movement.

Smoke Management - Conducting a prescribed fire under suitable fuel moisture and meteorological conditions with firing techniques that keep smoke impact on the environment within designated limits.

Smoke Management Program - A program designed to ensure that smoke impacts on air quality from agricultural or forestry burning operations are minimized; that impacts do not exceed, or significantly contribute to, violations of air quality standards or visibility protection guidelines; and that necessary open burning can be accomplished to achieve land management goals.

Smoke Sensitive Area - An area identified by the Oregon Smoke Management Plan that may be negatively affected by smoke but is not classified as a Designated Area.

Snag - Any standing dead, partially-dead, or defective (cull) tree at least 10 inches in diameter at breast height (dbh) and at least 6 feet tall. A hard snag is composed primarily of sound wood, generally merchantable. A soft snag is composed primarily of wood in advanced stages of decay and deterioration, generally not merchantable.

Snag Dependent Species - Birds and animals dependent on snags for nesting, roosting, or foraging habitat.

Soil Compaction - An increase in bulk density (weight per unit volume) and a decrease in soil porosity resulting from applied loads, vibration, or pressure.

Soil Displacement - The removal and horizontal movement of soil from one place to another by mechanical forces such as a blade.

Soil Productivity - Capacity or suitability of a soil for establishment and growth of a specified crop or

plant species, primarily through nutrient availability.

Soil Series - A group of soils developed from a particular type of parent material having naturally developed horizons that, except for texture of the surface layer, are similar in differentiating characteristics and in arrangement of the profile.

Special Areas - Areas that may need special management, which may include management as an ACEC, RNA, ONA, environmental education area, or other special category.

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 Proposed Resource Management Plan.

Special Habitat Features - Habitats of special importance due to their uniqueness or high value.

Special Recreation Management Area (SRMA) - An area where a commitment has been to provide specific recreation activity and experience opportunities. These areas usually require a high level of recreation investment and/or management. They include recreation sites but recreation sites alone do not constitute SRMAs.

Special Status Species - Plant or animal species falling in any of the following categories (see separate glossary definitions for each):

- Threatened or Endangered Species
- Proposed Threatened or Endangered Species
- Candidate Species
- State Listed Species
- Bureau Sensitive Species
- Bureau Assessment Species

Species Diversity - The number, different kinds and relative abundance of species.

Splash Dam - A method of moving logs by rafting them downstream. A log dam would be built in front of the instream logs. When enough water and logs were collected behind the dam, the dam was broken releasing an avalanche of logs and water. This practice would scour the soil and vegetation from the streambed and banks for miles downstream. Splash damming has not been practiced in the planning area for over 40 years.

Split Estate - An area of land where the surface is nonfederally owned and the subsurface mineral resources are Federally owned or vice versa.

Spotted Owl Habitat Sites - Sites monitored by BLM for spotted owl occupancy during some or all of the years 1985 through 1988, in accordance with BLM's spotted owl monitoring guidelines. These sites are known to have been inhabited by spotted owls at some time in the last dozen years, but not necessarily during the 1985-1988 period.

Stand (Tree Stand) - An aggregation of trees occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition so that it is distinguishable from the forest in adjoining areas.

Stand Density - An expression of the number and size of trees on a forest site. May be expressed in terms of numbers of trees per acre, basal area, stand density index, or relative density index.

Stand Replacing Wildfire - A wildfire that kills nearly 100 percent of the stand.

State Historic Preservation Officer (SHPO) - The State official authorized to act as a liaison to the Secretary of the Interior for purposes of implementing the National Historic Preservation Act of 1966.

State Implementation Plan (SIP) - A State document, required by the Clean Air Act. It describes a comprehensive plan of action for achieving specified air quality objectives and standards for a particular locality or region within a specified time, as enforced by the State and approved by the Environmental Protection Agency.

State Listed Species - Plant or animal species listed by the State of Oregon as threatened or endangered pursuant to ORS 496.004, ORS 498.026, or ORS 564.040.

Statewide Comprehensive Outdoor Recreation Plan (SCORP) - A plan prepared by the State that describes and analyzes the organization and function of the outdoor recreation system of the state. The plan provides an analysis of the roles and responsibilities of major outdoor recreation suppliers; an analysis of demand, supply and needs; issue discussions; an action program to address the issues; and a project selection process.

Stocked/Stocking - Related to the number and spacing of trees in a forest stand.

Strategic and Critical Minerals - Minerals that supply military, industrial and essential civilian needs of the United States during a national defense emergency. They are not found or produced in this country in sufficient quantities to meet such needs. Nickel, cobalt and chromium are examples of such minerals occurring in western Oregon.

Stream Class - A system of stream classification established in the Oregon Forest Practices Act at the time the planning documents were written. Class I streams are those which are significant for: 1) domestic use, 2) angling, 3) water dependent recreation, and 4) spawning, rearing or migration of anadromous or game fish. All

other streams are Class II. Class II special protection streams (Class II SP) are Class II streams that have a significant summertime cooling influence on downstream Class I waters, which are at or near a temperature at which production of anadromous or game fish is limited.

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

Stream Reach - An individual 1st 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. Although reaches identified by BLM are variable in length, they normally have a range of 1/2 to 1-1/2 miles in length unless channel character, confluence distribution, or management considerations require variance.

Structural Diversity - Variety in a forest stand that results from layering or tiering of the canopy and the die-back, death and ultimate decay of trees. In aquatic habitats, the presence of a variety of structural features such as logs and boulders that create a variety of habitat.

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

Suitable Commercial Forest Land - Commercial forest land capable of sustained long-term timber production.

Suitable River - A river segment found through administrative study by an appropriate agency to meet the criteria for designation as a component of the National Wild and Scenic Rivers system as specified in Section 4(a) of the Wild and Scenic Rivers Act.

Suitable Woodland - Forest land occupied by minor conifer and hardwood species not considered in the commercial forest land PSQ determination and referred to as noncommercial species. These species may be considered commercial for fuelwood, etc. under woodland management. Also included are low site and nonsuitable commercial forest land. These lands must be biologically and environmentally capable of supporting a sustained yield of forest products.

Surface Erosion - The detachment and transport of soil particles by wind, water, or gravity. Surface erosion can occur as the loss of soil in a uniform layer (sheet erosion) in many rills, or by dry ravel.

Suspended Sediment - Sediment suspended in a fluid by the upward components of turbulent currents or by colloidal suspension.

Sustained Yield - The yield that a forest can produce continuously at a given intensity of management.

Sustained Yield Unit (SYU) - An administrative division for which an allowable sale quantity is calculated.

Target Stocking - The desirable number of well-spaced trees per acre at age of first commercial thinning.

Ten Percent Stocked - Stocking of tree seedlings and saplings (0.5 inches in diameter 4.5 feet above the ground) that are well distributed over the land and are more than 30 per acre in number. Or the stocking of trees larger than 5 inches in diameter with foliage that covers at least l0 percent of the land surface area.

Texture (soil) - The relative proportion of sand, silt, and clay in a soil; grouped into standard classes and subclasses in the USDA Soil Survey Manual.

Thermal Cover - Cover used by animals to lessen the effects of weather. For elk, a stand of conifer trees that are 40 feet or more tall with an average crown closure of 70 percent or more. For deer, cover may include saplings, shrubs or trees at least 5 feet tall with 75 percent crown closure.

Threatened Species - Any species defined through the Endangered Species Act as likely to become endangered within the foreseeable future throughout all or a significant portion of its range and published in the Federal Register.

Timber Management Plan - An activity plan that specifically addresses procedures related to the offering and sale of timber volume consistent with the approved Allowable Sale Quantity.

Timber Production Capability Classification (TPCC) - The process of partitioning forest land into major classes indicating relative suitability to produce timber on a sustained yield basis.

Title Plat Acre - The official acreage of a tract of land as shown on the most current official BLM cadastral survey plat.

Total Suspended Particulates - All solid or semi-solid material found in the atmosphere.

Transportation System - Network of roads used to manage BLM administered lands. Includes BLM controlled roads and some privately controlled roads. Does not include Oregon Department of Transportation, County and municipal roads.

Travel Corridor - A route used by animals along a belt or band of suitable cover or habitat.

Treatable Water - Water capable of being treated with commonly used filtration and chlorination systems.

Understocked - The condition when a plantation of trees fails to meet the minimum requirements for number of well spaced trees per acre.

Uneven-aged Management - A combination of actions that simultaneously maintains continuous tall forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes. Cutting methods that develop and maintain uneven-aged stands are single tree selection and group selection.

Unique Ecosystems - Ecosystems embracing special habitat features such as beaches and dunes, talus slopes, meadows, and wetlands.

Unnecessary or Undue Degradation - Surface disturbance greater than what would normally result when a mineral exploration or development activity regulated under 43 CFR 3809 is being accomplished by a prudent operator in usual, customary and proficient operations of similar character, and taking into consideration the effects of operations on other resources and land uses outside the area of operations. Failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed areas; or failure to prevent the creation of a nuisance, which may constitute unnecessary or undue degradation. Failure to comply with applicable environmental protection statutes and regulations thereunder will constitute unnecessary or undue degradation.

Utility Corridor - A linear strip of land identified for the present or future location of utility lines within its boundaries.

Viable Population - A wildlife or plant population that contains an adequate number of reproductive individuals to appropriately ensure the long-term existence of the species.

Viewshed - The landscape that can be directly seen from a viewpoint or along a transportation corridor.

Visibility Protection Plan - A plan that implements the requirements of the Clean Air Act by establishing programs for visibility monitoring; short and long-term control strategies; and procedures for program review, coordination, and consultation.

Visual Resources - The visible physical features of a landscape.

Visual Resource Management (VRM) - The inventory and planning actions to identify visual values and establish objectives for managing those values and the management actions to achieve visual management objectives.

Visual Resource Management Classes - Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective that prescribes the amount of modification allowed in the landscape.

Watchable Wildlife - A Bureau of Land Management (BLM) program designed to increase opportunities to photograph, study, or simply watch the countless mammals, birds, fish, reptiles, amphibians, and invertebrates that live on the 270 million acres of Federal land that BLM administers.

Water Quality - The chemical, physical, and biological characteristics of water.

Water Yield - The quantity of water derived from a unit area of watershed.

Western Oregon Digital Data Base (WODDB) - A very high resolution (I"=400') geographic digital (computer) database derived from aerial photography for BLM lands in western Oregon.

Wetlands or Wetland Habitat - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for living in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, bogs, and similar areas.

Wet Meadows - Areas where grasses predominate. Normally waterlogged within a few inches of the ground surface.

Wild and Scenic River System - A National system of rivers or river segments that have been designated by Congress and the President as part of the National Wild and Scenic Rivers System (Public Law 90-542, 1968). Each designated river is classified as one of the following:

Wild River - A river or section of a river free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Designated wild as part of the National Wild and Scenic Rivers System.

Scenic River - A river or section of a river free of impoundments, with shorelines or watersheds still largely primitive and undeveloped but accessible in places by roads. Designated scenic as part of the National Wild and Scenic Rivers System.

Recreational River - A river or section of a river readily accessible by road or railroad, that may have some development along its shorelines, and that may have undergone some impoundment of diversion in the past. Designated recreational as part of the National Wild and Scenic Rivers System.

Wilderness Study Area (WSA) - A roadless area inventoried and found to be wilderness in

character, having few human developments and providing outstanding opportunities for solitude and primitive recreation, as described in Section 603 of the Federal Land Policy and Management Act and in Section 2(c) of the Wilderness Act of l964.

Wildlife Tree - A live tree retained to become future snag habitat.

Wild River - See Wild and Scenic River System

Windthrow - A tree or trees uprooted or felled by the wind.

Withdrawal - A designation that restricts or closes public lands from the operation of land or mineral disposal laws.

Woodland - Forest land producing trees not typically used as saw timber products and not included in calculation of the commercial forest land PSQ.

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

Yield Table - A table of timber volumes expected to be produced under a certain set of conditions.

Acronyms

ACE	Allowable Cut Effect
ACEC	Area of Critical Environmental Concern
ACMP	Area of Critical Mineral Potential
AMA	Adaptive Management Areas
AMS	Analysis of the Management Situation
ANS	Air Navigation Site
APD	Application for Permit to Drill
AQRV	Air Quality Related Values
ARD	Automated Resource Data
ARPA	Archeological Resources Protection Act
ASQ	Allowable Sale Quantity
AUM	Animal Unit Month
AWS	Analytical Watershed
BEHA	Bald Eagle Habitat Area
BF	Board Feet
BLM	Bureau of Land Management
BMP	Best Management Practices
BRU	Basic Resource Unit
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CF	Cubic Feet
CFS	Cubic Feet per Second
CMAI	Current Mean Annual Increment
COPE	Coastal Oregon Productivity Enhancement
CSU	Controlled Surface Use
CT	Commercial Thinning
CZMA	Coastal Zone Management Act
dbh	diameter breast height
DCA	Designated Conservation Areas
DDR	District Designated Reserves
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality
DLC	Donation Land Claim
DMS	Density Management Study
EA	Environmental Assessment
EEA	Environmental Education Area
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESBM	EcoSystem Based Management
ESC	Existing Stand Condition
ESP	Economic Stimulus Package
FAA	Federal Aviation Administration
FEMAT	Forest Ecosystem Management Assessment Team
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FWS	U.S. Fish and Wildlife Service (USDI)

GFMA	General Forest Management Area
GIS	Geographic Information System
HCA	Habitat Conservation Area
HMP	Habitat Management Plan
IMPLAN	Input Model Plan developed by the U.S. Forest Service to measure the economic effects of changes in program-related activities.
IRM	Information Resources Manager
KGRA	Known Geothermal Resource Area
LAU	Landscape Analysis Unit
LS/OG	Late-Successional and Old-Growth Forest
LSR	Late-Successional Reserves
LSS	Late-Successional Stages
LUA	Land Use Allocation
M&B	Metes and Bounds
MBF	Thousand Board Feet
MFP	Management Framework Plan
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MOSS	Map Overlay Statistical System
MOU	Memorandum of Understanding
MTP	Master Title Plat
MUSYA	Multiple-Use Sustained-Yield Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act of 1976
NMFS	National Marine Fisheries Service (U.S. Dept. of Commerce)
NOS	Notice of Staking
NPS	Non Point Source
NPV	Net Present Value
NSO	No Surface Occupancy
NWR	National Wildlife Refuge
NWSRS	National Wild & Scenic River System
O&C	Oregon and California Act of 1937 (Revested Oregon and California Railroad and Reconveyed Coos Bay Wagon Road Grant Lands)
OAR	Oregon Administrative Rules
OCMP	Oregon Coastal Management Program
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODF&W	(used same as ODFW)
OEDD	Oregon Economic Development Department
OHV	Off-Highway Vehicle
ONA	Outstanding Natural Area
ORV	Outstandingly Remarkable Value
OSDF	Oregon Department of Forestry
OSMP	Oregon Smoke Management Plan
PCT	Precommercial Thinning
PD	Public Domain
PILT	Payments in Lieu of Taxes
PL	Public Law

PLO	Public Land Order
PM	Particulate Matter
PM10	Particulate Matter (10 microns in diameter)
PNV	Present Net Value
PPM	Parts Per Million
PRMP	Proposed Resource Management Plan
PSC	Power Site Classification
PSR	Power Site Reservation
PSQ	Probable Sale Quantity
R&PP	Recreation and Public Purposes
R&R	Retention & Restoration
RFI	Relict Forest Island
RIA	Rural Interface Area
RMA	Riparian Management Area
RMIS	Recreation Management Information System
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
RPA	Forest and Rangeland Renewable Resources Planning Act
RRDC	Rural Resources Development Committee
SA	Sensitivity Analysis
SAG	Scientific Advisory Group
SAT	Scientific Analysis Team
SCFL	Suitable Commercial Forest Land
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SCS	Soil Conservation Service
SEIS	Supplemental Environmental Impact Statement
SIP	State Implementation Plan
SPS	Stand Projection System
SRMA	Special Recreation Management Area
SWL	Suitable Woodland
SYU	Sustained Yield Unit
T&E	Threatened and Endangered (species)
TPA	Trees Per Acre
TPCC	Timber Production Capability Classification
TSIS	Timber Sale Information System
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
VRM	Visual Resource Management
W&SR	Wild and Scenic River(s)
WCI	Watershed Condition Index
WODDB	Western Oregon Digital Data Base
WPD	Water Power Designation
WSA	Wilderness Study Area

Index

Appendices

Appendix A
SEIS Record of Decision and Standards and Guidelines

Appendix A consists of the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and its Appendix A* published in April 1994. This ROD includes *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl.* It is referred to as the SEIS / ROD.

The SEIS/ROD is bound separately from the PRMP/FEIS and is incorporated by reference. The Draft and Final SEIS and the SEIS/ROD were mailed to those who received copies of the Draft Eugene District Resource Management Plan and Environmental Impact Statement (DRMP/EIS). It was also sent to agencies, libraries, and others who requested it and is available on request.

To obtain a copy of the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* send a request in writing to Regional Ecosystem Office, P. O. Box 3623, Portland, Oregon 97208-3623.

Appendix B Management for SEIS Special Attention Species

Species to be protected through survey and management according to the ROD/Standards and Guidelines (text and Table C-3), survey strategies (from Table C-3), and special buffers and other management actions (pages C-20 and C-27).

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Fungi					
Mycorrhizal fungi					
Boletes					
Gastroboletus subalpinus	1		3		
Gastroboletus turbinatus			3		
Boletes, low elevation					
Boletus piperatus			3		
Tylopilus pseudoscaber	1		3		
Rare boletes					
Boletus haematinus	1		3		
Boletus pulcherrimus	1		3		
Gastroboletus imbellus	1		3		
Gastroboletus ruber	1		3		
False truffles					
Nivatogastrium nubigenum	1		3		
Rhizopogon abietis			3		
Rhizopogon atroviolaceus			3		
Rhizopogon truncatus			3		
Thaxterogaster pingue			3		
Uncommon false truffle					
Macowanites chlorinosmus	1		3		
Rare false truffles					
Alpova alexsmithii	1		3		
Alpova olivaceotinctus	1		3		
Arcangeliella crassa	1		3		
Arcangeliella lactarioides	1		3		
Destuntzia fusca	1		3		
Destuntzia rubra	1		3		
Gautieria magnicellaris	1		3		
Gautieria otthii	1		3		
Leucogaster citrinus	1		3		
Leucogaster microsporus	1		3		
Macowanites lymanensis	1		3		
Macowanites mollis	1		3		
Martellia fragrans	1		3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Martellia idahoensis	1		3		
Martellia monticola	1		3		
Octavianina macrospora	1		3		
Octavianina papyracea	1		3		
Rhizopogon brunneiniger	1		3		
Rhizopogon evadens var. *subalpinus*	1		3		
Rhizopogon exiguus	1		3		
Rhizopogon flavofibrillosus	1		3		
Rhizopogon inquinatus	1		3		
Sedecula pulvinata	1		3		
Undescribed taxa, rare truffles and false truffles					
Alpova sp. nov. #Trappe 9730	1		3		
Alpova sp. nov. #Trappe 1966	1		3		
Arcangeliella sp. nov. #Trappe 12382	1		3		
Arcangeliella sp. nov. #Trappe 12359	1		3		
Chamonixia pacifica sp. nov. #Trappe 12768	1		3		
Elaphomyces sp. nov. #Trappe 1038	1		3		
Gastroboletus sp. nov. #Trappe 2897	1		3		
Gastroboletus sp. nov. #Trappe 7515	1		3		
Gastrosuillus sp. nov. #Trappe 7516	1		3		
Gastrosuillus sp. nov. #Trappe 9608	1		3		
Gymnomyces sp. nov. #Trappe 4703, 5576	1		3		
Gymnomyces sp. nov. #Trappe 5052	1		3		
Gymnomyces sp. nov. #Trappe 1690, 1706, 1710	1		3		
Gymnomyces sp. nov. #Trappe 7545	1		3		
Hydnotrya sp. nov. #Trappe 787, 792	1		3		
Hydnotrya subnix sp. nov. #Trappe 1861	1		3		
Martellia sp. nov. #Trappe 311, 649	1		3		
Martellia sp. nov. #Trappe 1700	1		3		
Martellia sp. nov. #Trappe 5903	1		3		
Octavianina sp. nov. #Trappe 7502	1		3		
Rhizopogon sp. nov. #Trappe 9432	1		3		
Rhizopogon sp. nov. #Trappe 1692	1		3		
Rhizopogon sp. nov. #Trappe 1698	1		3		
Thaxterogaster sp. nov. #Trappe 4867, 6242, 7427, 7962, 8520	1		3		
Tuber sp. nov. #Trappe 2302	1		3		
Tuber sp. nov. #Trappe 12493	1		3		
Rare Truffles					
Balsamia nigra	1		3		
Choiromyces alveolatus	1		3		
*Choiromyces venosus**	1		3		
Elaphomyces anthracinus	1		3		
Elaphomyces subviscidus	1		3		
Chanterelles					
*Cantharellus cibarius**			3	4	
*Cantharellus subalbidus**			3	4	
Cantharellus tubaeformis			3	4	

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Chanterelles - *Gomphus*					
Gomphus bonarii			3		
Gomphus clavatus			3		
*Gomphus floccosus**			3		
Gomphus kauffmanii			3		
Rare chanterelles					
Cantharellus formosus	1		3		
Polyozellus multiplex	1		3		Buffer
Uncommon coral fungi					
Ramaria abietina			3		
Ramaria araiospora	1		3		
Ramaria botryis var. *aurantiiramosa*	1		3		
Ramaria concolor f. *tsugina*			3		
Ramaria coulterae			3		
Ramaria fasciculata var. *sparsiramosa*	1		3		
Ramaria gelatiniaurantia	1		3		
Ramaria largentii	1		3		
Ramaria rubella var. *blanda*	1		3		
Ramaria rubrievanescens	1		3		
Ramaria rubripermanens	1		3		
Ramaria suecica			3		
Ramaria thiersii	1		3		
Rare coral fungi					
Ramaria amyloidea	1		3		
Ramaria aurantiisiccescens	1		3		
Ramaria celerivirescens	1		3		
Ramaria claviramulata	1		3		
Ramaria concolor f. *marri*	1		3		
Ramaria cyaneigranosa	1		3		
Ramaria hilaris var. *olympiana*	1		3		
Ramaria lorithamnus	1		3		
Ramaria maculatipes	1		3		
Ramaria rainierensis	1		3		
Ramaria rubribrunnescens	1		3		
Ramaria stuntzii	1		3		
Ramaria verlotensis	1		3		
Ramaria gracilis	1		3		
Ramaria spinulosa	1		3		
Phaeocollybia					
Phaeocollybia attenuata			3		
Phaeocollybia californica	1		3		
Phaeocollybia carmanahensis	1		3		
Phaeocollybia dissiliens	1		3		
Phaeocollybia fallax			3		
Phaeocollybia gregaria	1		3		
Phaeocollybia kauffmanii	1		3		
Phaeocollybia olivacea			3		
Phaeocollybia oregonensis	1		3		
Phaeocollybia piceae	1		3		
Phaeocollybia pseudofestiva			3		
Phaeocollybia scatesiae	1		3		
Phaeocollybia sipei	1		3		
Phaeocollybia spadicea			3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Uncommon gilled mushrooms					
*Catathelasma ventricosa**			3		
Cortinarius azureus			3		
Cortinarius boulderensis	1		3		
Cortinarius cyanites			3		
Cortinarius magnivelatus	1		3		
Cortinarius olympianus	1		3		
Cortinarius spilomius			3		
Cortinarius tabularis			3		
Cortinarius valgus			3		
Dermocybe humboldtensis	1		3		
Hebeloma olympiana	1		3		
Hygrophorus caeruleus	1		3		
Hygrophorus karstenii			3		
Hygrophorus vernalis	1		3		
Russula mustelina			3		
Rare gilled mushrooms					
Chroogomphus loculatus	1		3		
Cortinarius canabarba	1		3		
Cortinarius rainierensis	1		3		
Cortinarius variipes	1		3		
Cortinarius verrucisporus	1		3		
Cortinarius wiebeae	1		3		
Tricholoma venenatum	1		3		
Uncommon ecto-polypores					
Albatrellus ellisii			3		
Albatrellus flettii			3		
Rare ecto-polypores					
Albatrellus avellaneus	1		3		
Albatrellus caeruleoporus	1		3		
Tooth fungi					
*Hydnum repandum**			3		
*Hydnum umbilicatum**			3		
Phellodon atratum			3		
Sarcodon fuscoindicum			3		
Sarcodon imbricatus			3		
Rare zygomycetes					
Endogone arcogena	1		3		
Endogone oregonensis	1		3		
Glomus radiatum	1		3		
Saprobes (decomposers)					
Uncommon gilled mushrooms					
Baeospora myriadophylla			3		
Chrysomphalina grossula			3		
Collybia bakerensis	1		3		
Fayodia gracilipes (syn. *F. rainierensis*)			3		
Gymnopilus puntifolius	1		3		
Marasmius applanatipes	1		3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Mycena hudsoniana	1		3		
Mycena lilacifolia			3		
Mycena marginella			3		
Mycena monticola	1		3		
Mycena overholtsii	1		3		
Mycena quinaultensis	1		3		
Mycena tenax			3		
Mythicomyces corneipes			3		
Neolentinus kauffmanii	1		3		
Pholiota albivelata	1		3		
Stagnicola perplexa			3		
Rare gilled mushrooms					
Clitocybe subditopoda	1		3		
Clitocybe senilis	1		3		
Neolentinus adherens	1		3		
Rhodocybe nitida	1		3		
Rhodocybe speciosa	1		3		
Tricholomopsis fulvescens	1		3		
Noble polypore (rare and endangered)					
Oxyporus nobilissimus	1	2	3		
Bondarzew's polypore					
Bondarzewia montana	1	2	3		
Rare resupinates and polypores					
Aleurodiscus farlowii	1		3		
Dichostereum granulosum	1		3		
Cudonia monticola			3		
Gyromitra californica			3	4	
Gyromitra esculenta			3	4	
Gyromitra infula			3	4	
Gyromitra melaleucoides			3	4	
Gyromitra montana (syn. *G. gigas*)			3	4	
Otidea leporina			3		Buffer
Otidea onotica			3		Buffer
Otidea smithii	1		3		Buffer
Plectania melastoma			3		
Podostroma alutaceum			3		
*Sarcosoma mexicana**			3		Buffer
Sarcosphaera eximia			3		
Spathularia flavida			3		
Rare cup fungi					
Aleuria rhenana					Buffer
Bryoglossum gracile	1		3		
Gelatinodiscus flavidus	1		3		
Helvella compressa	1		3		
Helvella crassitunicata	1		3		
Helvella elastica	1		3		
Helvella maculata	1		3		
Neournula pouchetii	1		3		
Pithya vulgaris	1		3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Plectania latahensis	1		3		
Plectania milleri	1		3		
Pseudaleuria quinaultiana	1		3		
Club coral fungi					
Clavariadelphus borealis			3	4	
Clavariadelphus ligula			3	4	
Clavariadelphus lovejoyae			3	4	
*Clavariadelphus pistilaris**			3	4	
Clavariadelphus sachalinensis			3	4	
Clavariadelphus subfastigiatus			3	4	
*Clavariadelphus truncatus**			3	4	
Jelly mushroom					
*Phlogoitis helvelloides**			3	4	
Branched coral fungi					
Clavulina cinerea			3	4	
Clavulina cristata			3	4	
Clavulina ornatipes			3	4	
Mushroom lichen					
Phytoconis ericetorum			3	4	
Parasitic fungi					
Asterophora lycoperdoides			3		
Asterophora parasitica			3		
Collybia racemosa			3		
Cordyceps capitata			3		
Cordyceps ophioglossoides			3		
Hypomyces luteovirens			3		
Cauliflower mushroom					
*Sparassis crispa**			3		
Moss-dwelling mushrooms					
Cyphellostereum laeve			3		
Galerina atkinsoniana			3		
Galerina cerina			3		
Galerina heterocystis			3		
Galerina sphagnicola			3		
Galerina vittaeformis			3		
Rickenella setipes			3		
Coral fungus					
Clavicorona avellanea			3		
Lichens					
Rare forage lichen					
Bryoria tortuosa	1		3		
Rare leafy (arboreal) lichens					
Hypogymnia duplicata	1	2	3		
Tholurna dissimilis	1		3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Rare nitrogen-fixing lichens					
Dendriscocaulon intricatulum	1		3		
Lobaria hallii	1		3		
Lobaria linita	1	2	3		
Nephroma occultum	1		3		
*Pannaria rubiginosa**	1		3		
Pseudocyphellaria rainierensis	1	2	3		
Nitrogen-fixing lichens					
*Lobaria oregana**				4	
*Lobaria pulmonaria**				4	
Lobaria scrobiculata				4	
*Nephroma bellum**				4	
*Nephroma helveticum**				4	
*Nephroma laevigatum**				4	
Nephroma parile				4	
*Nephroma resupinatum**				4	
*Pannaria leucostictoides**				4	
Pannaria mediterranea				4	
*Pannaria saubinetii**				4	
Peltigera collina				4	
Peltigera neckeri				4	
Peltigera pacifica				4	
*Pseudocyphellaria anomala**				4	
*Pseudocyphellaria anthraspis**				4	
*Pseudocyphellaria crocata**				4	
Sticta beauvoisii				4	
*Sticta fuliginosa**				4	
*Sticta limbata**				4	
Pin lichens					
Calicium abietinum				4	
Calicium adaequatum				4	
Calicium adspersum				4	
Calicium glaucellum				4	
Calicium viride				4	
Chaenotheca brunneola				4	
Chaenotheca chrysocephala				4	
Chaenotheca ferruginea				4	
Chaenotheca furfuracea				4	
Chaenotheca subroscida				4	
Chaenotheca pusilla				4	
Cyphelium inquinans				4	
Microcalicium arenarium				4	
Mycocalicium subtile				4	
Stenocybe clavata				4	
Stenocybe major				4	
Rare rock lichens					
Pilophorus nigricaulis	1		3		
Sticta arctica	1		3		
Riparian lichens					
Cetrelia cetrarioides				4	

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Collema nigrescens				4	
Leptogium burnetiae var. *hirsutum*				4	
Leptogium cyanescens				4	
Leptogium saturninum				4	
Leptogium teretiusculum				4	
Platismatia lacunosa				4	
*Ramalina thrausta**				4	
*Usnea longissima**				4	
Aquatic lichens					
Dermatocarpon luridum	1		3		
Hydrothyria venosa	1		3		
Leptogium rivale	1		3		
Rare oceanic-influenced lichens					
Bryoria pseudocapillaris	1		3		
Bryoria spiralifera	1		3		
Bryoria subcana	1		3		
Buellia oidalea	1		3		
*Erioderma sorediatum**	1		3		
*Hypogymnia oceanica**	1		3		
Leioderma sorediatum	1		3		
*Leptogium brebissonii**	1		3		
Niebla cephalota	1		3		
Pseudocyphellaria mougeotiana	1		3		
Teloschistes flavicans	1		3		
*Usnea hesperina**	1		3		
Oceanic-influenced lichens					
Cetraria californica	1		3		
Heterodermia leucomelos	1		3		
Loxospora sp. nov. "corallifera" (Brodo in edit)	1		3		
Pyrrhospora quernea	1		3		
Additional lichen species					
Cladonia norvegica			3		
Heterodermia sitchensis			3		
Hypogymnia vittiata			3		
Hypotrachyna revoluta			3		
Ramalina pollinaria			3		
Nephroma isidiosum			3		
Bryophytes					
*Antitrichia curtipendula**				4	
Bartramiopsis lescurii	1		3		
Brotherella roelli	1		3		Buffer
Buxbaumia piperi					Buffer
*Buxbaumia viridis**					Buffer
Diplophyllum albicans	1		3		
Diplophyllum plicatum	1	2			
Douinia ovata				4	
Encalypta brevicolla var. *crumiana*	1		3		
Herbertus aduncus	1		3		

Species	Survey Strategies[1] 1	2	3	4	Protection Buffers[2]
Herbertus sakurali	1		3		
Iwatsuklella leucotricha	1		3		
Kurzia makinoana	1	2			
Marsupella emarginata var. *aquatica*	1	2			
Orthodontlum gracile	1		3		
Plagiochila satol	1		3		
Plagiochila semidecurrens	1		3		
Pleuroziopsis ruthenica	1		3		
Ptilidium californicum	1	2			Buffer
Racomitrium aquaticum	1		3		
Radula brunnea	1		3		
Rhizomnium nudum					Buffer
Schistostega pennata					Buffer
Scouleria marginata				4	
Tetraphis geniculata	1		3		Buffer
Tritomaria exsectiformis	1	2			
Tritomaria quinquedentata	1		3		
Ulota meglospora					Buffer
Mammals					
Phenacomys longicaudus (red tree vole)*		2			
Mollusks					
Deroceras hesperium	1	2			
Megomphix hemphilli	1	2			
Prophysaon coeruleum	1	2			
Prophysaon dubium	1	2			
Vascular Plants					
*Allotropa virgata**	1	2			
Arceuthobium tsugense	1	2			
*Aster vialis**	1	2			
Botrychium minganense	1	2			
Botrychium montanum	1	2			
Coptis asplenifolia	1	2			
Coptis trifolia	1	2			
Corydalis aquae-gelidae	1	2			
*Cypripedium montanum**	1	2			

* Species known to occur on BLM lands in the Eugene District.

Note that some of the species in the ROD list (Table C-3) (*Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, April 1994, where there is no reasonable possibility of naturally occurring in the District, are not included in this list.

[1] Survey Strategies: 1 = manage known sites; 2 = survey prior to activities and manage sites; 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys.

[2] Protection Buffers are additional standards and guidelines from the Scientific Analysis Team Report for specific rare and locally endemic species, and other specific species in the upland forest matrix (see Record of Decision for SEIS (pages C-19 and C-27). Species that are identified under the survey strategies may also need protection buffers for the management of known sites.

Appendix C
Best Management Practices and TPCC Fragile Code Guidance

Introduction

This Appendix has 2 major sections: Best Management Practices (BMPs), and TPCC (Timber Production Capability Classification) Fragile Code Guidance. The BMPs described in this document are intended to maintain or improve water quality and soil productivity, and prevent or mitigate adverse impacts while meeting other resource objectives. For any given action, the actual BMPs needed to meet management goals are selected by an interdisciplinary team on a site specific basis. These BMPs are a compilation of existing policies, guidelines, and commonly employed practices designed to minimize water quality degradation and loss of soil productivity and may not necessarily be the best management practices for all other resources. The implementation of these BMPs will be the beginning of an iterative process that includes the monitoring and modification of BMPS. This process is considered the primary mechanism to achieve Oregon State Water Quality Standards.

The BMPs are designed to provide compliance with the Clean Water Act of 1972, as amended in 1977 and 1987. For proposed management actions, BMPs designed and implemented in accordance with a State approved process will normally constitute compliance with the Clean Water Act (CWA). The set of procedures prescribed by Oregon Forest Practice Act is the standard by which all forestry BMPs in Oregon are measured. The BMPs employed by BLM often are different in detail from the Oregon Forest Practice Act but must be equal or more protective of resources in terms of end results.

The iterative process by which nonpoint controls, including BMPS, are to be selected and implemented to achieve water quality standards include: (1) design of BMPs based upon site specific conditions, technical, economic and institutional feasibility, and the water quality of those waters potentially impacted; (2) monitoring to ensure that practices are properly designed and applied; (3) monitoring to determine the effectiveness of practices in meeting water quality standards, and the appropriateness of water quality criteria in reasonably assuring protection of beneficial uses; and (4) adjustment of BMPs when it is found that water quality standards are not being protected to a desired level and/or possible adjustment of water quality standards based upon considerations in 40 Code of Federal Regulations 131.

BMPs would be developed on a site specific basis and consist of a mix of conservation practices such as those listed below and management guidance identified in Chapter 2 of the Eugene District PRMP/FEIS.

Best Management Practices (BMPS)

I. Timber Harvest

A. Timber Sale Planning Design

Objective: Use the planning process to ensure that timber sales are designed to maintain favorable conditions of soil productivity, water flow, and water quality for beneficial uses in the watershed. Selection of some of the following practices will help meet this objective.

Practices:

1. Use Watershed Analysis to identify issues, concerns, and beneficial uses.

2. Use interdisciplinary teams to identify applicable BMPS.

3. Use Timber Production Capability Classification (TPCC) and field investigation to classify areas as nonsuitable for timber production and/or other resources manipulation.

4. Use TPCC and field investigations to classify areas as fragile suitable, restricted.

5. Identify, evaluate, and map potential problems (e.g., unstable areas and landforms, saturated areas, etc.). Design measures to avoid negatively impacting potentially unstable ground.

6. Design harvest units to avoid or mitigate potential adverse impacts to soil and water. Evaluation factors include the following: soil characteristics, watershed physiography, current watershed and stream channel conditions, proposed roads, skid trails, and logging system design.

7. Plan mitigation measures, if adverse impacts to water quality/quantity or soil productivity are anticipated from the proposed action.

8. Analyze watershed cumulative effects and, if necessary, provide mitigation measures that meet water quality standards and the aquatic conservation strategy objectives.

9. Within a watershed, disperse management activities over time and space in order to meet water quality standards and the aquatic conservation strategy objectives.

10. Where cumulative effects analysis predicts degradation, reevaluate the watershed analysis to reflect the degradation.

11. Include on timber sale maps and/or contracts the location of all stream channels and wetlands (springs, meadows, lakes, bogs, etc.).

12. Locate fragile (nonsuitable and suitable) areas that require special management practices.

13. Include on timber sale maps and/or contracts the location of protection required for each stream channel, wetland, and fragile area.

14. Design Riparian reserves to meet the criteria set in the Watershed Analysis.

15. Select the logging methods that meet water quality standards and soil productivity goals.

16. Leave large downed woody debris on-site in amounts that are equal to or greater than those designated aquatic conservation strategy.

B. Riparian/Wetland Protection

Objectives: To prevent damage to riparian/wetland ecosystems and disturbance to streambanks, protect the natural flow of streams, and preserve nutrient cycling from woody debris. Maintain the integrity and functional ability of wetlands by avoiding disturbance of these areas whenever possible. Selection of some of the following practices will help meet these and the aquatic conservation strategy objectives.

Practices:

1. Allow no chemical loading operations or similar toxic pollutant activities within 200 feet of all water bodies.

2. When operating within a tree length of riparian reserves/wetlands, directionally fall trees in order to meet the Aquatic Conservation Strategy.

3. Do not fell any snags within riparian reserves. (This BMP will be implemented in all instances where safety and fire hazards are avoidable)

4. Logs in the riparian reserve that were down prior to a planned management activity will be managed to meet the aquatic conservation strategy.

5. No skid trails are to be placed in the riparian reserves/wetlands except at designated crossings.

6. Avoid locating log landings within 50 feet of riparian/wetland areas.

7. Provide total protection to lands susceptible to mass wasting, for example, unstable or oversteepened streambanks and headwalls.

8. Restrict use of tractors in and adjacent to water.

9. When absolutely necessary to yard through riparian areas, restrict yarding to corridors that are perpendicular to streams. Management guidelines for corridors are:

   - Restrict corridors to the minimum number feasible.

   - Corridors will not exceed 50 feet in width, nor reduce crown cover on a project stream segment to less than 75 percent of predisturbance conditions.

   - Logs will be fully suspended over water and adjacent banks.

10. Remove all logging slash in streams (resulting from the current timber sale) for a distance of 100 feet above culverts, or the distance necessary to protect the culvert. Place slash above high-water mark.

11. Plan and implement any activities (e.g., construction, falling and yarding timber, operation of equipment, etc.) in wetlands and permanent high water table areas to meet the objectives of the Aquatic Conservation Strategy.

12. Manipulate vegetation in order to enhance or create springs and wetland areas.

C. Yarding Methods

Objectives: To minimize loss of soil productivity, and reduce potential for surface runoff, erosion, and subsequent degradation due to surface disturbance or compaction. Selection of some of the following practices will help meet these objective.

1. Cable

   a. Suspend the front end of logs above the ground during yarding. (This BMP is desirable at all times and will be selected when yarding is to be done over streams or highly erodible soils).

   b. Fully suspend logs above the ground during yarding when crossing riparian vegetation, streams with fragile banks and sideslopes, and TPCC designated fragile soils.

   c. Use seasonal restriction, if required suspension cannot be achieved by yarding equipment.

   d. Hand water bar cable yarding corridors immediately after use on sensitive soils where gouging occurs.

   e. Respool cables where necessary to protect riparian reserves or other sensitive areas.

2. Ground-based

   a. Use existing skid trails wherever possible.

   b. Limit new skid trails to slopes less than 35 percent.

   c. Use designated skid trails to limit area extent of skid trails plus landings to less than 10 percent of the unit.

   d. Restrict tractor operations to designated trails, and limit operations to periods of low soil moisture, when soils have the most resistance to compaction (dry season).

   e. In partial cut areas, locate skid trails so that they can be used for final harvest.

   f. Till compacted trails, including skid trails from previous entries, with a properly designed self-drafting winged subsoiler.

   g. Avoid tractor yarding on areas where soil damage cannot be mitigated.

   h. Avoid placement of skid trails through areas of high water tables or where the skid trails would channel water into unstable headwall areas.

   i. Water bar skid trails whenever surface erosion is likely.

   j. Avoid use of wide track vehicles or more than one machine on a skid trail at any given time to minimize the width. (On multiple pass skid trails, wide track vehicles result in wider skid trails and, after multiple passes, drive the compaction deeper than a regular width track; however, they are good for one-pass operations such as incidental scattered salvage or site preparation.)

   k. If timber harvesting activities will produce slash that covers the skid trails to the extent they cannot be relocated, prior to felling timber and with a property designed winged subsoiler, till existing skid trails that are not scheduled for reuse.

3. Aerial

   a. Use helicopter, balloon, or skyline yarding to avoid or minimize new road construction, or to provide for complete suspension in sensitive watersheds.

   b. Place landings away from watercourses to prevent petroleum products or other pollutants from entering the water.

II. Roads

A. Planning

Objective: To plan road systems in a manner that will meet resource objectives and minimize resource damage. Selection of some of the following practices will help meet this objective.

Practices:

1. Use an interdisciplinary process to develop an overall transportation system.

2. Establish road management objectives that minimize adverse environmental impacts.

3. Avoid fragile and unstable areas.

4. Minimize the percent of the land base converted to roads and landings; avoid heavy concentrations of roads and landings to minimize impacts from increased peak flows and erosion of the compacted surface.

5. Develop a District road closure plan using an interdisciplinary team.

B. Location

Objective: To minimize mass soil movement, erosion, and sedimentation. Selection of some of the following practices will help meet this objective.

Practices:

1. Locate roads on stable positions (e.g., ridges, natural benches, and flatter transitional slopes near ridges and valley bottoms). Implement extra mitigation measures when crossing unstable areas is unavoidable.

2. Avoid headwalls whenever possible.

3. There will be no construction on potentially unstable areas.

4. Locate roads to minimize height of cuts. Avoid high, steeply sloping cuts in highly fractured bedrock or deep soil.

5. Locate roads on well-drained soil types. Avoid wet areas by rolling the grade.

6. Avoid locating roads through areas where the geologic bedding planes or weathering surfaces are inclined with the slope.

7. Locate stream crossing sites where channels are well defined, unobstructed, and straight.

C. General Road Design Features

Objective: To design the lowest standard of road consistent with use objectives and resource protection needs. Selection of some of the following practices will help meet this objective.

Practices:

1. Road design standards and design criteria are based on road management objectives such as traffic requirements of the project and the overall transportation plan, an economic analysis, safety requirements, resource objectives, and the minimization of damage to the environment.

2. Consider future maintenance concerns and needs when designing roads.

3. Preferred road gradients are 2-10 percent with a maximum sustained grade of 15 percent. Use steeper grades in those situations where they will result in less environmental impact. Avoid grades less than two percent.

4. Outsloping of the road prism for surface drainage is normally recommended for local spurs or minor collector roads where low volume traffic and lower traffic speeds are anticipated. It is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is desired. Outsloping is not recommended on sustained gradients over 8-10 percent.

5. Insloping of the road prism is an acceptable practice on roads with gradients over 10 percent and where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.

6. Crown and Ditch - This traditional configuration is recommended for arterial and collector roads where traffic volume, speed, intensity, and user comfort are a consideration. Gradients may range from 2 to 15 percent as long as adequate drainage away from the road surface and ditchlines is maintained.

7. Minimize excavation.

8. Locate stable waste disposal areas suitable for depositing excess excavated material.

9. Endhaul waste materials generated during road and ditch maintenance, if side slopes exceed 60 percent or where unacceptable environmental damage may occur if sidecasting is used.

10. Endhaul sidecast materials where slopes have been overloaded.

11. Surface roads, if they will be subject to traffic during wet weather. The depth and gradation of surfacing will usually be determined by traffic type, frequency, weight, maintenance objectives, and the stability and strength of the road foundation and surface materials.

12. Provide for vegetative or artificial stabilization of cut and fill slopes in the design process.

13. Prior to completion of design drawings, field check the design to ensure that it fits the terrain, drainage needs have been satisfied, and all critical slope conditions have been satisfied.

14. Do not divert water directly into headwalls - vary the grade or install cross drains to channel water away from headwalls. Check maintenance on existing roads to ensure water is not allowed to remain on the road and/or diverted into unstable headwall areas.

15. Unless a road is needed for future entry, use a temporary road and reclaim it after use using methods such as blocking, tilling, seeding, mulching, fertilizing, and water barring. No excavation or minimal excavation with topsoil stockpiling and placement onto road after use could also be utilized.

16. Minimize potential erosion on a road. If it is dirt surface, reclaim it; otherwise apply rock aggregate to minimize surface erosion.

17. Select landing locations on the basis of minimal excavation, erosion potential, or slope stability concerns.

18. Avoid landing locations alongside or in meadows, wetland areas, or other special habitat features.

19. Shape landings to direct surface water runoff to preselected spots where it can be dispersed to natural, well-vegetated, stable ground.

D. Design of Cross Drains

Objective: To minimize concentrated water volume and velocity within the road prism, in order to reduce the risk of slope movement, erosion, and sedimentation. Selection of some of the following practices will help meet this objective.

Practices:

1. Design placement of all cross drains to avoid discharge onto erodible (unprotected) slopes or directly into stream channels. Provide a buffer or sediment basin between the cross drain outlet and the stream channel.

2. Locate cross drains or drainage dips in such a manner as to avoid outflows onto unstable terrain such as headwalls, landslide features, or block failure zones. Provide adequate spacing to avoid accumulation of water in ditches or surfaces through these areas.

3. Provide energy dissipators or armoring at cross drain outlets or drain dips where water is discharged on loose material, erodible soil, or steep slopes.

4. Use the guide for drainage spacing according to soil erosion classes and road grade shown in Section II.F.23., Table 1.

5. Use drainage dips and/or lead-off ditches in lieu of culverts on roads that have gradients less than 10 percent, or where road management objectives result in blocking roads. Avoid drainage dips on road gradients over 10 percent.

6. Locate drainage dips where water might accumulate, or where drainage is prevented by a berm.

7. Cut all cannon culverts to the proper length, downspout, and provide for energy dissipation if needed.

8. Design cross drainage culverts or drainage dips immediately upgrade of stream crossings to prevent ditch sediment from entering the stream.

9. Varying road gradients is a recommended design practice in erodible and unstable soils to reduce surface water volume and velocities, and the necessity for culverts.

10. Use slotted riser inlets in areas with highly erosive soils to prevent culvert plugging.

E. Design of Stream Crossings

Objective: To preclude stream crossings from being a direct source of sediment to streams, thus minimizing water quality degradation and providing unobstructed movement for aquatic fauna. Selection of some of the following practices will help meet this objective.

Practices:

1. Pipe arch culverts are appropriate on most fishery streams. Bottomless arch culverts and bridges will be necessary in some instances where gradients greater than 5 percent, stream discharge, and value of the fishery resource dictate that special engineering considerations are necessary to ensure uninterrupted fish passage. A round culvert may be suitable on streams where fish passage is not a concern.

2. Use the theoretical 100-year flood as design criteria for pipe arches or culverts.

3. Minimize the number of crossings on any particular stream.

4. Where feasible, design culvert placement on a straight reach of stream to minimize erosion at both ends of the culvert. Design adequate stream bank protection (e.g., riprap) where scouring could occur. Avoid locations requiring that the stream channel be straightened beyond the length of a culvert to facilitate installation of a road crossing.

5. Evaluate the advantages and disadvantages of a temporary versus permanent crossing structure. This evaluation should take into account economics, maintenance, and resource requirements for access to the area during all seasons over the long-term.

6. Reconstruct deteriorating or poorly built stream crossings with bridges or culverts, ensuring proper alignment and grade.

7. Increase the size of culverts to reduce the amount of highly erosive fill.

F. Construction

Objective: To create a stable roadway that will minimize soil erosion and water quality degradation. Selection of some of the following practices will help meet this objective.

Practices:

1. Limit road construction to the dry season (generally between May 15 and October 15). When conditions permit operations outside of the dry season, keep erosion control measures current with ground disturbance to the extent that the affected area can be rapidly closed/blocked and weatherized, if weather conditions warrant.

2. Manage road construction so that it can be completed and bare soil can be protected and stabilized prior to fall rains.

3. Confine construction of pioneer roads to within the roadway construction limits.

4. Conduct pioneer road construction to prevent undercutting the designated final cutslope as well as avoiding the deposition of materials outside the designated roadway limits.

5. Construct embankments out of appropriate materials (no slash or other organic matter) using one or more of the following methods:

   a. Layer placement (tractor compaction)
   b. Layer placement (roller compaction)
   c. Controlled compaction (85-90 percent maximum density).

6. Do not sidecast where it will adversely affect water quality or weaken stable slopes.

7. Install surface water drainage measures prior to fall rains.

8. Clear drainage ditches and natural watercourses of woody material deposited by construction or logging upstream from culvert installations.

9. Confine major culvert installation to the period of July 1 to September 15 to minimize sedimentation and the adverse effects of sediment on aquatic life.

10. For larger streams, divert streams around culvert installation work areas to minimize sedimentation during construction.

11. On streams with important fishery values, install the culvert as close to horizontal as possible (do not exceed 0.5 percent slope). Place culverts on larger nonfishery streams in the streambed at the existing slope gradient. Energy dissipators (e.g., large rock) placed at the outfall of culverts on small nonfishery streams are recommended to reduce water velocity and minimize scour at the outlet end.

12. Countersink culverts 6-8 inches below the streambed to minimize scouring at the outlet. Increase culvert diameters accordingly to minimize chances of plugging.

13. Confine activities by heavy equipment in the streambed to the area that is necessary for installation or removal of the structure. Restrict construction equipment to within the approved work area and out of the streambed.

14. Permanent stream crossing structures are recommended to be in place before heavy equipment moves beyond the crossing area. Where this is not feasible, install temporary crossings to minimize stream disturbance.

15. Place riprap on any fill material next to culvert inlets and outlets.

16. Where possible, limit the installation and removal of temporary crossing structures to once during the same year and within the prescribed work period. Installation and removal should occur between June 15 and September 15 to minimize adverse effects of increased sediment on aquatic life.

17. Use rock that is as soil-free as possible with temporary culverts. Whenever possible, use washed river rock covered by crushed rock as a compacted running surface.

18. Spread and reshape clean fill material as close as possible to the original topography after a crossing is removed in order that the stream remains in its channel during high flow.

19. Limit activities of mechanized equipment in the stream channel to the area that is necessary for installation and removal operations.

20. Remove stream crossing drainage structures and in-channel fill material during low flow and prior to fall rains. Reestablish natural drainage configuration.

21. Use washed rock/gravel in a low water ford crossing, if frequent use is anticipated. Surface the approaches with rock aggregate within 150 feet of each side of a low water ford to minimize washing and softening of the road surface.

22. Construct water bars on dirt roads, spur roads, and skid trails prior to fall rains.

23. Use the following table for water bar spacing, based on gradient and erosion class.

Table 1 - Water Bar Spacing (in Feet)

Gradients (%)	Erosion Class High	Moderate	Low
3-5	200	300	400
6-10	150	200	300
11-15	100	150	200
16-20	75	100	150
21-35	50	75	100
36+	50	50	50

Spacing is determined by slope distance and is the maximum allowed for the grade.

G. Road Renovation/Improvement

Objective: To restore or improve a road to a desired standard to minimize sediment production and water quality degradation. Selection of some of the following practices will help meet this objective.

Practices:

1. Change flat gradients to a minimum of 2 percent or provide raised subgrade sections (turnpike) to avoid accumulation of surface water on the road prism.

2. Reconstruct unstable culvert catch basins to specifications. Catch basins in solid rock need not be reconstructed provided that culvert entrance specifications are met.

3. Identify potential off-site water problems or excessive flows and add necessary drainage facilities

4. Identify ditchline and outlet erosion caused by excessive flows, and add necessary drainage facilities and armoring.

5. Replace undersized culverts and repair damaged culverts and downspouts.

6. Add additional full-round culverts, half-round culverts, and energy dissipators as needed.

7. Correct special drainage problems (i.e., high water table, seeps) that affect stability of subgrade through the use of perforated drains, geotextiles, drainage bays, etc.

8. Eliminate undesirable berms that impair drainage away from the road prism.

9. Restore outslope or crown sections.

10. Avoid disturbing cutbanks while reconstructing ditches or catch basins.

11. Surface inadequately surfaced roads that are to be left open to traffic during wet weather.

12. When roadside brushing is necessary, require it be done in a manner that prevents disturbance to root systems (i.e., prohibit using excavators for brushing).

13. Revegetate all cut and fill slopes by seeding and/or planting trees or shrubs (use Native Species Manual 1745 and Eugene District's Implementation Strategy for Native Plants as guides), fertilizing, hydromulching, netting, and/or mulching.

14. Install stabilization features such as debris racks, binwalls, and rock blankets as needed.

H. Maintenance

Objective: To maintain roads in a manner that will provide for water quality protection by minimizing surface erosion, rutting failures, sidecasting, and blockage of drainage facilities. Selection of some of the following practices will help meet this objective.

Practices:

1. Provide the basic custodial maintenance required to protect the road investment to ensure that erosion damage to adjacent land and resources is held to a minimum.

2. Perform blading and shaping in such a manner as to conserve existing surface material, retain the original crowned or outsloped self-drainage cross-section, and prevent or remove rutting berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid dumping loose ditch or surface material over the shoulder where it would cause stream sedimentation or weaken landslide prone areas. Avoid undercutting of road cuts.

3. Keep road inlet and outlet ditches, catch basins, and culverts free of obstruction, particularly before and during prolonged winter rainfall. Minimize routine machine cleaning of ditches during wet weather.

4. Promptly remove landslide material when it is obstructing the road surface and ditchline drainage, and utilize the landslide material for needed road improvements elsewhere or dispose of it in a stable waste area. Avoid sidecasting landslide material where it would overload embankments or natural slopes, or flow into downslope drainage courses.

5. Retain vegetation on cut slopes unless it poses a safety hazard or restricts maintenance activities. Accomplish roadside brushing by cutting vegetation rather than pulling it out and disturbing the soil.

6. Patrol areas subject to road damage during periods of high precipitation.

7. Reclaim/revegetate all roads not needed for future management activities.

8. Revegetate bare cut and fill slopes.

9. Stabilize major slope failures (landslides) by subsurface drainage, rock blankets, or other methods.

I. Road Closures

Objectives: To prevent erosion and sedimentation of streams from unmaintained roads, and restore site productivity to roads no longer needed. Selection of some of the following practices will help meet these objectives.

Practices:

1. Barricade or block the road surface using gates, guard rails, earth/log barricades, boulders, logging debris or a combination of these methods. Avoid blocking roads that would need future maintenance (i.e., culverts, potential landslides, etc.) with unremovable barricades. Use guardrails, gates, or other barricades capable of being opened for roads needing future maintenance.

2. Follow-up on road closures to ensure they are maintained in accordance with design criteria.

3. Install water bars, cross sloping or drainage dips, if not already on road, to ensure drainage.

4. Till with a winged subsoiler, mulch and/or seed for erosion control and site productivity restoration.

5. Coordinate road closures with the (Off Highway Vehicle) OHV Plan (Appendix F) and the Transportation Management Plan.

J. Water Source Development

Objective: To supply water for road construction, dust abatement, and fire protection while maintaining existing water quality and supply. Selection of some of the following practices will help meet this objective.

Practices:

1. Design and construct durable, long-term water sources that maintain or enhance aquatic organism habitat.

2. Avoid reduction of downstream flow that would detrimentally affect aquatic resources, fish passage, or other uses.

3. Direct overflow from waterholding developments back into the stream.

4. Locate road approaches in instream water source developments to minimize potential impacts in the riparian zone. Rock surface these approaches to reduce the effects of sediment washing into the stream.

5. Avoid use of road fills for water impoundment dams unless specially designed for that purpose.

6. Construct water sources during the dry season (generally between May 15 and October 15).

K. Restoration of Rock Quarries

Objective: To minimize sediment production from quarries that are susceptible to erosion due to steep sideslopes, lack of vegetation, or their proximity to water courses. Selection of some of the following practices will help meet this objective.

Practices:

1. Wherever possible, prior to excavation of the site, remove and stockpile topsoil for surface dressing to be used in the reclamation of the site.

2. Use seeding, mulching, and drainage to minimize erosion.

3. Till, water bar, block, fertilize, and seed access roads to rock quarries where no future entry is planned. Reclaim depleted quarries to enhance other resource uses.

III. Silviculture

A. Riparian Protection/Enhancement

Objectives: To comply with the Aquatic Conservation Strategy. To prevent damage to riparian ecosystems, disturbance to streambanks, deterioration of water quality, and accumulation of slash in streams. Selection of some of the following practices will help meet this objective.

Practices:

1. No cutting of vegetation within Riparian reserves except to meet watershed and/or aquatic conservation strategy objectives.

2. When cutting vegetation within a tree length of any stream or riparian zone, fell trees to meet objectives in the Aquatic Conservation Strategy.

B. Mechanical Methods

Objective: To maintain soil productivity and water quality while meeting the silviculture objectives. Selection of some of the following practices will help meet this objective.

Practices:

1. When using tracked equipment for site preparation, limit the use of such equipment to areas of less than 35 percent slopes.

2. Do not compact skeletal or shallow soils.

3. Till all compacted areas with properly designed equipment. This could be waived if inspection reveals that less than 2 percent of the area is compacted. Compaction of less than 2 percent is considered to impair less than 1 percent growth loss.

4. On sites that do not annually dry out enough to provide resistance to traditional tracked equipment, use low-ground-pressure, track-type excavators. The narrow window for dry soils on these sites presents a high risk for impacts, as they do not offer the consistency needed for contract administration. These sites are located in the *Udic* moisture regime, which is dry less than 45 days within the 4 months following June, in 6 years out of 10.

5. Restrict tractor operations to dry conditions with less than 25 percent soil moisture content in the upper six inches of soil.

6. Construct small diameter piles or pile in windrows.

7. Avoid piling large logs and stumps.

8. Pile small material (3-8" diameter size predominantly).

9. Burn piles when soil and duff moistures are high.

C. Chemical Methods

Objectives: To protect water quality from chemical pollution and to enhance soil productivity. Selection of some of the following practices will help meet these objectives.

Practices:

1. Refer to Vegetation Management EIS.
2. Select areas for fertilization listed as TPCC FNR (low nutrient).
3. Target fertilizer for areas that have been impacted from past practices (e.g., intense burns) for possible mitigation.
4. Avoid aerial application of chemicals when wind speeds would cause drift.
5. Locate heliports and storage areas away from stream channels.
6. Do not apply chemicals within 100 feet of perennial streams, or channels with beneficial use(s) recognized by the State.
7. Do not apply chemicals directly into intermittent streams or channels with beneficial use(s) recognized by the State.

D. Broadcast Burning

Objectives: To maintain long-term soil productivity, organic matter, duff, and water quality when burning is used as a management practice. Selection of some of the following practices will help meet this objective.

Practices:

1. Evaluate need for burning based on soils, plant community, and site preparation criteria. Burn under conditions when a light burn can be achieved (see guidelines below) to protect soil productivity. The following standards should not be exceeded.
   a. Category 1 Soils (highly sensitive) - Avoid burning.
   b. Category 2 Soils (moderately sensitive) - Reduce disturbance, fire intensity, and duration by using the following methods:
      - Burn under conditions that result in low intensity fires.
      - Burn when soils and duff are moist.
      - Avoid burning sparsely vegetated areas on slopes greater than 65 percent.
      - Pull slash and woody debris adjacent to landings onto landings before burning.
   c. Category 3 Soils (least sensitive) - Write prescriptions to protect a large percentage of the nutrient capital and other beneficial properties in the soil and the forest floor (low and moderate intensity burns).
2. Burn within Riparian Reserves only to meet aquatic conservation strategy objectives.

3. Fire Trails

   a. Construct tractor fire trails utilizing a brush blade with one-pass construction during periods of dry soil moisture.

   b. Where the fire trail construction has resulted in compacted surfaces, till and water bar the fire trail (use property designed equipment).

   c. Avoid the placement of tractor constructed fire trails on slopes in excess of 35 percent.

   d. Avoid the placement of any fire trails where water would be channeled into areas of slope instability.

   e. Water bar all fire trails that may carry water in order to minimize surface erosion.

IV. Other Activities

A. Firewood

Objective: To prevent erosion from road use and water quality degradation during firewood operations. Selection of some of the following practices will help meet these objectives.

Practices:

1. Seasonal restriction on firewood cutting when access to cutting area is on an unsurfaced road.

2. Clean all road surfaces, ditches, and catch basins of debris from wood cutting.

B. Wildfire Control

Objective: To minimize water quality degradation and maintain soil productivity while achieving rapid and safe suppression of wildfire. Selection of some of the following practices will help meet these objectives.

Practices:

1. Develop a fire contingency plan for sensitive areas.

2. Limit use of heavy equipment near streams and on steep slopes when possible. Where fire trail entry into a riparian area is essential, angle the approach rather than have it perpendicular to the stream.

3. Attempt to keep fire retardant out of water sources.

4. Utilize information from burned area surveys to determine if watershed emergency fire rehabilitation is needed.

5. Develop a fire rehabilitation plan through an interdisciplinary process.

6. Select treatments on the basis of on-site values, downstream values, probability of successful implementation, social and environmental considerations (including protection of native plant community), and cost as compared to benefits.

7. Examples of emergency fire rehabilitation treatments include: (1) seeding grasses or other vegetation as needed to provide a protective cover as quickly as possible; (2) mulching with straw or other suitable material; (3) fertilizing; (4) channel stabilization structures, (5) trash racks above road drainage structures; and (6) water bars on fire lines.

C. Watershed Restoration and Fish Habitat Improvement Projects

Objective: To minimize damage to riparian vegetation, streambanks, and stream channels. Selection of some of the following practices will help meet this objective.

Practices:

1. Use an interdisciplinary team.

2. Use corrective measures to repair degraded watershed conditions and restore to predisturbance conditions with a vegetative cover that will maintain or improve soil stability, reduce surface runoff, increase infiltration, and reduce flood occurrence and flood damages.

3. Carefully plan access needs for individual work sites within a project area to minimize exposure of bare soil, compaction, and possible damage to tree roots. Utilize existing trails to the extent practical.

4. Schedule the timing of work in stream channels in accordance with the Memorandum of Understanding with Oregon Department of Fish and Wildlife to minimize the area of the stream that would be affected by sedimentation during the low flow period.

5. Keep equipment out of streams to the extent possible.

6. Limit the amount of streambank excavation to the minimum that is necessary to ensure stability of enhancement structures. Place excavated material where it will be stable and will not cause adverse stream effects.

7. Whenever possible, obtain logs for habitat improvement structures from outside the riparian zone or at least 200 feet from the stream channel to maintain integrity of riparian habitat and streambanks. Riparian zone management actions will comply with Aquatic Conservation Strategy.

8. Inspect all mechanized equipment daily to help ensure toxic materials such as fuel and hydraulic fluid do not enter the stream.

9. Utilize water bars, barricades, seeding, and/or planting to stabilize bare soil areas.

10. When needed to meet Aquatic Conservation Strategy objectives, place woody debris in RMAs and streams, create snags and plant conifers and woody riparian vegetation where previous management activities have removed them.

11. Design water source developments and improvements to protect riparian values.

12. Manage livestock use of riparian areas by fencing, other water source development, livestock numbers, season of use, and in accordance with the Aquatic Conservation Strategy.

D. Mineral Exploration and Development

Objective: To minimize unnecessary disturbance to soils, riparian ecosystems, streambanks, and stream channels within constraints of applicable regulations. Selection of some of the following practices will help meet this objective.

Practices:

1. Require that operator obtain all required State and Federal operating permits.

2. Locate, design, operate, and maintain sediment settling ponds in conformance with State Department of Environmental Quality (DEQ) guidelines.

3. If possible, design, locate, and construct stream crossings in conformance with practices described in Sections II.D and II.E and the Aquatic Conservation Strategy.

4. Use existing roads, skid trails, and stream crossings whenever possible.

5. Adequate drainage of surface runoff will be necessary for roads that are constructed or reconstructed for vehicular access to the operating area. If roads are to be utilized during winter months (October 15 - April 15) rock aggregate should be used to surface those roads.

6. As appropriate, till, water bar, seed, mulch, and barricade according to BLM specifications, all roads and trails constructed for exploratory purposes that are not needed for the operation.

7. Reclamation of the disturbed area, access roads, and trails shall be conducted at the conclusion of operations.

8. Construct a berm or trench between disturbed areas and water courses when needed to protect water quality.

9. Stockpile topsoil for use during reclamation of the site. In the interim, stockpiled topsoil must be stabilized to prevent erosion and contamination of other resources in the area.

10. If erosion is predicted to occur during the period from October 15 to May 15, contour and mulch disturbed areas that will not be utilized for at least 30 days.

11. If possible, retain an undisturbed riparian buffer strip between mining operations and water courses to protect integrity of streambanks, provide for water temperature control, and for filtration of sediment from surface runoff.

12. Whenever possible, confine operations to areas above the high water line of streams.

13. Locate and maintain sanitation facilities in accordance with State and local regulations and District policies.

TPCC Fragile Codes/Guidance

The Timber Production Capability Classification (TPCC) inventory is designed to identify sites capable of sustaining intensive timber management without degradation of their productive capacity. Factors such as soil depth, available moisture, slope, drainage, and stability are evaluated to determine the degree of timber management activity on a particular site. This would include sites capable of sustaining standard timber harvest practices, special practices or limitations to prevent degradation, and sites too fragile to tolerate any timber management without long-term loss of productivity.

A complete description of the system can be found in *BLM State Office Handbook 525 1- 1, Timber Production Capability Classification.* This is available at the District office.

This section describes the fragile codes used in the TPCC, identifies the concerns associated with each code, and recommends potential practices for management of such areas. The recommended practices listed in this section are measures necessary to avoid unacceptable soil productivity loss for lands classified in the TPCC as fragile. The goal of the practices listed is to prevent or mitigate adverse impacts while meeting other resource objectives. Practices listed in this section are not all-inclusive. The actual practices used for land classified as fragile are selected by an interdisciplinary team on a site specific basis.

A. Fragile Nonsuitable Woodland - Soil Moisture (FSNW)

Soils on these sites are excessively well drained. Soils have a very low Available Water Holding Capacity (AWHC) and are subject to being dry for long periods during spring and summer months. Vegetation communities are primarily uneven-aged, open-grown Douglas-fir with a low vigor ground cover of salal. Soils typically have sandy or gravelly textures with coarse fragments consisting of more that 70 percent of the top 12 inches of the soil. AWHC is generally between 0.5 and 1 inch.

Concerns:

Because of the limited soil resource, survival of newly planted vegetation is low. Any site disturbance severely reduces the future productivity potential. These losses cannot be mitigated even using best management practices.

Recommended Practices:

These sites should be managed for nontimber uses.

B. Fragile Suitable Restricted - Soil Moisture (FSR)

Sites with thin, light-colored topsoils and gravelly, often shallow soils with low moisture storage capacity. Available water holding capacity in the top 12 inches ranges from 1 to 1.5 inches.

Concerns:

Because of low moisture supplying capacity and thin topsoil, soil displacement or compaction significantly impacts the growth of biomass. Soil compaction or displacement further reduces the soil's ability to absorb and store moisture, reducing survival and growth of conifer seedlings.

Recommended Practices:

1. Avoid ground-based logging equipment.
2. Avoid wet-season yarding, except with suspension of logs.
3. Avoid scarification or tilling of soil.
4. Avoid tractor constructed fire trails.
5. Do not prescribe burn or, if burning is absolutely necessary, burn only when fire intensity and duration will be low (see burning guidelines).

C. Fragile Suitable Restricted - Nutrient (FNR)

Soils on this site are typically well to excessively drained. They occur primarily on ridges, ridge noses, and steeper convex hillslopes, at elevations above 2,800 feet. Soils typically have thin topsoils. Organic matter turnover rates are slow and a high proportion of site nutrients is stored in the aboveground biomass.

Concerns:

The highest demand for plant nutrients occurs during the first 15 to 20 years after a plantation is established. Removal of nitrogen on sites already below optimum levels for growth would have an immediate impact on new plantations. Although natural precipitation supplies small amounts of nitrogen, it must be emphasized that nutrients in deficient soils will not be available in sufficient quantities during the period of maximum need by the young stand of trees.

Studies indicate that scarification and burning that result in high biomass removal on nutrient-deficient soils could have an immediate detrimental impact on growth.

Recommended Practices:

1. Avoid burning on these sites when possible. Burning is often not needed to control plant competition on low fertility sites.

2. Avoid burning on steeper slopes and southerly aspects.

3. Encourage nitrogen-fixing vegetation.

4. Use fertilizer to increase nutrient levels.

5. Avoid use of ground-based yarding equipment such as tractors and rubber-tired skidders.

6. Avoid scarification and tractor slash piling.

7. Consider extended rotations.

D. Fragile Nonsuitable Woodland - Slope Gradient (FGNW)

Slopes/areas that have been determined to be potentially unstable.

Slopes greater than 80 percent adjacent to streams and in headwalls of drainages.

Concerns:

Logging or road construction activity is likely to accelerate surface erosion and/or trigger slides or debris avalanches into streams.

Recommended Practices:

1. Manage for uses other than timber production with a primary emphasis on maintaining water quality.

2. Avoid and buffer these sites whenever possible, especially if there are indicators of instability.

3. If included in timber sale units, fall and yard away or use full suspension. Buffer the headwalls of streams.

E. Fragile Suitable Restricted - Slope Gradient (FGR)

Steep hillslopes of greater than 70 percent, adjacent to streams or in headwalls of drainages. Soils are shallow to moderately deep, noncohesive and gravelly.

Concerns:

Disturbances of logging or road construction may accelerate soil erosion, ravelling, and sliding, and may contribute to debris avalanches. When such materials enter streams, there are serious impacts to water quality and to riparian (streamside) vegetation.

Recommended Practices:

1. Avoid placing roads in headwalls steeper than 70 percent and minimize sidecasting of excess road construction materials.

2. Avoid practices that add water to headwalls or disrupt the natural drainage.

3. Patrol culverts in high-hazard areas during high runoff events.

4. Avoid placement of new materials into landslide areas.

5. Direct road runoff into ditch lines by insloping or use of dips.

6. Place downspouts on culverts where they discharge onto steep slopes.

7. Utilize full suspension yarding.

F. Fragile Suitable Restricted - Mass Movement Potential (FPR)

These sites occur primarily in undulating topography containing depressions and sag ponds. Parent material is primarily volcanic rock. Slopes of the slump scarp may be steep but the average hillslope is on gradients of less than 70 percent. Soils are typically deep and highly productive.

Concerns:

These sites are subject to slow mass movement. Any practice that increases weight or soil pore pressure, or reduces support at the toe, accelerates movement. Run-off from compacted soil on roads and skid trails that diverts water into unstable areas is a common cause of increased instability.

Recommended Practices:

1. Avoid unloading toeslopes of landslides.

2. Avoid placing waste material on landslide features.

3. Divert road drainage away from unstable areas.

4. Maintain or reestablish natural drainage after harvest operations.

5. Evaluate unstable slopes and design measures to enhance their stability.

G. Fragile Nonsuitable Woodland - Groundwater (FWNW)

Very poorly drained areas with water at the surface for much of the year. Vegetation includes scattered alder and cottonwood with an understory of salmonberry, skunk cabbage, sedges or rushes, and devils club.

Concerns:

Commercial conifer trees are unable to survive on these sites except on scattered hummocks or mounds with better drainage. The high water table makes it easily damaged by timber management or other activities.

Recommended Practices:

Manage for uses other than timber production with primary emphasis on water quality and wildlife.

H. Fragile Suitable Restricted - Groundwater (FWR)

These are very moist, imperfectly drained sites, usually in depressions or adjacent to streams or unstable areas where the water table is near the surface much of the year. (Soils have high-chroma mottles or

greying within 6 to 14 inches of the surface. Slough sedge and skunk cabbage are absent.) The vegetation is dominated by alder and western hemlock overstories, and oxalis, vine maple, and sword-fern understories. Salmonberry and devils-club are minor components.

Concerns:

These sites may or may not contain water-tolerant species, but removal of trees could reduce transpiration rates. Yarding may disrupt surface water flows. This can raise the water table and increase the time in which soils are wet. In turn, this could reduce production, increase competition of unwanted vegetation, and change the adapted species.

Recommended Practices:

1. Minimize practices that disrupt natural drainage, such as dragging logs through wet areas or leaving skid trails that block natural drainage.

2. Avoid use of ground-based logging equipment when soils are wet.

3. Avoid scarification.

4. Plant species adapted to the site, such as western hemlock, western red cedar, or alder.

Appendix D
Monitoring and Evaluation

Introduction

The monitoring plan for the RMP is tiered to the Monitoring and Evaluation Plan for the SEIS Record of Decision. Since the SEIS Monitoring and Evaluation Plan is not yet fully refined, the RMP Monitoring Plan is not complete. BLM has been and will continue to be a full participant in the development of the SEIS Monitoring and Evaluation Plan. Ongoing BLM effectiveness and validation monitoring will continue where relevant to Resource Management Plan (RMP) direction (e.g., stocking surveys, threatened and endangered species studies, and water quality measurements).

The SEIS and RMP monitoring plans will not identify all the monitoring the Eugene District will do. Activity and project plans may identify monitoring needs of their own.

All Land-Use Allocations

Expected Future Conditions and Outputs

- Protection of SEIS special attention species so as not to elevate their status to any higher level of concern.

Implementation Monitoring

Questions

1. Are surveys for the species listed in Appendix B conducted before ground-disturbing activities occur?

2. Are protection buffers being provided for specific rare and locally endemic species and other species and other species in habitats identified in the SEIS/ROD?

3. Are the sites of amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropod species listed in Appendix B being protected?

4. Are the sites of amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropod species listed in Appendix B being surveyed as directed in the SEIS/ROD?

5. Are high priority sites for species management being identified?

6. Are general regional surveys being conducted to acquire additional information and to determine necessary levels of protection for arthropods and fungi species that were not classed as rare and endemic, bryophytes, and lichens?

Monitoring Requirements

1. At least 20 percent of all management actions will be examined prior to project initiation and reexamined following project completion to determine if surveys are conducted for species listed in Appendix B, protection buffers are provided for specific rare and locally endemic species and other species in habitats identified in the SEIS/ROD, and sites of species listed in Appendix B are protected.

2. The Annual Program Summary will address Implementation Questions 4, 5, and 6.

Effectiveness and Validation Monitoring

Questions

1. Are measures taken to protect the SEIS special attention species effective?

2. Is the forest ecosystem functioning as a productive and sustainable ecological unit?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Riparian Reserves

Expected Future Conditions and Outputs

See Aquatic Conservation Strategy Objectives.

Provision of habitat for special status and SEIS special attention species.

Implementation Monitoring

Questions

1. Are watershed analyses being completed before on-the-ground actions are initiated in Riparian Reserves?

2. Is the width and integrity of the Riparian Reserves being maintained? (For Example, did the conditions that existed before management activities change in ways that are not in accordance with the SEIS/ROD Standards and Guidelines, and RMP management direction?)

3. What silvicultural practices are being applied to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy Objectives?

4. Are management activities in Riparian Reserves consistent with SEIS/ROD Standards and Guidelines, RMP management direction, and Aquatic Conservation Strategy objectives?

5. Are new structures and improvements in Riparian Reserves constructed to minimize the diversion of natural hydrologic flow paths, reduce the amount of sediment delivery into the stream, protect fish and wildlife populations, and accommodate the 100-year flood?

6. a. Are all mining structures, support facilities, and roads located outside the Riparian Reserves?

   b. Are those located within the Riparian Reserves meeting the objectives of the Aquatic Conservation Strategy?

   c. Are all solid and sanitary waste facilities excluded from Riparian Reserves or located, monitored, and reclaimed in accordance with SEIS/ROD Standards and Guidelines and RMP management direction?

7. Are new recreation facilities within the Riparian Reserves designed to meet and, where practicable, contribute to Aquatic Conservation Strategy Objectives? Are mitigation measures initiated where existing recreation facilities are not meeting Aquatic Conservation Strategy Objectives?

Monitoring Requirements

1. The files on each year's on-the-ground actions will be checked annually to ensure that watershed analyses were completed prior to project initiation and to ensure the concerns identified in the watershed analysis were addressed in the project's Environmental Assessment.

2. At least 20 percent of management activities within each Resource Area will be examined prior to project initiation and reexamined following project completion, to determine whether the width and integrity of the Riparian Reserves were maintained.

3. The Annual Program Summary will report what silvicultural practices are being applied in order to attain Aquatic Conservation Strategy Objectives.

4. At least 20 percent of the activities that are conducted or authorized within Riparian Reserves will be reviewed in order to identify whether the actions were consistent with the SEIS/ROD Standards and Guidelines, RMP management direction, and Aquatic Conservation Strategy objectives. In addition to reporting the results of this monitoring, the Annual Program Summary will also summarize the types of activities that were conducted or authorized within Riparian Reserves.

5. All new structures and improvements within a Riparian Reserve will be monitored during and after construction to ensure that it was constructed to minimize the diversion of natural hydrologic flow paths, reduce the amount of sediment delivery into the stream, protect fish and wildlife populations, and accommodate the 100-year flood.

6. All approved mining Plans of Operations will be reviewed to determine the following:

   a. Both a reclamation plan and bond were required.

   b. Structures, support facilities, and roads were located outside of Riparian Reserves, or in compliance with Aquatic Conservation Strategy objectives if located inside the Riparian Reserve.

   c. If solid and sanitary waste facilities were excluded from Riparian Reserves or located, monitored, and reclaimed in accordance with RMP management direction.

7. The Annual Program Summary will examine the status of evaluations of existing recreational facilities inside Riparian Reserves to ensure that Aquatic Conservation Strategy objectives are met. The Summary will also report on the status of the mitigation measures initiated where the Aquatic Conservation Strategy objectives cannot be met.

Effectiveness and Validation Monitoring

Questions

1. Is the health of Riparian Reserves improving?

2. Are management actions designed to rehabilitate Riparian Reserves effective?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Late-Successional Reserves

Expected Future Conditions and Outputs

- Development and maintenance of a functional, interacting, late-successional, and old growth forest ecosystem in Late-Successional Reserves.
- Protection and enhancement of habitat for late-successional and old growth forest-related species including the northern spotted owl and marbled murrelet.

Implementation Monitoring

Questions

1. What is the status of the preparation of assessment and fire plans for Late-Successional Reserves?
2. What activities were conducted or authorized within Late-Successional Reserves, and how were they compatible with the objectives of the Late-Successional Reserve assessment? Were the activities consistent with SEIS/ROD Standards and Guidelines, RMP management direction, Regional Ecosystem Office (REO) review requirements, and the Late-Successional Reserve assessment?
3. What is the status of development and implementation of plans to eliminate or control nonnative species that adversely impact late-successional objectives?

Monitoring Requirements

The Annual Program Summary will address Implementation Questions 1-3.

Effectiveness and Validation Monitoring

Questions

1. Are forest management activities (e.g., Special Forest Product harvesting) within Late-Successional Reserves compatible with the goal of developing and maintaining a functional, interacting, late-successional, and old growth forest ecosystem?
2. Does the harvest of Special Forest Products have adverse effects on Late-Successional Reserve objectives?
3. Is a functional, interacting, late-successional ecosystem maintained where adequate and restored where inadequate?
4. Did the silvicultural treatments benefit the creation and maintenance of late-successional conditions?
5. What is the relationship between levels of management intervention and the health and maintenance of late-successional and old growth ecosystems?

Monitoring Requirements

Deferred to SEIS Monitoring Plan

Adaptive Management Areas

Expected Future Conditions and Outputs

- Utilization of Adaptive Management Areas (AMAs) for the development and application of new management approaches for the integration and achievement of ecological health, and economic and other social objectives.
- Provision of well-distributed, late-successional habitat outside reserves; retention of key structural elements of late-successional forests on lands subjected to regeneration harvest; restoration and protection of Riparian Zones; and provision of a stable timber supply.

Implementation Monitoring

Question

Are the AMA plans being developed, and do they establish future desired conditions?

Monitoring Requirements

The Annual Program Summary will address Implementation Question 1.

Effectiveness and Validation Monitoring

Deferred to SEIS Monitoring Plan and individual AMA management plans.

Matrix

Expected Future Conditions and Outputs

- Production of a stable supply of timber and other forest commodities.
- Maintenance of important ecological functions, such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components such as down logs, snags, and large trees.
- Assurance that forests in the Matrix provide for connectivity between Late-Successional Reserves.
- Provision of habitat for a variety of organisms associated with early and late-successional forests.

Implementation Monitoring

Questions

1. Are suitable numbers of snags, coarse woody debris, and green trees being left in a manner that meets the needs of species and provides for ecological functions in harvested areas as called for in the SEIS/ROD Standards and Guidelines, and RMP management direction?
2. Are timber sales being designed to meet ecosystem goals for the Matrix?

3. Are late-successional stands being retained in fifth-field watersheds in which Federal forest lands have 15 percent or less late-successional forest?

Monitoring Requirements

1. Each year at least 20 percent of regeneration harvest timber sales in each Resource Area will be selected for examination by pre and post-harvest (and after site preparation) inventories to determine snag and green tree numbers, heights, diameters, and distribution within harvest units. The measure of distribution of snags and green trees will be the percent in the upper, middle, and lower thirds of the sale units monitored. Snags and green trees left following timber harvest activities (including site preparation for reforestation) will be compared to those that were marked prior to harvest.

   The same timber sales will also be inventoried pre and post-harvest to determine if SEIS/ROD and RMP down log retention direction has been followed.

2. At least 20 percent of the files on each year's timber sales will be reviewed annually to determine if ecosystem goals were addressed in the silvicultural prescriptions.

3. All proposed regeneration harvest timber sales in watersheds with less than 15 percent late-successional forest remaining will be reviewed prior to sale to ensure that a watershed analysis has been completed.

Effectiveness and Validation Monitoring

Questions

1. Are stands growing at a rate that will produce the predicted yields?

2. Are forests in the Matrix providing for connectivity between Late-Successional Reserves?

Monitoring Requirements

Deferred to the SEIS Monitoring Plan.

Air Quality

Expected Future Conditions and Outputs

- Attainment of National Ambient Air Quality Standards, and goals for the Prevention of Significant Deterioration and the Oregon Visibility Protection and Smoke Management Plan.

- Maintenance and enhancement of air quality and visibility in a manner consistent with the Clean Air Act and the State Implementation Plan.

Implementation Monitoring

Questions

1. Were efforts made to minimize the amount of particulate emissions from prescribed burns?

2. Are dust abatement measures used during construction activities and on roads during BLM timber harvest operations and other BLM commodity hauling activities?

3. Are conformity determinations being prepared prior to activities that may contribute to a new violation of the National Ambient Air Quality Standards, increase the frequency or severity of an existing violation, or delay the timely attainment of a standard?

Monitoring Requirements

1. Each year at least 20 percent of prescribed burn projects will be randomly selected for monitoring to assess what efforts were made to minimize particulate emissions, and to assess whether the environmental analysis that preceded the decision to burn addressed the questions set forth in the SEIS discussion of Emission Monitoring (pgs. 3 & 4-100).

2. Each year at least 20 percent of the construction activities and commodity hauling activities will be selected for monitoring to determine if dust abatement measures were implemented.

3. The Annual Program Summary will address Implementation Question 3.

Effectiveness and Validation Monitoring

Questions

1. What techniques were the most effective in minimizing the amount of particulate emissions from prescribed burns?

2. Are BLM prescribed burns contributing to intrusions into Class I areas or nonattainment areas?

3. Of the intrusions that the BLM is reported to be responsible for, what was the cause and what can be done to minimize future occurrences?

4. Are BLM prescribed underburns causing adverse air quality impacts to rural communities?

5. Are prescribed fires decreasing the actual or potential impacts from wildfire emissions?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Water and Soils

Expected Future Conditions and Outputs

- Restoration and maintenance of the ecological health of watersheds (see Aquatic Conservation Strategy Objectives).

- Compliance with State water quality requirements to restore and maintain water quality to protect recognized beneficial uses.

- Improvement and/or maintenance of soil productivity.

- Reduction of existing road mileage within Key Watersheds.

Implementation Monitoring

Questions

1. Are site-specific Best Management Practices (BMP) identified as applicable during interdisciplinary review and carried forward into project design and execution?

2. What watershed analyses have been or are being performed? Are watershed analyses being performed prior to management activities in Key Watersheds?

3. What is the status of identification of instream flow needs for the maintenance of channel conditions, aquatic habitat, and riparian resources?

4. What watershed restoration projects are being developed and implemented?

5. What fuel treatment and fire suppression strategies have been developed to meet Aquatic Conservation Strategy objectives?

6. What is the status of development of road or transportation management plans to meet Aquatic Conservation Strategy objectives?

7. What is the status of preparation of criteria and standards that govern the operation, maintenance, and design for construction and reconstruction of roads?

8. What is the status of the reconstruction of roads and associated drainage features identified in watershed analysis as posing a substantial risk? What is the status of closure or elimination of roads to further Aquatic Conservation Strategy objectives and to reduce the overall road mileage within Key Watersheds? If funding is insufficient to implement road mileage reductions, are construction and authorizations through discretionary permits denied to prevent a net increase in road mileage in Key Watersheds?

9. What is the status of review of ongoing research in Key Watersheds to ensure that significant risk to the watershed does not exist?

10. What is the status of evaluation of recreation, interpretive, and user-enhancement activities/facilities to determine their effects on the watershed? What is the status of eliminating or relocating these activities/facilities when found to be in conflict with Aquatic Conservation Strategy objectives?

11. What is the status of cooperation with other agencies in the development of watershed-based Research Management Plans and other cooperative agreements to meet Aquatic Conservation Strategy objectives? What is the status of cooperation with other agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives?

Monitoring Requirements

1. Each year at least 20 percent of the timber sales and other relevant actions stratified by management category will be randomly selected for monitoring to determine whether Best Management Practices were implemented as prescribed. The selection of management actions to be monitored will be based on beneficial uses likely to be impacted and for which BMPs are being prescribed.

2. Compliance checks will be completed for all agreements entered into with providers of municipal water.

3. The Annual Program Summary will address Implementation Questions 3-11.

Effectiveness and Validation Monitoring

Questions

1. Is the ecosystem function of the watersheds improving?

2. Are State water quality criteria being met? When State water quality criteria are met, are the beneficial uses of riparian areas protected?

3. Are prescribed Best Management Practices maintaining or restoring water quality consistent with basin specific State water quality criteria for protection of specified beneficial uses?

Monitoring Requirements

Deferred to SEIS Monitoring Plan

Wildlife Habitat

Expected Future Conditions and Outputs

- Maintenance of biological diversity and ecosystem health to contribute to healthy wildlife populations.

Implementation Monitoring

Questions

1. Are suitable (diameter, length, and numbers) snags, coarse woody debris, and green trees being left in a manner that meets the needs of species and provides for ecological functions in harvested areas, as called for in the SEIS/ROD Standards and Guidelines, and RMP management direction?

2. Are special habitats being identified and protected?

3. What is the status of designing and implementing wildlife habitat restoration projects?

4. What is the status of designing and constructing wildlife interpretive and other user-enhancement facilities?

Monitoring Requirements

1. Each year at least 20 percent of regeneration harvest timber sales in each Resource Area will be examined by pre and post-harvest (and after site preparation) inventories to determine snag and green tree numbers, heights, diameters, and distribution within harvest units. The measure of distribution of snags and green trees will be the percent in the upper, middle, and lower thirds of the sale units monitored. Snags and green trees left following timber harvest activities (including site preparation for reforestation) will be compared to those that were marked prior to harvest.

   The same timber sales will also be inventoried pre and post-harvest to determine if SEIS/ROD and RMP down log retention directions have been followed.

2. Each year at least 20 percent of BLM actions within each Resource Area on lands including or near special habitats will be examined to determine whether special habitats were protected.

3. The Annual Program Summary will address Implementation Questions 3 and 4.

Effectiveness and Validation Monitoring

Questions

1. Are habitat conditions for late-successional forest associated species maintained where adequate, and restored where inadequate?

2. Are the snags, green trees, and coarse woody debris being left achieving the habitat necessary to attain the desired population at a relevant landscape level?

3. Are BLM actions intended to protect special habitats actually protecting the habitat? Is the protection of special habitats helping to protect the species population?

4. What are the effects of management on species richness (numbers and diversity)?

Monitoring Requirements

Deferred to SEIS Monitoring Plan, which will address a variety of wildlife species such as amphibians, mollusks, neotropical migratory birds, etc.

Fish Habitat

Expected Future Conditions and Outputs

- See Aquatic Conservation Strategy Objectives.

- Maintenance or enhancement of the fisheries potential of streams and other waters consistent with BLM's *Anadromous Fish Habitat Management on Public Lands* guidance, BLM's *Fish and Wildlife 2000 Plan*, the Bring Back the Natives initiative, and other nationwide initiatives.

- Rehabilitation and protection of at-risk fish stocks and their habitat.

Implementation Monitoring

Questions

1. Are at-risk fish species and stocks being identified?

2. Are fish habitat restoration and enhancement activities being designed and implemented that contribute to attainment of Aquatic Conservation Strategy objectives?

3. Are potential adverse impacts to fish habitat and fish stocks being identified?

Monitoring Requirements

1. The Annual Program Summary will report on the status of watershed analysis to identify at-risk fish species and stocks, their habitat within individual watersheds, and restoration project needs.

2. The Annual Program Summary will report on the status of the design and implementation of fish habitat restoration and habitat activities.

3. The Annual Program Summary will report on the status of cooperation with Federal, Tribal, and State fish management agencies to identify and eliminate impacts associated with poaching, harvest, habitat manipulation, and fish stocking that threaten the continued existence and distribution of native fish stocks inhabiting Federal lands. The Summary will also identify any management activities or fish interpretive and other user-enhancement facilities that have detrimental effects on native fish stocks.

4. At least 20 percent of the files on each year's timber sales, and other relevant actions, will be reviewed annually to evaluate documentation regarding fish species and habitat and related recommendations and decisions in light of policy and SEIS/ROD Standards and Guidelines, and RMP management direction. If mitigation is required, review will ascertain whether such mitigation was incorporated in the authorization document and the actions will be reviewed on the ground after completion to ascertain whether the mitigation was carried out as planned.

Effectiveness and Validation Monitoring

Questions

1. Is the ecological health of the aquatic ecosystems recovering or sufficiently maintained to support stable and well-distributed populations of fish species and stocks?

2. Is fish habitat, in terms of quantity and quality of rearing pools, coarse woody debris, water temperature, and width to depth ratio, being maintained or improved as predicted?

3. Are desired habitat conditions for listed, sensitive, and at-risk fish stocks maintained where adequate and restored where inadequate?

Monitoring Requirements

Deferred to SEIS Monitoring Plan

Special Status and SEIS Special Attention Species Habitat

Expected Future Conditions and Outputs

- Protection, management, and conservation of Federal listed and proposed species and their habitats to achieve their recovery in compliance with the Endangered Species Act (ESA) and Bureau special status species policies.

- Conservation of Federal Candidate and Bureau Sensitive species and their habitats, so as not to contribute to the need to list and recover the species.

- Conservation of State Listed species and their habitats to assist the State in achieving management objectives.

- Maintenance or restoration of community structure, species composition, and ecological processes of special status plant and animal habitat.

- Protection of Bureau Assessment species and SEIS special attention species, so as not to elevate their status to any higher level of concern.

Implementation Monitoring

Questions

1. Are Special Status Species being addressed in deciding whether or not to go forward with forest management and other actions? During forest management and other actions that may disturb Special Status Species, are steps taken to adequately mitigate disturbances?

2. Are the actions identified in plans to recover species being implemented in a timely manner?

3. What coordination with other agencies has occurred in the management of Special Status Species?

4. What land acquisitions occurred or are under way to facilitate the management and recovery of Special Status Species?

5. What site specific plans for the recovery of Special Status Species were or are being developed?

6. What is the status of analysis that ascertains species requirements or enhances the recovery or survival of a species?

7. What is the status of efforts to maintain or restore the community structure, species composition, and ecological processes of special status plant and animal habitat?

Monitoring Requirements

1. Each year at least 20 percent of all management actions will be selected for examination prior to project initiation and reexamined following project completion to evaluate documentation regarding Special Status Species and related recommendations and decisions in light of ESA requirements, policy, and SEIS/ROD Standards and Guidelines, and RMP management direction. If mitigation is required, review will ascertain whether such mitigation is incorporated in the authorization document,and the actions will be reviewed on the ground after completion to ascertain whether the mitigation was carried out as planned.

2. Review implementation schedule and actions taken annually to ascertain if the actions to recover species were carried out as planned.

3. The Annual Program Summary will address Implementation Questions 3-7.

Effectiveness and Validation Monitoring

Questions

1. Are trends for Special Status Species meeting the objectives of mitigation and/or conservation actions?

2. Have any Federal Candidate, Bureau Assessment, or Bureau Sensitive species been elevated to higher levels of concern due to BLM management?

3. Were desired habitat conditions for the northern spotted owl and marbled murrelet maintained where adequate and restored where inadequate?

Monitoring Requirements

Deferred to SEIS Monitoring Plan, which will address a variety of special status species including marbled murrelet, bald eagle, northern spotted owl, anadromous fish species.

Special Areas

Expected Future Conditions and Outputs

- Maintenance, protection, and/or restoration of the relevant and important values of the special areas that include Areas of Critical Environmental Concern (ACEC), Outstanding Natural Areas (ONA), Research Natural Areas (RNA), and Environmental Education Areas (EEA).
- Provision of recreation uses and environmental education in ONAs. Management of uses to prevent damage to those values that make the area outstanding.
- Preservation, protection, or restoration of native species composition and ecological processes of biological communities in RNAs.
- Provision and maintenance of environmental education opportunities in EEAs. Management of uses to minimize disturbances of educational values.
- Retention of existing Research Natural Areas and existing Areas of Critical Environmental Concern that meet the test for continued designation. Retention of other special areas. Provision of new special areas where needed to maintain or protect important values.

Implementation Monitoring

Questions

1. Are BLM actions and BLM authorized actions/uses near or within special areas consistent with RMP objectives and management direction for special areas?
2. What is the status of the preparation, revision, and implementation of ACEC management plans?
3. Are interpretive programs and recreation uses being developed and encouraged in ONAs? Are the outstanding values of the ONAs being protected from damage?
4. What environmental education and research initiatives and programs are occurring in the RNAs and EEAs?
5. Are existing BLM actions and BLM authorized actions and uses not consistent with management direction for special areas being eliminated or relocated?
6. Are actions being identified that are needed to maintain or restore the important values of the special areas? Are the actions being implemented?
7. Are protection buffers being provided for specific rare and locally endemic species and other species in the SEIS/ROD?

Monitoring Requirements

1. Annually at least 20 percent of the files on all actions and research proposals within and adjacent to special areas will be reviewed to determine whether the possibility of impacts on ACEC values were considered, and whether any mitigation identified as important for maintenance of ACEC values is required. If mitigation was required, the relevant actions will be reviewed on the ground after completion to ascertain whether it was actually implemented.

2. The Annual Program Summary will address Implementation Questions 2 through 7.

Effectiveness and Validation Monitoring

Questions

1. Are the implemented management actions designed to protect the values of the special areas effective?

2. Are the special areas managed to restore or prevent the loss of outstanding values and minimize disturbance?

Monitoring Requirements

1. Each special area will be monitored at least every 3 years to determine if the values for which it was designated are being maintained.

2. Each ACEC where proactive management actions have been implemented will be monitored annually for the first 3 years and after that every 3 years or until objectives are met, to determine if these actions met their objectives.

Cultural Resources Including Native American Values

Expected Future Conditions and Outputs

- Identification of cultural resource localities for public, scientific, and cultural heritage purposes.
- Conservation and protection of cultural resource values for future generations.
- Provision of information on long-term environmental change and past interactions between humans and the environment.
- Fulfillment of responsibilities to appropriate Native American groups regarding heritage and religious concerns.

Implementation Monitoring

Questions

1. Are cultural resources being addressed in deciding whether or not to go forward with forest management and other actions? During forest management and other actions that may disturb cultural resources, are steps taken to adequately mitigate disturbances?

2. What mechanisms have been developed to describe past landscapes and the role of humans in shaping those landscapes?

3. What efforts are being made to work with Native American groups to accomplish cultural resource objectives and achieve goals outlined in existing memoranda of understanding and develop additional memoranda as needs arise?

4. What public education and interpretive programs were developed to promote the appreciation of cultural resources?

Monitoring Requirements

1. At least 20 percent of the files on each year's timber sales and other relevant actions (e.g., rights-of-way, and instream structures) will be reviewed annually to evaluate documentation regarding cultural resources and Native American values and decisions in light of requirements, policy, SEIS/ROD Standards and Guidelines, and RMP management direction. If mitigation were required, review will ascertain whether such mitigation was incorporated in the authorization document, and the actions will be reviewed on the ground after completion to ascertain whether the mitigation was carried out as planned.

2. The Annual Program Summary will address Implementation Questions 2-4.

Effectiveness and Validation Monitoring

Questions

1. Are sites of religious and cultural heritage adequately protected?

2. Do Native American groups have access to and use of forest species, resources, and places important for cultural, subsistence, or economic reasons, particularly those identified in treaties?

Monitoring Requirements

1. All cultural resource sites, where management and/or mitigation measures are utilized to protect the resource, will be monitored at least once a year to determine if the measures were effective.

The balance is deferred to SEIS Monitoring Plan.

Visual Resources

Expected Future Conditions and Outputs

- Preservation or retention of the existing character of landscapes on BLM administered lands allocated for VRM Class II management; partial retention of the existing character on lands allocated for VRM Class III management; and major modification of the existing character of some lands allocated for VRM Class IV management.

- Continuation of emphasis on management of scenic resources in selected high-use areas to retain or preserve scenic quality.

Implementation Monitoring

Question

Are visual resource design features and mitigation methods being followed during timber sales and other substantial actions in Class II and III areas?

Monitoring Requirements

Twenty percent of the files for timber sales and other substantial projects in VRM Class II or III areas will be reviewed to ascertain whether relevant design features or mitigating measures were included.

Effectiveness and Validation Monitoring

Questions

1. Are timber sales and other major actions in Class II and Class III areas meeting or exceeding Visual Resource Management (VRM) objectives?

2. Are Visual Resource Management objectives being met consistently over long periods of time in Class II management areas?

Monitoring Requirements

1. Each year all timber sales and other selected projects in VRM Class II areas and at least 20 percent of sales or projects in Class III areas that have special design features, or mitigating measures for visual resource protection, will be selected for monitoring to evaluate the effectiveness of the practices used to conserve visual resources.

2. In VRM Class II management areas, where 2 or more sales or actions have occurred, impacts will be monitored at a minimum interval of 5 years.

Wild and Scenic Rivers

Expected Future Conditions and Outputs

- Protection of the Outstandingly Remarkable Values (ORV) of designated components of the National Wild and Scenic Rivers System through the maintenance and enhancement of the natural integrity of river-related values.

- Protection of the ORVs of eligible/suitable Wild and Scenic Rivers and the maintenance or enhancement of the highest tentative classification pending resolution of suitability and/or designation.

- Protection of the natural integrity of river-related values for the maintenance or enhancement of the highest tentative classification determination for rivers found eligible or studied for suitability.

Implementation Monitoring

Questions

1. Are BLM actions and BLM authorized actions consistent with protection of the ORVs of designated suitable and eligible, but not studied, rivers?

2. Are existing plans being revised to conform to Aquatic Conservation Strategy Objectives? Are revised plans being implemented?

Monitoring Requirements

1. Annually the files on all actions and research proposals within and adjacent to Wild and Scenic River corridors will be reviewed to determine whether the possibility of impacts on the Outstandingly Remarkable Values were considered, and whether any mitigation identified as important for maintenance of the values was required. If mitigation were required, the relevant actions will be reviewed on the ground after completion to ascertain whether it was actually implemented.

2. The Annual Program Summary report will summarize progress on preparation and revision of Wild and Scenic River management plans, their conformance with the Aquatic Conservation Strategy objectives, and the degree to which these plans have been implemented.

Effectiveness and Validation Monitoring

Questions

1. Are the ORVs for which the Wild and Scenic Rivers were designated being maintained?

2. Are the ORVs of the rivers that were found suitable or eligible, but not studied, protected?

Monitoring Requirements

Each Wild and Scenic River that was found suitable or eligible, but was not studied, will be monitored at least once a year to determine if the ORVs are being maintained.

Rural Interface Areas

Expected Future Conditions and Outputs

- Consideration of the interests of adjacent and nearby rural landowners, including residents, during analysis, planning, and monitoring related to managed Rural Interface Areas (RIA). (These interests include personal health and safety, improvements to property, and quality of life.)

- Determination of how landowners might be or are affected by activities on BLM administered land.

Implementation Monitoring

Question

Are design features and mitigation measures developed and implemented to avoid/minimize impacts to health, life, property, and quality of life and to minimize the possibility of conflicts between private and Federal land management?

Monitoring Requirements

Each year at least 20 percent of all actions within the identified Rural Interface Areas will be selected for examination to determine if special project design features and mitigation measures were included and implemented as planned.

Effectiveness and Validation Monitoring

Question

Are the RIA design features and mitigation measures effective in minimizing impacts to health, life, property, and quality of life?

Monitoring Requirement

Each year at least 20 percent of actions within the identified RIAs that had design features or mitigation measures will be selected for examination following completion to assess the effectiveness of the action.

Socioeconomic Conditions

Expected Future Conditions and Outputs

- Contribution to local, State, National, and international economies through sustainable use of BLM managed lands and resources and use of innovative contracting and other implementation strategies.
- Provision of amenities for the enhancement of communities as places to live and work.

Implementation Monitoring

Questions

1. What innovative strategies and programs have been developed through coordination with State and local governments to support local economies and enhance local communities?
2. Are RMP implementation strategies being identified that support local economies?
3. What is the status of planning and developing amenities (such as recreation and wildlife viewing facilities) that enhance local communities?

Monitoring Requirements

The Annual Program Summary will address Implementation Questions 1, 2, and 3.

Effectiveness and Validation Monitoring

Questions

1. What level of local employment is supported by BLM timber sales and forest management practices?

2. What were O&C and CBWR payments to counties?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Recreation

Expected Future Conditions and Outputs

- Provision of a wide range of developed and dispersed recreation opportunities that contribute to meeting projected recreation demand within the planning area.

- Provision of nonmotorized recreational opportunities and creation of additional opportunities consistent with other management objectives.

Implementation Monitoring

Question

What is the status of the development and implementation of recreation plans?

Monitoring Requirement

The Annual Program Summary will address Implementation Question 1.

Effectiveness and Validation Monitoring

Questions

1. Based on the Statewide Comprehensive Outdoor Recreation Plan (SCORP) supply and demand data and public comments, is the range of recreation opportunities on BLM lands (i.e., roaded vs. unroaded) meeting public needs?

2. Are BLM developed recreation facilities meeting public needs and expectations, including facility condition and visitor safety considerations?

3. Are Off-Highway Vehicle (OHV) designations adequate to protect resource values while providing appropriate motorized vehicle recreation opportunities?

Monitoring Requirements

1. Each Special Recreation Management Area (SRMA) will be monitored at least every 3 years to determine if the types of recreation opportunities being provided are appropriate.

2. All developed recreation sites will be monitored annually to determine if facilities are being properly managed and all deficiencies documented.

3. All OHV designations will be reviewed annually to determine if revisions are necessary to protect resource values and resolve user conflicts.

Timber Resources

Expected Future Conditions and Outputs

- Provision of a sustained yield of timber and other forest products.

- Reduction of the risk of stand loss due to fires, animals, insects, and diseases.

- Provision of salvage harvest for timber killed or damaged by events such as wildfire, windstorms, insects, or disease, in a manner consistent with management objectives for other resources.

Implementation Monitoring

Questions

1. By land-use allocation, how do timber sale volumes, harvested acres, and the age and type of regeneration harvest stands compare to the projections in the SEIS/ROD Standards and Guidelines, and RMP management objectives?

2. Were the silvicultural (e.g., planting with genetically selected stock, fertilization, release, and thinning) and forest health practices anticipated in the calculation of the expected sale quantity implemented?

Monitoring Requirements

1. The Annual Program Summary will report both planned and nonplanned volumes sold. The report will also summarize annual and cumulative timber sale volumes, acres to be harvested, and stand ages and types of regeneration harvest for General Forest Management Areas (GFMA), Connectivity/Diversity Blocks, and Adaptive Management Areas stratified to identify them individually.

2. An annual Districtwide report will be prepared to determine if the silvicultural and forest health practices identified and used in the calculation of the ASQ were implemented. This report will be summarized in the Annual Program Summary.

Effectiveness and Validation Monitoring

Questions

1. Is reforestation achieving desired stocking?
2. Are stands growing at a rate that will produce the predicted yields?
3. Is the long-term health and productivity of the forest ecosystem being protected in the Matrix?

Monitoring Requirements

First, third, and fifth year surveys will be used to determine if reforestation is meeting reforestation objectives.

The balance is deferred to the SEIS Monitoring Plan.

Special Forest Products

Expected Future Conditions and Outputs

- Production and sale of Special Forest Products (SFP) when demand is present and where actions taken are consistent with primary objectives for the land use allocation.
- Utilization of the principles of ecosystem management to guide the management and harvest of Special Forest Products.

Implementation Monitoring

Questions

1. Is the sustainability and protection of Special Forest Product resources ensured prior to selling Special Forest Products?
2. What is the status of the development and implementation of specific guidelines for the management of individual Special Forest Products?

Monitoring Requirement

The Annual Program Summary will address Implementation Questions 1 and 2.

Effectiveness and Validation Monitoring

Question

Are Special Forest Products being harvested at a sustainable level?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Noxious Weeds

Expected Future Conditions and Outputs

- Containment and/or reduction of noxious weed infestations on BLM administered land using an integrated pest management approach to improve natural features.
- Avoidance of the introduction or spread of noxious weed infestations in all areas.

Implementation Monitoring

Question

Are noxious weed control methods compatible with Aquatic Conservation Strategy Objectives?

Monitoring Requirement

Review the files of at least 20 percent of each year's noxious weed control applications to determine if noxious weed control methods were compatible with Aquatic Conservation Strategy objectives.

Effectiveness and Validation Monitoring

Question

Are management actions effectively containing or reducing the extent of noxious weed infestations?

Monitoring Requirement

At least 20 percent of the noxious weed sites subjected to treatment will be monitored to determine if the treatment was effective.

Fire/Fuels Management

Expected Future Conditions and Outputs

- Provision of the appropriate suppression responses to wildfires in order to meet resource management objectives and minimize the risk of large-scale, high intensity wildfires.
- Utilization of prescribed fire to meet resource management objectives. (This will include, but not be limited to, fuels management for wildfire hazard reduction, restoration of desired vegetation conditions, management of habitat, and silvicultural treatments.)

- Adherence to smoke management/air quality standards of the Clean Air Act and State Implementation Plan standards for prescribed burning.

Implementation Monitoring

Questions

1. What is the status of the preparation and implementation of fire management plans for Late-Successional Reserves and Adaptive Management Areas?

2. Have additional analysis and planning been completed to allow some natural fires to burn under prescribed conditions?

3. Do wildfire suppression plans emphasize maintaining late-successional habitat?

4. Are Wildfire Situation Analyses being prepared for wildfires that escape initial attack?

5. What is the status of the interdisciplinary team preparation and implementation of fuel hazard reduction plans?

Monitoring Requirements

The Annual Program Summary will address Implementation Questions 1-5.

Effectiveness and Validation Monitoring

Questions

1. Are fire suppression strategies, practices, and activities meeting resource management objectives and concerns?

2. Are prescribed fires applied in a manner that retains the amount of coarse woody debris, snags, and duff at levels determined through watershed analysis?

3. Are fuel profiles being modified to lower the potential of fire ignition and rate of spread,and to protect and support land use allocation objectives by lowering the risk of high intensity, stand-replacing wildfires?

Monitoring Requirements

Deferred to SEIS Monitoring Plan.

Appendix E
Silvicultural Systems and Harvest Methods

Introduction

A variety of general silvicultural systems are proposed for the major land use allocations under the plan. The choice of silvicultural systems for management of forest stands would depend on 3 general factors:

1. Resource Management Objectives - Silvicultural systems will be designed to meet a wide range of management objectives, including the aquatic conservation strategy, development or maintenance of particular habitat types, restoration or maintenance of forest health, and production of merchantable forest products. These objectives vary by land use allocation.

2. Ecological Type and Site Conditions - Silvicultural systems will be selected to meet the ecological requirements of the communities of plants and animal species present. The silvicultural systems selected must also be compatible with soil conditions, slope, aspect, elevation, blowdown potential, and other physical characteristics of each site.

3. Forest Condition - The selection of silvicultural treatments will vary depending on the current condition of each stand. Factors considered include species mix, stand age and structure, density, vigor, previous management, damage or disturbance, and insect or disease problems.

Silvicultural systems will be adapted in some locations to meet the requirements of experimental designs. Many field trials and research studies will be needed to help explore the outcomes of the new management approaches being considered.

Livestock grazing can be utilized as a management tool only after a NEPA assessment and then only if it does not retard or prevent attainment of Aquatic Conservation Strategy Objectives. Where objectives cannot be met, eliminate the use of grazing.

Watershed analysis and interdisciplinary reviews will be used to help select and design silvicultural systems through better understanding of landscape-level patterns and ecological processes.

In the following sections, the selection of silvicultural systems is discussed for each of the major land use allocations.

General Forest Management Area

Silvicultural systems in the General Forest Management Area will be designed to promote production of merchantable timber, while retaining some larger trees and snags and maintaining forest health and productivity. All treatments will be compatible with the ecological requirements of the communities of native plant, fungi, and animal species present, and will be tailored to the condition of each stand. The results of watershed analysis will be used to help select and design silvicultural systems through better understanding of landscape-level patterns and ecological processes.

The quality of wood, value of logs ultimately produced, and economic efficiency will be important considerations for all planned treatments.

Lands available for harvest will be managed generally as even-aged stands with partial overstories of larger trees. The silvicultural prescription will provide for the retention of down logs necessary for ecological function. Harvest systems utilized will be consistent with the Best Management Practices (BMP) as described in Appendix C.

Silvicultural Treatments

Management actions will consist of 6 general types of treatments:

- regeneration harvest with partial retention;
- site preparation following harvest;
- reforestation treatment;
- management of young stands;
- commercial thinnings in mid-aged stands; and
- management of overstory trees, snags, and large woody debris.

Each of these silvicultural treatments is described below.

Regeneration Harvest: Regeneration harvests on available forest lands will generally occur in stands at or above the age of the Culmination of Mean Annual Increment (CMAI) except during the first decade when stands as young as 56 years old will be cut. On the Eugene District, the CMAI varies from stand age 70 to 90 years. Regeneration harvest will not be planned for stands less than 56 years of age.

Site Preparation: Following regeneration harvest, residual vegetation and logging debris will be treated if necessary to reduce fire hazard, improve access for planting of tree seedlings, lessen initial competition from other vegetation, and limit the cover for seedling-damaging rodents. Methods used will include prescribed fire, manual cutting and piling, and mechanical clearing.

Reforestation: Normally, all sites that receive regeneration harvest and do not require burning will be reforested within one year of cutting. If slashing and/or burning is required to prepare sites for planting, reforestation may be delayed beyond one year pending burn prescriptions and smoke management clearance. Most areas will be planted with seedlings grown from genetically-selected seed. The selection of tree species, planting density, and stock types will depend on site characteristics, the composition of the original stand, and projected future management of each stand. Areas having identified root disease will be planted with species resistant or immune to the disease or the areas will be treated in a manner that will reduce the likelihood of spreading the disease.

Management of Young Stands: During the first 10 to 15 years after planting, young stands will receive treatments as necessary and as funding allows to promote establishment, survival, and growth by managing competing vegetation, protecting seedlings from severe local site conditions, and preventing excessive animal damage. These treatments could include but not be limited to manual cutting of brush and seedling protection measures such as placement of plastic mesh tubes or nets on seedlings, and installation of tree shades or mulches. Animal damage control measures will be implemented to reduce their populations when they are high enough to threaten forest stands.

Suitable stands aged 10 to 20 years will receive treatments designed to improve growth, value, and wood quality, when funding is available. These treatments include precommercial thinning, release, pruning, and fertilization.

Commercial Thinnings: Stands approximately 30 to 70 years of age will be considered for commercial thinning potential. One or two thinnings may be scheduled over the life of an individual stand.

Commercial thinning may include one or more of the following objectives:

- Increase the proportion of merchantable volume in the stand.
- Produce larger, more valuable logs.
- Harvest anticipated mortality of small trees as the stand develops.
- Maintain good crown ratios and stable, windfirm trees.
- Accelerate development of trees that can later provide large-diameter snags and down logs.
- Manage species composition.
- Promote development of desired understory vegetation.

Nitrogen fertilizer may be applied following completion of thinnings. Pruning of selected trees may be considered to increase future value.

In any case, the decision to thin any given stand will depend on site-specific factors such as slope and topography, distance to roads, soil types, stand density, species composition, and average tree diameter.

Management of Overstory Trees, Snags, and Large Woody Debris: During partial cut or regeneration harvests, existing snags will be reserved from cutting whenever feasible and to the extent necessary to meet snag habitat objectives. However, some snags may need to be removed for road construction, safety reasons, or to make way for log yarding in some situations.

The large trees reserved from regeneration harvest will normally not be considered available for future harvest. Some may be damaged or killed during slash burning, while others may blow down or break off during windstorms. Such trees will then become part of the supply of snags and large woody debris. Many of the reserved trees will likely survive and grow, providing additional structural and functional habitat diversity as younger stands develop beneath them. Some of the trees reserved for snag recruitment may be topped, girdled, or felled over time to help meet long-range goals for snags.

Selection of Harvest Areas

Listed below are harvest area selection guidelines for Regeneration Harvest and Commercial Thinning.

Regeneration Harvest: For available forest lands, treatment areas will be selected when feasible from the least productive stands first. Stands that appear to have low stocking, damage, disease, generally low growth rates, or a predominance of noncommercial species resulting from past management will receive higher priority for harvest.

Commercial Thinning: Treatment areas will be selected from well-stocked or overstocked stands where density reduction is needed to maintain good diameter growth rates, live crown ratios, and stand stability. Selection of thinning areas may depend on access and logging feasibility.

Landscape Design

Harvest units, including regeneration harvest and commercial thinnings, will be placed where needed to meet management and landscape objectives on 3 levels of scale: the physiographic province, the landscape block or watershed, and the stand.

Regeneration Harvest Design

Silvicultural prescriptions for regeneration harvest will be based on knowledge of plant communities, successional relationships, and ecosystem functions. Knowledge of these relationships will be used to help prevent vegetation management problems before they occur. Harvest plans will provide for maintenance of long-term site productivity and forest health.

Regeneration harvest units will vary in size depending on factors such as ownership, topography, reserve boundaries, road locations, and other land use allocations. Appropriate treatment areas will be determined through watershed analysis.

Harvest unit shapes will be irregular, conforming where possible to topographic features, but limited in many cases by logging feasibility, ownership boundaries, reserve boundaries, or other land use allocations. An average of 6 to 8 live trees per acre will be reserved from harvest as clumps, strips, and scattered individual trees. The distribution of reserved trees will be designed to help meet habitat goals and to minimize interference with log yarding.

In addition to the previous green tree retention management action/direction, green trees will be retained for snag recruitment in timber harvest units where there is an identified, near-term (less than 3 decades) snag deficit. These trees do not count toward green-tree retention requirements. Some of the trees reserved for snag recruitment may be topped, girdled, or felled over time to help meet long-range goals for snags and large woody debris.

Partial Cut Harvest Design

Commercial thinnings will generally be designed to maintain good volume productivity of the stand. To accomplish this, a stand might be thinned before relative density exceeds 0.60, leaving a residual relative density of approximately 0.40. Depending on stand age, tree size, and the specific objectives of the thinning, stand density after thinning would range from approximately 50 to 150 trees per acre. Stand densities after thinning vary depending on stand age, tree size, the number of thinnings already completed, and the specific objectives of the thinning.

Commercial thinning treatment areas will vary in size, depending on factors such as operability and site conditions. Appropriate treatment areas will be determined through watershed analysis. A variety of thinning intensities may be designated within a treatment unit in order to reflect current within-stand spatial patterns or to meet stand development objectives.

In some portions of stands, thinning may consist only of removal of the smaller (intermediate and suppressed) trees in the stand. In other areas, the larger codominant and dominant trees may also be removed.

Where root diseases such as laminated root rot (*Phellinus weirii*), black stain (*Ceratocystis verticicladiella*), or Port Orford cedar root rot (*Phytophthora lateralis*) are present in stands to be thinned, the thinning will incorporate state-of-the-art recommendations for treatment. When consistent with management and landscape objectives, openings created will be planted with seedlings of species resistant or immune to the disease, or in a manner to reduce the rate of disease spread.

Connectivity/Diversity Blocks

Silvicultural systems in the Connectivity/Diversity blocks will be designed to promote development of late-successional forest structure within a longer rotation, while providing an output of merchantable timber and maintaining forest health and productivity. All treatments will be compatible with the ecological requirements of the communities of native plant, fungi, and animal species present and will be tailored to the condition of each stand. The results of watershed analysis will be used to help select and design silvicultural systems through better understanding of landscape-level patterns and ecological processes.

The quality of wood, value of logs ultimately produced, and economic efficiency will be important considerations for all planned treatments.

Lands available for harvest will be managed generally as even-aged stands with substantial overstories of larger trees. The silvicultural prescription will provide for the retention of down logs necessary for ecological function. Harvest systems utilized will be consistent with the BMPs as described in Appendix C.

Silvicultural Treatments

Management actions will consist of 6 general types of treatments:

- regeneration harvest with partial retention;
- site preparation following harvest;
- reforestation treatments;
- management of young stands;
- density management thinning in mid-aged stands; and
- management of overstory trees, snags, and large woody debris.

Each of these treatments is described below.

Regeneration harvest: Regeneration harvests on available forest land will be planned for a 150-year area control rotation. This means that approximately 1/15 of the available acres will receive regeneration harvest in any decade. On the Eugene District, portions of some stands will be cut at stand ages as low as 56 years during the first decade, where older stands are not available or to develop a better distribution of age classes over time. Regeneration harvest will not be planned for stands less than 56 years of age.

Site preparation: Following regeneration harvest, sites will receive treatment of understory vegetation and logging debris if necessary to reduce fire hazard, improve access for planting of tree seedlings, lessen initial competition from other vegetation, and limit the cover for seedling-damaging rodents. Methods used will include prescribed fire (underburning), machine piling, manual cutting and piling, and mechanical clearing.

Reforestation: Normally, all sites that receive regeneration harvest and do not require burning will be reforested within one year of cutting. If slashing and/or burning is required to prepare sites for planting, reforestation may be delayed beyond one year pending smoke management clearance. The selection of tree species, planting density, and stock types will depend on site characteristics, the composition of the original stand and remaining overstory, projected future management of each stand, and distribution of root disease infection. Harvested areas having identified root disease will be planted with species resistant or immune to the disease or the areas will be treated in a manner that will reduce the likelihood of spreading the disease.

Management of Young Stands: During the first 10 to 15 years after planting, the understory will receive treatments as necessary and as funding allows to promote establishment, survival, and growth by managing competing vegetation, preventing excessive animal damage, and managing overstory density. These treatments will include but not be limited to manual cutting of brush and seedling protection measures, such as placement of plastic mesh tubes or nets on seedlings. Animal damage control measures would be implemented to reduce their populations when they are high enough to threaten forest stands.

Suitable stands aged 10 to 20 years may receive treatments designed to improve growth, value, and wood quality when funding is available. These treatments may include release, precommercial thinning, pruning, and fertilization. Consideration will be given to retention of the natural species composition of the stand.

Density Management Thinnings: Stands approximately 30 to 110 years of age will be considered for density management thinnings. An individual stand may be thinned 3 to 4 times at intervals of 20 to 30 years within one 150-year rotation.

Density Management may include one or more of the following purposes:

- to accelerate growth of trees that would later provide large-diameter snags and down logs;
- to promote development of understory vegetation and multiple canopy layers;
- to produce larger, more valuable logs;
- to harvest mortality of small trees as the stand develops;
- to maintain good crown ratios and stable, windfirm trees; and
- to manage species composition.

The decision to thin a particular stand will depend on site-specific factors such as slope and topography, distance to roads, soil types, stand density, species composition, average tree diameter, and degree of structural variability in the stand.

Management of Overstory Trees, Snags, and Large Woody Debris: During partial cut or regeneration harvests, existing snags will be reserved from cutting whenever feasible to the extent

necessary to meet snag habitat objectives. However, some snags would need to be removed for safety reasons, road construction, or to make way for log yarding in some situations.

The large trees reserved from regeneration harvest will not normally be considered available for future harvest. Some may be damaged or killed during slash burning, while others may blow down or break off during windstorms. Such trees will become part of the supply of snags and large woody debris. Most of the reserved trees will likely survive and grow, providing substantial structural and functional habitat diversity as the canopies of younger stands develop beneath them.

Selection of Harvest Areas

Listed below are harvest area selection guidelines for Regeneration Harvest and Density Management Thinnings.

Regeneration Harvest: Treatment areas will be selected from mature stands having the least degree of late-successional forest structure. In addition, the more productive stands will be deferred so the less productive stands would be harvested first, when feasible. Stands that appear to have low stocking, damage, disease, generally low growth rates, or a predominance of noncommercial species resulting from past management will receive higher priority for harvest.

Density Management Thinnings: Treatment areas will be selected from well-stocked stands where density reduction is needed to promote development of late-successional forest structure. This will generally be stands that are predominantly even-aged, evenly spaced, and of a fairly uniform diameter and height. Selection of thinning areas will also depend on access and logging feasibility.

Landscape Design

Harvest units, including regeneration harvest and density management thinning, will be placed where needed to meet management and landscape objectives on 3 levels of scale: the physiographic province, the landscape block or subwatershed, and the stand.

Regeneration Harvest Design

Silvicultural prescriptions for regeneration harvest will be based on knowledge of plant communities, successional relationships, and ecosystem functions with consideration of forest health. Knowledge of these relationships will be used to help prevent vegetation management problems before they occur. Harvest plans will provide for maintenance of long-term site productivity and forest health.

Regeneration harvest units will vary in size depending on factors such as ownership, topography, reserve boundaries, other land use allocations, and road locations. Appropriate treatment areas will be determined through watershed analysis.

Harvest unit shapes will be irregular, conforming where possible to topographic features, but limited in many cases by logging feasibility, reserve boundaries, other land use allocations, and ownership boundaries. An average of 12 to 18 live trees per acre will be reserved from harvest as clumps, strips, and scattered individual trees. The distribution of reserved trees will be designed to help meet habitat goals and to minimize interference with log yarding.

In addition to the previous green tree retention management action/direction, green trees will be retained for snag recruitment in timber harvest units where there is an identified, near-term (less than 3 decades) snag deficit. These trees do not count toward green-tree retention requirements. Some of the trees reserved for snag recruitment may be topped, girdled, or felled over time to help meet long-term goals for snags and large woody debris.

Partial Cut Harvest Design

Density management thinning will generally be designed to encourage rapid development of vertical and horizontal stand diversity. To accomplish this, a stand might be thinned before relative density exceeds 0.55, leaving a residual relative density of approximately 0.35. Patches of denser forest will be retained in some places to meet particular wildlife habitat criteria. Depending on stand age and the specific objectives of thinning, stand density after thinning may range from approximately 30 to 200 trees per acre. Trees left per acre vary depending on stand age, tree size, the number of thinning already completed, and the specific objectives of the thinning. Density management areas will vary in size depending on factors such as operability and site conditions. Appropriate treatment areas will be determined through watershed analysis. A variety of treatment intensities may be designated within a thinning unit in order to reflect current within-stand spatial patterns or to meet stand development objectives.

For example, some dense patches of perhaps 0.25 acre to several acres may be reserved from cutting. Other patches of 0.5 to 1 acre may be completely removed as group selections and those areas planted with tree seedlings after the thinning is completed. Group selection patches larger than one acre in size will contain reserved trees and snags as provided in regeneration harvest units.

In each density management thinning entry, some of the larger codominant and dominant trees may be removed.

Where root diseases such as laminated root rot (*Phellinus weirii*), black stain (*Ceratocystis verticicladiella*) or Port Orford cedar root rot (*Phytophthora lateralis*) are present in stands to be thinned, the thinning will incorporate state-of-the-art recommendations for treatment. When consistent with management and landscape objectives, openings created will be planted with seedlings of species resistant or immune to the disease, or in a manner to reduce the rate of disease spread.

Late-Successional Reserves

Forest stands less than 80 years of age within the Late-Successional Reserves will be considered for silvicultural treatments where stocking, structure, or composition are expected to prevent or significantly retard development of late-successional conditions. Such stands will generally be composed of trees less than 10 to 20 inches diameter at breast height, and would show no significant development of a multiple-canopy forest structure. Stands that have desired late-successional structure or that will soon develop it would not be treated unless such treatment is necessary to accomplish risk reduction objectives (as described below).

Silvicultural Treatments

Late-Successional Reserve (LSR) assessments will assist in the determination of activities to be conducted. LSR assessments are subject to Regional Ecosystem Office (REO) review. Within LSR, silvicultural treatments should be beneficial to the creation of late-successional forest conditions and could include density management and reduction of large-scale disturbance risk. Silvicultural prescriptions will provide for the retention of down logs necessary for ecological function. Harvest systems utilized will be consistent with the BMPs as described in Appendix C.

> **Density management:** Density management prescriptions will be designed to produce stand structure and components associated with late-successional conditions including large trees, snags, down logs, and variable-density, multistoried, multispecies stands. By removing a portion of the stand, the remaining trees would be provided room to maintain or increase diameter growth rates. In addition, openings in the canopy would permit development of an understory of seedlings, saplings, and other vegetation. Some of the overstory trees may be converted to snags over time to help meet snag habitat targets or felled to provide large woody debris. Trees cut but surplus to habitat needs would be removed for commercial use.

A wide variety of silvicultural practices will be employed, rather than relying on a limited variety of techniques. Silvicultural activities, when needed, would be conducted in suitable stands whether or not the action would generate a commercial return.

In general, acres treated will be limited to 5 percent of the total area within Late-Successional Reserves in the initial 5-year period of implementation unless the need for larger-scale actions is explicitly justified.

Reduction of Large-Scale Disturbance Risk

In some areas, stands will be made less susceptible to natural disturbances by focusing salvage activities on reduction of catastrophic insect, disease, and wildfire threats, and by designing treatments to provide effective fuel breaks wherever possible. These treatments would be designed so they would not result in degeneration of currently suitable spotted owl habitat or other late-successional conditions.

Risks will be reduced in older stands if the proposed management activity would clearly result in greater assurance of long-term maintenance of habitat; is clearly needed to reduce risks;, and would not prevent Late-Successional Reserves from playing an effective role in attaining the objectives for which they were established.

Unless exempted from review, proposed risk reduction projects will be submitted to the Regional Ecosystem Office.

Riparian Reserves

Some stands within the Riparian Reserves will be considered for silvicultural treatments that will contribute to meeting objectives of the Aquatic Conservation Strategy.

Silvicultural Treatments

In Riparian Reserves the watershed analysis will assist in development of silvicultural treatments. Treatments would include density management and conifer underplanting. Silvicultural prescriptions will provide for the retention of down logs necessary for ecological function. Harvest systems utilized will be consistent with the BMPs as described in Appendix C.

Density Management: Where portions of young, even-aged conifer stands are located within the Riparian Reserves, they will be considered for density management treatments. The objectives of such treatment would be to promote development of large conifers, recruitment of large woody debris, and to improve diversity of species composition and stand density. Merchantable logs will be removed only where such action would not be detrimental to the purposes for which the Riparian Reserves were established.

Conifer Underplanting: Where hardwood stands dominate streamside areas and there is a lack of large conifers to provide inputs of large wood for instream structure, efforts will be made to reestablish conifers within the Riparian Reserve. This will involve cutting or girdling some hardwoods to create openings in the canopy, followed by cutting of brush and planting of a variety of conifer seedlings in the openings created. In most cases, follow-up stand maintenance and protection treatments will be necessary to ensure successful establishment of an adequate number of conifers in the riparian area.

Appendix F
Off Highway Vehicle Designations

Off Highway Vehicle (OHV) designations for the Eugene District changed after the publication of the Draft Resource Management Plan (PRMP). With approval in December 1994 of the Proposed Resource Management Plan (PRMP) the majority of the District land is now within the limited designation with some open and closed areas. Lists of specific roads and areas within these designations are listed below each Resource Area. Within this dynamic planning process there could be necessary modifications within these designations based upon watershed analysis and development of an OHV plan. An OHV Plan including specific activity plan objectives and details will be developed following publication in 1995 of the Eugene District's Record of Decision (ROD) and Resource Management Plan (RMP). The OHV Plan will be developed through watershed analysis and within the objectives of the Aquatic Conservation Strategy. Impacts on special status species and wildlife habitats will be part of the development of the analysis pursued during this process. BLM will seek active cooperation in the development of the plan from all affected public parties and other agencies. All closures or limitations will be made subject to valid existing rights such as existing right-of-way grants, reciprocal right-of-way agreements, O&C logging road right-of-way permits and mining claims. OHV area designations are not mapped in detail in the Eugene District's RMP. They will be mapped in subsequent planning documents. Each Resource Area can be contacted for location concerns. The 3 designations of open, limited, and closed are defined from the Code of the Federal Register (CFR) 8340.0-5 as follows:

"(f) **Open Area** means an area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in subparts 8341 and 8342 of this title.

"(g) **Limited Area** means an area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories: numbers of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads and trails; use on designated roads and trails; and other restrictions.

"(h) **Closed Area** means an area where off-road vehicle use is prohibited. Use of off-road vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the authorized officer."

Within the limited designation the District has the following 3 categories:

Limited to Designated Roads and Trails. These are areas that allow OHV activity on specific (listed) roads and trails only. Unrestricted road and trail motor vehicle operation may result in unnecessary soil erosion and create a likelihood of inadvertent negative impacts to important wildlife habitat or sensitive plant communities. Also accidental negative environmental affects related to totally unrestricted OHV operation may occur; therefore, a limited designation is needed to ensure that potential motor vehicle use impacts can be properly mitigated or avoided. The majority of these areas are found within certain Special Recreation Management Areas (SRMAs) which are listed along with their road designations by Resource Area below.

Limited to Existing Roads and Trails. These are areas that allow OHV activity on all existing roads and trails. Due to the steepness of the terrain, unstable soils, and high rainfall common to this region, unregulated cross-country motor vehicle operation may result in unnecessary soil erosion and create a likelihood of inadvertent negative impacts to critical wildlife habitat or sensitive plant communities. Accidental negative environmental affects related to totally unrestricted OHV operation may occur; therefore, a limited designation is needed to ensure that potential motor vehicle use impacts can be properly mitigated or avoided. Most of the District lands are included in this category.

Limited to Seasonal Use Due to Resource Concerns. Roads that are identified in this category are restricted for use during seasonal periods for resource concerns such as fish, riparian, and wildlife. These roads are listed below by Resource Area, with the specific season and reason identified.

McKenzie Resource Area

Designation	Site	Acres	Reason
Closed:	Shotgun Recreation Site	277	protect recreation values
	Horse Rock Ridge ACEC/RNA[1]	378	protect ACEC/RNA
	McGowan Creek Environment Education Area	79	protect EEA
	Mohawk ACEC/RNA	292	protect ACEC/RNA
	Proposed Coburg Hills RFI ACEC	804	protect ACEC
	Proposed Cougar Mtn Yew Grove ACEC	10	protect ACEC
	Proposed Grassy Mtn ACEC	74	protect ACEC
	Total	**1,914**	
	Potential[2] Low Elevation Headwaters of the McKenzie River ACEC	7,650	will need further analysis during the OHV planning process before designations can be assigned.

[1]ACEC/RNA = Area of Critical Environmental Concern/Research Natural Area
[2]This ACEC is potential instead of proposed due to the time period it was nominated in. This ACEC will receive interim management to protect the relevant and important values until the required review period is completed (see ACEC section).

Limited: **Limited to Existing Roads and Trails:**

Vehicle use in the rest of the McKenzie Resource Area is within this designation.

South Valley Resource Area

Designation	Site	Acres	Reason
Closed:	Fox Hollow ACEC including Road No. 19-4-4.1B	160	protect ACEC
	Camas Swale ACEC including Road Numbers: 19-4-25.1 19-4-25.1 Spur South 19-4-26 segments B, C, D, E 19-4-26.2B	314	protect ACEC
	Potential[1] Dorena Prairie ACEC	8	protect ACEC
	Proposed Dorena Lake RFI ACEC	18	protect ACEC
	Potential[1] Cottage Grove Old	80	protect EEA

Growth Environmental Education Area		
Proposed Cottage Grove Lake RFI ACEC	53	protect ACEC
Upper Elk Meadows ACEC including Road Numbers: 23-2-35.1 23-2-35.2 23-2-35.3 23-2-35.6	242	protect ACEC
Potential[1] Lorane Ponderosa Pine ACEC including Road Nos. 19-4-17.1 and 19-4-22.1	106	protect ACEC
Total	**981**	

Road	**Reason**
Road No. 20-4-15 segments C and D	Critical resources[2]
Road 20-4-15 Section 21 spurs	Critical resources
Road No. 21-3-16 segment C	Public safety and resource damage

[1]These ACECs and EEA areas are potential instead of proposed due to the time period when they were nominated. The areas will receive interim management to protect their relevant and important values until the required review period is completed. See ACEC section.
[2]Critical resources includes T&E wildlife and plant species, fish spawning and habitat areas, and wildlife such as elk emphasis areas.

Limited: **Roads Limited to Seasonal Use:**

Road Number	**Seasonal Closure**	**Reason**
21-2-1.4	1/1 to 8/15	Critical resources
21-1-19.2	4/1 to 10/31	Critical resources
20-6-4.2 seg. B, C	2/1 to 5/31	Critical resources
20-6-5 seg. A, C	2/1 to 5/31	Critical resources
20-6-5.1	2/1 to 5/31	Critical resources
20-6-5.2 seg. A, C	2/1 to 5/31	Critical resources
20-6-5.3	2/1 to 5/31	Critical resources
20-6-5.4	2/1 to 5/31	Critical resources
20-6-5.5	2/1 to 5/31	Critical resources
20-6-8.2	2/1 to 5/31	Critical resources
20-6-9	2/1 to 5/31	Critical resources
19-3-29 SE1/4SW1/4	4/1 to 10/31	Critical resources
19-4-4	12/1 to 9/30	Critical resources, public safety, resource damage
19-4-9	12/1 to 9/30	same as above
19-4-9.1	12/1 to 9/30	same as above
19-4-9.2	12/1 to 9/30	same as above
19-4-17	12/1 to 9/30	same as above

19-5-15	4/1 to 10/31	Critical resources
20-1-31.1	3/1 to 9/30	Critical resources
20-1-31.2	3/1 to 9/30	Critical resources
20-4-1	12/1 to 9/30	Public safety and resource damage
20-4-1.1	12/1 to 9/30	same as above
20-4-1.2	12/1 to 9/30	same as above
20-4-1.4	12/1 to 9/30	same as above
20-4-1.5	12/1 to 9/30	same as above
20-4-4.3	4/1 to 10/31	Critical resources
20-4-5.1	4/1 to 10/31	Critical resources
20-4-8 lot 3 spur	4/1 to 10/31	Critical resources
20-4-19.5	4/1 to 10/31	Critical resources
20-4-19.6	4/1 to 10/31	Critical resources
20-4-23	4/1 to 10/31	Critical resources
20-4-23.1	4/1 to 10/31	Critical resources
20-4-29 seg. D	4/1 to 10/31	Critical resources
20-4-29.2	6/1 to 9/15	Critical resources
20-4-29.4	6/1 to 9/15	Critical resources
20-4-30 seg. F, H	10/15 to 5/15	Critical resources
20-4-35	12/1 to 9/15	Critical resources, public safety, resource damage
20-4-35.1	4/1 to 10/31	Critical resources
20-4-35.2	12/1 to 9/30	Critical resources, public safety, resource damage
20-4-35.3	12/1 to 9/30	same as above
20-5-5.1	10/1 to 3/15	Critical resources
20-6-11 seg. C	10/1 to 3/15	Critical resources
21-1-5	3/1 to 9/30	Critical resources
21-2-1.5	1/1 to 8/15	Critical resources
22-2-3.2	3/1 to 9/30	Critical resources
23-4-1.2	4/1 to 10/31	Critical resources

Limited: **Limited to Designated Roads**:

Vehicle use within the Siuslaw River SRMA is limited to the following designated roads:

19-6-20.1	20-6-1	20-6-9.2	20-6-14
-29	-3	-9.3	-14.1
-29.2	-3.1	-9.4	-15
-29.3 seg. A1	-3.2	-10 seg. D, E	-15.1
-29.5	-4 seg. B	-10.1	-15.3
-29.6	-4.2 seg. A	-10.3	
-33.4	-4.3	-11	20-7-2 seg. A2
	-4.4	-13	-2.1
19-7-35	-4.5	-13.5	-2.2
-35.4	-9.1	-13.6	-3
			-3.5
			-10

Limited: **Limited to Existing Roads and Trails:**

Vehicle use within the remainder of the South Valley Resource Area is in this designation.

Coast Range Resource Area

Designation	Site	Acres	Reason
Closed:	Heceta Sand Dunes ACEC	218	Critical resources
	Long Tom ACEC	7	Critical resources
	Total	**225**	

Designation	Area and Roads (Resource Area has a location map)	Reason
Closed:	Greenleaf Creek including Road No. 16-8-35.1	Critical Resource protection
	Leopold Creek including Road Nos. 19-8-17.1, 19-8-17.5, 19-8-8.6	Critical Resource protection
	Vik Road No. 16-6-20 including spur 16-6-19.1	Critical Resource protection
	Saleratus Creek including Road No. 18-7-31.1	Critical resources

Open: **Areas**

The following two 40 acre sanddune tracts north of the city of Florence are designated as open:

T.18S., R.12 W., W.M.
Sec. 2: Lot 1
Sec. 15: SE1/4NE1/4

Limited: **Roads Limited to Seasonal Use:**

Seasonal closure times may be adjusted within these dates due to weather and resource conditions. Fish criteria include roads within the riparian zones that parallel a stream containing anadromous fish stocks at risk. Wildlife criteria included roads within 0.5 mile of a spotted owl activity center to remain closed during nesting season and roads within 0.25 mile of murrelet nesting sites.

Road Number	Seasonal Closure	Reason
17-8-14 (Nelson Creek)	10/15 to 9/15	Critical resources
17-7- 5 (Nelson Creek)	10/15 to 9/15	Critical resources
15-6-33.5	3/1 to 9/30	Critical resources
15-6-33.6	3/1 to 9/30	Critical resources
15-7-25.6	3/1 to 9/30	Critical resources
15-7-33.1	3/1 to 9/30	Critical resources
15-7-33.4	3/1 to 9/30	Critical resources
15-7-33.5	3/1 to 9/30	Critical resources
15-7-33.6	3/1 to 9/30	Critical resources
15-7-33.7	3/1 to 9/30	Critical resources
15-7-31 (along Swamp Cr.)	10/15 to 4/15	Critical resources
15-7-31.2	10/15 to 4/15	Critical resources
16-7-6.1	10/15 to 4/15	Critical resources
16-7-15.2	3/1 to 9/30	Critical resources
16-7-15.4	3/1 to 9/30	Critical resources
16-7-15.8	3/1 to 9/30	Critical resources
16-8-1.1	3/1 to 9/30	Critical resources
17-6-4	1/1 to 8/31	Critical resources
16-6-33.1	1/1 to 8/31	Critical resources
16-6-33.2	1/1 to 8/31	Critical resources
16-6-33.3	1/1 to 8/31	Critical resources
16-6-33.4	1/1 to 8/31	Critical resources
17-6-30.1	3/1 to 9/30	Critical resources
17-7-1	3/1 to 9/30	Critical resources
17-7-15	3/1 to 9/30	Critical resources
17-7-29.1	3/1 to 9/30	Critical resources
17-8-5.1	3/1 to 9/30	Critical resources
18-7-16	3/1 to 9/30	Critical resources
18-7-17	3/1 to 9/30	Critical resources
18-7-17.1	3/1 to 9/30	Critical resources
18-7-23.1	3/1 to 9/30	Critical resources
18-7-19	12/1 to 3/30	Watershed restoration
18-7-19.4	12/1 to 3/30	Watershed restoration
18-7-19.5	12/1 to 3/30	Watershed restoration
18-7-19.7	12/1 to 3/30	Watershed restoration
18-7-21	12/1 to 3/30	Watershed restoration
18-7-21.1	12/1 to 3/30	Watershed restoration
18-7-28.3	12/1 to 3/30	Watershed restoration
18-7-unnumbered spur, Sec. 29	3/1 to 9/30	Critical resources

18-8-16.1	3/1 to 9/30	Critical resources
18-8-21 (along Whittaker Creek)	10/15 to 4/15	Critical resources
18-9-25	12/1 to 3/30	Watershed restoration
18-9-25.1	12/1 to 3/30	Watershed restoration
18-9-25.2	12/1 to 3/30	Watershed restoration
18-9-25.4	12/1 to 3/30	Watershed restoration
18-9-31.1	12/1 to 3/30	Watershed restoration
18-9-31.3	12/1 to 3/30	Watershed restoration
18-9-31.4	12/1 to 3/30	Watershed restoration
18-9-31.5	12/1 to 3/30	Watershed restoration
19-6-3.5	3/1 to 9/30	Critical resources
19-6-3.6	3/1 to 9/30	Critical resources
19-6-3.7	3/1 to 9/30	Critical resources
19-6-3.8	3/1 to 9/30	Critical resources
19-6-30	12/1 to 3/30	Watershed restoration
19-6-19.1	9-/1 to 3/30	Watershed restoration
19-6-19.2	12/1 to 3/30	Watershed restoration
19-6-19.3	12/1 to 3/30	Watershed restoration
19-7-1 (along Grenshaw Creek)	10/15 to 4/15	Fish spawning & habitat
19-7-27.1	12/1 to 3/30	Watershed restoration
19-7-27.2	12/1 to 3/30	Watershed restoration
19-8-5	4/1 to 9/15	Critical resources
19-8-12	12/1 to 3/30	Watershed restoration
19-8-17.4	12/1 to 3/30	Watershed restoration
19-8-28.2	4/1 to 9/15	Critical resources
19-8-28.3	4/1 to 9/15	Critical resources
19-8-28.4	4/1 to 9/15	Critical resources
19-8-28.5	4/1 to 9/15	Critical resources
19-9-2.3	3/1 to 9/30	Critical resources
20-7-33.5	3/1 to 9/30	Critical resources

Limited: **Limited to Designated Roads.**

Vehicle use within the following areas is limited to designated roads due to botany T&E plant concerns:

Township Range Section	Road Number	Township Range Section	Road Number
16-8-33	16-8-33	19-8-27	19-8-13.2
15-6-35	16-6- 2.1	19-8-27	19-8-27.1
16-6- 1	16-6- 1	19-8-27	19-8-27.2
16-6-12	16-5- 7	19-8-27	19-8-27.3
16-6-12	unnamed spur	19-8-27	19-8-27.4
18-8- 3	18-8-3.5	19-8-27	19-8-27.5

Vehicle use within the Siuslaw River SRMA is limited to the following designated roads:

18-8-21; -26; -34; -35

19-7-25

19-8-3; -3.2; -3.7; -3.9; -8.2 (BLM portion); -9.7; -9.7A; -11; -11.1; -11.2; -11.3; -13; -13.1; -13.2; -14; -26.2; -30; -30.1; -30.2; -35.4; -35.5; -36; -36.3

19-7-9.1; -12.1; -16.1; -17.1; -19; -20.1; -20.4; -21.2; -22.6; -23; -23.3; -25; -25.1; -27.8; -28 (BLM portion); -28.2; -28.3

20-7-3.2

Vehicle use within the Upper Lake Creek SRMA is limited to the following designated roads:

14-6-34 (BLM portions)

15-6-7.2; -17.1; -17.2; -18; -18.4; -19.1; -19.2; -19.4; -19.5; -19.6; -26

15-7-10; -10.4; -14.2; -14.4; -15; -15.3; -15.4; -16.1; -16.4; -16.5; -16.6; -17 (BLM portions); -17.1; -17.2; -17.4; -18; -18.1; -18.2; -18.3; -19; -19.1; -19.2; -19.3; -20; -20.1; -20.3; -20.4; -21; -21.1; -21.3; -21.4; -21.5; -21.6; -22; -23 (BLM portions); -23.2; -24.1; -25.2; -25.3; -25.4; -25.5; -25.7; -26; -26.2; -27; -27.1; -28; -28.1; -29; -29.1; -29.3; -29.4; -29.5; -30 (BLM portions); -33; -34.1; -35; -36

unnumbered road in 15-7-10
unnumbered road in 15-7-14
unnumbered road in 15-7-23
unnumbered road in 15-7-24
unnumbered road in 15-7-26

Vehicle use within the Lower Lake Creek SRMA (including the Lake Creek Falls ACEC) is limited to the following designated roads:

16-7-19; -19.2
spur road to plantation in 16-7-19

16-7-23; -27; -27.1; -27.3; -27.4; -27.5; -28; -29; -29.4; -29.5; -30; -30.1; -30.4; -33.5; -33.6

Limited: **Limited to Existing Roads and Trails:**

Vehicle use within the remainder of the Coast Range Resource Area is in this designation.

Appendix G
Restrictions on Leasable Mineral Exploration and Development Activity

Introduction

This appendix discusses the leasing stipulations as they will be applied to BLM managed lands in the planning area. Mineral leasing of lands managed by the U.S. Forest Service within the District boundary is not addressed in this document.

Oil and Gas

The Mineral Leasing Act of 1920 (as amended) provides that all publicly owned oil and gas resources be open to leasing, unless a specific land order has been issued to close the area. Through the land use planning process, the availability of these resources for leasing is analyzed, taking into consideration development potential and surface resources. Constraints on oil and gas operations are identified and placed in the leases as notices and stipulations. Oil and gas leases are then issued from the BLM Oregon State Office in Portland.

The issuance of a lease conveys to the lessee an authorization to actively explore and/or develop the lease, in accordance with the attached stipulations and the standard terms outlined in the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA). Restrictions on oil and gas activities in the planning area will take the form of timing limitations, controlled surface use, no surface occupancy, and complying with the special status species stipulation, used at the discretion of the Authorized Officer to protect identified surface resources of special concern.

Stipulations will be attached to each lease before it is offered for bid by the field office, which reviews the lease tract. The review will be conducted by consulting the direction given in this Resource Management Plan. In addition, all lands administered by BLM within the planning area will be subject to the lease notices as shown on the following pages. All Federal lessees or operators are required to follow procedures set forth by: Onshore Oil and Gas Orders, Notices to Lessee (NTLs), The Federal Oil and Gas Royalty Management Act (as amended), The Federal Onshore Oil and Gas Leasing Reform Act, and Title 43 Code of Federal Regulations, Part 3100.

Geophysical Exploration - Oil and gas geophysical operations may be conducted regardless of whether or not the land is leased. Notices to conduct geophysical operations on BLM surface are received by the Resource Area. Administration and surface protection are accomplished through close cooperation of the operator and the BLM. Seasonal restrictions may be imposed to reduce fire hazards, conflicts with wildlife, watershed damage, etc. An operator is required to file a "Notice of Intent to Conduct Oil and Gas Exploration Operations" for all geophysical activities on public land administered by BLM. The notice should adequately show the location and access routes, anticipated surface damages, and time frame. The operator is required to comply with written instructions and orders given by the Authorized Officer, and must be bonded. Signing of the Notice of Intent by the operator signifies agreement to comply with the terms and conditions of the notice, regulations, and other requirements prescribed by the Authorized Officer. A prework conference and/or site inspection may be required. Periodic checks during and upon completion of the operations will be conducted to ensure compliance with the terms of Notice of Intent, including reclamation.

Drilling Permit Process - The Federal lessee or operating company selects a drill site based on spacing requirements, subsurface and surface geology, geophysics, topography, and economic considerations. Well spacing is determined by the Authorized Officer after considering topography, reservoir characteristics,

protection of correlative rights, potential for well interference, interference with multiple use of lands, and protection of the surface and subsurface environments. Close coordination with the State would take place. Written field spacing orders are issued for each field. Exceptions to spacing requirements involving Federal lands may be granted after joint State and BLM review.

Notice of Staking - Once the company makes the decision to drill, it must decide whether to submit a Notice of Staking (NOS) or apply directly for a permit to drill. The NOS is an outline of what the company intends to do, including a location map and sketched site plan. The NOS is used to review any conflicts with known critical resource values and to identify the need for associated rights-of-way and special use permits. The BLM utilizes information contained in the NOS and obtained from the on-site inspection to develop conditions of approval to be incorporated into the application for permit to drill. Upon receipt of the NOS, the BLM posts the document and pertinent information about the proposed well in the District Office for a minimum of 30 days prior to approval, for review and comment by the public.

Application for Permit to Drill (APD) - The operator may or may not choose to submit a NOS; in either case, an Application for Permit to Drill (APD) must be submitted prior to drilling. An APD consists of two main parts: a 12-point surface plan that describes any surface disturbances and is reviewed by resource specialists for adequacy with regard to lease stipulations designed to mitigate impacts to identified resource conflicts with the specific proposal, and a 8-point subsurface plan that details the drilling program and is reviewed by the staff petroleum engineer and geologist. This plan includes provisions for casing, cementing, well control, and other safety requirements. For the APD option, the on-site inspection is used to assess possible impacts and develop provisions to minimize these impacts. If the NOS option is not utilized, the 30-day posting period begins with the filing of the APD. Private surface owner input is actively solicited during the APD stage.

Geothermal

The Geothermal Steam Act of 1970 (as amended) provides for the issuance of leases for the development and utilization of geothermal steam and associated geothermal resources. Geothermal leasing and operational regulations are contained in Title 43 Code of Federal Regulations, Part 3200. Through the land use planning process the availability of the geothermal resources for leasing is analyzed, taking into consideration development potential and surface and subsurface resources. Constraints on geothermal operations are identified and placed in the leases as stipulations. Geothermal leases are then issued by the BLM Oregon State Office in Portland.

Geothermal resources within a Known Geothermal Resource Area (KGRA) are offered by competitive sale. Outside of KGRAs, leases can be issued noncompetitively (over-the-counter). Prior to a competitive lease sale, or the issuance of a noncompetitive lease, each tract will be reviewed, and appropriate lease stipulations will be included. The review will be conducted by consulting the direction given in this Resource Management Plan. The issuance of a lease conveys to the lessee authorization to actively explore and/or develop the lease in accordance with regulations and lease terms and attached stipulations. The operator is required to file a "Notice of Intent to Conduct Geothermal Resource Exploration Operations" for any proposed geothermal exploration, including geophysical work. Subsequent lease operations must be conducted in accordance with the regulations, Geothermal Resources Operational Orders, and any Conditions of Approval developed as a result of site-specific NEPA analysis. In the planning area, restrictions in some areas will include timing limitations, controlled surface use, no surface occupancy, and a special status species stipulation, used at the discretion of the Authorized Officer to protect identified surface resources of special concern.

In addition to restrictions related to the protection of surface resources, the various stipulations and conditions could contain requirements related to protection of subsurface resources. These may involve drainage protection of geothermal zones, protection of aquifers from contamination, or assumption of responsibility for any unplugged wells on the lease.

Development of geothermal resources can be done only on approved leases. Orderly development of a geothermal resource, from exploration to production, involves several major phases that must be approved

separately. Each phase must undergo the appropriate level of NEPA compliance before it is approved and subsequent authorization(s) is (are) issued.

Mineral Leasing Notice and Stipulation Summary

On the following pages, the mineral leasing notices and stipulations are shown. Those notices and stipulations shown are considered to be the minimum necessary in order to issue oil and gas or geothermal leases in the operating area. The standard lease terms (Form 3100-11 for oil and gas) (and Form 3200-24 for geothermal resources) would be utilized on all lands. On the Eugene District, the Special Status Species stipulation would be attached to every mineral lease. The powersite stipulation (Form 3730-1) would be utilized on lands within powersite reservations. Lands under the jurisdiction of the Department of the Army, Corps of Engineers, would be leased (for oil and gas,) subject to the stipulation on Form 3109-2. Prior to issuance of geothermal leases on lands under the jurisdiction of the Corps of Engineers, the Corps must approve the leasing activity and no special stipulation is attached to the lease.

Stipulations also include waiver, exception, and modification criteria defined below. If the Authorized Officer determines that a stipulation involves an issue of major concern, waivers, exceptions, or modifications of the stipulation will be subject to at least a 30-day advance public review (43 CFR 3101.1-4). Waiver, exception, and modification are defined as follows:

Waiver - The lifting of a stipulation from a lease that constitutes a permanent revocation of the stipulation from that time forward. The stipulation no longer applies anywhere within the leasehold.

Exception - This is a one-time lifting of the stipulation to allow an activity for a specific proposal. This is a case-by-case exemption. The stipulation continues to apply to all other sites within the leasehold to which the restrictive criteria apply. It has no permanent effect on the lease stipulation.

Modification - This is a change to a stipulation that either temporarily suspends the stipulation requirement or permanently lifts the application of the stipulation on a given portion of the lease. Depending on the specific modification, the stipulation may or may not apply to all other sites within the leasehold to which the restrictive criteria apply.

The No Surface Occupancy (NSO) stipulation is used rather than not leasing because leasable minerals, if present, could be produced from most, if not all, of each of the parcels that are subject to this stipulation without impacting the value(s) needing protection.

Whenever a special stipulation, such as No Surface Occupancy, Timing, Controlled Surface Use (CSU), or Special Status Species is used, the need for the special stipulation is described in the "Objective" that follows the stipulation. By imposing these special stipulations, it has been concluded that less restrictive stipulations would not be adequate to meet the stated objective.

Standard Lease Terms

Standard lease terms for oil and gas are listed in Section 6 of "Offer to Lease and Lease for Oil and Gas" Form 3100-11. They are:

> Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air and water; to cultural, biological, visual and other resources; and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities; timing of operations; and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorized future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee shall contact BLM to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short-term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects until appropriate steps have been taken to protect the site or recover the resources as determined by BLM in consultation with other appropriate agencies.

Standard lease terms for geothermal leasing can be found on Offer to Lease and Lease for Geothermal Resources (Form 3200-24), Section 6, and are very similar to those described above for oil and gas leasing.

Powersite Stipulation (Form No. 3730-1) (to be used on all lands within powersite reservations.)

Oil and Gas Stipulation for Lands Under Jurisdiction of Department of the Army, Corps of Engineers (Form No. 3109-2)

All areas within 2,000 feet of any major structure, including but not limited to dams, spillways, or embankments, are restricted areas. The lessee, his operators, agents, or employees shall not disturb the surface or subsurface estates of the restricted areas. If the Commander or the authorized representative discovers an imminent danger to safety or security that allows no time to consult the BLM, that person may order such activities stopped immediately. The Authorized Officer of the BLM shall review the order and determine the need for further remedial action. Platform drilling over water areas (flood pool/drawdown zone) is prohibited; the method of drilling shall be directional from an off-site base. This restriction is required because occupancy would negatively affect or interfere with authorized project purposes and/or operational needs as listed below:

Fish and Wildlife Habitat — Power Production
Flood Control — Recreation
Irrigation — Water Quality
Navigation — Water Supply
Other Legislative Authorities

Land surface occupancy may be permitted within lease area; however, directional drilling from on off-site base may be required. The Secretary of the Army or designee reserves the right to require cessation of operations, if a National emergency arises. Upon request of approval from higher authority, the Commander will give the lessee written notice or, if time permits, request the BLM to give notice of the required cessation.

Leasing Notice and Stipulations for the RMP

Notice

Cultural Resources

Special Stipulations

NSO - Land Use Authorizations
NSO - Recreation Sites
NSO - Special Areas (ACEC (including RNA & ONA), EEA)
NSO - Tyrrell and Dorena Seed Orchards
NSO - Great Blue Heron Rookeries

NSO - Osprey Nest Sites
NSO - Riparian Reserves
Timing - Mineral Springs Utilized by the Band-tailed Pigeon
CSU - Soils
CSU - VRM Class II
CSU - Special Recreation Management Areas
CSU - Suitable or Eligible Recreational Rivers
CSU - Late-Successional Reserves
Special Status Species

Leasing Notice for the RMP

The following Notice is to be included in each lease for all lands administered by BLM within the planning area where the pertinent resource potential exists. Lease notices are attached to leases in the same manner as stipulations; however, there is an important distinction between lease notices and stipulations. Lease notices do not involve new restrictions or requirements. Any requirements contained in a lease notice must be fully supported in either laws, regulations, policy, onshore oil and gas orders, or geothermal resources operational orders.

Notice

Cultural Resources: An inventory of the leased lands may be required prior to surface disturbance to determine if cultural resources are present and to identify needed mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1. Contact the Bureau of Land Management (BLM) to determine if a cultural resource inventory is required. If an inventory is required, then

2. The BLM will complete the required inventory; or the lessee or operator, at their option, may engage the services of a cultural resource consultant acceptable to the BLM to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the standard 10-acre minimum to cover possible site relocation, which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the BLM for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface-disturbing operation is submitted.

3. Implement mitigation measures required by the BLM. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as data recovery and extensive recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the BLM, surface occupancy on that area must be prohibited. The lessee or operator shall immediately bring to the attention of the BLM any cultural resources discovered as a result of approved operations under this lease, and shall not disturb such discoveries until directed to proceed by the BLM.

Authorities: Compliance with Section 106 of the National Historic Preservation Act is required for all actions that may affect cultural properties eligible to the National Register of Historic Places. Section 6 of the standard lease terms for geothermal and oil and gas require that operations be conducted in a manner that minimize adverse impacts to cultural and other resources.

Special Leasing Stipulations for the RMP -

The following special stipulations are to be utilized on specifically designated tracts of land.

No Surface Occupancy

Resource: Land Use Authorizations

Stipulation: Surface occupancy and use is prohibited on Recreation and Public Purposes (R&PP) and FLPMA leases.

Objective: To protect uses on existing R&PP and FLPMA leases.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the Authorized Officer, if the land use authorization boundaries are modified.

Waiver: This stipulation may be waived by the Authorized Officer, if all land use authorizations within the leasehold have been terminated, canceled, or relinquished.

No Surface Occupancy

Resource: Recreation Sites

Stipulation: Surface occupancy and use are prohibited within developed recreation areas.

Objective: To protect developed recreation areas.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified by the Authorized Officer, if the recreation area boundaries are changed.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold no longer contains developed recreation areas.

No Surface Occupancy

A 30-day public notice period will be required prior to modification or waiver of this stipulation.

Resource: Special Areas

Stipulation: Surface occupancy and use are prohibited within Areas of Critical Environmental Concern (ACECs) and Environmental Education Areas (EEAs).

Objective: To protect important historic, cultural, scenic values, natural resources, natural systems or processes, threatened and endangered animal species, and/or natural hazard areas of the ACEC or EEA.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified by the Authorized Officer, if the ACEC or EEA boundaries are changed.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold no longer contains designated ACECs or EEAs.

No Surface Occupancy

Resource: Tyrrell and Dorena Seed Orchards.

Stipulation: Surface occupancy and use are prohibited within the Tyrrell and Dorena Seed Orchards.

Objective: To protect the Tyrrell and Dorena Seed Orchards.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified by the Authorized Officer, if the Tyrrell and Dorena Seed Orchard site boundaries are changed.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold no longer contains a developed seed orchard.

No Surface Occupancy

Resource: Wildlife - Great Blue Heron Rookery

Stipulation: Surface occupancy and use are prohibited within known great blue heron rookeries.

Objective: To protect great blue heron rookeries.

Exception: An exception may be granted by the Authorized Officer, if the operator submits a plan that demonstrates the proposed action will not affect the great blue heron or its habitat. If the Authorized Officer determines that the action may or will have an adverse effect on the species, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM.

Modification: The boundaries of the stipulated area may be modified, if the Authorized Officer determines that portion of the area can be occupied without adversely affecting the great blue heron or its habitat.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold can be occupied without adversely affecting great blue heron rookeries.

No Surface Occupancy

Resource: Wildlife - Osprey Nest Sites

Stipulation: Surface occupancy and use is prohibited within a quarter mile of known osprey nest sites, which have been active within the past 7 years.

Objective: To protect osprey nest sites.

Exception: An exception may be granted by the Authorized Officer, if the operator submits a plan that demonstrates the proposed action will not affect the osprey or its nest site. If the Authorized Officer determines that the action may or will have an adverse effect on the species, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM.

Modification: The boundaries of the stipulated area may be modified, if the Authorized Officer determines that portion of the area can be occupied without adversely affecting the osprey or its nest site.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold can be occupied without adversely affecting osprey or osprey nest sites.

No Surface Occupancy

A 30-day public notice period will be required prior to modification or waiver of this stipulation.

Resource: Riparian Reserves

Stipulation: Surface occupancy and use are prohibited within Riparian Reserves

Objective: To meet the objectives of the Aquatic Conservation Strategy (ACS) in order to protect the health of aquatic systems and their dependent species, including upland species that benefit from these areas.

Exception: An exception to this stipulation may be granted by the Authorized Officer if the operator submits a plan that demonstrates impacts from the proposed action are acceptable or can be mitigated so that the objectives of the ACS can be met.

Modification: The boundaries of the stipulated area may be modified if the Riparian Reserve boundaries are modified.

Waiver: This stipulation may be waived if it is determined that the leasehold no longer contains land that meets Riparian Reserve criteria.

Timing Limitation

Resource: Wildlife - Mineral Springs Utilized by the Band-tailed Pigeon

Stipulation: Surface occupancy and use are prohibited between March 1 and August 1, within an area with mineral springs utilized by the band-tailed pigeon.

Objective: To protect lands utilized by the band-tailed pigeon.

Exception: An exception may be granted by the Authorized Officer, if the operator submits a plan that demonstrates the proposed action will not affect the mineral springs or the band-tailed pigeon using those springs. If the Authorized Officer determines that the action may or will have an adverse effect on the species or habitat, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by BLM.

Modification: The boundaries of the stipulated area may be modified, if the Authorized Officer determines that portions of the area can be occupied without adversely affecting the mineral springs or the band-tailed pigeon. The dates for the timing restriction may be modified, if new information indicates that the March 1 to August 1 dates are not valid for the leasehold.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold can be occupied without adversely affecting the mineral springs or the band-tailed pigeon.

Controlled Surface Use

Resource: Soils

Stipulation: Prior to disturbance of any suspected unstable slopes or slopes over 60 percent, an engineering/ reclamation plan must be approved by the Authorized Officer. Such plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.

- Off-site areas will be protected from accelerated erosion, such as rilling, gullying, piping, and mass wasting.
- Water quality and quantity will be in conformance with State and Federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction will not be allowed when soils are frozen.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, or having excessive reclamation problems.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan, which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the Authorized Officer, if it is determined that portions of the area do not include suspected unstable slopes or slopes over 60 percent.

Waiver: This stipulation may be waived by the Authorized Officer, if it is determined that the entire leasehold does not include any suspected unstable slopes or slopes over 60 percent.

Controlled Surface Use

A 30-day public notice period will be required prior to modification or waiver of this stipulation.

Resource: Visual Resource Management (VRM) Class II.

Stipulation: All surface-disturbing activities, semipermanent and permanent facilities in VRM Class II areas may require special design including location, painting, and camouflage to blend with the natural surroundings, and meet the visual quality objectives for the area.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: This stipulation may be waived, if the Authorized Officer determines that there are no longer any VRM Class II areas in the leasehold.

Controlled Surface Use

Resource: Special Recreation Management Area (SRMA).

Stipulation: Unless otherwise authorized, drill site construction and access through special recreation management areas within this leasehold will be limited to established roadways.

Objective: To protect recreational qualities of the lands involved and recreational facilities, as well as enhance recreational opportunities within the designated boundary of the SRMA.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan that demonstrates impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the Authorized officer, if it is determined that portions of the area do not include SRMAs.

Waiver: This stipulation may be waived by the Authorized Officer, if it is determined that the entire leasehold no longer includes SRMAs.

Controlled Surface Use

Resource: Suitable or Eligible Recreational Rivers

Stipulation: All surface-disturbing activities, semipermanent and permanent facilities within a quarter mile of suitable or eligible rivers may require special design including location, painting, and camouflage to blend with the natural surroundings, and meet the recreational quality objectives for the area.

Objective: To control the impacts of mineral leasing activities on the recreational values of the river.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan that demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the Authorized Officer, if it is determined that portions of the area do not include suitable or eligible recreational rivers.

Waiver: This stipulation may be waived, if the Authorized Officer determines that there are no longer any suitable or eligible recreational rivers in the leasehold.

Controlled Surface Use

Resource: Late-Successional Reserves

Stipulation: Unless otherwise authorized, drill site construction and access through Late-Successional Reserves within this leasehold will be limited to established roadways.

Objective: To protect vegetation, to retain and/or restore old growth forest.

Exception: An exception to this stipulation may be granted by the Authorized Officer, if the operator submits a plan that demonstrates impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the Authorized Officer, if it is determined that portions of the area do not include Late-Successional Reserves.

Waiver: This stipulation may be waived by the Authorized Officer, if it is determined that the entire leasehold no longer includes Late-Successional Reserves.

Special Status Species Stipulation (to be attached to all leases)

Resources: Botany and Wildlife

Stipulation: Lands within this lease may be within the suitable habitat of the Federal Threatened (FT), Endangered (FE) or Proposed Threatened (PT) & Proposed Endangered (PE) species, either officially listed or proposed for listing as Threatened or Endangered species. If it is determined through an environmental review process that these species or their habitat exist within the lease, then all future post-lease operations will be analyzed and subjected to a U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) Section 7 consultation or conference to ensure the action is not likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat.

Lands within this lease may bear some or all of the species that have protected status as State Threatened (ST); State Endangered (SE); Federal Candidate (FC); Bureau Sensitive (BS) or are within the suitable habitat of these species. These species are protected by BLM policy as described in Manual 6840. All future post-lease operations must be analyzed, utilizing recent field data collected at the proper time of year to identify the presence of such species. If the field examination indicates that the proposed activity may adversely impact FC species, technical assistance will be obtained from FWS to ensure that actions will not contribute to the need to list a Federal Candidate as a Federal Threatened or Endangered species. Technical assistance may be

obtained from FWS or NMFS to ensure that actions will not contribute to the need to list a ST, SE, or BS species as a Federal Threatened or Endangered species.

Therefore, prior to any surface disturbing activities or even the use of vehicles off existing roads on this lease, BLM approval is required. This restriction also applies to geophysical activities for which a permit is required. The approval is contingent upon the results of site-specific inventories for any of the above mentioned species. The timing of these inventories is critical. They must be conducted at a time of year appropriate to determine the presence of the species or its habitat. The lessee is hereby notified that the process may take longer than the normal 30 days and that surface activity approvals may be delayed.

If no FT, FE, PT, or PE species, or suitable habitat for such species, are found during the inventories, then no formal Section 7 consultation with the FWS or NMFS will be necessary, and the action will be processed using the procedures found in the applicable Oil and Gas Onshore Orders or Geothermal Resources Operational Orders. However, the lessee is hereby notified that, if any FT, FE, PT, PE, ST, SE, FC, or BS species are found during the inventories, or if the actions are proposed in designated or proposed critical habitat, then surface disturbing activities may be prohibited on portions of, or even all of the lease, unless an alternative is available that meets all of the following criteria: (a) The proposed action is not likely to jeopardize the continued existence of a Threatened or Endangered species; (b) The proposed action is not likely to destroy or adversely modify critical habitat for a Threatened or Endangered species; (c) The proposed action is consistent with the recovery needs in approved Fish and Wildlife Service or National Marine Fisheries Service recovery plans or BLM Habitat Management Plans for the Threatened or Endangered species; and (d) the proposed action will not contribute to the need to list species as Federal Threatened or Endangered.

Objective: To protect officially listed or proposed Threatened or Endangered plant or wildlife species; and to ensure that post leasing oil and gas or geothermal operations will not likely contribute to the need to list other special status species as Threatened or Endangered.

Exception: An exception may be granted by the Authorized Officer, if review of the proposed plan submitted by the operator indicates that the proposed action will have no effect on the species.

Modification: The boundaries of the stipulated area may be modified, by the Authorized Officer, if it is determined that portions of the area do not have any officially listed or proposed Threatened or Endangered species, Federal Candidate, State Threatened or Endangered species, or Bureau Sensitive species, or their habitat.

Waiver: This stipulation may be waived if the species is declared recovered and is no longer protected under the Endangered Species Act, or if other species found within the lease are no longer considered to be in the Federal Candidate, State Threatened or Endangered, or Bureau Sensitive categories.

Appendix H
Locatable Minerals Surface Management Standards for Prospecting Exploration, Mining, and Reclamation

Introduction - The following operational guidelines for mining activities have been compiled to facilitate compliance with the 43 CFR 3809 surface management regulations, which apply to all mining operations on BLM administered lands in the Eugene District. All of the following standards may not apply to every mining operation. The BLM will provide site specific standards for some mining proposals. It is the mining claimant's and/or operator's responsibility to avoid "unnecessary or undue degradation," and to promptly perform all necessary reclamation work. Refer to the regulations at 43 CFR 3809 for general requirements. BLM's Solid Mineral Reclamation Handbook (H-3042-1) provides guidance for the reclamation of mining and exploration sites that will be followed on the Eugene District.

There is an intergovernmental agreement between BLM and the Oregon Department of Geology and Mineral Industries designed to avoid duplication of regulations, inspections, and approval of reclamation plans as well as minimize repetitive costs to mining operators. The following guidelines include some but not all of the requirements of the various State agencies overseeing mining operations. BLM does not enforce State requirements, and they are included here as information. State requirements could change during the plan period.

BLM Requirements

Operations ordinarily resulting in only negligible disturbance as defined in 43 CFR 3809.0-5(b) are considered to be "casual use" and no notification to or approval by the BLM is required. Casual use activities include staking mining claims, prospecting or sampling or mining with hand tools, gold panning, and use of suction dredges with a suction hose equal to or less than 4 inches in diameter where no structures or occupancy beyond 14 calendar days per year is involved.

At the existing Sharps Creek Recreation Site, which is withdrawn from mining claim location, the use of hand tools (including shovels, gold pans, and sluice boxes), and suction dredges with a suction hose equal to or less than 4 inches in diameter, is allowed with the required permits in compliance with Department of Environmental Quality (DEQ) requirements. Suction dredges with suction hoses having an inside diameter greater than 4 inches are not allowed at this recreation site. Additional information on recreational mining at this site is available from the reception desk at the BLM District Office.

All operators proposing occupancy for more than 14 calendar days per year, timber removal, road or trail construction, installation of structures of any kind, suction dredges with suction hoses having an inside diameter of greater than 4 inches, multiple suction dredges regardless of size, or the use of other mechanized earth moving equipment that would cause a surface disturbance of 5 acres or less during any calendar year, must provide written notice to the District Office at least 15 days prior to the commencement of any surface mining disturbance. For operations that will cause greater than 5 acres of cumulative surface disturbance, the operator is required to submit a Plan of Operations pursuant to the regulations in 43 CFR 3809.1-4. A Plan of Operations will be required to use motorized vehicles in areas designated as closed to Off-Highway Vehicles (OHV). Notices properly filed under the regulations in 43 CFR Subpart 3809 constitute authorization to operate vehicles in areas not designated as closed to OHV use. Generally, the need for a Notice or Plan of Operations is determined on a case by case basis.

State of Oregon Requirements

Out-of-stream mining, which disposes of all waste water by evaporation and/or seepage with no readily-traceable discharge to ground water or surface water, and involves processing of up to 10,000 cubic yards of material per year, must be authorized under General Permit #0600 issued by the Department of Environmental Quality (DEQ).

In-stream use of suction dredges must be authorized by Permit #0700-J issued by the DEQ. This permit is issued free of charge for dredges having hoses with an inside diameter of 4 inches or less. Registration and a filing fee of $50.00 is required for suction dredges having hoses with an inside diameter greater than 4 inches. Suction dredge operators should contact the Department of Environmental Quality, 750 Front St. N.E., Suite 120, Salem, Oregon 97310, phone: 378-8240 ext. 238, for further information.

Suction dredging outside the "permitted work period" established for certain waterways by the Oregon Department of Fish and Wildlife (ODFW) will require written permission by an appropriate ODFW District Biologist.

The river beds of navigable waterways are controlled by the Oregon Division of State Lands. Removal or alteration of over 50 cubic yards of material in any waters of the State requires a Removal-Fill permit from the Division of State Lands. This permit is required for any relocation of flowing streams in conjunction with mining.

Any person engaging in onshore mineral exploration, which disturbs more than one surface acre or involves drilling to greater than 50 feet, must obtain an exploration permit from the Oregon Department of Geology and Mineral Industries (DOGAMI). Mining operations involving 5,000 or more cubic yards of material per year or disturbance of one or more acres of land will require an operating permit from DOGAMI.

Timber Removal - The operator may cut and use timber that is in the way of mining activities. An application must be submitted to the Authorized Officer pursuant to 43 CFR 3821.4 describing the proposed use of merchantable timber from O&C lands for mining purposes. No merchantable trees may be cut until the application is approved and the trees are marked.

The Eugene BLM office recommends that small trees less than 7 inches in diameter at breast height (dbh) and shrubs be lopped and scattered, or shredded for use as mulch. Trees greater than or equal to 7 inches (dbh) are to be bucked and stacked in an accessible location unless they are needed for the mining operation.

Firewood - Merchantable conifer timber may not be used for firewood. Firewood permits may be issued to the operator for use in conjunction with the mining operation, but no wood may be used until a permit is obtained from BLM. Permits will be limited to hardwoods or salvage timber that is not considered merchantable. Firewood authorized for use in conjunction with a mining operation *is not to be removed from the mining claim.*

Topsoil - Topsoil and usable subsoil (usually the top 12 to 18 inches) should be carefully removed from all areas in advance of excavation or establishment of mine waste dumps and tailings dams. This material should be stockpiled and protected from erosion for use in future reclamation.

Roads - Existing roads and trails should be used as much as possible. Temporary roads are to be constructed to a minimum width and with minimum cuts and fills. All roads shall be constructed so as not to negatively impact slope stability. Roads will be promptly reclaimed when no longer needed.

Wetlands - When proposed mining activities will fill or alter wetland areas, the operator must contact the Department of the Army, Corps of Engineers, for the appropriate permit. A copy of the permit must be submitted to the Authorized Officer in conjunction with a Notice or Plan of Operations.

Water Quality - All operators shall comply with Federal and State water quality standards including the Federal Water Pollution Control Act. When mining will be in or near bodies of water, or sediment will be discharged, the State Department of Environmental Quality should be consulted. A discharge permit is required when mining operations discharge turbid water. In some cases, a settling pond may be necessary. It is the operator's

responsibility to obtain any needed suction dredging, stream bed alteration, or water discharge permits required by the State DEQ or other State agencies. Copies of such permits shall be provided to the BLM Authorized Officer when a Notice or Plan of Operations is filed. All operations, including casual use, shall be conducted in a manner so as to prevent unnecessary or undue degradation of surface and subsurface water resources and shall comply with all pertinent Federal and State water quality laws.

Claim Monuments - State law prohibited the use of plastic pipe for lode claim staking in Oregon after House Bill 2077 was implemented on March 28, 1991. BLM policy requires that existing plastic pipe monuments should have all openings (ends and slots) permanently closed. Upon loss or abandonment of the claim, all plastic pipe must be removed from the public lands by the parties who placed it there. When old markers are replaced during normal claim maintenance, they are to be either wood posts or stone and/or earth mounds, constructed in accordance with State law.

Drill Sites - Whenever possible, exploratory drill sites should be located next to or on existing roads without blocking public access. When drill sites must be constructed, the size of the disturbance shall be as small as possible. Any operator engaging in mineral exploration that involves drilling to greater than 50 feet must obtain an exploration permit from the Oregon Department of Geology and Mineral Industries (ORS 517.962).

Dust and Erosion Control - While in operation, and during periods of shut-down, exposed ground surfaces susceptible to erosion will need to be protected. This can be accomplished with seeding, mulching, installation of water diversions, and routine watering of dust producing surfaces.

Fire Safety - All State fire regulations must be followed, including obtaining a campfire permit or blasting permit, if needed. All internal gas combustion engines must be equipped with approved spark arresters and exhaust systems.

Safety and Public Access - Under Public Law 167, the Government has the right to dispose and manage surface resources (including timber) on mining claims located after July 23, 1955. These rights are limited to the extent that they do not endanger or materially interfere with any phase of an ongoing mining operation or uses reasonably incident thereto. Claims located prior to July 23, 1955 may have surface rights, if such claims were verified as being valid under Sections 5 and 6 of the Act.

Mining claimants shall not exclude the public from mining claims with force, intimidation, or no trespassing signs. It is the operator's responsibility to protect the public from mining hazards. The public can be restricted only from specific dangerous areas (e.g., underground mines, open pits, or equipment storage sites) by erecting fences, gates, and warning signs. Gates or road blocks may be installed on existing or proposed roads only with BLM approval. Gates restricting public access onto a mine site will only be considered in cases where there is a large area safety hazard created by the mining activity. The determination as to whether a safety hazard is large enough to warrant a gate will be determined on a case by case basis. Fences (rather than gates) or other approved barriers shall be utilized to protect the public from hazards related to small excavations, tunnels, and shafts.

Some roads that cross private land to reach BLM administered lands are controlled by private parties. Some of these roads have been assigned BLM road numbers, which can give the impression that they are BLM roads. These roads may grant administrative use to the BLM and its licensees and permittees under a nonexclusive easement. Mining claimants are not considered licensees or permittees and, therefore, they must make their own arrangements with the private party in order to use such a road. No automatic right is granted under any of the mining laws to use a road involved in a nonexclusive easement.

Sewage - Self-contained or chemical toilets are to be used at exploration or mining operations and their contents disposed of at approved dump stations. Outhouses and uncontained pit toilets are considered unnecessary and undue degradation and are not allowed. County sanitation permits are required for all other types of proposed sanitation facilities.

Structures - It is District policy that permanent structures will not be allowed for exploration or prospecting operations. Permanent structures are those fixed to the ground by any of the various types of foundations, slabs, piers, poles, or other means allowed by State or County building codes. The term shall also include

structures placed on the ground that lack foundations, slabs, piers or poles, and that can only be moved through disassembly into component parts or by techniques commonly used in house moving. Permanent structures include trailers, mobile homes, motor homes, campers, house-cars, and the like when fixed to the ground by any method.

Any temporary structures placed on public lands in conjunction with prospecting or exploration are allowed only for the duration of such activities, unless expressly allowed in writing by the Authorized Officer to remain on the public lands. Temporary structures are defined as structures not fixed to the ground by a foundation or piers (cinder blocks or posts) and that can be moved without disassembly into its component parts. Vans, pickup campers, motor homes, and trailers that have not been piered are considered to be temporary structures.

Permanent structures (as described above) may be allowed for mining operations if they are deemed reasonably incident to conducting the operation. Mining operations are defined as all functions, work, facilities, and activities in connection with development, mining, or processing mineral deposits.

All permanent or temporary structures placed on public lands shall conform with the appropriate State or local building, fire, and electrical codes, and occupational safety and health and mine safety standards. This requirement for existing or future structures on BLM lands in Oregon was published in the Federal Register on July 1, 1992. BLM may require operators to remove such structures if a period of nonoperation exceeds 24 consecutive months, and reclamation of the building site(s) must be conducted at that time.

Equipment - Only equipment and supplies that are appropriate, reasonable, and in regular use for exploration and mining operations will be allowed on the mining claim. Equipment used only infrequently (including parts and scrap metal) should be stored off site. That which can be readily removed in a small truck and/or trailer at the end of the work day should not be left on site. Storage of unused or infrequently used equipment will not serve to justify occupancy of a mining claim. Accumulation of unused and/or derelict equipment and other unused materials, including trash, may be in violation of Federal and State ordinances regarding offensive littering, and will be considered undue and unnecessary degradation of the public lands. BLM may require the operator to remove equipment after an extended period (defined as 24 consecutive months) of nonoperation and to reclaim the site. In such cases, the claimant will be required to take immediate mitigative action.

Animals - If dogs or cats are to be present at the work site, the operator is required to keep them under control at all times so that they do not chase wildlife, or threaten other people, including government employees conducting site inspections on the public lands. Unless otherwise permitted, animals such as cows, chickens, goats, pigs or horses are not considered necessary to conduct mining operations and are not allowed on mining claims.

Tailings Ponds - Settling ponds must be used to contain sediment, and any discharge must meet the standards of the Oregon Department of Environmental Quality.

Solid and Hazardous Waste - Trash, garbage, used oil, etc. must be removed from public land and disposed of properly. Trash, garbage, or hazardous wastes must not be buried on public lands. Accumulations of trash, debris, or inoperable equipment on public lands is viewed as unnecessary degradation and will not be tolerated. Operators conducting illegal disposals shall be held financially responsible for the clean-up of such disposals.

Cultural and Paleontological Resources - Operators shall not knowingly alter, injure, or destroy any scientifically important paleontological (fossil) remains or any historical or archaeological site, structure, or object on Federal lands. The operator shall immediately bring to the attention of the BLM, any paleontological (fossil) remains or any historical or archaeological site, structure, or object that might be altered or destroyed by exploration or mining operations, and shall leave such discovery intact until told to proceed by the Authorized Officer. The Authorized Officer shall evaluate the discovery, take action to protect or remove the resource, and allow operations to proceed within 10 working days.

Threatened and Endangered Species of Plants and Animals - Operators shall take such action as may be needed to prevent adverse impacts to Threatened or Endangered species of plants and animals and their habitat that may be affected by operations, as stipulated in guidelines developed through consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. Under Notice-level operations, if the review of the

notice by BLM reveals that a potential conflict with a Threatened or Endangered species exists, the operator will be advised not to proceed and informed that a knowing violation of the taking provision of the Endangered Species Act (for wildlife or fish) will result in a notice of noncompliance and may result in criminal penalties. Although the takings provision of the Act does not extend to plants, willful acts of vandalism to endangered plants is illegal. If the operator wishes to develop measures that will eliminate the conflict, then the Authorized Officer will arrange for the participation of BLM resource specialists and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service in reviewing the proposed revision to the Notice.

If processing a proposed Plan of Operations indicates that a potential conflict exists with a Threatened or Endangered species or its habitat, the Authorized Officer shall notify the operator that the plan cannot be approved until BLM has complied with Section 7 of the Endangered Species Act. Special status species (Federal Candidate/Bureau Sensitive) plants and animals, and their habitat will be identified by the Authorized Officer, and shall be avoided wherever possible.

Occupancy at Mining Sites

Living on public land in excess of 14 days per calendar year must be reasonably incident to and required for actual continuous mining or diligent exploration operations and will require either a Notice or Plan of Operations. In general, operations at the casual use level are not sufficient to warrant occupancy on a mining claim. The following discussion of occupancy only applies to those operators wishing to assert their right to live full-time on public lands pursuant to privileges granted under the mining laws. It does not apply to operators proposing to camp at prospecting or mining sites on weekends or 1 to 2 days during the week.

> Any claimant and/or operator who will occupy a claim will identify in the Notice or Plan of Operations, immediate family members (spouse, minor children/stepchildren) who will be living on the mining claim. The claimant and/or operator will be required to be engaged in a good faith, diligent effort in prospecting, exploration, mining, or processing operations to warrant occupancy. The immediate family members, as defined above, will be allowed to occupy the site without engaging in the mining-related work which is being conducted by the claimant or operator.
>
> The claimant and/or operator will be required to notify the District Office in writing if any additional individuals not identified in the original Notice or Plan of Operations propose to stay on the claim longer than 14 calendar days. Based on a case by case review, occupancy by such individuals will be allowed if it is reasonably incident to conducting diligent mining-related activities. In such instances, the Notice or Plan of Operations would be amended to note additional workers allowed to live on the site.

Security Guard - In some cases it may be reasonably incident for a security guard to live on-site in order to protect valuable property, equipment, and/or safeguard the public from workings that are necessary for the mining operation. The need for a security guard shall be such that the person with those duties is required to be present at the site whenever the operation is shut down temporarily or at the end of the workday, or whenever the mining claimant, operator, or workers are not present on the site. The proposed occupancy by a security guard must be described in the Notice or Plan of Operations. If a guard animal is kept at the site, it must be kept under control at all times, or could be considered a public safety hazard.

Reclamation

Reclamation of all disturbed areas must be performed concurrently or as soon as possible after exploration or mining permanently ceases and shall conform to guidelines described in BLM Handbook H-3042-1. Reclamation shall include, but shall not be limited to (a) saving topsoil for final application after reshaping disturbed areas; (b) measures to control erosion, landslides, and water runoff; (c) measures to isolate, remove, or control toxic materials; (d) reshaping the area disturbed, applying topsoil, and revegetating disturbed areas where reasonably practicable; and (e) rehabilitation of fisheries and wildlife habitat. When reclamation of the disturbed area has been completed, except to the extent necessary to preserve evidence of mineralization, the BLM must be notified so that an inspection of the area can be made.

Equipment and Debris - All mining equipment, vehicles, and structures must be removed from the public lands during periods of nonoperation in excess of 24 consecutive months and/or at the conclusion of mining, unless authorization from BLM is given to the operator or claimant in writing. Accumulations of debris and trash on mining claims is considered unnecessary and undue degradation and must be removed immediately regardless of the status of the operation. Failure to do so will result in the issuance of a notice of noncompliance.

Backfilling and Recontouring - The first steps in reclaiming a disturbed site are backfilling excavations and reducing high walls, if feasible. Coarse rock material should be replaced first, followed by medium sized material, with fine materials to be placed on top. Recontouring means shaping the disturbed area so that it will blend in with the surrounding lands, minimize the possibility of erosion, and facilitate revegetation.

Seedbed Preparation - Recontouring should include preparation of an adequate seedbed. This is accomplished by ripping or disking compacted soils to a depth of at least 6 inches in rocky areas and at least 18 inches in less rocky areas. This should be done following the contour of the land to limit erosion. All stockpiled settling pond fines, and then topsoil, shall be spread evenly over the disturbed areas.

Fertilizer - Due to the generally poor nutrient value of mined soils, it may be necessary to use fertilizer to ensure maximum yield from the seeding mixture. For example, a fertilizer with analysis of 16-16-16, or other approved mix should be spread at the rate of 200 lbs/acre, but not allowed to enter streams or bodies of water.

Seeding - BLM approved seeding prescription must be used to provide adequate revegetation for erosion control, restoration of wildlife habitat, and achieve productive secondary uses of public lands. Seeding should be done in September or October in the Eugene District to ensure that seed is in the ground prior to the first significant winter rains. If seeding fails, or is done at the wrong time, the operator may be asked to reseed the area at the appropriate time, as determined by the Authorized Officer.

Broadcast seeding is preferable on smaller sites. When using a whirlybird type seed spreader, it is important to keep the different seeds well mixed to achieve even seed distribution. For the best results, a drag harrow should be pulled over the seeded area to cover the seed before mulching. The Authorized Officer may recommend hydroseeding on critical sites for rapid coverage and erosion control on cut banks, fill slopes, and any other disturbed areas.

Tree Replacement - Replacement of destroyed trees may be necessary with the planting of seedlings or container stock.

Mulch - As directed by the BLM, during review of the Notice or Plan of Operations, the disturbed area may require mulching during interim or final reclamation procedures. Depending on site conditions, the mulch may need to be punched, netted, or blown on with a tackifier to hold it in place. In some cases, erosion control blankets may be cost effective for use.

Roads - After mining is completed, all new roads shall be reclaimed, unless otherwise specified by the BLM. High walls and cutbanks are to be knocked down or backfilled to blend with the surrounding landscape. Remove all culverts from drainage crossings and cut back the fill to the original channel. The roadbed should be ripped to a minimum depth of 18 inches to reduce compaction and provide a good seedbed. The road must then be fertilized, seeded, and mulched if necessary. When necessary, water bars are to be used to block access and provide drainage.

Tailings Ponds - The ponds should be allowed to dry out and the sediments removed and spread with the topsoil, unless the sediments contain toxic materials. If the ponds contain toxic materials, a plan will be developed to identify, dispose, and mitigate effects of the toxic materials. If necessary, a monitoring plan will also be implemented. The ponds should then be backfilled and reclaimed.

Visual Resources - To the extent practicable, the reclaimed landscape should have characteristics that approximate or are compatible with the visual quality of the original area.

Appendix I
Guidelines for Development of Salable Mineral Resources in the Eugene District

Proposed Operations

All proposed salable mineral developments, and any exploration that involves surface disturbance, should have operation and reclamation plans approved by the Authorized Officer. All proposals will undergo the appropriate level of review and compliance with the National Environmental Policy Act (NEPA).

Quarry Design

Due to steep terrain in the operating area, most quarry developments will require a series of benches to effectively maximize the amount of mineral materials to be removed in a safe manner. In most cases, bench height should not exceed 40 feet. If the bench will be used by bulldozers to access other parts of the quarry, the width of the bench should be at least 25 feet. If the bench will not be used by equipment, then this width can be reduced to approximately 10 feet.

Clearing of timber and brush should be planned at least 10 feet beyond the edge of the excavation limit. Often the brush will be piled and burned at the site or scattered nearby.

If at all possible, all topsoil and overburden should be stockpiled and saved for eventual quarry site reclamation. These piles may need to be stabilized by mulching or seeding in order to minimize erosion during the winter months.

As a standard procedure, the excavation of the quarry floor should be designed with an outslope of approximately 2 percent in order to provide for adequate drainage of the floor. Compliance with this design should be made a requirement of all operators at the site.

Operating Procedures

Where practicable, the following requirements should be made a part of every contract or permit providing for the use of mineral material sites on the District:

- Oversized boulders shall not be wasted, but shall be broken and utilized concurrently with the excavated material.
- The operator shall comply with local and State safety codes covering quarry operations, warning signs and traffic control. All necessary permits must be obtained from State and County agencies.
- Use of the site for equipment storage and stockpiling rock material is allowed for the duration of the contract or permit. Use of the site beyond that time would be authorized under a Temporary Use Permit (TUP).
- All topsoil shall be stockpiled or windrowed as appropriate for use in reclamation.
- Prior to abandonment, all material sites will be graded to conform with surrounding topography. Topsoil will be utilized to create a medium for revegetation. Reseeding and tree planting, if necessary, will be done as prescribed by the Authorized Officer. Access roads no longer needed by the BLM will be abandoned and reclaimed as directed by the Authorized Officer.

Appendix J
Land Tenure Adjustment Criteria

Adjustment Evaluation Factors

In accordance with FLPMA and other laws, Executive Orders, and Departmental and Bureau policy, the following factors will be considered in evaluating opportunities for disposal or acquisition. This list is not considered all inclusive but represents the major factors to be considered.

Threatened or Endangered or Sensitive plant and animal species habitat
Riparian areas and wetlands
Fish habitat
Nesting/breeding habitat for game and non-game animals
Key big game seasonal habitat
Contribution to biodiversity
Developed recreation sites and recreation use areas
High quality scenery
Timber production potential
Energy and mineral potential
Land adjacent to rivers eligible for designation under the National Wild and Scenic Rivers Act
Significant cultural resources and sites eligible for inclusion on the National Register of Historic Places
Accessibility of the land for public recreation and other uses
Amount of public investments in facilities or improvements and the potential for recovering those investments
Difficulty or cost of administration (manageability)
Suitability of the land for management by another Federal agency
Significance of the decision in stabilizing business, social and economic conditions, and/or lifestyles
Whether private sites exist for the proposed use
Encumbrances, including but not limited to, withdrawals or existing leases or permits
Consistency with cooperative agreements and plans or policies of other agencies
Suitability (need for change in land ownership or use) for purposes including but not limited to community expansion or economic development, such as industrial, residential, or agricultural (other than grazing) development

Acquisition Criteria

General Criteria for Acquisition

1. Facilitate access to public land and resources retained for long-term public use.
2. Maintain or enhance important public values and uses.
3. Facilitate National, State, and local BLM priorities or mission statement needs.
4. Facilitate implementation of other aspects of the approved Resource Management Plan.
5. Maintain or enhance local social and economic values in public ownership.
6. Meet long-term public land management goals as opposed to short-term.
7. Be of sufficient size to improve use of adjoining public lands or, if isolated, large enough to allow identified potential public land use.
8. Enhance the opportunity for new or emerging public land uses or values.
9. Contribute to a wide spectrum of uses or large number of public land users.
10. Facilitate management practices, uses, scales of operation, or degrees of management intensity that are viable under economic program efficiency standards.

11. Secure for the public significant water related land interests. These interests will include islands, lake shore, river or stream frontage, or ponds.
12. Contribute to increased biodiversity at the local or regional level.
13. Facilitate the recovery of threatened and endangered species.
14. Riparian areas.
15. Important wetland areas.

Program Specific Acquisition Criteria

Forestry: Focus acquisition priority on areas that are:

1. Site Class IV or above unless the area will enhance the management of adjacent forest lands.
2. Contiguous to, or which facilitate access to and management of public forest land.
3. Contain enough existing harvestable volume for a commercial logging unit after physical, biological, or other land use constraints are considered.
4. Have minimum conflicts with other resource programs and rural residences.
5. Parcels with existing, well-maintained road systems have higher priority than unroaded parcels or parcels with roads in poor condition. Parcels with existing surveys have a higher priority than parcels requiring large amounts of surveying per acre of commercial forest land.

Minerals: Focus acquisition priority on areas that:

1. Consolidate Federal mineral estate to create economic mineral development units.
2. Reunite split surface and mineral estates.

Cultural Resources: Any cultural site to be acquired should meet the following standards: high research value, moderate scarcity, possess some unique values such as association with an important historic person or high aesthetic value, or contribute significantly to interpretive potential of cultural resources already in public ownership.

Wildlife Habitat Management: Areas for acquisition will be lands with significant wildlife values as defined below. These areas may be of any size.

1. Special Status Species.
   a. Federally Listed Threatened or Endangered species.
   b. Federal Candidate species.
   c. State Listed species of special concern.

2. Fisheries.
   a. Riparian lands with potential to protect or enhance anadromous fisheries.
   b. Lakes, ponds or other impoundments important for anadromous or non-anadromous fisheries.

3. Big game: Important habitat such as crucial winter areas, fawning/calving areas, mineral licks, and security/cover areas.

4. Upland Game Birds, Migratory Birds and Waterfowl: Crucial breeding, nesting, roosting, feeding, and wintering habitat areas or complexes.

5. Raptors: Existing and potential nesting areas for sensitive species or significant nesting complexes for nonsensitive species.

6. Nongame: Crucial habitat complexes; buffers to enhance management of special habitat features and crucial wildlife habitats, including critical habitats for threatened and endangered species.

7. Biodiversity: Contribute to increased connectivity of important wildlife habitats.

Botanical and Special Area Management: Areas for acquisition will be lands with significant botanical or other biological values as defined below. These areas may be of any size.

1. Special Status Species.
   a. Federally Listed Threatened or Endangered species.
   b. Federal Candidate species.
   c. State Listed species of special concern.

2. Unique or rare biological communities.

3. Buffers for protection of existing special areas.

Recreation: Acquire land with the following significant values:

1. National values that enhance Congressionally designated areas, rivers, or trails.
2. State values that enhance recreation trails and waterways for interstate, State, and multi-county use.
3. Local values for extensive use, such as hunting, fishing, and OHV use.
4. Lands that expand, protect, or buffer existing or potential developed recreation sites.

Disposal Criteria: Parcels of BLM land are identified for disposal through exchange under the authority of Section 206 of FLPMA. The management objective is to use the disposal parcels to meet the acquisition goals for each alternative. The following criteria will be used to identify parcels in Land Tenure Zones 2 and 3 for disposal by exchange:

1. Lands of limited public value.
2. Widely scattered parcels that are difficult for BLM to manage and have no significant resource values warranting retention.
3. Lands with high public values proper for management by other Federal agencies or State or local government.
4. Lands that would aid in aggregating or repositioning other public lands or public land resource values in retention areas to facilitate National, State, and local objectives where the public values to be acquired outweigh the values to be exchanged.

Each parcel used in an exchange is subject to certain reviews before disposal can be approved: State and local government agency consultations, hazardous waste surveys, wildlife and threatened/endangered species evaluations, cultural and mineral clearances, and reports. The results of the evaluations and reports are included in an Environmental Assessment. Parcels are removed from disposal consideration if the consultations, clearances, reports, or Environmental Assessment show any resource values worthy of permanent Federal retention.

Appendix K
Existing Withdrawals and Classifications

Note: Location description indicates sections within which withdrawn lands are located. Information on which portions of the cited sections are withdrawn is available at the District Office.

Withdrawals

Authority	Location	Acres	Purpose	Surface Management Agency	Segregative Effect
ORE 05555	T.15S., R.7W. Section 7	40.00	Air Navigation Site	FAA/BLM	General land laws including mining and mineral leasing
ORE 013117 (PLO 3610)	T.18S., R.1E. Section 31 T.19S., R.1E. Section 6	81.20	Fall Creek Reservoir	COE/BLM	General land laws including mining except mineral leasing
OR 19234 (PLO 497)	T.17S., R.5W. Section 27 Section 28	5.27	Fern Ridge Reservoir	COE	General land laws including mining and mineral leasing
OR 19240 (PLO 727)	T.19S., R.1E. Section 34	1.37	Lookout Point Reservoir	COE	General land laws including mining and mineral leasing
OR 711 (PLO 4395)	T.16S., R.12W. Section 33	1.00	Oregon Islands National Wildlife Refuge	USFWS	General land laws including mining except mineral leasing
OR 25306 (PLO 6287)	T.16S., R.12W. Section 33	1.00	Oregon Islands National Wildlife Refuge	USFWS	General land laws including mining except mineral leasing

Abbreviation Key:
PLO = Public Land Order
FAA = Federal Aviation Administration
COE = U.S. Army Corp of Engineers
USFWS = U.S. Fish and Wildlife Service

ORE 016183A (PLO 3869)	T.16S., R.7W. Section 19 T.18S., R.8W. Section 21 T.18S., R.9W. Section 14 T.19S., R.7W. Section 19 Section 35 T.22S., R.1W. Section 15	440.12	Lake Creek Rec. Site Whittaker Creek Rec. Site Turner Creek Rec. Site Clay Creek Rec. Site Haight Creek Rec. Site Sharps Creek Rec. Site	BLM	General land laws including mining except mineral leasing
ORE 012093 (PLO 5490)	[1]	9000.52	Reserved for multiple use management	BLM	General land laws except R&PP, sales, exchanges, mining and mineral leasing
OR 8754 (PLO 5229)	T.15S., R.1W. Section 29 Section 30 Section 31 Section 32	260.00	Shotgun Creek Recreation Site	BLM	General land laws including mining except mineral leasing
OR 37548 (PLO 6662)	T.20S., R.5W. Section 9 Section 15 Section 21	832.50	Tyrrell Seed Orchard	BLM	General land laws including mining except mineral leasing
OR 46473 (PLO 6963)	T.18S., R.12W. Section 3 Section 15	257.60	Florence Sand Dunes	BLM	General land laws including mining except mineral leasing
OR 48744 (PLO 7081)	T.17S., R.3E. Section 3 Section 9 Section 10 Section 11	292.25	Eagle Rock Section McKenzie River	BLM	General land laws including mining except mineral leasing

[1]All public domain lands in and west of Range 8 East and all lands within the area, which become public domain lands in the future.

Abbreviation Key:
PLO = Public Land Order
PSC = Power Site Classification

OR 19133[2] (PSC 41)	T.19S., R.7W. Section 21 Section 25 Section 35 T.20S., R.6W. Section 5	550.49	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19148[2] (PSC 180)	T.20S., R.2W. Section 31 T.21S., R.1W. Section 33 Section 35 T.21S., R.2W. Section 15	300.60	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19164 (PSC 287)	T.18S., R.6W. Section 5	120.00	Protect electric transmission line	BLM/FERC	General land laws except mining and mineral leasing
OR 19186[2] (PSC 426)	T.16S., R.2E. Section 23 Section 24 Section 27	276.64	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19040[2] (PSR 95)	T.16S., R.2E. Section 28[3] Section 34[3] T.17S., R.2E. Section 2[3] T.17S., R.3E. Section 4	152.28	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19059[2] (PSR 285)	T.16S., R.3E. Section 31[3] T.17S., R.3E. Section 4	163.56	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing

[2]Withdrawals remaining to be reviewed through the FLPMA withdrawal review process or under authority of DM 603.
[3]Opened to entry subject to Sec. 24 of the Federal Power Act.

Abbreviation Key:
PSC = Power Site Classification
PSR = Power Site Reservation
FERC = Federal Energy Regulatory Commission

OR 19113[2] (PSR 659)	T.15S., R.6W. Section 7 T.16S., R.7W. Section 19 T.17S., R.8W. Section 17[3] T.18S., R.7W. Section 31 Section 33 T.18S., R.8W. Section 21 Section 27 Section 35 T.19S., R.6W. Section 7 Section 9 Section 29 Section 31 T.19S., R.7W. Section 1 Section 3 Section 5 Section 9 Section 19 Section 21 Section 27 Section 35 T.19S., R.8W. Section 3 Section 11 Section 13 T.20S., R.6W. Section 1 Section 3 Section 5 Section 9 Section 11 T.20S., R.7W. Section 3	5961.48	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing

[2]Withdrawals remaining to be reviewed through the FLPMA withdrawal review process or under authority of DM 603.
[3]Opened to entry subject to Sec. 24 of the Federal Power Act.

Abbreviation Key:
PSR = Power Site Reservation
FERC = Federal Energy Regulatory Commission

OR 19115[2] (PSR 661)	T.16S., R.2E. Section 33[3] Section 35[3] T.17S., R.2E. Section 1[3] T.17S., R.3E. Section 3[3] Section 5[3] Section 9[3] T.20S., R.2W. Section 31 T.21S., R.1W. Section 31[3] Section 33 Section 35 T.21S., R.2W. Section 7 T.22S., R.2W. Section 5 Section 15 Section 23 T.23S., R.2W. Section 1	1103.60	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19116[2] (PSR 662)	T.18S., R.8W. Section 28	40.00	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing
OR 19127[2] (PSR 730)	T.22S., R.1W. Section 5 Section 9 Section 15[4] Section 23 Section 27 Section 35 T.23S., R.1W. Section 1 Section 7	1249.16	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing

[2]Withdrawals remaining to be reviewed through the FLPMA withdrawal review process or under authority of DM 603.
[3]Opened to entry subject to Sec. 24 of the Federal Power Act.
[4]Opened to entry in part subject to Sec. 24 of the Federal Power Act.

Abbreviation Key:
PSR = Power Site Reservation
FERC = Federal Energy Regulatory Commission

OR 19014[2] (WPD 14)	T.15S., R.6W. Section 7 T.16S., R.2E. Section 33[3] Section 35[3] T.16S., R.7W. Section 19 T.17S., R.2E. Section 1[3] T.17S., R.3E. Section 3[3] Section 5[3] Section 9[3] T.17S., R.8W. Section 17[3] T.18S., R.7W. Section 31 Section 33 T.18S., R.8W. Section 21 Section 27 Section 35 T.19S., R.6W. Section 7 Section 9 Section 29 Section 31 T.19S., R.7W. Section 1 Section 3 Section 5 Section 9 Section 19 Section 21 Section 27 Section 35 T.19S., R.8W. Section 3 Section 11 Section 13 T.20S., R.2W. Section 31	8234.24	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing

[2]Withdrawals remaining to be reviewed through the FLPMA withdrawal review process or under authority of DM 603.
[3]Opened to entry subject to Sec. 24 of the Federal Power Act.

Abbreviation Key:
WPD = Water Power Designation
FERC = Federal Energy Regulatory Commission

	T.20S., R.6W. Section 1 Section 3 Section 5 Section 9 Section 11 T.20S., R.7W. Section 3 T.21S., R.1W. Section 31[3] Section 33 Section 35 T.21S., R.2W. Section 7 Section 31 T.22S., R.1W. Section 5 Section 9 Section 15[4] Section 23 Section 27 Section 35 T.22S., R.2W. Section 5 Section 15 Section 23 T.23S., R.1W. Section 1 Section 7 T.23S., R.2W. Section 1				
OR 19016[2] (WPD 16)	T.23S., R.1W. Section 1	80.00	Protect water-power and reservoir development potential	BLM/FERC	General land laws except mining and mineral leasing

Note: Table does not include lands that have been transferred out of Federal ownership subsequent to withdrawal or lands within National Forest boundaries.

[2]Withdrawals remaining to be reviewed through the FLPMA withdrawal review process or under authority of DM603.
[3]Opened to entry subject to Sec. 24 of the Federal Power Act.
[4]Opened to entry in part subject to Sec. 24 of the Federal Power Act.

Abbreviation Key:
WPD = Water Power Designation
FERC = Federal Energy Regulatory Commission

Classifications

Authority	Location	Acres	Purpose	Surface Management Agency	Segregative Effect
OR 905 (R&PP)	T.14S., R.2W. Section 13	2.00	McKercher County Park	BLM/Linn County	General land laws including mining except mineral leasing
ORE 06095` (R&PP)	T.16S., R.2E. Section 34 Section 35	61.73	Whitewater County Park	BLM/Lane County	General land laws including mining except mineral leasing
ORE 011226 (R&PP)	T.17S., R.2E. Section 1	2.40	Martin Rapids County Park	BLM/Lane County	General land laws including mining except mineral leasing
ORE 012264 (R&PP)	T.16S., R.6W. Section 7	2.00	Solid waste transfer site	BLM/Lane County	General land laws including mining except mineral leasing
OR 37243 (R&PP)	T.19S., R.3W. Section 35	2.79	Willamette River Greenway	BLM/State of Oregon	General land laws including mining except mineral leasing

Abbreviation Key:
R&PP = Recreation and Public Purposes Act

Appendix L
New Withdrawals, Relinquishments, and Modifications

OR 46473 Modification of Florence Sand Dunes Withdrawal

Federal Lands

T.18 S., R.12 W., W.M.
Sec. 15: SE1/4NE1/4

The area described above contains 40 acres (title plat) in Lane County, Oregon.

The land described above is withdrawn by Public Land Order No. 6963 of April 5, 1993 and reserved to protect significant scenic, water quality, botanical, wildlife, and recreational values. The withdrawal segregates the lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws. At such future time as the City of Florence requests transfer of the SE1/4NE1/4 of Section 15 under the Recreation and Public Purposes Act, it will be recommended that the withdrawal be modified or revoked as to the SE1/4NE1/4 of Section 15 to allow transfer of the tract to the City of Florence.

Row River Special Recreation Management Area Withdrawal

Federal Lands

T.22 S., R.1 W., W.M.
Sec. 15: Lots 8,11 and E1/2 of Lot 10
Sec. 27: NE1/4NE1/4
Sec. 35: W1/2SE1/4

T.23 S., R.1 W., W.M.
Sec. 01: Lot 4, SW1/4NW1/4, E1/2SW1/4SW1/4, W1/2SE1/4SW1/4
Sec. 12: NE1/4NW1/4, N1/2SE1/4NW1/4

The area described above contains 403.54 acres (title plat) in Lane County, Oregon.

Private Lands

T.22 S., R.1 W., W.M.
Sec. 15: E1/2 of Lot 9, W1/2 of Lot 12
Sec. 22: Lots 3,8,9,12, E1/2 of Lot 7, S1/2SE1/4, SW1/4NW1/4SE1/4
Sec. 26: S1/2NW1/4NW1/4, SW1/4NW1/4, N1/2NW1/4SW1/4, E1/2SW1/4
Sec. 35: E1/2NE1/4NW1/4, W1/2NE1/4

T.23 S., R.1 W., W.M.
Sec. 01: NW1/4SW1/4
Sec. 02: Lots 1,2

The area described above contains 707.00 (title plat) acres in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to allow the establishment and development of a recreational mining area in an area with high recreational mining demand and potential.

ORE 05555 Partial Revocation of Horton Air Navigation Site Withdrawal

Federal Lands

T.15 S., R.7 W., W.M.
Sec. 07: SW1/4SE1/4

The area described above contains 40.00 acres (title plat) in Lane County, Oregon.

The land described above is part of a larger tract withdrawn by BLM Order of July 12, 1957 and reserved for use by the Federal Aviation Administration as an air navigation site. BLM retains jurisdiction over grazing and the management and disposal of forest resources. The withdrawal segregates the land from the operation of the public land laws, including the mining and mineral leasing laws. The only FAA improvement on the acreage described above is an access road. The withdrawal has been reviewed pursuant to FLPMA 204 (l) and it has been recommended that the withdrawal be revoked as to the subject acreage. FAA interest in the access road would be protected by issuance of a right-of-way reservation under the authority of FLPMA Sec. 507 prior to completion of the partial revocation action. The partial revocation would restore the land to entry under the public land laws, including the mining and mineral leasing laws, subject to valid existing rights. FAA has concurred in the recommended partial revocation.

ORE 013117 Partial Relinquishment of Fall Creek Reservoir Withdrawal

Federal Lands

T.18 S., R.1 E., W.M.
Sec. 31: All that portion of the following subdivisions lying north of the northerly right-of-way line of Lane County Road #409: S1/2NE1/4SW1/4, W1/2SW1/4, S1/2NE1/4SE1/4, S1/2N1/2NW1/4SE1/4, S1/2NW1/4SE1/4

The area described above contains 33.50 acres in Lane County, Oregon.

The land described above is part of a larger tract withdrawn by Public Land Order No. 3610 of April 8, 1965 and reserved for use by the U.S. Army Corps of Engineers for flood control purposes as part of the Fall Creek Reservoir Project. BLM retains jurisdiction over the land for all purposes other than flood control. The withdrawal does not alter the applicability of the public land laws governing the use of the lands under lease, license, or permit, or governing the disposal of their mineral and vegetative resources other than under the mining laws. The withdrawal has been reviewed pursuant to FLPMA 204 (L) and the Corps of Engineers has relinquished the withdrawal as to the lands described above since these lands are not needed or used for the purpose for which they were withdrawn. The only improvements on this acreage are BLM access roads. The lands have been examined and found to be suitable for return to full BLM jurisdiction. It has been recommended that the withdrawal be revoked as to the subject acreage. The partial revocation would restore the land to entry under the mining laws, subject to valid existing rights.

ORE 016183A Partial Revocation of Turner Creek Recreation Site Withdrawal

Federal Lands

T.18 S., R.9 W., W.M.
Sec. 14: NE1/4SW1/4

The area described above contains 40.00 acres (title plat) in Lane County, Oregon.

The land described above is one of several tracts withdrawn by Public Land Order No. 3869 of November 12, 1965 and reserved for use as the Turner Creek Recreation Site. The withdrawal segregates the land from the operation of the public land laws, including the mining, but not the mineral leasing laws nor disposal of materials under the Act of July 31, 1947 (61 Stat. 681; 30 U.S.C. 601-604), as amended, or forest products under the Act of August 28, 1937 (50 Stat. 874; 43 U.S.C. 1181a). The subject recreation site has been permanently closed and the improvements removed. The partial revocation would restore the land described above to entry under the public land laws, including the mining laws, subject to valid existing rights.

OR 19164 Revocation of Power Site Classification 287

Federal Lands

T.18 S., R.6 W., W.M.
Sec. 05: SE1/4NE1/4, E1/2SE1/4

The area described above contains 120.00 acres (title plat) in Lane County, Oregon.

The land described above was withdrawn by Secretarial Order of March 23, 1935 and reserved as Power Site Classification 287. The land was withdrawn to authorize and protect the right-of-way for an electric transmission line. The withdrawal segregated the land from the operation of the non-discretionary public land laws, including the mining laws but not the mineral leasing laws. The land was subsequently opened to entry under the mining laws subject to the provisions of Public Law 359. The Federal Energy Regulatory Commission has jurisdiction over this land for hydropower generation and electric transmission purposes. BLM retains jurisdiction over mineral leasing, grazing, the management and disposal of mineral materials and forest resources and land use authorizations by lease, license or permit, subject to the concurrence of FERC. The electric transmission line was removed several years ago and the land is no longer needed for the purpose for which it was withdrawn. The withdrawal has been reviewed pursuant to FLPMA 204 (L) and it has been recommended that the withdrawal be revoked. Revocation would restore the land to full operation of the public land laws and to full BLM jurisdiction. Mineral entry would no longer be subject to the provisions of P.L 359.

OR 19234 Modification of Fern Ridge Reservoir Withdrawal

Federal Lands

T.17 S., R.5 W., W.M.
Sec. 27: Lots 2,3
Sec. 28: Lot 5

The area described above contains 5.27 acres (title plat) in Lane County, Oregon.

The land described above is withdrawn by Public Land Order No. 497 of July 13, 1948 and reserved for use by the U.S. Army Corps of Engineers for flood control purposes as part of the Fern Ridge Reservoir Project. The withdrawal segregates the land from entry under the public land laws, including the mining and mineral leasing laws. The withdrawal has been reviewed pursuant to FLPMA 204 (L) and found to be used and needed for the purpose for which it was withdrawn. It has been recommended that the withdrawal be modified to open the land to operation of the mineral leasing laws. The modification would restore the land to operation of the mineral leasing laws, subject to the concurrence of the Corps of Engineers. The Corps of Engineers has concurred in the modification.

OR 19240 Modification of Lookout Point Reservoir Withdrawal

Federal Lands

T.19 S., R.1 E., W.M.
Sec. 34: Lot 4

The area described above contains 1.37 acres (title plat) in Lane County, Oregon.

The land described above is withdrawn by Public Land Order No. 727 of June 6, 1951 and reserved for use by the U.S. Army Corps of Engineers for flood control purposes as part of the Lookout Point Dam and Reservoir Project. The withdrawal segregates the land from entry under the public land laws, including the mining and mineral leasing laws. The withdrawal has not yet been reviewed pursuant to FLPMA 204 (L). The land is being used for the purpose for which it was withdrawn. It will be recommended that the withdrawal be modified to open the land to operation of the mineral leasing laws. The modification would restore the land to operation of the mineral leasing laws, subject to the concurrence of the Corps of Engineers.

Fox Hollow Research Natural Area Withdrawal

Federal Lands

T.19 S., R.4 W., W.M.
Sec. 09: E1/2E1/2

The area described above contains 160.00 acres (title plat) in Lane County, Oregon.

In furtherance of the Management Plan for the Fox Hollow Research Natural Area, the withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the Fox Hollow Research Natural Area and Area of Critical Environmental Concern.

Camas Swale Research Natural Area Withdrawal

Federal Lands

T.19 S., R.4 W., W.M.
Sec. 25: NW1/4, W1/2SW1/4, W1/2E1/2SW1/4, NE1/4NE1/4SW1/4, SW1/4SE1/4 SE1/4SW1/4, and those portions of SE1/4NE1/4SW1/4, NE1/4SE1/4SW1/4, N1/2SE1/4SE1/4SW1/4 and W1/2NW1/4SE1/4 lying west of BLM Road No. 19-4-26.

The area described above contains 313.91 acres, more or less, in Lane County, Oregon.

In furtherance of the Management Plan for the Camas Swale Research Natural Area, the withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the Camas Swale Research Natural Area and Area of Critical Environmental Concern.

Mohawk Research Natural Area Withdrawal

Federal Lands

T.16 S., R.2 W., W.M.
Sec. 19: Lots 3,4, S1/2N1/2 of Lot 2, S1/2 of Lot 2, S1/2N1/2SE1/4NW1/4, S1/2 SE1/4NW1/4, E1/2SW1/4, W1/2E1/2W1/2SE1/4, W1/2W1/2SE1/4

The area described above contains 292.67 acres (title plat) in Lane County, Oregon.

In furtherance of the Management Plan for the Mohawk Research Natural Area, the withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the Mohawk Research Natural Area and Area of Critical Environmental Concern.

Upper Elk Meadows Research Natural Area Withdrawal

Federal Lands

T.23 S., R.2 W., W.M.
Sec. 35: E1/2E1/2S1/2S1/2S1/2SW1/4NW1/4; W1/2W1/2S1/2S1/2S1/2SE1/4NW1/4; that portion of E1/2NE1/4SW1/4 lying south of BLM Road No. 23-2-35.1; W1/2 NE1/4SW1/4; E1/2E1/2NW1/4SW1/4; N1/2SE1/4SW1/4; E1/2SW1/4 SE1/4SW1/4; SE1/4SE1/4SW1/4; S1/2NE1/4NE1/4SE1/4; those portions of NW1/4NE1/4SE1/4 and NW1/4SE1/4 lying south of BLM Road No. 23-2-35.1; S1/2NE1/4SE1/4; S1/2SE1/4

The area described above contains 242.00 acres, more or less, in Douglas County, Oregon.

In furtherance of the Management Plan for the Upper Elk Meadows ACEC, the withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the Upper Elk Meadows Research Natural Area and Area of Critical Environmental Concern.

Long Tom Area of Critical Environmental Concern Withdrawal

Federal Lands

T.16 S., R.5 W., W.M.
Sec. 33: Lot 3

The area described above contains 9.66 acres (title plat) in Lane County, Oregon.

Private Lands

T.16 S., R.5 W., W.M.
Sec. 28: SE1/4SE1/4, Lot 2 East of the center of the West branch of the Long Tom River
Sec. 33: N1/2NE1/4NE1/4

The area described above contains 79.64 acres in Lane County, Oregon.

In furtherance of the Management Plan for the Long Tom ACEC, the withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect a remnant Willamette Valley native grassland containing a population of a Federally listed endangered plant species and several additional sensitive plant species.

Hult Marsh Area of Critical Environmental Concern Withdrawal

Federal Lands

T.15 S., R.7 W., W.M.
Sec. 23: That portion of the E1/2 lying east of the centerline of BLM Road No. 15-7-35
Sec. 24: SW1/4

The area described above contains 341.22 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect a wetland/aquatic/riparian habitat with significant botanical, wildlife and recreational values.

Horse Rock Ridge Research Natural Area Withdrawal

Federal Lands

T.15 S., R.2 W., W.M.
Sec. 01: Lots 3,4; W1/2 and W1/2E1/2 of Lot 2; W1/2E1/2SW1/4NE1/4; W1/2SW1/4 NE1/4; S1/2NW1/4; N1/2NE1/4SW1/4; SE1/4NW1/4SW1/4; that portion of the SW1/4NE1/4SW1/4 lying north of BLM Road No. 15-2-1.1; that portion of the W1/2SW1/4 lying north of BLM Road No. 15-2-1.1; W1/2E1/2NW1/4SE1/4; W1/2NW1/4SE1/4; that portion of the E1/2E1/2NW1/4SE1/4, E1/2SW1/4SE1/4 and SE1/4SE1/4 lying west of a line to be described by metes and bounds following completion of survey.

The area described above contains 378.08 acres, more or less, in Linn County, Oregon.

Private Lands

T.14 S., R.2 W., W.M.
Sec. 36: S1/2SW1/4

T.15 S., R.2 W., W.M.
Sec. 02: Lot 1, SE1/4NE1/4

The area described above contains 160.92 acres (title plat) in Linn County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect outstanding botanical, wildlife and scenic values and the best remaining example of a western Cascade margin grassy bald.

Cougar Mountain Yew Grove Area of Critical Environmental Concern Withdrawal

Federal Lands

T.20 S., R.3 W., W.M.
Sec. 01: NE1/4SE1/4SE1/4

The area described above contains 10.00 acres (title plat) in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect a rare stand of Pacific yew.

Grassy Mountain Area of Critical Environmental Concern Withdrawal

Federal Lands

T.15 S., R.1 W., W.M.
Sec. 11: Lot 4, SW1/4NE1/4 of Lot 5, W1/2 of Lot 5, W1/2SE1/4 of Lot 5, SE1/4SE1/4 of Lot 5

The area described above contains 73.53 acres (title plat), more or less, in Lane County, Oregon.

Private Lands

T.15 S., R.1 W., W.M.
Sec. 14: Portion of N1/2NW1/4 lying north of Weyerhaeuser Road

The area described above contains 35.00 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect a rare natural system made up of a relatively undisturbed native grassy bald community.

Lorane Ponderosa Pine Potential Area of Critical Environmental Concern Withdrawal

Federal Lands

T.19 S., R.4 W., W.M.
Sec. 11: W1/2E1/2NW1/4NW1/4, W1/2NW1/4NW1/4
Sec. 17: S1/2S1/2NE1/4NE1/4, SE1/4NE1/4, N1/2NE1/4SE1/4
Sec. 21: NE1/4SE1/4, N1/2N1/2SE1/4SE1/4

The area described above contains 150.00 acres (title plat), more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect three relict stands of low elevation, mature Willamette Valley Ponderosa Pine.

Whittaker Creek Recreation Site Addition Withdrawal

Federal Lands

T.18 S., R.8 W., W.M.
Sec. 21: N1/2SW1/4, N1/2SW1/4SW1/4

The area described above contains 100.00 acres (title plat), more or less, in Lane County, Oregon.

Private Lands

T.18 S., R.8 W., W.M.
Sec. 21: NW1/4SE1/4

The area described above contains 40.00 acres (title plat) in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect an existing hiking trail system and the natural park setting of the existing recreation development, which encroaches inadvertently onto the private tract.

Clay Creek Recreation Site Addition Withdrawal

Federal Lands

T.19 S., R.7 W., W.M.
Sec. 19: Lot 4, SW1/4SE1/4, N1/2SE1/4SE1/4

The area described above contains 83.02 acres (title plat), more or less, in Lane County, Oregon.

Private Lands

T.19 S., R.7 W., W.M.
Sec. 19: Lots 2,3, NW1/4SE1/4

The area described above contains 84.99 acres (title plat) in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the natural visual quality of the existing recreation development, to protect an existing hiking trail, and to allow for expansion of the campground, a portion of which currently encroaches inadvertently onto the private tract.

Siuslaw Bend Recreation Site Withdrawal

Federal Lands

T.19 S., R.7 W., W.M.
Sec. 21: Lot 5; those portions of Lots 2, 3 and 7 lying west of the centerline of the Upper Siuslaw Access Road; that portion of Lot 4 lying south of the centerline of the Upper Siuslaw Access Road; and those portions of Lots 6, 11 and 12 lying north of the centerline of the Upper Siuslaw Access Road.

The area described above contains 153 acres, more or less, in Lane County, Oregon.

Private Lands

T.19 S., R.7 W., W.M.
Sec. 16: Those portions of Lots 13 and 14 lying south of the centerline of the Upper Siuslaw Access Road.

The area described above contains 11 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect campground and related recreational improvements to be constructed on the site as well as scenic and natural values that contribute to its value for recreation.

McKenzie River Special Recreation Management Area Withdrawal

Federal Lands

T.16 S., R.2 E., W.M.
Sec. 28: Lot 9
Sec. 33: Lot 2
Sec. 34: Lot 10
Sec. 35: Lot 6

T.16 S., R.3 E., W.M.
Sec. 31: Lots 7,8,10,14
Sec. 32: Lot 2, S1/2 of Lot 10, Lot 11, Lots 13 and 14 excluding Goodpasture County Road right-of-way
Sec. 33: W1/2 of Lot 1, SW1/4NW1/4SW1/4

T.17 S., R.1 E., W.M.
Sec. 19: N1/2 of Lot 10

T.17 S., R.2 E., W.M.
Sec. 1: Lot 4

T.17 S., R.3 E., W.M.
Sec. 3: Lot 4, Lot 2 excluding the north 700 feet
Sec. 4: Lots 5,6,7,9, NW1/4NW1/4
Sec. 5: Lots 2,3 and SW1/4NE1/4 excluding Goodpasture County Road right-of-way; Lot 4; Lot 5 north of the north right-of-way line of Bonneville Power Administration right-of-way Ore 06100; SE1/4.
Sec. 8: NE1/4NE1/4
Sec. 9: Lots 3-5; S1/2N1/2
Sec. 10: Lots 3-5; NW1/4NW1/4; SE1/4NW1/4; N1/2SE1/4 north of Weyerhaeuser road right-of-way
Sec. 11: Lot 3; NW1/4SW1/4 north of Weyerhaeuser road right-of-way

The area described above contains 1474.02 acres, more or less, in Lane County, Oregon.

Private Lands

T.16 S., R.2 E., W.M.
Sec. 26: NE1/4SW1/4, portion of SE1/4NW1/4
Sec. 31: Lot 2
Sec. 36: Portion of Lot 6 (Tax lot 16-25-36-00-01100)

T.17 S., R.1 E., W.M.
Sec. 19: Portion of unnamed island

T.17 S., R.1 W., W.M.
Sec. 24: Rodman Island, portion of unnamed island
Sec. 27: McNutt Island
Sec. 28: McNutt Island

T.17 S., R.3 E., W.M.
Sec. 2: Lots 7-10; NE1/4SE1/4; S1/2SE1/4
Sec. 4: Lot 8
Sec. 9: Lot 6
Sec. 10: SW1/4NW1/4
Sec. 11: Lot 2; E1/2NW1/4

The area described above contains 725.00 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect campground and related recreational improvements to be constructed as well as scenic and natural values along the McKenzie River.

McGowan Creek Environmental Education Area Withdrawal

Federal Lands

T.16 S., R.2 W., W.M.
Sec. 19: W1/2E1/2W1/2NE1/4, W1/2W1/2NE1/4, E1/2NE1/4NW1/4, E1/2N1/2N1/2 SE1/4NW1/4, SE1/4NE1/4 and E1/2E1/2SW1/4NE1/4 lying north of McGowan Creek Road.

The area described above contains 124 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the outstanding natural values of the existing environmental education area.

Coburg Hills Relict Forest Islands
Area of Critical Environmental Concern Withdrawal

Federal Lands

T.14 S., R.2 W., W.M.
Sec. 13: Metes and bounds in Lots 5-7
Sec. 28: Metes and bounds in E1/2
Sec. 29: Metes and bounds in SW1/4NE1/4
Sec. 33: Metes and bounds in NW1/4
Sec. 35: Metes and bounds in N1/2SE1/4 and SE1/4SE1/4

T.15 S., R.2 W., W.M.
Sec. 03: Metes and bounds in S1/2NE1/4, N1/2SE1/4 and SW1/4SE1/4.
Sec. 09: Metes and bounds in Lot 1, SW1/4 and S1/2SE1/4.
Sec. 31: Metes and bounds in Lots 1-4, NE1/4NE1/4, S1/2NE1/4, E1/2NW1/4, SW1/4 and W1/2SE1/4.

T.16 S., R.3 W., W.M.
Sec. 01: Metes and bounds in Lots 1-2, S1/2NE1/4, SE1/4NW1/4 and SE1/4.

The area described above contains 804 acres, more or less, in Linn County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect remnant islands of mature and old growth forest within a Key Raptor Area.

Note: Final withdrawal description of lands described above as metes and bounds will utilize aliquot part descriptions down to five-acre parts. Final withdrawal acreage could thus differ slightly from that cited above.

Cottage Grove Lake Relict Forest Islands
Area of Critical Environmental Concern Withdrawal

Federal Lands

T.21 S., R.3 W., W.M.
Sec. 27: Metes and bounds in NE1/4NE1/4.

T.21 S., R.4 W., W.M.
Sec. 25: Metes and bounds in NW1/4NE1/4.

The area described above contains 54 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect remnant islands of mature and old growth forest within a Key Raptor Area.

Note: Final withdrawal description of lands described above as metes and bounds will utilize aliquot part descriptions down to five-acre parts. Final withdrawal acreage could thus differ slightly from that cited above.

Dorena Lake Relict Forest Islands
Area of Critical Environmental Concern Withdrawal

Federal Lands

T.20 S., R.2 W., W.M.
Sec. 27: Metes and bounds in SE1/4NE1/4.

The area described above contains 18 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect remnant islands of mature and old growth forest within a Key Raptor Area.

Note: Final withdrawal description of lands described above as metes and bounds will utilize aliquot part descriptions down to five-acre parts. Final withdrawal acreage could thus differ slightly from that cited above.

Upper Lake Creek Special Recreation Management Area Withdrawal

Federal Lands

T.15 S., R.7 W., W.M.
Sec. 26: NE1/4, NE1/4SW1/4, N1/2SE1/4

The area described above contains 280.00 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect campground and related recreational improvements to be constructed as well as scenic and natural values around Hult Reservoir.

White's Creek Administrative Site Withdrawal

Federal Lands

T.21 S., R.3 W., W.M.
Sec. 17: N1/2NE1/4SE1/4SE1/4

The area described above contains 5.00 acres (title plat) in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the public investment in the existing buildings and other facilities at the White's Creek road maintenance complex.

Row River Trail Withdrawal

Federal Lands

T.20 S., R.2 W., W.M.
Sec. 30: M&B in Lots 3, 4, 6, DLC 40, DLC 42
Sec. 31: M&B in DLC 39
Sec. 32: M&B in Lots 1, 3, S1/2NE1/4, NE1/4NW1/4, DLC 38, DLC 39
Sec. 33: M&B in Lots 2, 6, 7, DLC 41, DLC 43, DLC 45
Sec. 34: M&B in DLC 43

T.20 S., R.3 W., W.M.
Sec. 25: M&B in DLC 74
Sec. 36: M&B in DLC 65, DLC 66, DLC 74

T.21 S., R.1 W., W.M.
Sec. 19: M&B in Lots 1, 2, 4, 5, SE1/4NW1/4, NE1/4SW1/4, DLC 37
Sec. 30: M&B in Lots 1-4, SE1/4SW1/4, DLC 37
Sec. 31: M&B in Lot 2 of Tract 38, NW1/4NE1/4, NE1/4NW1/4
Sec. 32: M&B in SW1/4

T.21 S., R.2 W., W.M.
Sec. 02: M&B in Lots 1, 2, DLC 44
Sec. 03: M&B in Lot 2, SE1/4NE1/4, DLC 40, DLC 44
Sec. 11: M&B in DLC 42, DLC 45
Sec. 13: M&B in DLC 42, DLC 43
Sec. 14: M&B in Lot 1, DLC 42
Sec. 24: M&B in Lots 1, 2

T.21 S., R.3 W., W.M.
Sec. 01: M&B in Lot 4, DLC 60

T.22 S., R.1 W., W.M.
Sec. 05: M&B in SW1/4NE1/4, SE1/4NW1/4 and Unnumbered Lots in NE1/4NE1/4, NW1/4NE1/4

The area described above contains 178.95 acres, more or less, in Lane County, Oregon.

Private Lands

T.21 S., R.1 W., W.M.
Sec. 31: M&B in SE1/4NE1/4
Sec. 32: M&B in SW1/4NW1/4

The area described above contains 16.76 acres, more or less, in Lane County, Oregon.

The withdrawal would withdraw the public lands acquired by donation (serial number OR 49776) and any of the private lands that may become public lands in the future from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the existing Row River Trail and associated recreational facilities and recreational facilities to be developed in the future.

OR 50856 Pending Pacific Coastline - Highway 101 Withdrawal

Federal Lands

T.18 S., R.12 W., W.M.
Sec. 02: Lot 1

The area described above contains 36.52 acres (title plat) in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect significant water quality, scenic, and recreational values.

West Eugene Wetlands Withdrawal

Federal Lands

T.17 S., R.4 W., W.M.

Sec. 27: M&B in DLC 40
Sec. 29: M&B in E1/2SW1/4, SE1/4SE1/4
Sec. 30: N1/2SE1/4
Sec. 32: M&B in E1/2E1/2E1/2NE1/4
Sec. 33: M&B in S1/2NE1/4, NW1/4
Sec. 34: M&B in DLC 40
Sec. 35: M&B in NW1/4NW1/4
Sec. 35: Lot 5, Block 2, Seneca Industrial Park

The area described above contains 359.27 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands acquired by purchase under serial numbers OR 23598, OR 48441, OR 48443, OR 48444, OR 48446, OR 48462, OR 48463, OR 48585, OR 48588, OR 48589, OR 48590, OR 49367, and OR 49375 from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect important wetland, botanical, wildlife and recreational values and to facilitate management of the lands as part of the West Eugene Wetlands Land and Water Conservation Fund Project under the West Eugene Wetlands Plan.

Lake Creek Recreation Site Addition Withdrawal

Federal Lands

T.16 S., R.7 W., W.M.

Sec. 20: Portion of SW1/4SW1/4 described as follows: Beginning at a point on the North line of the Southwest 1/4 of the Southwest 1/4 of Section 20, Township 16 South, Range 7 West of the Willamette Meridian, that is 430 feet East of the West line of said Section 20; thence South on a line parallel to and 430 feet distant from the West line of Section 20 a distance of 470 feet to the true point of beginning of the tract of land herein to be described; thence continue South on a line parallel to and 430 feet distant from the West line of Section 20 to a point on the South line of Section 20; thence West along the South line of Section 20 to the Southwest corner thereof; thence North along the West line of Section 20 to a point that is Westerly along a line parallel to and 470 feet South of the North line of the Southwest 1/4 of the Southwest 1/4 of said Section 20 from the true point of beginning; thence Easterly along a line parallel to and 470 feet South of the North line of the Southwest 1/4 of the Southwest 1/4 of said Section 20 a distance of 430 feet to the true point of beginning; ALSO, that portion of Lot 10 and the Southwest 1/4 of the Southwest 1/4 lying Northwest of the Westerly right-of-way line of Highway 36.

The area described above contains 19.39 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the

natural visual quality of the Lake Creek Recreation Site and existing and planned recreation and fish passage developments.

Cottage Grove Old Growth Environmental Education Area Withdrawal

Federal Lands

T.20 S., R.3 W., W.M.
Sec. 31: S1/2SW1/4

The area described above contains 80 acres, more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect the outstanding natural and educational values of the site, which receives considerable use by local schools and has potential for expanded educational and research use.

Low Elevation Headwaters of the McKenzie River Potential Area of Critical Environmental Concern Withdrawal

Federal Lands

T.16 S., R.3 E., W.M.
Sec. 21: S1/2
Sec. 27: SW1/4NE1/4, W1/2, SE1/4
Sec. 28: All
Sec. 29: Lots 1-4, N1/2, N1/2S1/2
Sec. 30: Lots 8, 11-19, SW1/4SE1/4
Sec. 31: NE1/4NE1/4, E1/2NW1/4NE1/4
Sec. 32: Lots 5-9, 15, SW1/4NE1/4, SE1/4NW1/4
Sec. 33: N1/2
Sec. 34: N1/2, NE1/4SE1/4

T.17 S., R.2 E., W.M.
Sec. 01: S1/2
Sec. 12: All

T.17 S., R.3 E., W.M.
Sec. 05: Lot 5 south of the north right-of-way line of Bonneville Power Administration right-of-way Ore 06100; S1/2NW1/4, SW1/4
Sec. 07: All
Sec. 08: NW1/4NE1/4, S1/2NE1/4, W1/2, SE1/4
Sec. 09: S1/2
Sec. 17: All
Sec. 18: Lots 1, 2, NE1/4, NE1/4NW1/4, E1/2SE1/4 lying east of Marten Creek Fork.

The area described above contains 7,418 acres (title plat), more or less, in Lane County, Oregon.

The withdrawal will withdraw the public lands from entry under the general land laws, including the mining laws, but not the mineral leasing laws, subject to valid existing rights. The purpose of the withdrawal is to protect water quality values in a "Tier 1" Key Watershed and populations and habitat of two candidate threatened and endangered species (bull trout and tailed frog).

Appendix M
Forest Genetics Program

Introduction

For thousands of years humans have selected and used the genetic variation that is naturally present in plants and animals. Genetic diversity is the foundation for plant and animal improvement programs. Modern crop and livestock improvement programs have substantially increased yields and productivity with selection and breeding. The need for food production and natural resources is increasing as the human population increases. Genetic improvement programs have and will continue to help meet these demands.

The genes in all organisms are the basis of their diversity. Ecosystems are dynamic communities that change over time and genetic diversity is a key component. Broad genetic diversity is considered to be an asset because variability is a buffer which allows a species to adjust to change. Problems can occur when genetic diversity is too narrow. Genetic uniformity decreases resilience to change and increases the potential for problems due to pests and diseases. Species with wide tolerances can adapt to changes, while those with narrow tolerances can be detrimentally impacted.

Environmental conditions influence the expression of the genetic code. The physical characteristics of an organism are dependent on the interaction of its genes with the environment. The amount and pattern of genetic diversity in a species develops in part as an organism responds to the environment. This adaptation occurs over a long period of time. Each species develops a unique genetic structure. Genetic studies are conducted to describe and quantify the amount of genetic variation within a species. This information is necessary to direct management and to help guide operational projects.

Genetic diversity can be described as a natural resource. Management and conservation of genetic resources is vital for many reasons. Genetic improvement programs are a great benefit to society and genetic materials have a large economic value. Genetic material from wild stock is an important source of variability that can be infused into existing improved varieties. Conserving genetic diversity maintains options for future needs i.e. many medicinal compounds are derived from plants and there is the potential for undiscovered uses. Conserving genetic diversity for a species allows evolutionary processes to continue within the conditions of the natural environment.

Tree improvement is the application of genetic principles and methods to forest trees. Many of the desirable traits in trees can be enhanced with tree improvement. The Bureau of Land Management has participated in cooperative tree improvement programs for forest trees in the Pacific Northwest since the mid 1950s. The emphasis to date has been in improvement of growth and disease resistance. Ecosystem management principles are changing the focus of the tree improvement program. The existing tree improvement and seed orchard programs will be integrated into a broader based forest genetics program. Genetic diversity issues for many organisms will likely become more important in the future. A forest genetics program is consistent with ecosystem management principles and can be expanded to cover the genetics of other plants and animals.

This appendix describes the objectives of the forest genetics program, the present status, and proposed direction. Readers who are interested in technical details of the tree improvement program are referred to the BLM Western Oregon Tree Improvement Plan (1987), and the BLM Eugene District Tree Improvement Plan (1994). Additional information on genetic resource issues can be found in *The Value of Genetic Resources* (Oldfield, 1984), and *Genetics and Conservation of Rare Plants* (Falk, Holsinger, 1991).

Program Objectives

The objectives of the forest genetics program underlay a broad spectrum of land management activities. The biological foundation of ecosystem management rests upon a clear understanding of the genetic diversity

present within the system. The following objectives are broadly defined and include tree improvement, gene management, and gene conservation activities:

Provide for seed production as needed for planting species on BLM lands. Develop seed collection and seed deployment guidelines as needed.

Develop genetically improved materials as needed to meet BLM's resource management objectives.

Maintain and restore the genetic diversity within managed forest stands.

Analyze needs and implement gene conservation strategies as appropriate.

Collect information on genetic variation from important species.

Contribute to the development of genetic information needed for landscape analysis, ecological assessments, research studies,and ecosystem management projects.

Maintain flexibility within the program so that information fulfills the current needs and anticipates future needs.

Status of the Existing Program

The BLM tree improvement program has generated a substantial and important genetic information base for several conifer species. The data is significant to ecosystem management because it describes the nature and extent of genetic variation present for traits of the species.

Tree improvement programs function at a landscape level. Genetic diversity is continuous across the landscape and tree improvement programs are implemented at this level. Each program is a small ecologically similar area called a breeding unit. Most tree improvement programs are cooperatives with BLM and adjacent land owners. A cooperative structure is beneficial because it greatly increases the number of trees in the genetic base and the trees are located across a broader geographic area. Program costs are shared among cooperators, which is more efficient. BLM is cooperating in more than 50 breeding units, which include several million acres of forest land in Western Oregon.

The following accomplishments summarize the status of the program:

Several conifer species (Douglas-fir, western white pine, sugar pine) have been selected for genetically controlled characteristics such as growth rate, tree form, and resistance to disease.

Field tests have been established using progeny of the selected trees. These progeny test sites have been measured at regular intervals.

Seed orchards have been established using parent trees. The orchards produce locally adapted seed for several major species (Douglas-fir, western hemlock, western red cedar, ponderosa pine, grand fir, incense cedar).

Each year improved seed is sown for replanting a portion of the harvested forest acres.

The seed orchards are managed for seed production. Stimulation techniques are part of the management to encourage cone production. Trees that have slow growth in field tests or show undesirable characteristics are removed from the orchard. This practice is known as "roguing".

Second generation programs to manage gene resources and increase improvement have been initiated in some breeding units. Selection and breeding work is underway.

Facilities for cone and seed processing and greenhouses for growing custom tailored lots of many species are located at the seed orchards.

Proposed Program Direction

The future forest genetics program will be more complex under ecosystem management than under the previous management plans. Improvement of growth and disease resistance will continue as an important component of the forest genetics program. Gene conservation and gene resources management issues will be emphasized to a greater degree. Gene conservation consists of specific actions to conserve the genetic variation of a species. The purpose is to maintain the range of natural diversity within the species. Gene management integrates genetic principals into resource management actions. Ecosystems are complex and genetic diversity is important for all organisms. Genetic principles should be considered when planning and implementing resource management projects so that genetic diversity is maintained and enhanced.

The following is a summary of the direction for the forest genetics program:

- Progeny test sites will be maintained and measurements of growth and other characteristics will continue. Long-term management plans for the sites will be developed.

- Seed orchards will be maintained and managed to produce seed as needed for ecosystem management projects.

- Improved stock will be planted on a portion of the harvested acres.

- Tree improvement programs have emphasized cooperative efforts for operational programs and research studies with state, private, and other government agencies. These partnerships will continue.

- Genetic expertise including genetically appropriate guidelines will be provided for ecosystem management implementation.

- A forest genetics plan will be prepared. It will include a strategy for gene conservation, maintenance of genetic diversity, and definition of a monitoring baseline to quantify genetic variation.

Ecosystem management concepts have challenged the forest genetics program with more issues than was done by the previous forest management plans. The former program must be meshed with the additional needs defined by ecosystem management so previous gains are maintained and future needs are addressed. Policy and land use allocations will likely change over time. A flexible broad based forest genetics program is the best option to accommodate changing conditions. Tree improvement, gene management, and gene conservation objectives share a common genetic basis. Each aspect of the program can compliment the others. All aspects should include provisions for maintaining and enhancing genetic diversity. Tree improvement programs are intensive management practices that can achieve higher productivity and help meet the demand for wood products. Genetic information is needed to support and guide ecosystem management projects. Conservation of genetic diversity is vital to ecosystem health and stability.

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R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Junction City

Eugene

Springfield

Veneta

Creswell

Cottage Grove

Florence

N

SCALE

OREGON

LOCATION

Legend

- Interstate Highway
- US Highway
- State Highway
- General Forest Management Area
- Connectivity/Diversity Block
- Late-Successional Reserve
- Adaptive Management Area
- District Designated Reserve
- Urban Area

Elevation in Feet

10000
6200
5400
4600
3800
3000
2200
1400
800
400
250
Sea Level

MAP 1: LAND USE ALLOCATION

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
1995 RMP

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Junction City

Eugene

Springfield

Veneta

Florence

Creswell

Cottage Grove

N

SCALE

Legend

- No Surface Occupancy
- Controlled Surface Use Stipulation
- Powersite Stipulation
- Timing Stipulation
- Open - Standard Requirements
- Interstate Highway
- US Highway
- State Highway
- City/Urban Areas
- District Office

RESTRICTIONS NOT SHOWN

CLOSED: Lands Within City Limits (oil and gas only)

NO SURFACE OCCUPANCY STIPULATION:

Fall Creek Fern Ridge and Lookout Point Reservoirs
Oregon Islands National Wildlife Refuge
Riparian Reserves
Dorena Seed Orchard
Walton and Whites Creek Maintenance Sites

SPECIAL STATUS SPECIES STIPULATION:

All District Lands

OREGON

LOCATION

Notes: This product generated through digital or automated means by district office.

MAP 7 : MINERAL LEASING RESTRICTIONS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT
1995 RMP

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

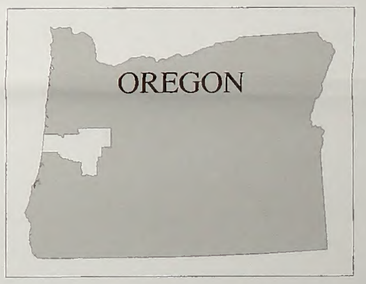
T.14S.
T.15S.
T.16S.
T.17S.
T.18S.
T.19S.
T.20S.
T.21S.
T.22S.
T.23S.

Junction City
Eugene
Springfield
Veneta
Florence
Creswell
Cottage Grove

N

SCALE

LOCATION



Legend

- Closed
- Open with Additional Restrictions
- Open - Standard Requirements
- Interstate Highway
- US Highway
- State Highway
- City/Urban Areas
- District Office

RESTRICTIONS NOT SHOWN

CLOSED: Fall Creek, Fern Ridge, and Lookout Point Reservoirs
Oregon Islands National Wildlife Refuge
Dorena Seed Orchard
Walton Maintenance Site
Other Lands with Acquired Land Status

OPEN WITH ADDITIONAL RESTRICTIONS:
Progeny Test Sites
Regional Forest Nutritional Study Areas
Lands with Threatened and Endangered Species

Note: This product generated through digital or automated means by district office.

MAP 8: LOCATABLE MINERAL RESTRICTIONS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT
1995 RMP

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W. R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

T.14S.
T.15S.
T.16S.
T.17S.
T.18S.
T.19S.
T.20S.
T.21S.
T.22S.
T.23S.

Junction City
Eugene
Springfield
Veneta
Florence
Creswell
Cottage Grove

N

SCALE

LOCATION

OREGON

Legend

- Closed
- Open with Additional Restrictions
- Open - Standard Requirements
- Interstate Highway
- US Highway
- State Highway
- City/Urban Areas
- District Office

RESTRICTIONS NOT SHOWN

CLOSED: Fall Creek, Fern Ridge, and Lookout Point Reservoirs
Oregon Islands National Wildlife Refuge
Danebo Office Site
Walton and Whites Creek Maintenance Sites
Progeny Test Sites
Regional Forest Study Installations
R&PP Classifications
Dorena Seed Orchard

OPEN WITH ADDITIONAL RESTRICTIONS:
Riparian Reserves
Lands with Special Status Species

MAP 9: SALABLE MINERAL RESTRICTIONS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT
1995 RMP

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Pacific Ocean

Siuslaw River

Lake Creek

Siuslaw River

Willamette River

McKenzie River

McKenzie River

Middle Fork Willamette River

Willamette River

Coast Fork Willamette River

EUGENE

SPRINGFIELD

COTTAGE GROVE

I-5

99

126

36

58

101

N

5 0 5 10 15 miles

10 0 10 20 km

SCALE

OREGON

LOCATION MAP

LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- OREGON & CALIFORNIA (O&C) LANDS
- PUBLIC DOMAIN LANDS
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM

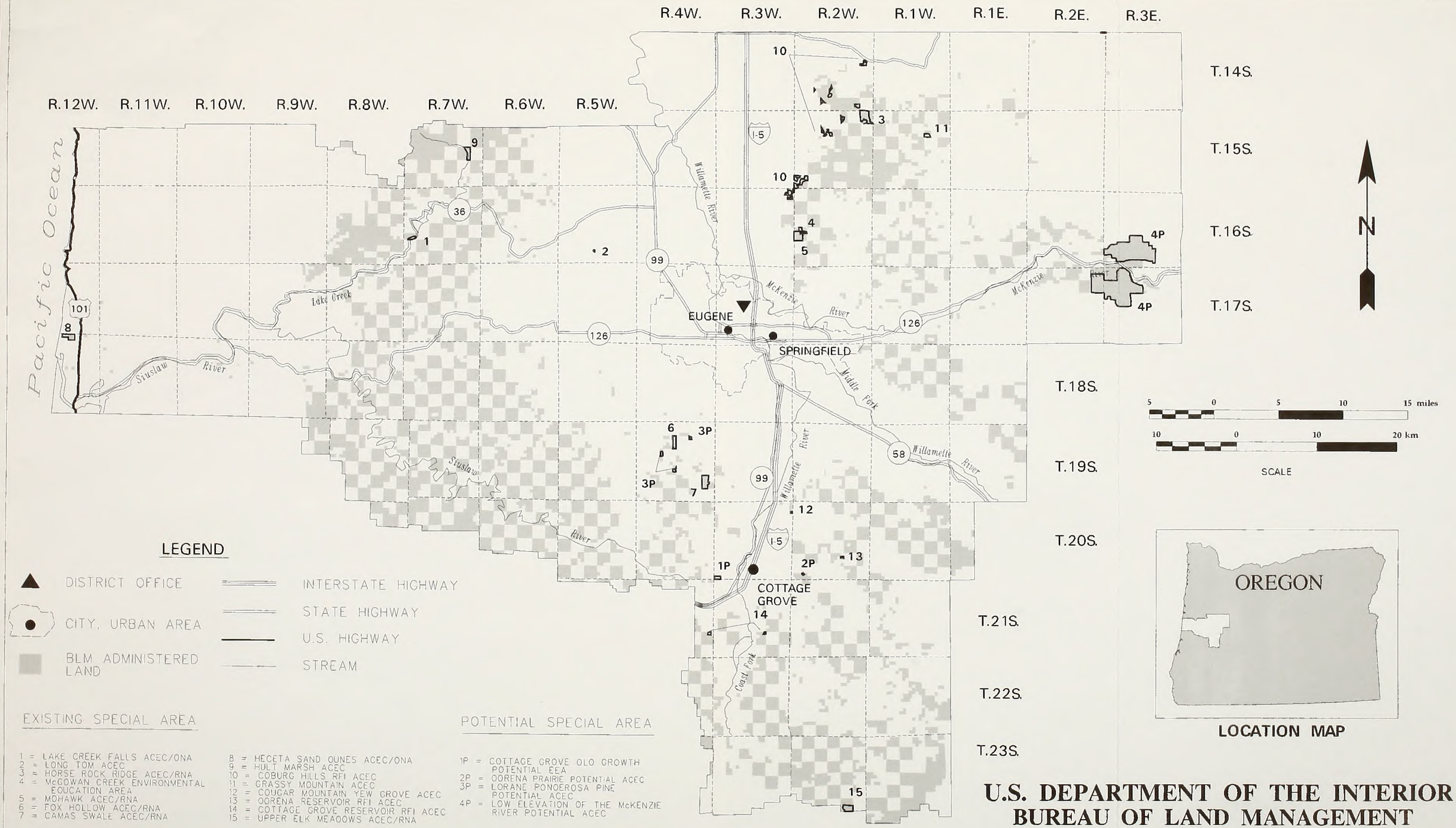
The Bureau of Land Management cannot assure the reliability or suitability of this information for a particular purpose. Original data was compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Note: This product generated through digital or automated means by district office.

MAP 2: LAND STATUS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
1995 RMP



LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- BLM ADMINISTERED LAND
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM

EXISTING SPECIAL AREA

1 = LAKE CREEK FALLS ACEC/ONA
2 = LONG TOM ACEC
3 = HORSE ROCK RIDGE ACEC/RNA
4 = McGOWAN CREEK ENVIRONMENTAL EDUCATION AREA
5 = MOHAWK ACEC/RNA
6 = FOX HOLLOW ACEC/RNA
7 = CAMAS SWALE ACEC/RNA
8 = HECETA SAND DUNES ACEC/ONA
9 = HULT MARSH ACEC
10 = COBURG HILLS RFI ACEC
11 = GRASSY MOUNTAIN ACEC
12 = COUGAR MOUNTAIN YEW GROVE ACEC
13 = OORENA RESERVOIR RFI ACEC
14 = COTTAGE GROVE RESERVOIR RFI ACEC
15 = UPPER ELK MEADOWS ACEC/RNA

POTENTIAL SPECIAL AREA

1P = COTTAGE GROVE OLD GROWTH POTENTIAL EEA
2P = OORENA PRAIRIE POTENTIAL ACEC
3P = LORANE PONDEROSA PINE POTENTIAL ACEC
4P = LOW ELEVATION OF THE McKENZIE RIVER POTENTIAL ACEC

LOCATION MAP

Note: This product generated through digital or automated means by district office.

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EUGENE DISTRICT
1995 RMP

MAP 3: EXISTING AND POTENTIAL SPECIAL AREAS

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Pacific Ocean

101

36

99

126

I-5

58

Willamette River

Lake Creek

Siuslaw River

McKenzie River

Middle Fork

Coast Fork

EUGENE

SPRINGFIELD

COTTAGE GROVE

N

5 0 5 10 15 miles

10 0 10 20 km

SCALE

LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- BLM ADMINISTERED LAND
- SUITABLE RECREATIONAL RIVER SEGMENTS
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM

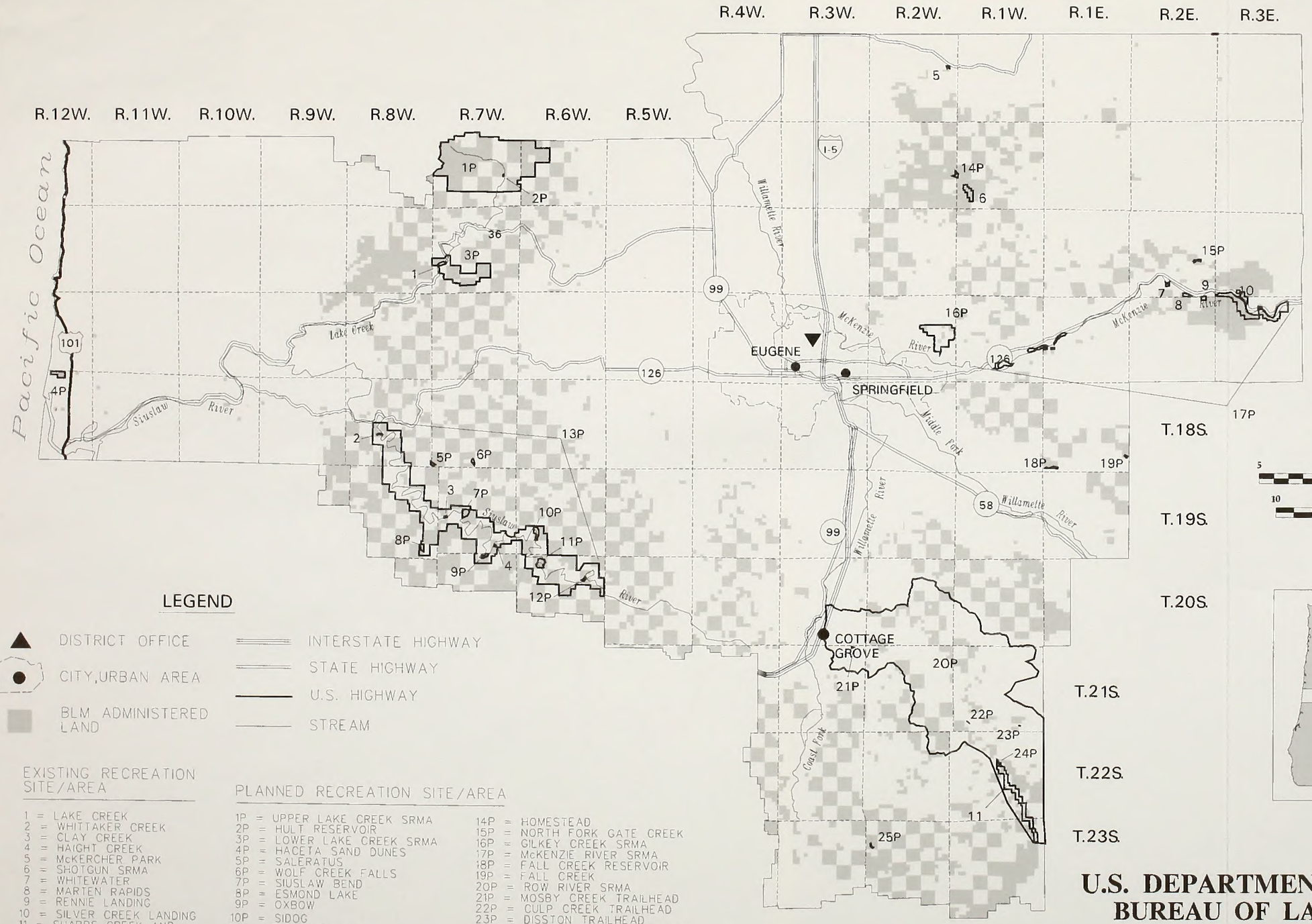
OREGON

LOCATION MAP

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
1995 RMP

MAP 4: SUITABLE RECREATIONAL RIVERS



LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- BLM ADMINISTERED LAND
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM

EXISTING RECREATION SITE/AREA

1 = LAKE CREEK
2 = WHITTAKER CREEK
3 = CLAY CREEK
4 = HAIGHT CREEK
5 = McKERCHER PARK
6 = SHOTGUN SRMA
7 = WHITEWATER
8 = MARTEN RAPIDS
9 = RENNIE LANDING
10 = SILVER CREEK LANDING
11 = SHARPS CREEK AND PROPOSED RECREATION MINING AREA

PLANNED RECREATION SITE/AREA

1P = UPPER LAKE CREEK SRMA
2P = HULT RESERVOIR
3P = LOWER LAKE CREEK SRMA
4P = HACETA SAND DUNES
5P = SALERATUS
6P = WOLF CREEK FALLS
7P = SIUSLAW BEND
8P = ESMOND LAKE
9P = OXBOW
10P = SIDOG
11P = FRYING PAN
12P = DOE CREEK
13P = SIUSLAW RIVER SRMA
14P = HOMESTEAD
15P = NORTH FORK GATE CREEK
16P = GILKEY CREEK SRMA
17P = McKENZIE RIVER SRMA
18P = FALL CREEK RESERVOIR
19P = FALL CREEK
20P = ROW RIVER SRMA
21P = MOSBY CREEK TRAILHEAD
22P = CULP CREEK TRAILHEAD
23P = DISSTON TRAILHEAD
24P = SHARPS CREEK EXPANSION
25P = EDWARDS CREEK

Note: This product generated through digital or automated means by district office.

MAP 5: EXISTING AND PLANNED RECREATION SITES

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
1995 RMP

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Pacific Ocean

Lake Creek

Siuslaw River

Willamette River

McKenzie River

Middle Fork

Coast Fork

EUGENE

SPRINGFIELD

COTTAGE GROVE

I-5

36

99

101

126

58

Z1

Z2

Z3

N

5 0 5 10 15 miles

10 0 10 20 km

SCALE

LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- BLM ADMINISTERED LAND
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM

Z1 ZONE 1

Z2 ZONE 2

Z3 ZONE 3

OREGON

LOCATION MAP

The Bureau of Land Management cannot assure the reliability or suitability of this information for a particular purpose. Original data was compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Note: This product generated through digital or automated means by district office.

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BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
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MAP 10: LAND TENURE ZONES

R.4W. R.3W. R.2W. R.1W. R.1E. R.2E. R.3E.

R.12W. R.11W. R.10W. R.9W. R.8W. R.7W. R.6W. R.5W.

T.14S.

T.15S.

T.16S.

T.17S.

T.18S.

T.19S.

T.20S.

T.21S.

T.22S.

T.23S.

Pacific Ocean

Siuslaw River

Lake Creek

Willamette River

McKenzie River

Middle Fork

Coast Fork

Row River

EUGENE

SPRINGFIELD

COTTAGE GROVE

I-5

99

126

36

58

101

N

5 0 5 10 15 miles

10 0 10 20 km

SCALE

OREGON

LOCATION MAP

LEGEND

- DISTRICT OFFICE
- CITY, URBAN AREA
- BLM ADMINISTERED LAND
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- U.S. HIGHWAY
- STREAM
- EXISTING AND PLANNED COMMUNICATION SITES
- RIGHT OF WAY CORRIDORS
- EXCLUSION AREAS
- AVOIDANCE AREAS

MAP 11: COMMUNICATION SITES AND RIGHT OF WAY CORRIDORS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT
1995 RMP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE
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Eugene, Oregon 97408

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