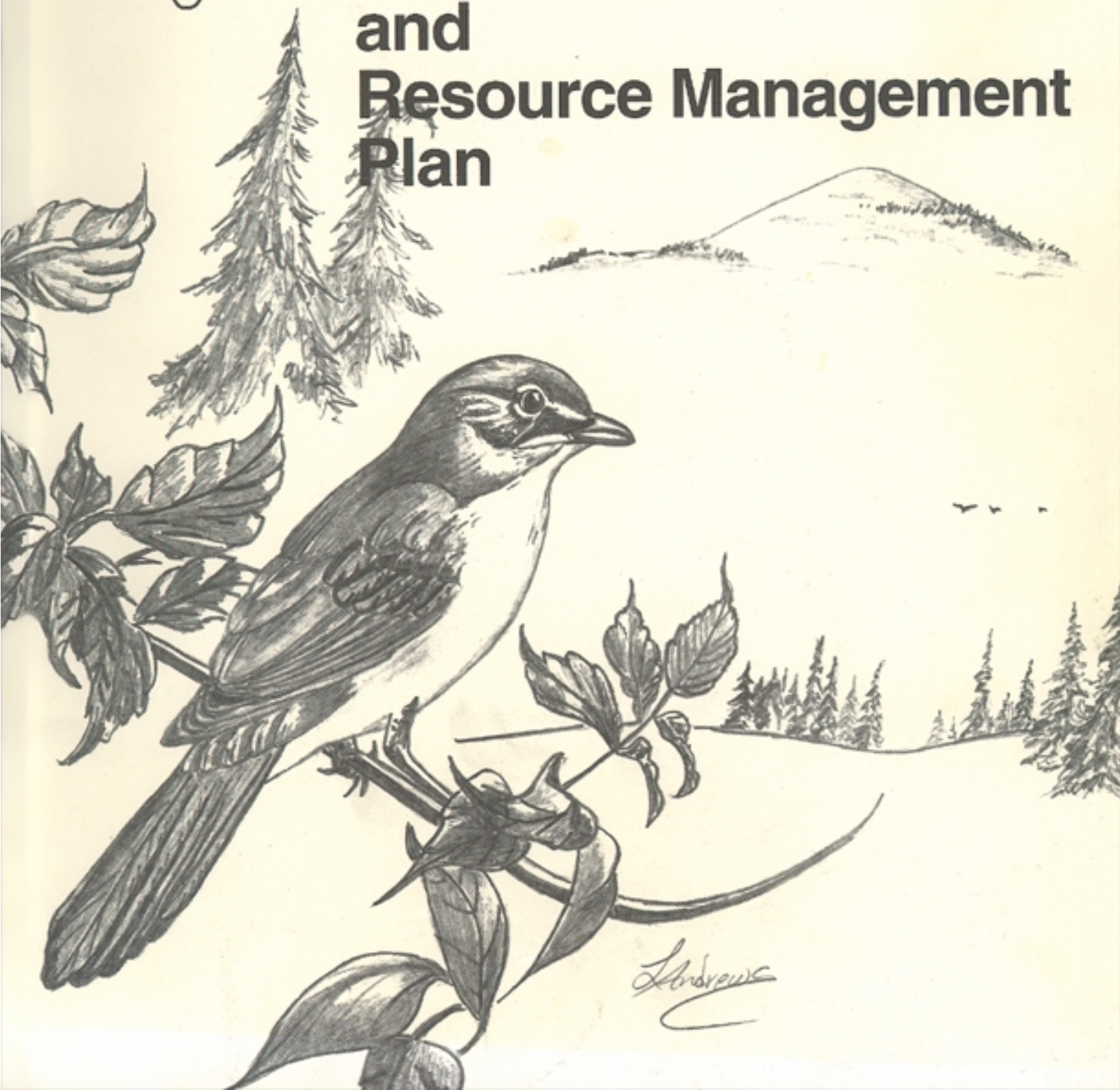
U.S. Department of the Interior
Bureau of Land Management

Roseburg District Office
777 N.W. Garden Valley Boulevard
Roseburg, Oregon 97470

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-95/020+1792

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Roseburg District Office
777 NW Garden Valley Boulevard
Roseburg, Oregon 97470

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

Dear Reader:

This is a consolidated document which includes both the Record of Decision (ROD) and the Roseburg District Resource Management Plan (RMP), which was approved by the Oregon/Washington State Director, on June 2, 1995. The ROD approves the Bureau of Land Management's (BLM) decisions for managing 425,588 acres in Douglas county.

The Record of Decision (ROD) was prepared in conformance with Title 40, Code of Federal Regulations, part 1505.2, which requires a concise document which links the manager's decision to the analysis presented in the Roseburg District final environmental impact statement (FEIS), dated October 1994. The ROD shows how environmental impacts and other factors were considered in the decision making process. The ROD documents approval and adoption of the proposed Resource Management Plan, as described in the Roseburg District Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS). Minor differences from the FEIS, Volume I, Chapter 2 of the PRMP/FEIS, 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 that there were eight valid protests on the Roseburg District Proposed RMP/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 Roseburg District Proposed Resource Management Plan. 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 those individuals and groups who were on the mailing list for the Roseburg District Proposed RMP/FEIS. The full supporting record for the approved Roseburg RMP is also available for inspection in the 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 Douglas County library, at Jackson St and Diamond Lake Boulevard, Roseburg, 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, District maps will be developed to provide more detailed information for off highway vehicle management designations and mineral and energy development restrictions 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,

ACTING

Cary Osterhaus
District Manager

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

ROSEBURG DISTRICT

RECORD OF DECISION
and
RESOURCE MANAGEMENT PLAN

Prepared by
Roseburg District Office

June 1995

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Record of Decision

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Record of Decision For The Roseburg District Resource Management Plan

Prepared By Bureau of Land Management, Roseburg District, Roseburg, Oregon

Introduction

In this Record of Decision we adopt and approve for immediate implementation the following Roseburg District Resource Management Plan (RMP), based on the combination of this office's August 1992 Draft Environmental Impact Statement (DEIS) and the October 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 its associated 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 425,588 acres of Federal land and 1,717 acres of reserved mineral estate administered by Bureau of Land Management in the Roseburg District, which is primarily in Douglas County, Oregon.

The approved resource management plan responds to the need for a healthy forest ecosystem with habitat that will contribute toward and 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 Areas, Connectivity/Diversity Blocks, and General Forest Management Areas. An Aquatic Conservation Strategy will be applied to all lands and waters under BLM administration. Major land and resource allocations of the approved Resource Management Plan are displayed in Table R-1, which is located at the end of this Record of Decision.

Alternatives Considered And Rationale For Decision

Seven alternatives for management of BLM-administered lands and resources in the Roseburg District were analyzed in the final EIS, and nine other alternatives in the final SEIS.

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

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 lands to community stability, consistent with a variety of other land uses. Public domain lands with non-timber values and uses of greater importance than timber production would be managed primarily for those non-timber 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 non-motorized 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, non-motorized recreation activities and scenic resources.

The Proposed Resource Management Plan: This alternative would emphasize ecosystem management. It would also respond to public

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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.

Rationale

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 Roseburg District PRMP/EIS, on p. 1-3:

> The need for forest habitat is the need for a healthy forest ecosystem with habitat that will support populations of native species and includes protection for riparian areas and waters. This need was reflected by President Clinton at the April 2, 1993, Forest Conference in Portland, Oregon.
>
> The need for forest products from forest ecosystems is 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. This need also was reflected 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 adopt 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-administered 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-managed 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/EIS and their predicted environmental, economic, and social consequences, and the risks and safeguards inherent in them. PRMP Alternative in the PRMP/EIS 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 select PRMP Alternative as the management direction that best responds to the purpose and need for the proposed action as expressed in the PRMP/EIS.

We base our conclusion on a number of factors. Although management under Alternatives A, B, or the no-action alternative would provide higher levels of timber supply than the PRMP Alternative, those alternatives 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/EIS, pp. 4-50 through 4-66. 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/EIS pp. 4-17 through 4-21.

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, we think it is unlikely that Alternatives A and B and the No-Action Alternative would satisfy the requirements of the Endangered Species Act.

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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 PRMP/EIS. Based upon the PRMP/EIS and all of the information in the record, we have determined that 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 uses, 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, PRMP Alternative offers one advantage that the other alternatives do not -- its 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, which may be used to develop and test new management approaches to achieve the desired ecological, economic, and other social objectives. This Adaptive Management Area offers the opportunity for creative, voluntary participation in forest management activities. 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. Our 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 (which in the short-term protects more old-growth than the PRMP Alternative), the PRMP Alternative may provide a better connected network of old-growth forests in the future. Furthermore, when compared to Alternative E, the PRMP Alternative provides over twice as much timber harvest to contribute to the long-term stability of the local and regional economies. (See Table R-2, Summary of Environmental Consequences, Comparison of Alternatives.)

The Environmentally Preferable Alternative

Environmental preferability is judged using the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The 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 which 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 Section 101 establishes the following goals:

- Fulfills the responsibility of this generation as trustee of the environment for succeeding generations (NEPA §101(b)(1)),
- Assures for all Americans productive and aesthetically and culturally pleasing surroundings (NEPA §101(b)(2)),
- Attains the widest range of beneficial uses of the environment without degradation or other undesirable and unintended consequences (NEPA §101(b)(3)),
- Preserves important natural aspects of our national heritage and maintains an environment which supports diversity and variety of individual choice (NEPA §101(b)(4)),
- Achieves a balance between population and resource use, which permits high standards of living and a wide sharing of life's amenities (NEPA §101(b)(5)), and
- Enhances the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA §101(b)(6)).

Alternative E would allow for the smallest amount of directly human-induced effects on the physical environment. It would exclude timber management activity from all old-growth forest stands, preserving them from human management actions. It would set aside more existing older forest acres than any other alternative -- 115,500 acres. Alternative E would reserve for retention and development of older forest 343,700 acres of land, the most of any of the alternatives. (See PRMP/EIS, Table 2-1, p. 2-111) Alternative E has more positive estimated effects on

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wildlife habitat than any other alternative (See PRMP/EIS, Chapter 4). Based on the probable sale quantity estimates, Bureau of Land Management forests in the planning area would produce about 3.2 million cubic feet (i.e. 18 MMBF) of timber annually under Alternative E. (See PRMP/EIS, Table 2-1, p. 2-113). Based on these factors, we conclude that Alternative E 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, Late-Successional Reserve assessments, Adaptive Management Area plans, and further environmental analysis are completed, 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 on a decision-by-decision basis.

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 be held by other Federal, State, or local government agencies or by private individuals or companies. Valid existing rights may pertain to mining claims, mineral or energy leases, rights-of-way, 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; and 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 Roseburg District RMP planning process was published in the Federal Register in September 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 Roseburg District planning effort.

In February 1991, copies of the Roseburg District summary of the analysis of the management area

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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 five 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 a 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 approximately 1200 individuals, organizations, and agencies. Over 400 persons attended the meetings held by the Roseburg District to help explain the RMP. A total of 1348 comment letters were received by the end of the 120 day 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.

In December 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 over 1300 individuals, organizations, and agencies. A total of 14 letters were received by the Roseburg 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 Indian tribes.

The official period to protest the proposed plan closed on December 27, 1994. A total of eight valid protests on the proposed Roseburg District PRMP were received, reviewed, and resolved by the Director. As a result of the protests and 14 comment letters, a number of non-substantive 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.

Recommendation

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

David R. Baker ACTING — 5/24/95

Cary Osterhaus — Date
District Manager, Roseburg District

State Director Approval

I approve the Roseburg District Resource Management Plan as recommended and hereby declare that, effective October 1, 1994, the annual productive capacity (allowable harvest level) of the South Umpqua and Douglas Master Units is 7.0 million cubic feet.

This document meets the requirements for a Record of Decision as provided in 40 CFR 1505.2.

Elaine Zielinski — June 2, 1995

Elaine Zielinski — Date
State Director, Oregon/Washington
Bureau of Land Management

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

Major Land Use Allocations	Acres	Percent
Late-Successional Reserves	186,423	44
Adaptive Management Area	19,260	2
Riparian Reserves	113,500	23
General Forest Management Area	54,900	13
Connectivity/Diversity Blocks	26,900	6
Total	423,928	100

Water Quality and Riparian Zones	Acres
Riparian Reserves	113,500

Old Growth and Mature Forest Habitat

Manage 44% of the land as Late-Successional Reserves
Manage 23% of the land as Riparian Reserves
Manage 6% of the land as Connectivity/Diversity Blocks

Acres managed for retention and development of older forests:	305,500
Acres managed for maintenance of older forest characteristics:	28,700
Older forest retained end of first decade:	104,700

Timber	Acres
Forest Management Allocations (acres)	
Intensive	61,200
Restricted	28,700
Woodlands	0
Enhancement of other uses or not available	305,500
Practices (assumed average annual acres for first decade)	
Regeneration harvest	1,190
Commercial thinning/density management harvest	84/66
Brushfield/hardwood conversion	15
Site preparation, prescribed fire	840
Site preparation, other	50
Planting, regular stock	290
Planting, genetic stock	1,140
Stand maintenance/protection	830
Stand release/precommercial thin	390
Fertilization	1,140
New road construction(miles/acres)	6.5/35
Harvest volume (million cubic feet, mmcf)	7.0
Harvest volume (million board feet, mmbf)	45
Harvest volume for enhancement of other resources other wood, mmcf	0.7

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Table R-1. Summary of Land Allocations and Management Actions/Direction (cont.)

Major Land Use Allocations	Acres	Percent
Special Status Species including threatened and endangered species habitat		**Acres**
Manage habitats of federal canditate, state-listed, and bureau sensitive species on all BLM-administered lands		
Acres managed for all Category 1 and 2 Federal Candidate, State Listed, and Bureau Sensitive species and animals		423,928
Wildlife (including fisheries) Habitat		
Special habitat buffers (feet)		100-200
Fish habitat improvement (miles)		25
Special Areas		**Number/Acres**
Existing special areas		6/7674
New special areas		4/2649
Total special areas		10/10,323
Recreation Resources		
Recreation sites		
Existing (#sites/acres)		12/1136
New (#sites/acres)		17/173
Trails maintained		
Existing (#trails/acres)		6/14
New (#trails/acres)		13/35
Special Recreation Management Areas		
Existing (#/acres)		1/1620
New (#/acres)		2/3950
Backcountry Byways		
Existing (#/miles)		3/34
New (#/miles)		3/70
Acres open to off-highway vehicle use		0
Acres limited off-highway vehicle use		423,422
Acres closed to off-highway vehicle use		2,166
Wild and Scenic Rivers		
No rivers found suitable for designation as recreational, scenic or wild.		

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Table R-1. Summary of Land Allocations and Management Actions/Direction (cont.)

Major Land Use Allocations	Acres	Percent
Visual Resources		**Acres**
Manage as inventoried lands adjacent to recreation sites, state and federal highways, scenic waterways and rivers designated wild and scenic, available forest lands where federal ownership consists of more than half the viewshed and areas of critical environmental concern/research natural areas. Manage rural interface areas as VRM III as a minimum. Manage all other forest lands as VRM IV		
Acres managed as VRM Class I		28
Acres managed as VRM Class II		18,045
Acres managed as VRM Class III		4,385
Acres managed as VRM Class IV		396,546
Land Tenure		
Exchanges or acquisitions would be made to benefit any of the resources managed.		
Acres identified for retention, Zone 1		35,930
Acres potentially eligible for exchange only, Zone 2		380,989
Acres potentially eligible for sale or exchange, Zone 3		13,352
Rights-of-way		**Acres**
Rights-of-way exclusion areas		1577
Energy and Minerals Resources		**Acres**
Acres available for oil and gas and geothermal leasing		421,062
Acres closed to oil and gas and geothermal leasing		28
Acres open to mining claim location and operation		414,323
Acres closed to mining location		5,050
Rural Interface Areas		**Acres**
Acres considered for alternative management practices		8,522
Acres where clearcutting, herbicide spraying, and prescribed burning excluded		8,522

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Table R-2. Summary of Environmental Consequences, Comparison of Alternatives

Effects	RMP	DRMP PA	No Action	Alternatives A	B	C	D	E
Air Quality								
Tones of fuel burned annually in prescribed fires, 10 years	29,600	80,100	60,100	60,100	60,100	80,100	30,300	10,800
Biological Diversity (after 10 years)								
Mature forest	79,100	66,700	79,600	85,700	83,700	79,800	84,000	85,300
Old-growth forest	126,500	91,700	42,400	34,700	44,600	106,900	102,600	115,600
After 100 years (acres)								
Mature forest	152,000	127,200	NA	16,000	26,800	167,900	78,600	151,200
Old-growth forest	156,300	99,500	38,900	22,500	46,037	147,086	116,000	179,900
Dominant Woodpecker Population (% of potential, 10 years)	54	52	38	35	38	58	54	57
Elk Habitat (10 years)								
No. of habitat areas improving	9	6	0	0	2	1	6	7
No. of habitat areas unchanged	9	10	0	0	0	15	11	14
No. of habitat areas declining	3	5	21	21	19	5	4	0
Threatened and Endangered Species								
Bald eagle existing and potential nest sites protected	6	6	6	6	6	6	6	6
Columbian White-tailed Deer managed acres	12,761	12,761	12,761	12,761	12,761	12,761	12,761	12,761
Peregrine Falcon potential nesting cliffs protected	5	5	5	5	5	5	5	5
Northern Spotted Owl suitable habitat acres								
(10 years)	190,000	174,000	131,800	130,000	139,000	173,000	190,000	208,000
(100 years)	333,000	177,000	79,000	32,000	69,000	372,000	179,000	317,000

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Table R-2. Summary of Environmental Consequences, Comparison of Alternatives (continued)

Effects	RMP	DRMP PA	No Action	Alternatives A	B	C	D	E
Wild and Scenic Rivers (Canton Creek and Smith River study river segments, 10 years) Outstandingly remarkable value, Fish; +,-,0								
Visual Resources, 10 years; +,-,0	0	0	0	0	0	0	0	0
Inventoried VRM Class I	0	0	0	0	0	0	0	+
Inventoried VRM Class II	0	0	-	-	-	0	+	+
Inventoried VRM Class III	+	+	-	-	-	+	+	+
Inventoried VRM Class IV	+	+	0	0	0	+	+	NA
Recreation Use (capability to meet 10-year demand)								
Off-road travel (ATV and 4x4)	No	No	Yes	Yes	Yes	Yes	No	No
Nonmotorized travel	Yes	Yes	No	No	No	No	Yes	Yes
Camping	Yes	Yes	No	No	No	No	Yes	Yes
Picnicking, studying nature, etc.	Yes	Yes	No	No	No	No	Yes	Yes
Boating	Yes	Yes	No	No	No	Yes	Yes	Yes
Swimming, general waterplay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Areas closed to OHV use	2,166	15,131	10,465	10,465	12,901	14,200	15,131	15,131
Socioeconomic Conditions (10 years)								
Estimated dependent personal income millions (1989 dollars)	9,333	NE	44,843	53,439	49,670	14,391	16,702	4,207
Estimated dependent employment	544	NE	2,316	2,755	2,550	819	877	248
Projected O&C payments to counties attributed to timber harvest in Western Oregon	$25,771,000	NE	$129,958,000	$169,418,000	$154,190,000	$48,107,000	$54,145,000	$39,693,000

NE = No estimate

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Resource Management Plan

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The Planning Area

The Roseburg District Resource Management Plan describes management of 425,588 acres of land in Oregon administered by the U.S. Department of the Interior, Bureau of Land Management's (BLM) Roseburg District. Within the planning area there are also 1,717 acres of nonfederal land with federal subsurface mineral estate administered by BLM (see Appendix J, Acreage Standards for the RMP).

The land is located in western Oregon as shown on Map 1. The portions of the planning area where BLM-administered lands lie are in the western foothills of the Cascade Range, the Oregon Coast Range, and Klamath Mountains. They are predominately forested with stands of Douglas-fir mixed conifer, and drain into the Umpqua River or a number of different coastal rivers. Population is centered in and near Roseburg.

Purpose and Need

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), the Resource Management Plan responds to dual needs: the need for forest habitat and the need for forest products.

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

The need for forest products from forest ecosystems is 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. This need also was reflected by President Clinton at the Forest Conference.

The Resource Management Plan (RMP) identified in this document 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 consequences of alternatives.
- Legal mandates of Federal laws and executive orders.
- Decisions 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 (hereafter referred to as the SEIS ROD).
- Requirements of Bureau policy.

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

The management of the Oregon and California Railroad (O&C) lands is governed by a variety of statutes, including the O&C Lands Act, Forest Land Policy and Management Act, 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, informed 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 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 Endangered Species Act directs the Secretary and all federal

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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 which endangered and threatened species depend upon. 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 Endangered Species Act. 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 that 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 will help regulate streamflows, thus moderating peak streamflows and attendant adverse impacts to watersheds.

Relationship of the Resource Management Plan to BLM Policies, Program, and Other Plans

The BLM in Oregon developed five other Resource Management Plans (Medford, Klamath Falls, Coos Bay, Eugene, Salem) concurrently with development of the Roseburg District Resource Management Plan. The six Resource Management Plans together cover all BLM-administered lands in western Oregon. Some lands administered by the Eugene District to the north and the Medford District to the south and Coos Bay District to the west directly adjoin lands being addressed in the Roseburg plan. The districts cooperate in the management of these lands.

The Draft RMP/EIS was supplemented by the SEIS. The SEIS ROD, signed jointly by the Secretary of the Interior and the Secretary of Agriculture, requires the Bureau to incorporate in its RMPs for western Oregon the land use allocations and standards and guidelines in that decision. The Resource Management Plan is intended to be consistent with the SEIS ROD; any apparent inconsistencies are oversights or misinterpretations of SEIS ROD language. This RMP incorporates the analysis in that Final SEIS.

The Resource Management Plan incorporates the following records of decision by reference:

- -Northwest Area Noxious Weed Control Program.
- -Western Oregon Program - Management of Competing Vegetation.
- -Pacific Yew management program.

Any finding made in this record of decision that certain river segments studied herein are suitable for designation under the Wild and Scenic Rivers act, will be a preliminary administrative finding. It will receive further review and possible modification by the Director, BLM; Secretary of the Interior; or the President of the United States. To facilitate that 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.

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The North Umpqua Wild and Scenic River Plan was completed in July 1992 to respond to a specific Congressional mandate which designated the North Umpqua River a recreational river under the National Wild & Scenic River System. The plan developed will not be changed by the Resource Management Plan.

Planning Process and Criteria

BLM's planning process involves nine steps which are described below.

Step 1: Issue Identification

This planning step is designed to identify major problems, concerns, or opportunities associated with the management of public land in the planning area. Issues are identified by the public, the BLM, and other governmental entities. The planning process is focused on resolving the identified planning issues.

Step 2: Planning Criteria

Planning criteria include policies, laws, regulations, and guidelines for resolving issues, developing alternatives, and choosing a proposed plan.

Step 3: Inventory and Data Collection

Certain kinds of biological, physical, social, or economic information needed to resolve the planning issues is collected and analyzed. Inventory information is used in determining how BLM-administered resources would also respond under each of the alternatives.

Step 4: Analysis of the Management Situation

The Analysis of the Management Situation identifies the ways lands are currently managed in the planning area and opportunities to manage these lands differently.

Step 5: Formulation of Alternatives

BLM formulates a range of alternatives for managing resources in the planning area. A range of alternatives are developed to resolve significant planning issues and address specific management concerns. Alternatives include a preferred plan, management direction common to all alternatives, alternative plans, and no action (current management).

Step 6: Estimation of Effects

This step involves estimating the environmental effects of implementing each of the alternatives. Impacts are estimated in order to provide a comparative evaluation of impacts in compliance with Council of Environmental Quality regulations for implementing National Environmental Policy Act (40 Code of Federal Regulations 1500).

Step 7: Selection of the Preferred Alternative

BLM identifies a Preferred Alternative. The draft Resource Management Plan/Environmental Impact Statement is then prepared and distributed for public review.

Step 8: Selection of Resource Management Plan

Following review and analysis of public comments of the Draft Resource Management Plan/Environmental Impact Statement, BLM selects a proposed resource management plan and then publishes the proposed Resource Management Plan and Final Environmental Impact Statement. Decisions become final after a 30 day appeal period following publication of the Final Environmental Impact Statement. BLM then publishes the Record of Decision and prepares the Approved Resource Management Plan.

Step 9: Monitoring and Evaluation

This step involves the collection and analysis of resource condition and trend data to ensure the plan is accomplishing its objective of resolving the identified issues and achieving other desired results. Monitoring continues from the time the Resource Management Plan is adopted until changing conditions require revision of the entire plan or any portion of it.

Publication of this document constitutes completion of step eight. Public involvement has occurred at several steps in the process.

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The planning process is designed to help the BLM identify the uses of BLM-administered lands desired by the public. It also assists the BLM in considering these 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 these lands.

Where BLM manages the subsurface mineral estate and the surface is nonfederal or administered by another federal agency, the Resource Management Plan addresses only the management of the BLM-administered mineral resources.

The Resource Management Plan

Introduction

The purpose of this section is to describe the Roseburg District 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 October 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 and the 1994 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 since the issuance of the 1994 Record of Decision named above. Such guidelines may clarify or interpret the 1994 Record of Decision.

- The Bushnell-Irwin Rocks Area of Critical Environmental Concern was designated an Area of Critical Environmental Concern/ Research Natural Area.

- The land tenure designation of 240 acres was changed from Zone 3 to Zone 2 (T.24S.,R.6W., W.M., Sec. 11, N1/2NW1/4, S1/2SE1/4; Sec 15, E1/2NW1/4)

Vision

The Bureau of Land Management 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 the human population.

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 Bureau of Land Management 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 or restore healthy, functioning ecosystems while providing a sustainable production of natural resources. This management strategy, titled ecosystem management, involves the use of ecological, economic, social, and managerial principles to ensure the sustained condition of the whole. Ecosystem management

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emphasizes the complete ecosystem instead of individual components and looks at sustainable systems and products that people want and need. It seeks a balance between maintenance and restoration of natural systems and sustainable yield of resources.

The building blocks for this strategy are comprised of several major land use allocations - Riparian Reserves, Late-Successional Reserves, Adaptive Management Areas, Matrix which includes General Forest Management Areas and Connectivity/Diversity Blocks, and a variety of special purpose management areas such as recreation sites, wild and scenic rivers, and visual resource management areas. These land use allocations are located and configured in the landscape to support overall ecosystem function and to meet the vision for management of federal lands in western Oregon.

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 rules 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.

There are two 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.

Ecological Principles for Management of Late-Successional Forests

One goal of this plan 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 plan will contribute to these two goals. For instance, Late-Successional 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 the Attachment A of 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 would protect salmonid habitat on federal lands managed by the Forest Service and Bureau of Land Management within the range of the Pacific Ocean anadromy.

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 floodplains, 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

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of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

- Maintain and restore instream 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 floodplain 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 serve 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 two 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. There are no Tier 2 Key Watersheds on the Roseburg District. The following are Tier 1 Key Watersheds on the Roseburg District: Elk Creek, Middle Creek, Paradise Creek, South Umpqua River, Canton Creek, Upper Smith River, West Fork Cow Creek, and Williams/Fairview Creeks. See Roseburg District Strategy map for locations of Key Watersheds.

Key Watersheds overlay portions of land use allocations in the district and place additional management requirements or emphasis on activities in those areas.

The non-interchangeable component of the Allowable Sale Quantity, attributable to Key Watersheds, is 1.3 million 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 in Key Watersheds, prepare watershed analyses. Until watershed analyses can be completed, proceed with minor activities, such as those categorically excluded under the National Environmental Policy Act 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 section (toward the end of this chapter), and Use of the Plan section.

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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. See Use of the Plan (watershed analysis discussion) section.

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 Attachment A of the SEIS ROD.

Land Use Allocations and Resource Programs

This section provides a description of objectives, land use allocations, and management actions/direction for this Resource Management Plan. The term “land use allocations” is used in two ways. First, it pertains to the major land use allocation categories derived from the SEIS and its Record Of Decision (e.g., Riparian Reserves and Late-Successional Reserves) and the still relevant allocations of the Roseburg District Draft Resource Management Plan. The second use pertains to data and text describing specific allocations (e.g., acres, miles, and number of sites) under each land use allocation and resource program category.

The remainder of this Land Use Allocations and Resource Programs section has two major parts:

- Specific land use allocations - objectives, allocations, and management actions/direction for each category.

- Resource programs - objectives, allocations, and management actions/direction for each category.

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/directions will be used to guide plan implementation (see SEIS Record of Decision).

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 Resource Management Plan 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 Resource Management Plan is found in Table R-1.

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

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

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and related management actions/direction will be used to guide plan implementation (see Attachment A of the SEIS ROD, Hierarchy of Standards and Guidelines).

Survey and Manage for Amphibians, Mammals, Bryophytes, Mollusks, Vascular Plants, Fungi, Lichens, and Arthropods

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. Table H-1 of Appendix H shows which species are covered by this provision, and which of the following four categories and management actions/direction are to be applied to each:

1. Manage known sites (highest priority).

   a. Acquire and manage information on known 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.

   d. Establish management areas of all useable habitat up to 600 acres around two currently unprotected locations of Oxiporous nobilissimus. Protect these populations until the sites can be thoroughly surveyed and site specific measures prescribed. Protection will be undertaken immediately.

2. Survey prior to 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 Del Norte, Larch Mountain, Shasta, Siskiyou Mountains, and Van Dyke's salamanders, red tree voles, and Lynx.

      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 Table H-1 of Appendix H, begin development of survey protocols in 1994 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 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 classed as rare and endemic, bryophytes, and lichens.

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

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Protection Buffers

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 H, Table H-2 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, are simply recognition of valid resource management decisions in existing or proposed plans. These allocations are fully incorporated in the resource program elements of this Resource Management Plan. They are not described as separate land use allocations in this document.

Although there are no Congressionally Reserved allocations in the Roseburg District, the Myrtle Island area was set aside by Public Land Order.

Types of administratively withdrawn areas in the district include Special Areas, recreation sites, facility sites, stockpile sites, etc.

Riparian Reserves

The following material summarizes management direction for Riparian Reserves. Details regarding this direction are found in the SEIS ROD (see Appendix A).

Objectives

See Aquatic Conservation Strategy Objectives.

Provide habitat for special status and SEIS special attention (Survey and Manage, Protection Buffers, bat roosts) and other terrestrial species.

Land Use Allocations

There are approximately 113,500 acres of Riparian Reserves in the district, including approximately 8,200 acres modeled in the Little River Adaptive Management Area. Calculation of these acres is based on prescribed widths and estimated miles of stream in the various categories described in the SEIS ROD. If Riparian Reserves were projected across the entire landscape, including all other reserves and administrative withdrawals, they would account for 217,000 gross acres. The gross acres of Riparian Reserves have little effect on management when they occur in areas already reserved or withdrawn. 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.

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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 floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.

Permanently flowing non-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 floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site potential tree, or 150 feet 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.
- The area extending from the edges of the stream channel to a distance equal to the height of one site potential tree, or 100 feet 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 feet 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. (Riparian vegetation and seasonally saturated soils will generally constitute a wetland and will be managed as prescribed for wetlands.)

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 two site potential trees, or 300 feet slope distance, whichever is greatest. (Riparian vegetation and seasonally saturated soils will generally constitute a wetland and will be managed as prescribed for wetlands.)

Management Actions/Direction

As a general 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 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 D.)

General

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

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.

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- 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:

- 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.

- Minimizing road and landing locations in Riparian Reserves.

- Preparing road design criteria, elements, and standards that govern construction and reconstruction.

- Preparing operation and maintenance criteria that govern road operation, maintenance, and management.

- Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.

- Restricting sidecasting as necessary to prevent the introduction of sediment to streams.

- 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:

- Reconstructing roads and associated drainage features that pose a substantial risk.

- Prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.

- 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 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. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is not feasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

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

Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As 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.

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- Establishing the purpose of each road by developing the Road Management Objective.

Grazing Management

Through a planning and environmental analysis process appropriate to the action, adjust or eliminate grazing practices that retard or prevent attainment of Aquatic Conservation Strategy objectives.

Locate new livestock handling and/or management facilities outside Riparian Reserves. For existing livestock handling facilities inside Riparian Reserves, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.

Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Aquatic Conservation Strategy objectives are met.

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 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 and Scenic River and Wilderness management plans.

Minerals Management

Note: 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.

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 CFR 3809 regulations:

- 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 locating 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

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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 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.

Limit the size of all wild fires. When watershed analysis and/or landscape analysis are completed and approved, some natural fires may be allowed to burn under prescribed conditions.

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

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 affects 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

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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 instream 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 instream 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 instream 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 instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.

Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on site when needed to meet Aquatic Conservation Strategy and Riparian Reserve objectives.

Apply herbicides, insecticides, other toxicants, 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 instream 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, tribal, and state wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.

Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest, and poaching that threaten the

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continued existence and distribution of native fish stocks inhabiting streams with adjacent or nearby federal lands.

Late-Successional Reserves

The following material summarizes management direction for Late-Successional Reserves. 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 186,423 acres of Late-Successional Reserves which are mapped in the district. The five 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 Roseburg District strategy map 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 toward the end of this chapter for additional information.

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 Regional Ecosystem Office 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 (e.g., planted after logging or naturally regenerated after fire or blowdown).

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Salvage

Limit salvage of dead trees in Late-Successional Reserves to areas where stand replacing events exceed ten 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.

In the Oregon Klamath Province, if essential to reduce future risk of fire or insect damage, conduct salvage that does not meet the preceding management actions/direction. Focus on those areas where there is high risk of large scale disturbance.

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.

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

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

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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 or a late-Successional Reserve Assessment, 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 resource specialists to assure 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 which retains the amount of coarse woody debris determined through watershed analysis.

Limit the size of all wild fires. When watershed analysis or a Late-Successional Reserve Assessment is completed, some natural fires may be allowed to burn under prescribed conditions.

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.

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

Access to nonfederal lands through Late-Successional reserves will be considered and existing right-of-way agreements, contracted rights, easements and temporary use permits in Late-Successional Reserves will be recognized as valid uses.

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 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 would 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 consistent 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.

Adaptive Management Areas

The following material summarizes Adaptive Management Area direction. Details regarding this direction are found in Attachment A of the SEIS ROD.

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 19,260 acres of BLM-administered land in the Little River Adaptive Management Area.

Management Actions/Direction

Develop a plan for the Little River Adaptive Management Area. See Management Assessments and Plans (toward the end of this chapter) for additional information.

Proceed with management activities in the Adaptive Management Area 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 (i.e., fish, mollusks, amphibians, lichens, fungi, bryophytes,

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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 which 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 Adaptive Management Area 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 Adaptive Management Area planning, review relevant objectives, land use allocations, and management actions/direction for resource programs established in this Resource Management Plan. They may be modified in Adaptive Management Area plans based on site specific analyses. Otherwise, management actions/direction will be developed to meet the objectives of the Adaptive Management Area and the overall strategy. Development of management guidance will be coordinated with the Regional Ecosystem Office through the Regional Interagency Executive Committee.

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 Resource Management Plan (see Fire section) until the Adaptive Management Area plan is completed.

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

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

Objectives

Produce a sustainable supply of timber and other forest commodities.

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 for 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 54,900 acres of BLM-administered land in the General Forest Management Area and 26,900 acres in Connectivity/Diversity Blocks. Connectivity/Diversity Blocks vary in size and are distributed throughout the Matrix.

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.

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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. Models will be developed for groups of plant associations and stand types that can be used as a baseline for developing prescriptions.

1. Leave 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long. Decay class 1 and 2 logs will be credited toward the total. 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.

2. In areas of partial harvest (eg. Connectivity/ Diversity Blocks, density management), apply the same basic management actions/direction as in Number 1 above, 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) which might otherwise destroy the integrity of the substrate.

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

1. Retain six to eight 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 three decades) snag deficit. These trees do not count toward green tree retention requirements.

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

1. Maintain 25 to 30 percent of each block in late-successional forest at any point in time. Inclusions of Riparian Reserves and other allocations with late-successional forest within the gross mapped Connectivity/Diversity Blocks 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. Manage available forest land within each block on a 150 year area control rotation.

3. When an area is regeneration harvested, retain 12 to 18 green trees per acre within harvest units.

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 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 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.

Resource Programs

The following section includes objectives, land use allocations, and management actions/direction for the

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resource uses and programs which BLM manages in the Roseburg District. Some of the management actions/direction in the previous land use allocation section are repeated in this section. The intent of this duplication is to give a reader a package of related management guidance in one location.

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.

Determine the cumulative effects of proposed forest management activities on local and subregional air quality and minimize impacts. Coordinate cumulative impact analysis with other federal agencies.

As part of implementation planning, prepare conformity determinations required by the Clean Air Act.

Perform an emissions tradeoff analysis to determine and quantify the effects of prescribed burning and other types of fuel management on reduction of wildfire emissions. This analysis will be performed at the same geographic scale as conformity determinations.

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 FSEIS for alternative treatments that may be considered during fuels management project design.

Water and Soils

Objectives

See Aquatic Conservation Strategy, Riparian Reserve, Watershed Restoration and Key Watershed objectives (Tier 1 on Roseburg District).

Improve and/or maintain soil productivity.

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 South Coast and Umpqua basins.

Land Use Allocations

None specifically for water quality or soils. However, Riparian Reserves, Key Watershed provisions, Timber Production Capability Classifications, Congressional Reserves, and Administratively Withdrawn Areas will assist in meeting water quality and soils management objectives. In addition, the district manages 8.4 miles of the total 33.8 river miles designated as the North Umpqua Wild and Scenic River corridor. Water quality and quantity were major contributors to the outstandingly remarkable values of this river. There are an estimated 113,500 acres of Riparian Reserves that include the five categories of streams or waterbodies described in the Land Use Allocation, Riparian Reserve section of this chapter.

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Management Actions/Direction

General

Improve and/or maintain soil and water conditions by closing selected areas to off highway vehicle use or limiting such use to existing roads and trails, and/or limiting the period of use. See Recreation, Off Highway Vehicles, for additional details.

Water

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

Conduct watershed analysis as described in Use of the Plan and in the SEIS ROD.

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

Continue coordination with the Oregon Department of Environmental Quality for implementation of Best Management Practices which 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 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 D, for additional guidance.

Identify and attempt to obtain instream 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 herbicides, insecticides, and other chemicals in a manner that avoids impacts that retard or prevent 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.

Land management practices of adjacent landowners will be considered during site specific timber management planning and other specific activity and project planning.

Provide for protection of both surface water and ground water in planning for chemical uses. Chemicals used will include herbicides, pesticides, fertilizers, and fire retardant chemicals. Application and monitoring of herbicides will be done in accordance with BLM's "Record of Decision, Western Oregon Program, Management of Competing Vegetation", 1991.

Management in municipal watersheds is subject to agreement with the cities of Drain, Riddle, and Canyonville through memorandums of understanding, and with the City of Myrtle Creek through a special use permit.

Soils

Apply Best Management Practices during all ground and vegetation disturbing activities. See Appendix D for a list of practices.

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

Use 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 skid trails, will be planned to have insignificant growth loss effect. Existing tractor trails will be used as much as possible and new trails will be limited to slopes less than 35 percent. Operation on these trails will minimize soil displacement and occur when soil moisture content provides the most resistance to compaction. Tractor trails, including those from previous entries, will be selectively tilled with a properly designed self-drafting winged subsoiler.

The use of prescribed fire on highly sensitive soils (those soils recognized as unusually erodible, nutrient deficient, or low organic matter) will be avoided. Any burning on such soils, if considered essential for resource management, will be accomplished under site specific prescriptions to accomplish the resource objectives and minimize adverse impacts on soil properties. On other soils, prescribed fire prescriptions will be designed to protect beneficial soil properties.

The following guidelines will be followed when using track type equipment with a brush blade for mechanical site preparation:

- Restrict use to areas with suitable soil types and slopes less than 35 percent.
- Avoid displacing duff layers and topsoil into piles or windrows.
- Minimize piling of large woody material.
- Limit machine use to one round trip over the same area.
- Operate at soil moistures that maximize resistance to compaction. A low ground pressure backhoe/loader grapple or other special equipment or techniques that will achieve the same insignificant soil compaction may be used instead of the preceding techniques. All areas compacted during site preparation will be tilled with a properly designed self-drafting winged subsoiler.

Wildlife Habitat

Objectives

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

Enhance and maintain biological diversity and ecosystem health to contribute to healthy wildlife populations.

Land Use Allocations

The land use allocations in this Resource Management Plan are designed to benefit wildlife species, in the aggregate, that use the various seral stages and other habitat areas of the forest.

Management Actions/Direction

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. Coordinate with the Oregon Department of Fish and Wildlife 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.

Avoid road construction in areas with high wildlife values.

Riparian Reserves

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

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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 wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.

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 would 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 which are inconsistent with Late-Successional Reserve objectives. Include an analysis of effects of implementing such programs on other species within Late-Successional Reserves.

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

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.

General Forest Management Area

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 six to eight green conifer trees per acre after regeneration harvest. 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 three decades) snag deficit. These trees do not count toward green tree retention requirements.

Leave 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of original stands. Where this management action/ direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit.

Connectivity/Diversity Blocks

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 point in 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 to 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 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long. Existing decay class 1 and 2 logs will be credited

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toward this total. Down logs will reflect the species mix of original stands. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit.

Special Habitats

Using interdisciplinary teams, identify special habitat areas and determine relevance 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.

Special habitat areas will be buffered by 100 to 200 feet to protect their plant community structure, species composition, and ecological processes. The special habitat buffer will be an area designated and managed for the protection or enhancement of the special habitat. Activities such as timber harvest, timber salvage, and prescribed burning will be permitted within the buffers when they are considered necessary for special habitat restoration and will benefit resident special habitat species. Water courses flowing into and out of wetland habitats will be maintained.

Other Raptors Habitat

Known and future raptor nest sites not protected by other management recommendations will be protected by providing suitable habitat buffers and seasonal disturbance restrictions.

Roosevelt Elk

Elk habitat management will be emphasized in the Tyee, Deadman Mountain, and Canton Creek elk areas. Habitat Management Plans will be developed for these areas prior to implementing major management programs. The following road closures will be implemented to limit the amount of vehicle access and potential harassment to elk.

1. Approximately 20 miles of existing roads in the Tyee elk area.

2. Approximately 15 miles of year long road closure on existing roads in the Deadman Mountain elk management area to establish an area of approximately 6,000 acres (at the head of Days and Coffee Creeks) with limited disturbance.

In the Tyee and Canton Creek elk management areas and consistent with underlying land use allocations, the following guidelines will be adopted for timber harvest units:

1. Thirty percent of the harvest units will be small units (15 to 20 acres) with irregular boundaries.

2. Within harvest units the distance to cover will not exceed 500 feet.

3. Minimum width of cover adjacent to harvest units will be 200 feet.

Consistent with underlying land use allocations, preferred forage plots will be developed for the Tyee elk area utilizing a variety of practices. These practices may include seeding, fertilization of natural grass/forb types, creating small openings or wide spaced thinning in young stands, and enhancing the herbaceous vegetative layer within older forest stands. All forage developments will require practices designed not to adversely affect listed species or the development of suitable habitat.

In cooperation with Oregon Department of Fish and Wildlife, elk transplants will be conducted to supplement existing numbers or establish new local populations within the Rock Creek, Little River, Canton Creek, and Green Butte elk areas.

Wild Turkey Habitat

Consistent with underlying land use allocations, all oak stands will be maintained except on conifer sites within designated turkey habitat utilizing a variety of methods including prescribed fire. A minimum of one ten acre stand of roosting habitat will be provided in each section of designated turkey habitat. Roosting habitat will contain the following components:

- A scattering (eight to ten) of large (larger than 24" DBH) open limbed conifer trees on each acre.

- Ponderosa pine when available will be preferred roost trees.

Osprey Habitat

On BLM-administered lands within 1/4-mile of known osprey nest sites (2,500 total acres), nest trees and adjacent perch trees will be protected and disturbance will be restricted between March 20 and August 31. Consistent with other land use allocations, adequate nest and perch replacement trees for osprey will be retained within 1/4-mile of nest sites.

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Fish Habitat

Objectives

See Aquatic Conservation Strategy objectives.

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

Promote the rehabilitation and protection of fish stocks at risk 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

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. For existing fish 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 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.

Cooperate with federal, tribal, and state wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.

Late-Successional Reserves

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

All Land Use Allocations

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

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.

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 will include, but not be limited to, fish passage improvements, instream 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.

Use existing and new water impoundments to provide recreational fishing opportunities where sufficient water quality and quantity exist and where consistent with aquatic conservation strategy and other management action/direction.

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

Special Status and SEIS Special Attention Species Habitat

SEIS Special Attention Species include Survey and Manage, Protection Buffer, and bat roosts as discussed in Attachment A of the SEIS ROD.

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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.

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

Land Use Allocations

The objectives for special status species will apply to all land use allocations. All of the major land allocations in this plan are designed in part to benefit special status species in the aggregate. Special status species habitat designated on the district may change as inventories are conducted and the status of species change.

Management Actions/Direction

Late-Successional Reserves

Design projects for recovery of threatened or endangered animal and plant species even if they result in some reduction of habitat quality for late-successional species. These projects will be designed for least impact to late-successional species.

All Land Use Allocations

Special Status Species

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

Conduct field surveys according to protocols and established procedures. This includes surveying during the proper season unless surveys are deemed unnecessary through watershed analysis, project planning, and environmental assessment. 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 would be included on a new survey, and the likelihood of potential habitat. The intensity of field surveys will also vary depending on the same factors.

Consult (formal, informal, conference, or technical assistance, as appropriate) with the U.S. Fish and Wildlife Service or National Marine Fisheries Service for any proposed action which may affect federal listed, proposed, or candidate species or critical or essential habitat. Based on the results of consultation, modify, relocate, or abandon the proposed action.

Coordinate with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and other appropriate agencies and organizations and jointly endeavor to recover federal listed and proposed species and their habitats.

Modify, relocate, or abandon a proposed action to avoid contributing to the need to list under the Endangered Species Act, all federal candidate, state listed species and bureau sensitive species or their habitats.

Coordinate and cooperate with the state of Oregon to conserve state listed species.

Protect assessment species where possible so as not to increase their status. Assessment species will be included in all field inventory and clearance work and all new locations will be documented. They will be considered in all environmental analyses where impacts will be clearly identified.

Where it is biologically appropriate and consistent with species recovery plans, buffer special status species by 100 to 300 feet from all surface disturbance and harvest of timber.

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Retain under federal management, or other appropriate management organization, habitat essential for the survival or recovery of listed and proposed species. Retain habitat of candidate, bureau sensitive, and assessment species where disposal would 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.

Coordinate with other agencies and groups in management of species across landscapes. Coordination will be accomplished through conservation plans or similar agreements which identify actions to conserve single or multiple species and/or habitats.

Where plans exist for species no longer on the special status list, continue with the prescribed conservation actions if determined to be necessary 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 rangewide conditions and conservation management.

Pursue opportunities for public education about conservation of species.

Where appropriate, pursue opportunities to increase the number of populations of species under BLM management through land acquisition and/or species reintroduction in coordination with other responsible agencies.

SEIS Special Attention Species (includes Survey and Manage species, Protection Buffer species, and roosts for bats)

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 H shows which species are covered by this provision, and which of the following four categories and management actions/ direction are to be applied to each:

1. Manage known sites (highest priority).

   a. Acquire and manage information on known 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.

   d. Establish management areas of all useable habitat up to 600 acres around two currently unprotected locations of *Oxiporous nobilissimus*. Protect these populations until the sites can be thoroughly surveyed and site specific measures prescribed. Protection will be undertaken immediately.

2. Survey prior to 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 Del Norte, Larch Mountain, Shasta, Siskiyou Mountains, and Van Dyke's salamanders, red tree voles, and Lynx.

      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 H, begin development of survey protocols in 1994 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.

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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 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, bryophytes, lichens, and fungi species that were not classed as rare.

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

Protection Buffers

Provide protection buffers for specific rare and locally endemic species and SEIS Special Attention Species in the upland forest matrix. A list of these species and related management actions/direction are presented below. 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 as follows:

The SEIS ROD establishes Late-Successional Reserves for the Protection Buffers for the following species:

Nonvascular Plants

Ptilidium californicum (Liverwort) - This species is rare and has a very limited distribution in old white fir forests with fallen trees. It occurs on trunks of trees at about 5000 feet elevation. Mitigation options include finding locations and maintaining stands of overmature white fir at about 5000 feet elevation for inoculum and dispersal along corridors and studying specific distribution patterns. Protect known occupied locations if distribution patterns are disjunct and highly localized by deferring timber harvest and avoiding removal of fallen trees and logs.

Ulota meglospora (Moss) - This species occurs in northern California and southwest Oregon. It is best developed (locally abundant) in very old stands of tanoak, Douglas-fir, and other conifer species further north, but is generally scarce throughout its range. The species is poorly known ecologically. Mitigation activities include conducting basic ecological studies, and surveying for presence, particularly in Oregon. Protect known occupied sites if distribution patterns are disjunct and highly localized. Defer timber harvest or other activities which would not maintain desired habitat characteristics and population levels.

Aleuria rhenana (Fungus) - This mushroom is widely distributed but rare and little known throughout its range. Known from one collection from Mt. Rainier National Park it is a conifer litter decomposer. Mitigation activities include conducting ecological studies and surveys to determine localities. Protect known populations if surveys continue to indicate that the population is rare. Defer ground disturbing activities.

Otidea leporina, O. onotica, and *O. smithii* (Fungi) - These mushrooms occur in conifer duff, and are widespread in distribution but uncommon. They are dependent on older-age forests. Specific mitigation options include protecting older forests from ground disturbance where the species are located.

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For the plants listed above, it is recommended that Regional or state office level ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Shasta Salamander - This species is very narrowly distributed, occurring only in localized populations on the Shasta-Trinity National Forest. Only a small part of its range is included within Habitat Conservation Areas identified by the Interagency Scientific Committee (1990) (status within Late-Successional Reserves has not been determined). It occurs in association with limestone outcrops, protected by an overstory canopy. All known and future localities must be delineated and protected from timber harvest, mining, quarry activity, and road building within the delineated site, and a buffer of at least the height of one site potential tree or 100 feet horizontal distance, whichever is greater, should surround the outcrop. Additional surveys conducted using a standardized protocol must be undertaken to identify and delineate all occupied sites within the species' potential range.

Birds

Great Gray Owl - Within the range of the northern spotted owl, the great gray owl is most common in lodgepole pine forests adjacent to meadows. However, it is also found in other coniferous forest types. In some locations, such as on the Willamette National Forest west of the crest of the Cascade Range, at least some shelterwood harvesting seems to be beneficial for the species by opening up otherwise closed canopy cover for foraging. In doing so, consequences to species such as northern goshawk and American marten must be evaluated. Specific mitigation measures for the great gray owl, within the range of the northern spotted owl, include the following: provide a no harvest buffer of 300 feet around meadows and natural openings and establish 1/4-mile protection zones around known nest sites.

Within one year of the signing of the Record of Decision for the SEIS develop and implement a standardized protocol for surveys; survey for nest locations using the protocol. Protect all future discovered nest sites as previously described.

The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. However, there might be occupied locations outside these areas that will be important to protect as well. Protocols for surveys will be developed that will ensure a high likelihood of locating these occupied sites, and such surveys will be conducted prior to ground disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage components 1, 2, 3, and/or 4 set forth in the SEIS ROD. When located, the occupied sites need to be protected as described in the following standard and guidelines.

The SEIS ROD establishes Managed Late-Successional Areas for the Protection Buffers for the following species:

Nonvascular Plants

Buxbaumia piperi, B. viridis, Rhizomnium nudum, and *Tetraphis geniculata* (Mosses) - Most of these species are fairly rare (the exception is *B. piperi*). They occur on rotten logs and some organic soil, and are shade dependent, occurring in old-growth forests. Mitigation activities include surveying to determine presence and distribution; and, where located, maintaining decay class 3, 4, and 5 logs and greater than 70 percent closed canopy forest habitats for shade. Shelterwood and thinning prescriptions for timber harvest will cause their demise, as logs dry out. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Polyozellus multiplex (Fungus) - Ecologically, this mushroom was considered in the same species group as *Albatrellus caeryliopus* and others, listed earlier in the SAT Report under species aided by marbled murrelet mitigation measures. However, *P. multiplex* occurs in higher elevations of the Cascades in silver fir and mixed conifer (and is thus outside the range of marbled murrelet mitigations). It can be locally abundant and is a mycorrhizal species important to forest health. Like its group associates, it is a good indicator of old-growth forests. Mitigation activities for this species include conducting surveys to define its distribution, and studies to assess its habitat requirements. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Sarcosoma mexicana (Fungus) - This mushroom occurs in deep conifer litter layers in older forests. It is uncommon to rare and is found in the Oregon and Washington Coast Range into British Columbia. Mitigation activities include surveying for locations

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and protecting deep litter layers of older forests where found. Defer prescribed burning of understory or other activities which would not retain a deep litter layer. The implementation schedule for this species is the same as for survey and manage component 3.

For the plants listed above, it is recommended that regional and state ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Larch Mountain Salamander - Because of the narrow distribution of this species, mostly within the Columbia River Gorge, primary emphasis should be to survey and protect all known sites. Sites must be identified based on fall surveys conducted using a standardized protocol. Known sites are included within boundaries of conservation areas and under these guidelines, are not to be disturbed. Surveys are needed at additional sites in the forest matrix along the Columbia River Gorge. Key habitat is mossy talus protected by overstory canopy. Avoiding any ground disturbing activity that would disrupt the talus layer where this species occurs is the primary means of protection. Once sites are identified, maintain 40 percent canopy closure of trees within the site and within a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site. Larger buffer widths are appropriate upslope from protected sites on steep slopes. Partial harvest may be possible if canopy closure can be retained; in such cases logging must be conducted using helicopters or high-lead cable systems to avoid disturbance of the talus layer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Siskiyou Mountain Salamander - This species occurs within an extremely narrow range on the Rogue River, Siskiyou, and Klamath National Forests. Its range does not fall within any of the Habitat Conservation Areas identified by the Interagency Scientific Committee in Oregon. Additional surveys conducted using a standardized protocol must be undertaken to delineate range and identify subpopulations. All populations must be protected by delineating an occupied site and avoiding disturbance of talus throughout the site. Because this species seems to require cool, moist conditions, a buffer of at least the height of one site potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site, must be retained around the outer periphery of all known sites. Overstory trees must not be removed within the boundary of this buffer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Del Norte Salamander - This species occurs in talus slopes protected by overstory canopy that maintains cool, moist conditions on the ground. The species is a slope-valley inhabitant, and sometimes occurs in high numbers near riparian areas. Riparian Reserves, in combination with Late-Successional Reserves and other reserves, will offer some protection to the species but significant numbers also occur in upland areas. Additional mitigation options in this upland matrix include identifying locations (talus areas inhabited by the species) by using a standardized survey protocol, then protecting the location from ground disturbing activities. Designate a buffer of at least the height of one site potential tree or 100 feet horizontal distance, whichever is greater, surrounding the location. Within the site and its surrounding buffer, maintain 40 percent canopy closure and avoid any activities that would directly disrupt the surface talus layer. Partial harvest within the buffer may be possible if 40 percent canopy closure can be maintained; in such cases, tree harvest must be conducted using helicopters or high-lead cable systems to avoid compaction or other disturbance of talus. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

The SEIS ROD establishes the following management direction for protection buffers where the following species occur in the matrix:

Birds

White-headed Woodpecker, Black-backed Woodpecker, Pygmy Nuthatch, and Flammulated Owl - These species will not be sufficiently aided by application of mitigation measures for riparian habitat protection or for marbled murrelets alone. They all occur on the periphery of the range of the northern spotted owl on the east slope of the Cascade Range in Washington or Oregon. Additionally, the white-headed woodpecker and flammulated owl occur in the Klamath Province in northwestern California and southwestern Oregon. The viability of all four species within the range of the northern spotted owl was rated as a medium risk on National Forests, although they each are much more widely distributed elsewhere.

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Apply the following mitigation standards and guidelines to ensure that the distribution and numbers of all four species do not severely decline on BLM Districts within the range of the northern spotted owl. These guidelines apply to the forest matrix outside designated habitat for the northern spotted owl and Riparian Reserves. Maintain adequate numbers of large snags and green-tree replacements for future snags within the four species' ranges in appropriate forest types. Where feasible, green-tree replacements for future snags can be left in groups to reduce blowdown. Specifically, the Scientific Analysis Team recommends that no snags over 20 inches dbh be marked for cutting. The Scientific Analysis Team recognizes, however, that safety considerations may prevent always retaining all snags. Use of standardized definitions of hazard trees is required. For the longer term, provide for sufficient numbers of green trees to provide for the full (100 percent) population potential of each species.

As depicted by Neitro in Management of Wildlife and Fish Habitats in Forest of Western Oregon and Washington (1985), the 100 percent population potential for white-headed woodpeckers is 0.60 conifer snags (ponderosa pine of Douglas-fir) per acre in forest habitats; these snags must be at least 15 inches dbh (or largest available if 15 inch dbh snags are not available) and in soft decay stages, and must be provided in stands of ponderosa pine and mixed pine/Douglas-fir. The 100 percent population potential or black-backed woodpeckers is 0.12 conifer snags per acre in forest habitats; these snags must be at least 17 inches dbh (or largest available if 17 inch dbh snags are not available) and in hard decay stages, and must be provided in stands of mixed conifer and lodgepole pine in higher elevations of the Cascade Range. Provision of snags for other cavity nesting species, including primary cavity nesters, must be added to the requirements for these two woodpecker species. Site specific analysis, and application of a snag recruitment model (specifically, the Forest Service's Snag Recruitment Simulator) taking into account tree species, diameters, falling rates, and decay rates, will be required to determine appropriate tree and snag species mixes and densities. If snag requirements cannot be met, then harvest must not take place.

As identified by the expert panel, black-backed woodpeckers also require beetle infested trees for foraging; some such trees should be provided in appropriate habitat, and sanitation harvest of all such trees would be detrimental to the species. More information is needed on habitat use, seasonal occurrence, and use of forest age classes and burns, for the black-backed woodpecker.

Pygmy nuthatches use habitat very similar to those of white-headed woodpeckers. Pygmy nuthatches require large trees, typically ponderosa pine within the range of the northern spotted owl, for roosting. Provision of snags for white-headed woodpeckers is assumed to provide for the needs of pygmy nuthatch, as no species specific guidelines for the species have been developed. Additional information on ecology of pygmy nuthatch within the range of the northern spotted owl is needed to develop more precise standards and guidelines.

Flammulated owls are secondary cavity nesters and use cavities in snags and live trees, created by woodpeckers or, less often, that occur naturally. It is assumed that standards and guidelines for snags and green-tree replacements for woodpeckers and other primary cavity nesting species, as provided by BLM District Land and Resource Management Plans and for the woodpeckers in this species group, would provide for flammulated owls.

Note: The snag recommendations above are based on the model presented by Neitro and others (1985). In that model, snag requirements for individual species were treated as additive in developing snag requirements for the overall community of cavity excavators. As noted above, "provision of snags for other cavity nesting species, including primary cavity nesters, must be added to the requirements for these two woodpecker species" (black-backed and white-headed woodpeckers).

Snag requirements are developed by the BLM Districts for specific forest cover types, and these may be further broken down by geographic location. The intent is to tailor the requirements to those species that are actually expected to occur in an area. To determine if the protection buffer requirements should be added to existing BLM District Plan requirements, the basis for those existing requirements should be analyzed to determine if they include the species identified by SAT at the specified level of percent population potential. If they do not, then the SAT requirements must be added to the existing Forest and BLM District Plan requirements.

Mammals

Lynx - Lynx are rare within the range of the northern spotted owl, occurring primarily in the Okanogan area of Washington. The lynx is currently listed by the Fish

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and Wildlife Service as a Category 2 candidate (a species for which additional information is needed to propose listing as threatened or endangered). A petition was filed to list the lynx as endangered within the northern Cascades of Washington, based on small population size, population isolation, and lack of adequate prey base (snowshoe hare). However, the Fish and Wildlife Service ruled that available information does not warrant listing the lynx in Washington.

Three primary habitat components for lynx are (1) foraging habitat (15 to 35 year old lodgepole pine) to support snowshoe hare and provide hunting cover, (2) denning sites (patches of greater than 200 year old spruce and fir, generally less than 5 acres), and (3) dispersal/travel cover (variable in vegetation composition and structure). The major limiting factor is abundance of snowshoe hare, which in turn is limited by availability of winter habitat (primarily early-successional lodgepole pine with trees at least 6 feet tall). Past excessive trapping of lynx and incidental mortality of lynx from hunting of other species have depressed populations and may have been detrimental to local lynx populations in Washington. Roads provide access to hunters and trappers and thus road density may be related to lynx mortality.

The reserves and other designated areas in these standards and guidelines will provide denning habitat within protected forest stands in juxtaposition with early-successional vegetation in the forest matrix. Connectivity between many of the denning patches will be provided by the network of buffers along streams under the Riparian Reserves.

In addition, the Scientific Analysis Team proposed development of site specific timber harvest, roading, and fire management plans in known lynx range. These plans should be developed in consultation with state wildlife agencies and should address:

1. Minimizing road construction, closing unused roads, and maintaining roads to the minimum standard possible.

2. Using prescribed fire to maintain forage for snowshoe hare in juxtaposition with hunting cover.

3. Designing areas as closed to kill trapping of any furbearer to avoid incidental lynx mortality to maintain population refugia for lynx in key areas.

4. Planning for kill trapping closure on a wider basis if data indicate a declining lynx population as a result of incidental trapping mortality.

5. Developing and implementing a credible survey and monitoring strategy to determine the distribution of lynx throughout its potential range.

Roosting Bats - Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for 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 as outlined below and defined in the SEIS ROD and in any subsequent revisions 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.

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.

This provision is intended to apply in matrix forests and Adaptive Management Areas, and elements such as protection of known occupied caves should be considered for other land allocations. Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. For the purposes of this management action/direction, caves are defined as in the Federal Cave Resources Protection Act of 1988 as "any naturally occurring void, cavity, recess, or system of interconnected passages which occur beneath the surface of the earth or within a cliff or ledge (. . . but not including any . . . man-made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made." Searches should be conducted during the day in the summer (to locate day roosts and maternity colonies), at night during the late summer and fall (to locate night roosts, which are important for reproduction), and during the day in the winter (to locate hibernacula). If bats are found, identify the species using the site and determine for what purpose it is being used by bats. As an interim measure, timber harvest is prohibited within 250 feet of sites containing bats. Management action/direction that may be included as mitigation measures in project or activity plans will be developed for the site.

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This management action/direction will be developed following an inventory and mapping of resources. The purpose of the management action/direction will be developed following an inventory and mapping of resources and will provide for protection of the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the direction developed for the specific site. Retention of abandoned bridges or buildings will be made contingent on safety concerns.

Listed and Proposed Threatened and Endangered Species

General

Implement the land use allocations and management actions/direction of this Resource Management Plan which are designed to enhance and maintain habitat for all endangered and threatened species.

Northern Spotted Owl

Retain 100 acres of the best northern spotted owl habitat as close to the nest site or owl activity center as possible for all known (as of January 1, 1994) spotted owl activity centers. Human activity within 1/4-mile of nest sites which could disturb owl nesting activities will be restricted, especially the use of large power equipment and falling of trees. Restrictions will apply from March 1 to September 30 or until non-nesting status is confirmed using protocol procedures. The retention of adequate habitat conditions for dispersal of the northern spotted owl will be taken into account during watershed analysis that addresses the issue of adjusting Riparian Reserve widths.

Columbian White-tailed Deer

Timber harvest or other vegetation altering activities on all BLM-managed lands (12,761 acres) within the general area of distribution will only occur if determined beneficial to Columbian White-tailed deer or until such time that definitive information is available describing the use level and value of these lands in the context of meeting recovery plan goals. Of the above acres, 8,830 acres occurring within the core habitat area for the species have been removed from the timber base. Acquisition of lands within the core area (primarily T. 26 S., and T. 27 S., R. 5 W.) for the Columbian white-tailed deer in Douglas County through exchange or purchase will be actively pursued. To provide long term recovery for the Columbian white-tailed deer, the recovery plan identifies a need for 5,500 acres of secure suitable habitat and a population of 1,000 animals supported on secure habitat for down listing to occur. A Habitat Management Plan will be prepared for existing BLM-managed lands determined to be of significant value to Columbia white-tailed deer or any lands acquired specifically for this species. The Roseburg District has recently acquired approximately 6,600 acres (included in above totals) of prime habitat for this species. A management plan for the area is currently under development. When adequate habitat is secured to meet recovery plan goals and the species is no longer listed, lands outside the core area and not acquired primarily for Columbian white-tailed deer management will no longer be restricted as described above.

Townsend's Big-eared Bat

Townsend's big-eared bat roosts and hibernacula will be protected and buffered by 600 feet to maintain the integrity of sites. Disturbance will be limited near roosts and hibernacula to prevent detrimental impact to colonies. The use of pesticides which are detrimental to prey species or their habitat within the normal hunting range of known bat nursery colonies and hibernacula will be restricted. The restriction will apply to an area within the normal hunting range of known nursery colonies, and hibernacula. BLM will pursue acquisition of the Scott Mountain hibernaculum consisting of approximately ten acres. To maintain habitat integrity on BLM-administered lands adjacent to the Scott Mountain hibernaculum, 36 acres will remain withdrawn from the timber base.

Marbled Murrelet

Conduct two years of survey prior to any physical disturbance of marbled murrelet habitat within zone II (approximately 50 miles from coast).

Protect contiguous existing and recruitment habitat for marbled murrelets (i.e., stands that are capable of becoming marbled murrelet habitat within 25 years) within a 0.5 mile radius of any site where the birds' 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).

Neither conduct nor allow harvest of timber within occupied marbled murrelet habitat at least until completion of the Marbled Murrelet Recovery Plan.

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Human activity will be minimized or curtailed within occupied or nesting stands between March 1 and July 15.

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

Amend or revise management direction as appropriate when the recovery plan is completed.

Bald Eagle

Comply with the Pacific Bald Eagle Recovery and Implementation Plans and existing, site specific habitat management plans.

Manage 4,658 acres along the major river corridors to develop or maintain forest structure needed to support nesting and foraging activities. These acres are withdrawn from the timber base.

To meet recovery plan goals, the currently existing six bald eagle nest territories and habitat (4,658 acres) will be protected as well as any future occupied territories under the following management guidelines:

1. Maintain or attain the following stand characteristics on all lands managed for bald eagles:

    a. Large conifer trees that are greater than 50 inches dbh and occur at a density of five to seven trees per acre.

    b. Multi-storied canopy with at least 60 percent crown closure.

    c. Remainder of the stand with conifer trees with an average dbh of 24 inches and an average density of 50 to 70 trees per acre.

2. Avoid disturbance including logging, mining, and mineral leasing (except existing recreational use) within 1/2-mile of active nest sites which may adversely affect, between the dates of February 15 and August 31 contingent on consultation under Sec. 7 of the Endangered Species Act.

3. Provide an appropriate level of fire protection on lands managed for bald eagles and restrict the use of insecticides within 1/2-mile of bald eagle sites.

Retain ownership of all BLM designated bald eagle habitat and pursue conservation easements or acquisition of other lands occurring within known active or future nesting territories. Priority is placed on acquiring 261 acres within Cougar Creek and Woodruff Mountain nesting territories.

Implementation of the Umpqua Corridor Habitat Management Plan will continue. Habitat management plans will be developed for all active nesting territories.

Vehicle use on 1.5 miles of road at the head of Huntley Creek will be restricted from February 15 to August 31 to limit nest site disturbance.

Peregrine Falcon

Comply with the Peregrine Falcon Recovery Plan and existing, site specific habitat management plans. Known and potential (sites rated 7 or above) nesting cliffs will be managed to maintain site integrity.

Although there are no known Peregrine falcon nesting sites on BLM-administered lands, sites occupied in the future will have seasonal disturbance restrictions of 1/4-mile or greater around them. Actual areas restricted will depend on the activity and likely disturbance at the nest cliff. Pesticides that have a negative effect on prey species or their habitat will not be applied within two miles of active sites. Habitat management plans will be written for all active Peregrine falcon nest sites on BLM-administered lands. High potential sites will periodically be surveyed for occupancy and all future occupied sites will be monitored annually to determine occupancy, nesting, and production. Acquisition will be pursued for occupied nest sites occurring on adjacent private lands. Currently there is one active nest site suitable for BLM acquisition.

Northern Goshawk

Retain 30 acre buffers of undisturbed habitat around active and alternative nest sites. Restrict human activity and disturbance within 1/4-mile of active sites between March and August or until such time as young have dispersed.

Plants

Umpqua Mariposa Lily (*Calochortus umpquaensis)*

Manage Umpqua mariposa lily habitat to increase numbers of plants in each of the populations known throughout the species range. A conservation strategy will be prepared in cooperation with the

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Medford District BLM, Umpqua National Forest, and the U.S. Fish and Wildlife Service which will prescribe the following management actions at locations throughout the species range:

- Acquisition of private land to increase habitat in federal ownership.
- Securing voluntary protection by private landowners through cooperative agreements.
- Designation of habitat as Areas of Critical Environmental Concern.
- Installation of gates and fences.
- Management of livestock grazing and Off Highway Vehicle use.
- Collection of seed for long term storage.
- Prescribed burning of habitat.
- Girdling trees, precommercial thinning, and commercial thinning forest stands to produce gaps in forest habitat.
- Monitoring habitat to determine population trends and the effects of management treatments.
- Conducting demographic studies.

Special Areas

Objectives

Retain and modify existing Special Areas to maintain or protect the resource values for which they were originally designated. Designate new Special Areas where resource values have been identified that need special management attention. Remove Special Area designation from any area that does not meet relevance and importance criteria. Provide interim management to candidate Special Areas nominated since publication of the Draft RMP to protect resource values and preserve future management options.

Manage Areas of Critical Environmental Concern for the maintenance, protection, or restoration of relevant and important resource values.

Manage Research Natural Areas for the purpose of scientific study, research, and education and to provide a baseline against which human impacts on natural systems can be measured.

Manage Outstanding Natural Areas for recreation in a way which will not damage the natural features that make the area outstanding.

Land Use Allocations

Seven existing Special Areas will be retained, four of which will be expanded. Three new Special Areas will be designated. Total allocation will be 11,323 acres (see Table 3 and Map 5). The Brad's Creek and Golden Bar Areas of Critical Environmental Concern will be combined and expanded to form the new Umpqua Wildlife Area of Critical Environmental Concern. Seven areas have been nominated for Special Area designation since publication of the draft RMP. These areas include Ace Williams Mountain, Bilger Ridge, Canton Creek, Langell Ridge, North Myrtle Creek Headwaters, Lee Creek, and Odd Lots. Ace Williams Mountain, Bilger Ridge, Canton Creek, Langell Ridge, North Myrtle Creek Headwaters will be evaluated for future designation as Areas of Critical Environmental Concern, Lee Creek as an Area of Critical Environmental Concern/ Research Natural Area, and Odd Lots as an Area of Critical Environmental Concern/Outstanding Natural Area (see Table 6).

Management Actions/Direction

Management activities will be implemented in such a manner so as to be compatible with specific management objectives identified in site specific activity management plans. Management plans with specific management objectives have already been prepared for all existing Areas of Critical Environmental Concerns and Research Natural Areas. New plans will be prepared for new and expanded Special Areas. These new plans will define specific management objectives and address a wide spectrum of management activities such as land acquisition, the role of fire, and public outreach. Interim management will be provided areas without activity management plans to protect the natural features for which the areas were designated and preserve future management options.

Land acquisition will be pursued for the Beatty Creek Area of Critical Environmental Concern/Research Natural Area to block up ownership and improve management opportunities. Land acquisition for other Special Areas will be addressed in site specific management plans or activity level environmental assessments.

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Management restrictions for Special Areas are summarized below. Additional restrictions may be identified in site specific management plans or activity level environmental assessments.

- Mineral withdrawal of all Areas of Critical Environmental Concern/Research Natural Areas. Mining will be permitted in other Special Areas with a plan of operations to avoid undue and unnecessary degradation.

- No salable mineral development and no surface occupancy for leasable minerals in Special Areas.

- Closure of Areas of Critical Environmental Concern/Research Natural Areas to Off Highway Vehicle use and the restriction of Off Highway Vehicle use to existing roads and trails in all other Special Areas.

- No timber harvest, road construction, or the operation of ground based fire suppression equipment off existing roads or other surface disturbing activity in Areas of Critical Environmental Concern/Research Natural Areas.

Cultural Resources Including American Indian Values

Objectives

Identify cultural resource localities and manage them for public, scientific, and cultural heritage purposes.

Conserve and protect designated cultural paleontological 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.

Fulfill responsibilities to appropriate American Indian groups regarding heritage and religious concerns.

Identify paleontological resources, manage them for their scientific, educational, and recreational values, and protect significant sites and specimens.

Land Use Allocations

Cultural resources are allocated to specific use categories based on scientific, heritage, and interpretive values.

Sites with significant values will be protected from 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.

Management Action/Direction

Conduct systematic inventories of areas likely to contain cultural resources.

Evaluate cultural resource sites to determine their potential for contributing to public, cultural heritage, and/or scientific purposes.

Develop cultural resource management plans for areas with fragile resources or intensive prehistoric or historic use. These areas will include Golden Bar, the North Umpqua River corridor, the Little River/Wolf Creek area, the Middle Creek drainage, Camas Valley, the White Rock/Deadman Mountain/Deadman Creek area, and the mining areas in the southern portion of the district.

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 Native American groups and other interested parties to accomplish cultural resource objectives.

Monitor cultural resources being impacted by unauthorized use, such as 35DO100, 35DO147, 35DO153, and 35DO435, and take appropriate law enforcement actions.

Implement physical protection measures, such as riprapping and barrier installations, to reduce deterioration.

Develop memoranda of understanding with federally recognized Indian tribes and other Indian groups so that their heritage and religious concerns may be appropriately considered. These groups may include the Cow Creek Band of Umpqua Tribe of Indians, the Confederated Tribes of the Siletz Indians, the Confederated Tribes of Grand Ronde, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, and the Coquille Indian Tribe.

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Acquire significant cultural resource properties for public, cultural heritage, and scientific purposes. These properties include 35DO17, 35DO19, 35DO291, 35DO431, and the portion of 35DO383 located on nonfederal land.

Develop province level inventory plans.

Investigate landscape features such as bogs, ponds, and packrat middens, as well as 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.

Maintain an updated record of paleontological sites in the Roseburg District and manage the sites as appropriate.

Visual Resources

Objectives

Manage all BLM-administered land to meet the following visual quality objectives:

Class

VRM I: Preserve the existing character of landscapes.
VRM II: Retain the existing character of landscapes.
VRM III: Partially retain the existing character of landscapes.
VRM IV: Allow major modifications of existing character of landscapes.

Land Use Allocations

Class	Acres
VRM I	28
VRM II	18,045
VRM III	4,385
VRM IV	396,546

See Map 4.

Roseburg District Visual Resource Management Classes will be determined by the following:

1. Designate Visual Resource Management Classes “as inventoried” in the Visual Resource Inventory, including:
   a. Land adjacent to (within 1/4-mile of) developed recreation sites, state and federal highways, state scenic waterways, and rivers designated under the federal Wild and Scenic Rivers Act.
   b. Available forest land where Federal ownership consists of more than half of the viewshed.
   c. Areas of Critical Environmental Concern and Research Natural Areas.
2. Designate rural interface areas under Visual Resource Management Class III objectives unless these lands fall under a more restrictive Visual Resource Management Class.
3. Designate all other forest lands Visual Resource Management Class IV.

Management Actions/Direction

Address visual resource management issues when conducting landscape/watershed analysis, environmental assessments, or environmental impact statements.

Use the visual resource contrast rating system during project level planning to determine whether or not proposed activities will meet Visual Resource Management objectives. Use mitigation measures to reduce visual contrasts.

Provide for natural ecological changes in Visual Resource Management Class I areas. Some very limited management activities may occur in these areas. The level of change to the characteristic landscape would be very low and must not attract attention. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Manage Visual Resource Management 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 Visual Resource Management Class III lands for moderate levels of change to the characteristic landscape. Management activities may attract attention but should not dominate the view of

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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 Visual Resource Management 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 the activities through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture.

Adhere to the following timber harvest scenarios to meet Visual Resource Management Class II, III, and IV objectives. Based on the visual resources rating system and site specific conditions, these scenarios or others may be used.

VRM II: Timber management approaches to meet Visual Resource Management Class II objectives will employ single tree selection, uneven-aged harvest, retention of shelterwood overstory trees or group selection management in seen areas. Larger regeneration harvests will be in unseen areas. Fire suppression and fuels management standards will be established to meet Visual Resource Management Class II objectives.

To permit screening of regeneration harvests and permit time for regrowth between sequential entries, regeneration harvests will not remove more than 6.6 percent of any seen Visual Resource Management Class II area in a given decade.

VRM III: Timber management approaches to meet Visual Resource Management Class III objectives will employ either short-term retention of shelterwood overstory trees, or use of regeneration harvests which have less than ten acres of seen area and which do not disturb more than ten percent of the seen Visual Resource Management Class III area in any decade. Where possible, regeneration harvests will be screened from key viewing points along major travel routes by uncut areas or by shelterwood units or young stands.

VRM IV: No specific visual management constraints will apply to lands managed for Visual Resource Management Class IV objectives, but mitigation of visual impacts will be incorporated where consistent with efficient timber harvest or other management activities.

Employ guidelines of the revised Oregon Forest Practices Act, Section 17, in visually sensitive corridors along Interstate 5 and State Highways 38, 42, and 138.

Monitor Visual Resource Management according to District Visual Resource Management monitoring procedures.

Conduct Visual Resource Management inventories on newly acquired public lands.

Wild and Scenic Rivers

Objective

Manage designated components of the National Wild and Scenic Rivers System by protecting their Outstandingly Remarkable Values and maintain and enhance the natural integrity of river related values.

Land Use Allocations

The only designated National Wild and Scenic River is an 8.4 mile segment of the North Umpqua River located on BLM-managed lands classified as recreational.

Eligible Segments

Of the five river segments found eligible for inclusion into the National Wild and Scenic Rivers System, three were not assessed for suitability because they did not meet minimum suitability requirements (Cow Creek, South Umpqua River, Umpqua River).

The two which were assessed for suitability (Canton Creek, Smith River) were determined to be unsuitable for designation in the National Wild and Scenic River system.

The corridor width for rivers found eligible or studied for suitability is defined as 1/4-mile on either side of the river.

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Under interim protective management, all authorized actions on BLM-administered land within a 1/2-mile wide corridor must have either a positive or neutral effect on identified Outstandingly Remarkable Values that resulted in rivers being found eligible/suitable**.** A synopsis of interim management for the Roseburg District follows:

> Eligible Recreational Rivers: Exclude timber harvest in the riparian reserves, moderately restrict development of leasable and salable minerals, and protect a segment's free flowing values and identified Outstandingly Remarkable Values.

Implementation monitoring will be conducted according to procedures identified for monitoring Wild and Scenic Rivers.

Management Actions/Direction

Undesignated Segments

Determine future manageable river segments which may be suitable for designation to the National Wild and Scenic River 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 Outstandingly Remarkable Values 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.

Designated Segments

Revise the North Umpqua Wild and Scenic River Management Plan, dated 1992, to address attainment of Aquatic Conservation Strategy Objectives.

Manage the Congressionally designated North Umpqua River segment as a Wild and Scenic River under the North Umpqua Wild and Scenic River Management Plan.

Wilderness Study Areas

There are no lands in the Roseburg District which are eligible as Wilderness Study Areas.

Rural Interface Areas

Objectives

Consider the interests of adjacent and nearby rural land owners, including residents, during analysis, planning, and monitoring related to managed rural interface areas. These interests include personal health and safety, improvements to property and quality of life. Determine how land owners might be or are affected by activities on BLM-administered lands.

Land Use Allocations

Managed rural interface areas encompass approximately 8,522 acres of BLM-administered land within 1/4-mile of private lands zoned for 1-5 acre lots located throughout the district (see Map 6 for locations).

Management Actions/Direction

Work with local governments to:

- Improve the BLM data base regarding private land planning/zoning designations and residential development near BLM-administered land.
- Provide information to local planners regarding BLM land allocations in Rural Interface Areas and the management objectives and guidelines for these lands.
- Develop design features and mitigation measures that will minimize the possibility of conflicts between private and federal land management.
- Monitor the effectiveness of design features and mitigation measures in Rural Interface Areas.

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.

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Use design features and mitigation measures to avoid/minimize impacts to health, life and property, and quality of life. The following timber management practices will not be applied on those lands: herbicide spraying, clearcutting, and broadcast burning.

Manage rural interface areas using Visual Resource Management class III standards (unless an area is classified as Visual Resource Management class I or II).

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 (e.g., 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 and adaptive management area 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.

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.

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

Ensure the continued availability of Public Land for a diversity of resources dependent outdoor recreation while maintaining the commitment to manage Public Land consistent with the applicable laws, regulations, and principles of ecosystem management.

Provide a wide range of developed and dispersed recreation opportunities that contribute to meeting projected recreation demand within the planning area.

Manage recreation use on BLM-administered land to protect natural resources, provide visitor safety, and minimize conflicts among various uses.

Provide a variety of public recreation opportunities and experiences through visitor awareness information, interpretation, and protection, with emphasis on-the-ground presence.

Expand and strengthen cooperative partnerships with Federal, State, and local agencies and the private sector to enhance the outdoor recreation opportunities offered on and adjacent to the Public Land.

Enhance recreation opportunities provided by existing and proposed watchable wildlife areas and national back country byways.

Provide motorized and 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 the policy, goals, and objectives identified in BLM's Recreation 2000 Implementation Plan and Oregon-Washington Public Lands Recreation initiative.

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Develop and maintain cooperative relationships with national, state, and local tourism entities and assist them in promoting local tourism.

Land Use Allocations

Recreation Sites
Existing - 12.
Proposed - 17.

Recreation Trails
Existing - 7.
Proposed - 13.

Special Recreation Management Areas
Existing - one; containing 1,620 acres.
Proposed - two; containing 3,950 acres.

Extensive Recreation Management Areas
Existing - three; containing 420,018 acres.
Proposed - zero acres.

Off Highway Vehicle Use Areas
Open - zero acres.
Limited - 423,422 acres.
Closed - 2,166 acres.

Back Country Byways
Existing - two; encompassing 34 miles.
Proposed - three; encompassing 70 miles.

See Map 3 for locations and Tables 2 and 3 for additional details.

Management Actions/Direction

Riparian Reserves

New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not 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 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.

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

Late-Successional Reserves

Retain and maintain existing recreation development in Late-Successional Reserves. Dispersed recreational uses, including hunting and fishing, generally are consistent with the objectives of Late-Successional Reserves. 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.

Review new recreation development proposals on a case-by-case basis. Approve new recreation projects when adverse affects can be minimized and mitigated. Locate new recreation developments to avoid degradation of habitat and adverse affects on identified late-successional species. Permit no new recreation developments that may adversely affect Late-Successional Reserves.

Removal of snags and logs in Riparian Areas may be necessary to reduce hazards to humans along roads and trails, and in or adjacent to recreation sites. Where materials must be removed, a salvage sale is appropriate.

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 Sites and Trails

Continue to operate and maintain 12 existing recreation sites and six existing trails. (See Table 2) Maintain potential for recreation development in 16 sites and 12 trail locations listed in Table 2 and any future sites or trails consistent with management allocations and practices. Develop potential sites and trails as funding becomes available.

Designate developed recreation sites as fire suppression areas (intensive) and fire fuels management areas. These designations will reduce fire hazards and protect investments. Restrictions on fire suppression equipment and activities at all developed recreation sites will be in accordance with

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Special Fire Management Measures C-5-6 of the BLM/Oregon Department of Forestry Fire Protection Contract.

Manage timber within developed recreation sites for purposes of 1) removing hazard trees, 2) providing space for additional facilities and activity areas, and 3) providing desired regeneration of the forest canopy.

Consistent with management of existing roads and developed recreation sites in riparian areas, fell trees when necessary to maintain open flyways to ponds (dispersed recreation sites) where helicopters dip water for fire suppression. Restrict the sale of timber in any existing or potential recreation site to the salvage of trees cut for any of the above stated purposes.

Pursue mineral withdrawals or expansions for existing developed recreation sites and for proposed recreation sites when development is approved.

Propose for withdrawal from locatable mineral entry the following existing or potential recreation sites:

Site	***Acres***
Cow Creek Bluffs Trail	10.00
Cow Creek Recreational Gold Panning Area	93.76
Eagleview Recreation Site	42.40
Iron Mountain Gold Panning Area	40.00
Island Creek Recreation Site	162.22
Miner-Wolf Watchable Wildlife Site	10.00
North Umpqua Trail Primitive Campsite	43.17
Olalla-Thompson Creek	10.00
Osprey Boat Ramp	10.00
Pickett Bridge Recreation Site	15.00
Susan Creek Recreation Site	200.82

A total of 637.37 acres will be proposed for withdrawal from public land laws and the mining laws.

Acquisition of private lands or access easement to cross nonfederal lands will be needed before trail systems are built to Cow Creek Bluffs, Alexander Butte, Upper Susan Creek Falls, Salt Creek, Deadman Mountain, or around Ben Irving Reservoir.

Improve and develop camping, hiking, and other dispersed recreational opportunities within the Cow Creek Special Recreation Management Area in the vicinity of Cow Creek Bluffs through land acquisition of approximately 840 acres, Sections 33 and 34, T. 30 S., R. 07 W., W.M., and in Sections 4 and 5, T. 31 S., R. 07 W., W.M. Pursue acquisition of approximately 540 acres for hiking opportunities on the Salt Creek Trail, Section 18, T. 30 S., R. 06 W., W.M., and Sections 25, 26 and 35, T. 30 S., R. 07 W., W.M.

Pursue land acquisition to develop the Hardscrabble and Island Creek potential recreation sites. Land acquisitions will involve acquiring approximately 40 acres in two different ownerships located in Section 12, T. 22 S., R. 6 W., W.M., for the Hardscrabble site, and approximately 60 acres in Section 1, T. 31 S., R. 7 W., W.M. and Section 36, T. 30 S., R. 7 W., W.M. for the Island Creek Recreation Site.

Consider additional land acquisitions for recreation purposes which meet management objectives and recreation program goals in Extensive or Special Recreation Management Areas.

Special Recreation Management Areas

Manage three Special Recreation Management Areas for intensive recreation management. Develop and maintain a Recreation Area Management Plan for each Special Recreation Management Area. Update and revise the Management Plan for the North Umpqua Special Recreation Management Area and Area of Critical Environmental Concern, to be consistent with the North Umpqua Wild and Scenic River Management Plan 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.

See Table 3 for a description of the three Special Recreation Management Areas.

Manage Special Recreation Management Areas under the following objectives:

1. Identify, plan, and implement high priorities for recreational and interpretive opportunities for the public, emphasizing camping, picnicking, hiking, nature study, interpretation, watchable wildlife, driving for pleasure, horseback riding, mountain biking, white water sports, fishing, swimming, recreational gold panning, and other compatible activities.

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2. Identify the need for, and secure funding to develop priority areas. Utilize outside funding programs and initiatives including volunteer labor.

3. Develop partnerships with public agencies, private landowners, and recreation user groups or individuals to promote recreation opportunities.

Extensive Recreation Management Areas

Designate all lands not classified as a Special Recreation Management Areas as Extensive Recreation Management Areas, one per respective Resource Area. Recreation management is one of several management objectives where limited commitment of resources provides extensive and unstructured types of recreation activities. Extensive Recreation Management Areas may contain recreation sites.

Maintain recreation site information and visitor use data based on Special and Extensive Recreation Management Areas in each Resource Area. Calculate visitor statistics and other information in the annual Recreation Management Information System report.

Back Country Byways

Continue to manage the North Umpqua River National Scenic Byway (8.4 miles) and the Cow Creek Back Country Byway (26 miles in the Roseburg District and 17.5 miles in the Medford District).

Dedicate the following as Back Country Byways: Tyee-Loon Lake Road (25 miles in Roseburg District), Coos Bay Wagon Road (18 miles in Roseburg District), and Smith River Road (27 miles in Roseburg District). Additional mileage will be designated on all three proposed Back Country Byways on lands managed by the Coos Bay District BLM.

Coordinate dedication and management of Back Country Byways with adjoining BLM Districts, local county governments, the Chamber of Commerce and regional visitor bureau. Incorporate public participation where issues are sensitive on any route listed with potential for a back country byway.

Manage Back Country Byways according to policy and objectives contained in BLM Manual 8357.

Off Highway Vehicle Designations

Designate all public lands within the District as “limited” or “closed” to Off Highway Vehicle (motorized) use. No lands will be designated in the open category. Off Highway Vehicle designations apply only to BLM-administered lands, including:

Limited to OHV use	423,422 acres
Closed to OHV use	2,166 acres
Total acres	425,588 acres

Descriptions of Limited and Closed Off Highway Vehicle Areas

A. Limited Areas to Motorized Use - Limited use will occur on 423,422 acres of public land, including:

1. Limited to Existing Roads and Trails - 415,446 acres.

Motorized use will be “limited to existing roads and trails” to meet objectives of resource protection, safety of users and minimization of conflicts among various uses of the public lands, in accordance with criteria listed in 43 CFR 8342.1 (a-d). New proposed motorized routes will be established through the NEPA process.

As part of the area limited to existing roads and trails, 11,681 acres of the Hubbard Creek area will be managed as an Off Highway Vehicle recreation use area under the limited category. In this area, registered vehicles such as All Terrain Vehicles and motorcycles will be allowed to travel on BLM maintained (graveled) roads as well as other natural surfaced roads and trails on public lands. Cooperation and partnerships will be sought with adjoining private landowners, other government agencies (State) and organized clubs for program development.

2. Limited to Official Use - 7,976 acres

   a. Motorized use will be “limited to official use” on 1,395 acres of BLM roads totaling 230 miles of roads (517 spur roads within a 50 foot wide corridor). Official motorized use may occur as determined by the Authorized Officer on any of these spur roads.

      Of these 517 roads, 234 will be limited to official use year-round and 283 will be limited to official use seasonally in the South Douglas Resource Area as follows:

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- Ten roads will be closed seasonally to public use between December 1 and August 15. The ten roads comprise a total of 87 acres and a combined length of 14 miles. The purpose of the limitation is to meet wildlife management program objectives. The roads are open to motorized use between August 16 and November 30 each year.

- Between October 15 and May 15, 273 roads will be closed seasonally to public use . The 273 spur roads comprise a total of 620 acres and a combined length of 102 miles. The purpose of the limitation is to meet water quality and soil protection objectives. The roads are open to motorized use between May 16 and October 14 each year.

Roads listed above vary in length, however, average less than one mile long.

A list of BLM roads in this category is maintained in the District Office. The roads will be managed according to the District Off Highway Vehicle Implementation Plan. This plan will determine which roads will be rehabilitated, which will be gated, signed, or restricted by other means, and when actions will be implemented. In addition, the District Transportation Management Objectives Plan will identify how roads will be managed in the future.

Limitations on motorized use will help meet objectives of the wildlife program, including upgrading hunting opportunities. Limitations may also reclaim spur roads not needed over a ten year or longer period.

b. Motorized use will be limited to official use year-round on 6,581 acres of public land within the North Bank Habitat Management Area. Motorized use will be closed to the general public and official use will be allowed as determined by the Authorized Officer.

In both cases above, the limitation is on the “type of user”, closing motorized use to the general public, but allowing authorized access for official or administrative use.

Nonmaintained dirt roads will be inventoried and may be closed to motorized use at a future date.

Where problems occur in any limited area, roads trails or areas may be closed on an emergency basis through procedures identified in 43 CFR 8341 and 8364.

B. Closed Areas to Motorized Use - Three closures will occur on 2,166 acres:

1. Areas of Critical Environmental Concern/ Research Natural Areas - 1,419 acres, including:

   - Bear Gulch - 330 acres
     T. 31 S., R. 4 W., Sec. 7; T. 31 S, R. 5 W., Sec. 1 & 12.

   - Beatty Creek - 173 acres
     T. 30 S., R. 6 W., Sec. 31; T. 30 S., R 7 W., Sec. 25.

   - North Myrtle Creek - 472 acres.
     T. 28 S., R. 4 W., Sec. 33.

   - Red Ponds - 134 acres (does not include two spur roads into unit, approx .1 mile long)
     T. 27 S., R. 3 W., Sec. 35.

   - Tater Hill - 280 acres
     T. 29 S., R. 2 W., Sec. 6, 7; T. 29 S., R. 3 W., Sec. 1;
     T. 28 S, R. 3 W., Sec. 36.

   - Myrtle Island - 30 acres
     T. 24 S., R. 7 W. Secs. 20, 21.

2. Trails closed to Off Highway Vehicle use - 92 acres

   All BLM trail systems intended for nonmotorized activities such as hiking, mountain biking, or horseback riding will be closed to motorized use, including:

   North Umpqua Trail
   Wolf Creek Falls Trail
   Susan Creek Falls Trail
   Susan Creek Complex Trails
   Deadline Falls Watchable Wildlife Trail
   Miner-Wolf Creek Watchable Wildlife Trail

   Additional hiking trails, progeny test sites, or Areas of Critical Environmental Concern developed in the future will also be closed to Off Highway Vehicle use.

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3. Progeny Test Sites - 655 Acres

   Fifty-three sites are closed to motorized use. These genetic evaluation areas are a test ground for the progeny of selected Douglas-Fir trees. Most of the District's progeny test sites are fenced and have no motorized access into or through the site. The site list is available at District Office.

General Off Highway Vehicle

An implementation plan for Off Highway vehicle management will be completed as outlined in BLM Manual 8342.

General Recreation Management

Implement initiatives, goals and objectives in BLM's Recreation 2000 Strategic Plan to the capabilities of the District.

Maintain District recreation sites to a standard that protects the resource, the public, and the public investment, and fosters pride of public ownership.

Place increased emphasis on interpretive and informational signs, maps and brochures.

Support state and local recreation management strategies to encourage tourism and provide quality visitor services.

Plan new developments to meet standards set forth in the Americans with Disabilities Act of 1990, as appropriate and feasibly possible.

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

The General Forest Management Areas and Connectivity/Diversity Blocks net land use allocations are interspersed with Riparian Reserves and other land use allocations which are not shown on the Roseburg District Strategy map The net land use allocation acres are the actual allocated acres for the General Forest Management Areas and Connectivity/ Diversity Blocks and are the acres modeled in TRIM-PLUS as available for harvest.

Management Actions/Direction

All Land Use Allocations

Conform all management activities within the range of Port-Orford cedar to the guidelines described in the BLM Port-Orford cedar Management Policies to mitigate damage caused by *Phytophthora lateralis*. Site specific analyses for projects within the range of Port-Orford cedar will consider possible effects on the species.

Matrix (General Forest Management Areas and Connectivity/Diversity Blocks)

Declare an annual allowable sale quantity of 7.0 million cubic feet (45 million board 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. This estimate, however, is surrounded by uncertainties. The actual sale levels may differ, as timber sale levels will be an effect of overall forest management rather than a target that drives that management. 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.

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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 are over the life of the plan, following a start-up period. The actual sustainable timber sale level attributable to the land use 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 take place.

During the first several years, the annual allowable sale quantity will not likely be offered for sale. The resource management plan represents a new forest management strategy. Time will be required to develop new timber sales that conform to the resource management plan.

Apply silvicultural systems that are planned to produce, over time, forests which have desired species composition, structural characteristics, and distribution of seral or age classes (see Appendix E).

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 which produces maximum average annual growth over the lifetime of a timber stand. In the planning area, culmination occurs between 80 and 110 years of age. Regeneration harvests may be scheduled in stands as young as 60 years, in order to develop a desired age class distribution across the landscape.

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 prevent the development of undesirable species composition, species dominance, or other stand characteristics. 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.

Plan harvest of marketable hardwood stands in the same manner as conifer stands, if the land is not otherwise constrained from timber management. Where hardwood trees became established following previous harvest of conifers, plan to reestablish a conifer stand on the site.

Unscheduled Harvests - see Riparian Reserves and Late-Successional Reserves sections.

Timber sale contracts, usually awarded on a competitive basis, are the means of accomplishing all timber harvest and many forest development practices. The standard and special provisions (which include mitigating measures) in a contract set forth the performance standards to be followed by the contractor in carrying out the action in accordance with applicable laws, regulations, and policies. In contract preparation, selection of special provisions is governed by the scope of the action to be undertaken and the physical characteristics of the specific site. Standard provisions of the basic timber sale contract, Bureau Form 5450-3, are applicable for all timber sales. Bureau manuals and manual supplements provide a variety of approved special provisions for use, as appropriate, in individual contracts. The combination of selected special provisions constitutes Section 41 of the timber sale contract. Maintaining or enhancing water quality and long-term soil/site productivity will be inherent in all timber harvest and production practices.

The Allowable Sale Quantity has been calculated using a computer program called TRIM-PLUS. The sustainable Allowable Sale Quantity has been calculated in cubic feet. Timber sales under the plan will be sold according to cubic foot measure.

Accomplish timber harvest by the appropriate application of aerial, cable, or ground-yarding

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systems. The logging systems and the degree of log suspension are design features that will be employed for yarding efficiency, watershed protection, to minimize soil damage and to minimize damage to residual trees in partial cut operations. BLM Oregon Manual Supplement H-5420-1 will guide selection of harvesting techniques for timber sale contracts.

Plan timber sales involving ground yarding systems with skid trails (including trails from previous harvest entries) to have insignificant (less than one percent) growth loss effect. Skid trails will affect less than ten percent of the land. Existing skid trails will be used as much as possible and new skid trails will be limited to slopes of less than 35 percent. Operation on these trails will minimize soil displacement and occur when soil moisture content provides the most resistance to compaction. Upon final harvest, all compacted trails, including skid trails from previous entries, will be tilled with a properly designed self-drafting subsoiler. For entries other than final harvest, skid trails will be selectively tilled.

Harvest unit size will be determined at the appropriate level given the site specific management objectives, such as watershed wildlife habitat enhancement or salvage of timber damaged by fire, disease, insects, or wind. In addition, economic, logistical, and safety considerations may influence size.

Accomplish regeneration harvests in such a way that the land can be adequately restocked within five years.

Apply commercial thinning in the matrix where practical and where research indicates increased gains in timber production are likely. The interval of treatment will range from 10 to 30 years, varying by site class, with poor sites having longer intervals.

Harvest trees from lands withdrawn from timber production under certain circumstances, only when their harvest will be consistent with other plan guidelines. Examples of circumstances under which trees may be harvested from these lands are:

- To harvest inclusions of trees within a harvest unit on lands mostly classified as suitable for timber production, to allow design of more logical management units and/or reduced road construction, thereby lessening net adverse environmental impacts.
- To salvage trees or stands killed or substantially damaged by fire, windthrow, or other natural disturbance.
- To control the spread of insect or disease outbreaks.
- To conduct experiments.
- To provide for the safety of forest users (this includes hazard tree removal in camp and picnic grounds, in administrative sites, and along trails and roads open to the public).
- To maintain or enhance fish and wildlife habitats.
- To improve the visual resource by opening scenic vistas.
- To provide guy line or tailhold trees where needed to facilitate logging on adjacent lands.
- To facilitate construction and maintenance of facilities such as roads, trails, power lines, communication facilities, administrative facilities, recreation facilities, etc.
- To eliminate interference with the operation of communication sites.

Design, to the extent consistent with other management direction, forest products sales to encourage complete utilization of harvestable timber including noncommercial species.

Use site preparation procedures to prepare newly harvested and inadequately stocked areas for planting new trees. Four types of site preparation treatments (prescribed burning, herbicide application, and mechanical and manual techniques) will be utilized. BLM's "Record of Decision Western Oregon Program - Management of Competing Vegetation", 1992, and BLM Oregon Manual Supplement H-5420-1 will be followed in selecting site preparation treatments, using an integrated vegetation management approach.

Use prevention as the preferred strategy in controlling competitive and unwanted vegetation. The goal is to prevent or reduce the need for future vegetation control by considering known ecological relationships on individual sites. Harvest activity will be designed to eliminate or reduce post harvest treatment. Prevention seeks to detect and ameliorate conditions that cause or favor the presence of competing or unwanted vegetation in the harvest units before it interferes with management objectives. Prevention is in contrast to treatment.

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Use herbicides where considered the most appropriate treatment to control grasses, forbs, brush and noncommercial tree species, to increase seedling survival. Application and monitoring of herbicides will be done in accordance with BLM's "Record of Decision, Western Oregon Program, Management of Competing Vegetation", 1992.

Apply herbicides aerially and by several ground methods, as site specifically appropriate. The method selected will depend on costs, topography, equipment limitations, target plant species and their distribution, potential environmental impacts, and biological conditions. Most aerial herbicide applications will be accomplished by helicopters equipped with systems designed to limit herbicide application to the target areas.

Control stringently the timing of herbicide treatment in relation to specified weather conditions such as temperature, humidity, and wind. Continuous project inspection of spraying operations is required. There is full authority for ordering cessation of operations based on adverse field conditions. Both equipment and operators will be checked frequently by field project inspectors. Only registered chemicals will be used in accordance with label instructions on the container. Handling, storage, and application of chemicals will also be in accordance with the Oregon Forest Practices Rules .

Use manual site preparation consisting of brush pulling or cutting or hand piling of slash for burning.

Use mechanical site preparation consisting of piling or windrowing of slash, brush, and unmerchantable stems. Track-type equipment with a brush blade will be restricted to areas with suitable soil types and slopes less than 35 percent. Track-type tractor site preparation operations will meet the following minimum conditions:

1. Minimize piling of large woody material.

2. Avoid displacing duff layers and topsoil into piles or windrows.

3. Make only two machine passes (one round trip) over the same area.

4. Operate at soil moistures that maximize resistance to compaction. Special equipment or techniques that will achieve the same insignificant (less than one percent) growth loss result may be used instead of the preceding techniques, especially on soils considered unsuitable for tractor type operations. All compacted areas will be tilled with a properly designed self drafting subsoiler equipment.

Convert lands identified as available for timber production but currently growing primarily brush or hardwoods to appropriate conifer species unless the hardwoods will produce a higher net monetary return than conifers. Such actions will meet relevant tests of economic feasibility or justification and will be consistent with other resource and land use allocation objectives of an alternative. Conversion could include harvest of existing merchantable trees, slashing of nonmerchantable trees, and other site preparation techniques as appropriate.

Achieve adequate reforestation as promptly as practical following timber harvest. Harvested areas will be planted with indigenous commercial coniferous species (e.g., Douglas-fir, western hemlock, and western redcedar, etc.) generally within one year of the completion of harvesting and site preparation. Hardwoods will be encouraged on harvested sites where they will produce a higher net monetary return than conifers. Identified root disease centers will be planted with indigenous resistant tree species.

Use planting stock from nursery grown seed collected on sites and at elevations similar to the specific project area. Genetically selected stock will also be nursery grown and used to the extent available in accordance with BLM's Western Oregon Tree Improvement Plan. Broad selection of parent trees for such stock is used to maintain genetic diversity.

Conduct post-treatment reforestation surveys to determine the rate of survival and if replanting or interplanting will be required to meet stocking standards.

Protect plantations by using treatments including protection of seedlings from the sun by shading and protection from damage by deer, elk, mountain beaver, or other animals by placing plastic tubing or netting over the seedlings or by bud capping. Large populations of mountain beaver or pocket gophers will be reduced by several different methods when they cause significant damage to a plantation. The number of acres requiring each of these treatments will be determined annually in conjunction with normal reforestation surveys. Control within progeny test sites and other intensive study plots will also include porcupine or other animals causing significant damage. The appropriate treatments will be analyzed and determined through an interdisciplinary effort that will consider all resource objectives.

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Promote the survival and establishment of coniferous seedlings through maintenance treatments. Release treatments reduce competition for light, moisture, and nutrients between surrounding vegetation and existing coniferous seedlings, and promote dominance and growth of established coniferous trees. Faster growing hardwoods, such as red alder, bigleaf maple or vine maple, overtop and suppress slower starting conifer seedlings. The degree and type of competition varies with the individual site. On dry sites, grasses, forbs and shrubs are strong competitors for water, while elsewhere shrubs and/or hardwoods grow rapidly enough to shut out essential light and compete for water during the dry summer. With reduced competition, the conifers rapidly grow beyond the point where they can be overtopped and further suppressed by surrounding vegetation. When this growth situation is achieved (approximately three to ten years after planting), there will be no further effort to control competing vegetation.

Use an integrated vegetation management approach in selection of maintenance and release treatments, in conformance with BLM's "Record of Decision, Western Oregon Program - Management of Competing Vegetation", 1992. Herbicides will be used to control competing vegetation when analysis shows their use to be the most appropriate treatment. See the previous discussion on site preparation for further discussion of herbicide use. Manual vegetation control methods (clearing around selected commercial trees using hand tools) will also be used when considered most appropriate to assure commercial tree growth.

Apply precommercial thinning to timber stands in the intensive timber production base that are overstocked. Thinning will generally be done between ten and 20 years of age. Average number of trees left will vary between 150 to 250 trees per acre depending on the alternative and individual stand prescription. Contract specifications will define desired density, spatial arrangement and selection criteria for trees to be retained.

Fertilize areas precommercially or commercially thinned and portions of areas where stocking control is achieved through plantation spacing where increased wood yields will result. The average application is expected to be 200 pounds of nitrogen per acre beginning when the stand is precommercially thinned and at 15 year intervals thereafter until 20-25 years before final harvest. In addition to acceleration of growth for up to 15 years following treatment, fertilization tends to reduce shock associated with thinning.

Manage top ranking plus trees intensively in the field to optimize cone production (thinning, fertilization, girdling, and systemic insecticide treatment). The seed orchards for Douglas-fir and sugar pine will be managed to produce increasing yields of genetically selected seed. Minor species seed production plantations will also be planted in the seed orchards to ensure a dependable supply of seed for trees native to the Roseburg District.

Apply pruning to selected young forest stands. This treatment can significantly increase the value of harvested timber. It reduces the proportion of juvenile wood in the tree and the number of knots caused by branches. The lower branches of the identified crop trees will usually be pruned to a height of approximately 18 feet.

General Forest Management Area

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 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 six to eight green conifer trees per acre after regeneration harvest to provide a source of snag recruitment and 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 three decades) snag deficit. These trees do not count toward green tree retention requirements.

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Leave 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long. Existing decay class 1 and 2 logs count toward this requirement. Down logs will reflect the species mix of original stands. Where this management action/ direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit.

Plan initial spacing of seedlings, thinning and control of competing vegetation in the General Forest Management Area to maximize wood production by concentrating site resources on individual tree growth.

See Appendix E for additional detailed management direction.

Connectivity/Diversity Blocks

Maintain 25 to 30 percent of each block in late-successional forest at any point in 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.

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.

Provide 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long. Existing decay class 1 and 2 logs will be credited toward this total. Down logs will reflect the species mix of original stands. Where this management action/direction cannot be met with existing coarse woody debris, merchantable material will be used to make up the deficit.

See Appendix E for additional detailed management direction.

Special Forest Products

Objectives

Manage for the production and sale of special forest products 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

Riparian Reserves

Where catastrophic events result in degraded riparian conditions, allow fuelwood cutting if required to attain Aquatic Conservation Strategy objectives.

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

All Land Use Allocations

Establish specific guidelines for the management of individual Special Forest Products using interdisciplinary review as needed. Management guidelines will be based on the ecological characteristics of the Special Forest Products species and the requirements of associated plant, animal, and fungal species. Guidelines will include provisions

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that minimize changes in site productivity. Monitoring of harvest activities and the effects of harvest will be part of Special Forest Products management. Feasibility to harvest newly identified Special Forest Products species will receive interdisciplinary review.

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

See Table R-1 for energy and mineral allocations.

Management Actions/Direction

See Tables 10, 11, and 12 for restrictions on energy and mineral activities and Appendix G for leasing stipulations and operating standards pertinent to locatable and salable minerals.

Riparian Reserves

Note: 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.

For any proposed locatable mining operation in Riparian Reserves, other than notice level or casual use, require the following actions 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 locating 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, 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 it's 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.

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- 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.

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.

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.

All Land Use Allocations

Leasable Minerals

Use special stipulations for oil, gas and geothermal leases to protect fragile areas or critical resource values (see Appendix G for a list of mineral restrictions by resource value). Special stipulations may include seasonal restrictions to protect resources such as critical wildlife habitat, prevent excessive erosion, etc.; controlled surface use stipulations to protect valuable resources in small areas; and no surface occupancy stipulations to protect valuable resources scattered over a large area while still providing an opportunity for exploration and development. Special stipulations may be waived by authorized BLM officials if the objective of a stipulation could be met in another way.

Locatable Minerals

Use general requirements in 43 CFR 3809 and site specific guidelines to avoid unnecessary or undue degradation of resources on mining claims.

Require reclamation at the earliest feasible time for all surface disturbing operations, whether conducted under a notice or approved plan of operations.

Saleable Minerals

Address quarry development, management, and reclamation needs through implementation planning.

Emphasize long-term regional quarry use.

Develop new quarry sites in locations consistent with overall management objectives and guidelines of the Resource Management Plan. New quarry sites will not be developed unless no other reasonable alternative can be found.

Continue to use rock from existing quarries for construction and maintenance of timber sale access roads and other purposes.

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 will only be exchanged for lands to be managed for multiple use purposes.

Meet the following objectives for the three 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.

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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, and special recreation permits. Leases and conveyances under the Recreation and Public Purpose Act will be made in Zones 2 and 3.

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	35,930
Zone 2	380,989
Zone 3	13,352

See Map 9 for location of land tenure zones.
See Appendix C for legal descriptions of Zone 3 lands.

Management Actions/Direction

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.

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 (e.g., connectivity, shape, and contribution to biodiversity) of Late-Successional Reserves and where public and private lands are intermingled.

All Land Use Allocations

Use the land tenure adjustment criteria shown in Appendix B 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 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 any exchange involving O&C land.

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 Roseburg District BLM-administered land to other BLM districts or Federal agencies, or acquisition of other federal lands where consistent with public land management policy and where improved management efficiency would result.

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).

For all land Tenure Zones, sales of lands other than available commercial forest lands will be made to dispose of lands that meet criteria (1) or (2) of the Federal Land Policy and Management Act Sec. 203(a), but sales of land that meet only criterion (3) will not be made.

Generally prohibit disposal of Zones 1 and 2 lands through sales under Section 203(a) of the Federal Land Policy and Management Act. Some sales may occur on a case-by-case basis. Zone 2 lands may be transferred to other public agencies or managed under some form of cooperative agreement. Zones 1 and 2 lands would generally remain under BLM administration.

Dispose of Zone 3 lands through sale under Section 203(a) of Federal Land Policy Management Act if no

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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.

Where survey hiatuses and unintentional encroachments on public lands are discovered in the future which meet the disposal criteria, the lands may be automatically assigned Zone 3 for disposal.

Land Use Authorizations

Lease serial numbers ORe 05564, ORe 010734, OR 16775, OR 37065 and OR 37070, will be continued in accordance with the terms of each lease. A life estate residential lease (ORe 05564) will not be assigned at the end of its terms. Douglas County maintains Richard Baker County Park as a day use area. This 7.5 acre Recreation and Public Purpose lease, located within the Wild and Scenic River Corridor of the North Umpqua River, will be continued.

Temporary use permits, as identified under the Federal Land Policy and Management Act section 302, will be issued for a variety of uses such as, but not limited to apiary, stockpile and storage sites, and as a tool to authorize unintentional trespass situations pending final resolution.

No leases or permits will be issued for landfills or other waste disposal facilities and no leases will be issued for new residential construction. Leases or permits for other uses of public land or amendments to existing authorizations will be authorized if the use does not conflict with higher resource values.

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.

The occupied utility transportation routes identified in the Western Regional Corridor Study, 1992, containing electrical transmission facilities of 115 to 500 kV and pipelines ten inches in diameter or larger, will be designated as corridors under this plan. These corridors will be available for uses compatible with existing facilities.

Corridor widths vary depending on the number of parallel facilities, but are a minimum of 2,000 feet (1,000 feet either side of existing centerlines) unless constrained by exclusion and avoidance areas described below. Applicants will be encouraged to locate new facilities (including communication sites) adjacent to existing facilities to the extent technically and economically feasible.

Communication facilities will be allowed on existing communication sites. Existing communication sites will be fully developed with compatible uses prior to developing new sites. New communication sites will be considered available for development when the use is consistent with the objective of the alternative.

Douglas County is considering the construction of the Milltown Hill Reservoir. Some rights-of-way across BLM-administered lands would be required for access and water impoundment.

Prior to BLM approval of a right-of-way, the applicant must submit plans, maps, and other information related to the use of the proposal, for evaluation. Each right-of-way will be limited to the area necessary for operation and maintenance. Approvals will consider the protection of public safety, be consistent with the Resource Management Plan, and minimize damage to the environment.

All Research Natural Areas and Visual Resource Management Class I areas will be considered right-of-way exclusion areas where future rights-of-way may be granted only on a case-by-case basis or when mandated by law.

All existing and proposed recreation sites, Areas of Critical Environmental Concern other than Research Natural Areas, (rivers suitable for scenic status), and areas identified as having threatened or endangered, proposed, candidate (Category 1 or 2), state listed, or Bureau sensitive plant or animal species will be avoidance areas (where future rights-of-way may be

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granted only when no feasible alternative route or designated right-of-way corridor is available). Areas identified for Visual Resource Management Class II management will be avoided or appropriate mitigation measures taken. On August 10, 1988, the Northwest Power Planning Council amended its Northwest Conservation and Electric Power Plan to prohibit future hydroelectric development on rivers and streams with significant fisheries and wildlife resource values. In accordance with the plan, rights-of-way authorizing new hydroelectric development will not be approved on the streams designated in the plan. For lands acquired in the future, hydroelectric development will not be allowed on any rivers or streams designated as protected in the Northwest Conservation and Electric Power Plan. Lands within the Canton Creek drainage are avoidance areas for new hydroelectric development, power transmission or distribution lines.

Future rights-of-way may be granted in avoidance areas when no feasible alternative route or designated right-of-way corridor is available.

Management Actions/Direction

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 instream 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 instream 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 instream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies.

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 affects on identified late-successional species.

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

Other Land Use Allocations

Encourage location of major new rights-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 Resource Management Plan and would minimize damage to the environment.

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Allow expansion of communications facilities on existing communication sites.

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 Resource Management Plan 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

Acquire access by obtaining 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 rights-of-way agreements through appropriate 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.

Acquisition of easements will be required for access to all parcels in the planning area for resource management.

Continue to provide all prospective purchasers of BLM timber with an equal opportunity of access when timber is offered for sale. This will most often be accomplished by reciprocal right-of-way agreements with private landowners or through federal ownership and control of roads. Reciprocal right-of-way agreements will continue to be used to identify conditions of use that are equitable and nondiscriminatory and facilitate management of the road network. Most of the lands where logging road right-of-way agreements are appropriate are now covered by reciprocal agreements. The 140 individual agreements and permits will continue to be subject to the regulations in effect when they were executed or assigned. The provisions of these agreements allow BLM only limited discretion to control the location of roads constructed by private parties across BLM-administered lands (and vice versa). This limited discretion allows BLM to object for only one environmental reason - excessive erosion damage. However, future reciprocal right-of-way agreements could have different provisions depending on the regulations in effect at the time of their execution.

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

All withdrawals identified in Appendix K are recommended for continuation pending formal withdrawal review recommendations.

Two new public land and mineral law withdrawals are being considered in the Recreation section. They will not be withdrawn from the mineral leasing laws, but will have a no surface occupancy stipulation applied to any leases that may include those areas.

It is expected that new proposals for acquisition and/ or development of special concern areas (e.g. recreation sites, Area of Critical Environmental Concern/Riparian Management Area) will arise over the next decade. Whenever existing regulations are not adequate to guarantee protection of improvements or resources, or whenever additional lands are acquired to enlarge the size of existing special concern areas, a withdrawal that will be

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consistent with the management objectives will be considered.

Classifications will generally withdraw land from the operation of general land laws and mining laws, but not mineral leasing laws. Classifications recommended for termination are listed in Table 4. These include three Small Tract Act and one Recreation and Public Purpose Act classifications. Once revoked, the lands will be restored to the operation of general land and mining laws. Since the lands involved are being managed for purposes established through the classification process, but under different authorities, no change in land use is anticipated. New classifications for Recreation and Public Purpose Act leases will be considered in land tenure Zone 2 and 3 for all new proposals that surface during the life of this plan. A ten acre tract located in Lot 1, Section 28, T. 24 S., R. 7 W. will be classified for Recreation and Public Purpose Act lease purposes for a boat ramp facility on the Umpqua River.

Management Actions/Direction

See Management of Newly Acquired Lands (toward the end of this section).

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 duplicate 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.

Withdrawals generally segregate the lands from operations under the nondiscretionary general land laws, mining laws, and sometimes mineral leasing laws. All withdrawals remaining to be reviewed are identified in Appendix K. These withdrawals will be reviewed during the 1990s and may be continued, modified, or terminated. The BLM currently manages lands withdrawn as Power Site Reserves, Power Site Classifications, and Water Power Designations. These lands will be managed in accordance with the objectives of the plan whether the withdrawals are continued, modified, or terminated.

Roads

Objectives

Develop and maintain a transportation system that 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 Status and SEIS Special Attention Species Habitat, Timber Resources, and Recreation.

Land Use Allocations

Existing roads occupy approximately 15,900 acres on BLM-administered land in the district.

Management Actions/Direction

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 by:

- Completing watershed analyses, including appropriate geotechnical analyses (i.e., examining soil and rock conditions in riparian

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and stream crossings) prior to construction of new roads or landings in Riparian Reserves.

- Minimizing road and landing locations in Riparian Reserves.

- Preparing road design criteria, elements, and standards that govern construction and reconstruction.

- Preparing operation and maintenance criteria that govern road operation, maintenance, and management.

- Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.

- Restricting sidecasting as necessary to prevent the introduction of sediment to streams.

- 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:

- Reconstructing roads and associated drainage features that pose a substantial risk.

- Prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.

- Closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential affects 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 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. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is infeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

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

Develop and implement a Road Management Plan or a Transportation Management Plan that meets the Aquatic Conservation Strategy objectives. As 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.

- Establishing the purpose of each road by developing the road management objective.

Late Successional Reserves

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, 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.

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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.

All Land Use Allocations

Prepare a district wide road management plan after approval of the resource management plan. The management plan will specifically address recreation use, road densities, road closures, wildlife protection, water quality, Port-Orford-cedar management, 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 using standard analysis, public involvement, and notification procedures.

Determine standards for new road construction during the project planning process. Standards will be the minimum necessary to meet resource and allocation objectives (e.g., recreation site, timber sale, key watershed, etc.) while having minimal impacts on the environment.

Minimize new road construction in areas with fragile soils (granitic, schist, and pyroclastic soils) to reduce impacts to soils, water quality, and fisheries. Stabilize existing roads where they contribute to significant adverse affects on these resources.

Locate, design, construct, and maintain roads to standards that meet management objectives in accordance with the district road management plan.

Follow Best Management Practices (see Appendix D) for water quality and soil productivity to mitigate adverse affects on soils, water quality, fish, and riparian habitat during road construction and maintenance.

Permanent roads will be paved or rocked to minimize sedimentation. Cuts and fills of new roads capable of supporting vegetation will be seeded to stabilize them prior to winter rains to provide the maximum stability. Roads built for temporary use will be stabilized prior to winter rains and rehabilitated when use is completed. Roads will be closed, if required, to prevent or alleviate significant resource damage.

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.

Avoid road construction in special areas and special habitats.

Keep roads to the minimum needed for management, and locate, design, and construct to standards appropriate to the expected road use and the resource values affected. Use BLM Oregon Manual Supplement H-5420-1 in preparing road construction requirements for timber sale contracts. (Copies of Supplement H-5420-1 are available from the district office on request.)

Noxious Weeds

Objectives

Contain and/or reduce noxious weed infestations on BLM-administered land using an integrated pest management approach.

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

Late-Successional Reserves

Evaluate impacts of nonnative plants (weeds) growing in Late-Successional Reserves.

Develop plans and recommendations for eliminating or controlling nonnative plants (weeds) which adversely affect Late-Successional Reserve objectives. Include an analysis of effects of implementing such programs on other species or habitats within reserves.

All Land Use Allocations

Continue to survey BLM-administered land for noxious weed infestations, report infestations to the

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Oregon Department of Agriculture, and work with the department to control infestations.

Use control methods which do not retard or prevent attainment of Aquatic Conservation Strategy Objectives.

Apply integrated pest management methods (e.g., chemical, mechanical, manual, and biological) in accordance with BLM's 1985 Northwest Area Noxious Weed Control Program Environmental Impact Statement, 1987 Supplement and respective Records of Decision.

Hazardous Materials

Objectives

Minimize use of hazardous materials on BLM-administered lands.
Eliminate known hazardous wastes on BLM-administered lands.

Land Use Allocations

No allocations are made for hazardous wastes 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 (the 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.

Until hazardous wastes 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.

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 which may affect hazard reduction

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goals. Minimize the impacts of wildfire suppression actions.

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. 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 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.

Limit the size of all wildfires.

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 affects on riparian habitat and water quality as consistent with Aquatic Conservation Strategy objectives.

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 assure 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. Then some natural fires may 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 which retains the amount of coarse woody debris determined through watershed analysis.

Consider rapidly extinguishing smoldering coarse woody debris and duff.

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 Resource Management Plan until Adaptive Management Area plans are completed and approved.

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

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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.

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 that 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 efficiency 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.

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.

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Underburning will be reintroduced across large areas over a period of time to create a mosaic of stand conditions. Treatments should be site specific treatments 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 five to ten years).

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 and 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, the Department of Agriculture, the Department of Commerce, and the Environmental Protection Agency. The Memorandum of Understanding created several interagency groups, including the Interagency Steering Committee, Regional Interagency Executive Committee, and Regional Ecosystem Office. 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 and the National Marine Fisheries Service 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 and Oregon Department of Environmental Quality on water quality standards and beneficial use requirements of the Clean Water Act will minimize project impacts. Similar coordination with the Environmental Protection Agency, Department of Environmental Quality 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 will 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 will precede most on-the-ground management activities. Interdisciplinary teams are comprised of relevant

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resource management disciplines. The interdisciplinary 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. Important 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 Indian tribes) or new information so altered the levels or methods of activities or the expected impacts (on water, wildlife, socioeconomic conditions, etc.), that the environmental consequences of the plan may paint a seriously different picture than those anticipated in the Roseburg District RMP.

As part of these third year evaluations, the allowable sale quantity 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, along with coordination through the Regional Ecosystem Office and the Regional Interagency Executive Committee if SEIS ROD standards and guidelines or land use allocations would be modified. Figure 4 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, after preparation of new plans that would substantially supersede the RMP is well under way, 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 which could lead to such an adjustment might be an announcement of research findings which clearly establish that some of the plan's goals and objectives are unlikely to be met. The kind of unusual event which 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.

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

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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 which 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 5 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, will 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. 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 Area of Critical Environmental Concern 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 Areas of Critical Environmental Concern, and will be subject to analysis in an EIS or Environmental Assessment linked to a proposed plan amendment or a broader plan revision.

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, 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

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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 (Fiscal Year 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 for water quality protection. Monitoring and evaluating the effectiveness of Best Management Practices 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 Best Management Practices, 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 which exceed those levels necessary to support recreation and the propagation of fish, shellfish and wildlife.

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Proposed timber sales and other land disturbing activities will incorporate the interactive (adaptive management) process for developing, implementing and evaluating nonpoint control to determine if water quality goals have been met. Modification of nonpoint source controls, including Best Management Practices, 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 will precede most on-the-ground management activities. Interdisciplinary Teams are comprised of relevant resource management disciplines. The Interdisciplinary Team process includes field examination of resources, identification of alternative management actions, and analysis. Adjacent land uses will be considered during site specific land management planning.

Site specific Environmental Analysis and documentation (including Environmental Assessments, categorical exclusions or administrative determinations where appropriate, and RMP conformance determination) will 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 Environmental Assessment 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 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 burning 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 this and other applicable Environmental Impact Statements. Tiering is used to prepare more specific documents without duplicating relevant parts of previously prepared general documents. The more specific Environmental Assessment 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

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amend the plan. If an Environmental Assessment indicates potential for significant impacts that are seriously different from those described in an existing EIS, a new EIS (or supplement to this or another EIS) may be required.

Specific proposals for treatment to manage competing vegetation will be addressed in site specific Environmental Assessments tiered to BLM's EIS, Western Oregon Program-Management of Competing Vegetation, 1989. Specific proposals for control of noxious weeds will be addressed in site specific Environmental Assessments tiered to BLM's EIS, Northwest Area Noxious Weed Control Program, 1986 as supplemented in 1987.

Availability of Environmental Assessments 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 Roseburg Office.
- Mailings to known interested/affected people, groups, tribal units, governmental agencies and businesses. These mailings may include, but are not limited to, District Program Periodic District Planning [and Project] Update progress reports.
- Legal notices in one or more newspapers circulated in the project area.

Management Assessments and Plans

A management assessment will be prepared for each large Late-Successional Reserve (or group of smaller Late-Successional Reserves) before habitat manipulation activities are designed and implemented. 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 closely coordinated with subsequent watershed analysis and province level planning. SEIS ROD 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 identified late-successional associated species known to exist within the Late-Successional Reserve and information on their locations.
- A history and description of current land uses 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., larger scale) plans.
- 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. Until Late-Successional Reserve assessments are completed, fire suppression activities should be guided by land allocation objectives in coordination with local resource management specialists.

Projects and activities within Late-Successional Reserves (including restoration, recreation, projects for public safety, thinning, and salvage) may proceed in fiscal years 1995-96 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.

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

- A shared vision of the Adaptive Management Area, (e.g., the kind of knowledge the participants hope to gain). Identification of the

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desired future conditions may be developed in collaboration with communities, depending on the area.

- Learning which includes social and political knowledge, not just biological and physical information.
- A strategy to guide implementation, restoration, monitoring, and experimental activities.
- A short-term (three to five year) timber sale plan and long-term yield projections.
- Education of participants.
- A list of community strategies, resources, and partners being used.
- Coordination with overall activities within the province.
- A funding strategy.
- Integration of the community strategies and technical objectives.

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 $16,000,000 for the Roseburg 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 resource management plan.

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 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 Allowable Sale Quantity 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 I). Some

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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 second 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 this 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. Resource Areas will report their findings and recommendations to the District for consolidation and publication in the Annual Program Summary.

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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, this Monitoring Plan is not complete. As components of the Regional (SEIS) monitoring and evaluation plan are completed or refined, the resource management plan 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 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 Roseburg 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 insure 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.

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Table 1. Fish Habitat Enhancement Projects.

Priority	Stream	Project Type
1	Wolf Creek (Tyee)	S,R,C,P,M
1	Rader Creek	S,R,C
1	Little Wolf Creek	S,R,C,P
1	Case Knife Creek	S,R
1	Boulder Creek	S,R,M
1	Stouts Creek	S,R,C,M
1	Shively Creek	S,R,M
1	East Fork Shively Creek	S,R
1	Pass Creek	S,R,M
1	East Pass Creek	S,R
2	South Fork Smith River	S,R,C
2	Little south Fork Smith River	S,R,C
2	Yellow Creek	S,R,C
2	Olalla Creek	S,R
2	Thompson Creek	S,R
2	Deadman Creek	S,R
2	Middle Fork Deadman Creek	S,R
2	Lee's Creek	P
2	Slide Creek	P
2	Cavitt Creek	S,R,P
2	Canton Creek	S,R
3	Upper Smith River	S,R,C
3	Martin Creek (Drain)	S,R
3	Fate Creek	S,R
3	Days Creek	S,R
3	Dompier Creek	S,R
3	Union Creek	S,R
3	Martin Creek (Dillard)	S,R

S=Structures
R=Rearing Habitat
P=Passage
C=Riparian Conversion
M=Monitoring

Table 2. Potential and Existing Recreation Sites and Trails

Existing Rec Sites
- Susan Creek
- Millpond
- Rock Creek
- Scaredman
- Cavitt Creek
- Swiftwater
- Tyee
- Gunter Wayside
- Cow Cr. Recreational Gold Pan Area**
- Lone Rock Boat
- Emile
- North Umpqua Trailhead

Potential Rec Sites
- North Umpqua Trail Primitive Campsite**
- Susan Creek Group Reservation Camp
- Eagleview **
- Osprey Boat Ramp**
- Hardscrabble+
- Island Creek** +
- Weaver Road Pond
- Michigan Springs
- Brickyard Pond
- Chimney Rock Pond
- Pickett Bridge**
- Lavadoure Boat Ramp
- Red Top Pond
- Iron Mountain Gold Panning**
- Hubbard Creek OHV Area
- Olalla-Thompson Creek **

Existing Trails
- North Umpqua Trail
- Susan Creek Falls Trail
- Wolf Creek Falls Trail
- Susan Creek Complex Trails**
- Deadline Falls Watchable Wildlife Trail
- Miner-Wolf Cr Watchable Wildlife Tr **

Potential Trails
- Cow Creek Bluffs Trail+ **
- Salt Creek Trail+
- Deadman Mountain Trail
- Wolf Creek Falls Trail Extension
- Upper Susan Creek Falls Trail
- Susan Creek Falls Barrier Free Trail
- Tyee Mountain Trail
- Eagleview Trail
- Red Top Pond Trail
- Ben Irving Trail
- Alexander Butte Trail
- Cougar Creek Trail

Potential SRMA
- Cow Creek Canyon SRMA
- Umpqua River SRMA

+ Land acquisition needed.
** Proposed Withdrawal from public land and mineral law.

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Table 3. Special Recreation Management Areas.

Name of SRMA	Acres	Status	Type	Features / Designations
North Umpqua River	1,620	Existing	Congressional	Wild & Scenic River, National Scenic Byway, Area of Critical Environmental Concern, National Recreation Trail, Watchable Wildlife Sites, Intensive Recreation Developments.
Cow Creek	1,710	New	Administrative	Back Country Byway, O&C History, Watchable Wildlife Sites, Existing and Potential Recreation Developments.
Umpqua River	2,240	New	Administrative	Existing and Potential Recreation Developments, Watchable Wildlife, Back Country Byway, Interpretation of Timber Harvesting.

Special Recreation Management Area acreages include a minimum of 1/4-mile on each side of respective rivers, roads, or recreation sites.

Table 4. Classifications and Withdrawals Recommended for Termination or Revocation

Case No.	Withdrawing Agency	Original Purpose	Rationale for Termination Revocation
OR 05564	BLM	Small Tract Act Classification	Land is now leased under Sec. 302 of the FLPMA of 1976.
OR 010044	BLM	Recreation and Public Purpose	Lease terminated
OR 011654	BLM	Small Tract Act	Lease terminated Classification
OR 16775	BLM	Small Tract Act Classification	Land is now leased under Sec. 302 of the FLPMA of 1976

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Table 5. Land Allocations (acres) for Special Areas

Special Area	Designation	Acres
Bear Gulch	ACEC/RNA	330
Beatty Creek	ACEC/RNA	331
Brad's Creek*	ACEC	0
Bushnell-Irwin Rocks	ACEC/RNA	958
Golden Bar*	ACEC	0
Myrtle Island	ACEC/RNA	30
North Bank	ACEC	6221
North Myrtle Creek	ACEC/RNA	472
North Umpqua River	ACEC	1620
Red Pond	ACEC/RNA	134
Tater Hill	ACEC/RNA	280
Umpqua River Wildlife Area	ACEC	947
TOTAL		**11323**

*Acreage included in the Umpqua River Wildlife Area ACEC.

Table 6. Nominated Areas of Critical Environmental Concern

Special Area	Potential Designation	Size (Acres)	ACEC Description	Eligibility
Ace Williams Mountain	ACEC	TBD[1]	Special status plant habitat	TBD
Bilger Ridge	ACEC	TBD	Special status plant habitat	TBD
Canton Creek	ACEC	TBD	Anadromous fish habitat	TBD
Langell Ridge	ACEC	TBD	Special status plant habitat	TBD
Lee Creek	ACEC/RNA	TBD	Douglas-fir/Jeffrey pine woodland on the West Slope of the Oregon Cascades	
North Myrtle Headwaters	ACEC	TBD	Special Status plant habitat	TBD
Odd Lots	ACEC/ONA	TBD	Outstanding scenic, geologic, wildlife, and botanical values available for recreational use	TBD

[1]TBD: To be determined by an interdisciplinary team after publication of the Record of Decision.

ACEC - Area of Critical Environmental Concern
RNA - Research Natural Area
ONA - Outstanding Natural Area

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Table 7. Acres of Protected Special Status Plant Habitat and Buffers by Alternative.

Species	Category	Acres
Aster vialis	FC	9
Astragalus umbraticus	AS	0
Bensoniella oregana	FC	3
Calochortus coxii	FC	71
Calochortus umpquaensis	FC/SE	123
Cimicifuga elata	FC	1
Horkelia conqesta ssp. congesta	FC	15
Lewisia cotyledon var. howellii	FC	56
Limnanthes gracilis var. gracilis	BS	2
Lupinus sulphureus var kincaidii	FC	2
Mimulus kelloggii	AS	0
Polystichum californicum	AS	0
Romanzoffia thompsonii	BS	30
Sedum spathulifolium ssp. purdyi	AS	0
Wolffia borealis	AS	9
Total Habitat Acres		**338**
Total Habitat Acres-Percent		**67**
Total Buffer Acres		**766**

AS = Assessment Species
BS = Bureau Sensitive
FC = Federal Candidate
SE = State Endangered

Table 8. Oil and Gas and Geothermal Lease Restrictions[1.]

Restriction	Acres
Closed - Nondiscretionary	28
Closed - Discretionary	0
Open - No Surface Occupancy	9,683
Open - With Standard Lease Terms	356,329
Open - With Additional Restrictions	53,333

[1]Total acres include 1,717 acres of split estate.

Table 9. Locatable Mineral Restrictions (Acres).

Restriction	Acres
Closed - Nondiscretionary	294
Closed - Discretionary	4,776
Open - Standard Requirements	366,247
Open - With Additional Restrictions	20,814

Table 10. Salable Mineral Restrictions (Acres)[1.]

Restriction	PRMP
Closed - Nondiscretionary	28
Closed - Discretionary[2]	8,387
Open - Standard Requirements	381,738
Open - With Additional Restrictions[3]	29,218

[1] Total acres include 1,717 acres of split estate.
[2] Withdrawals, ACECs, cultural sites, areas suitable for designation as a recreational river.
[3] Time restrictions within 1/4-mile of any migratory bird site.

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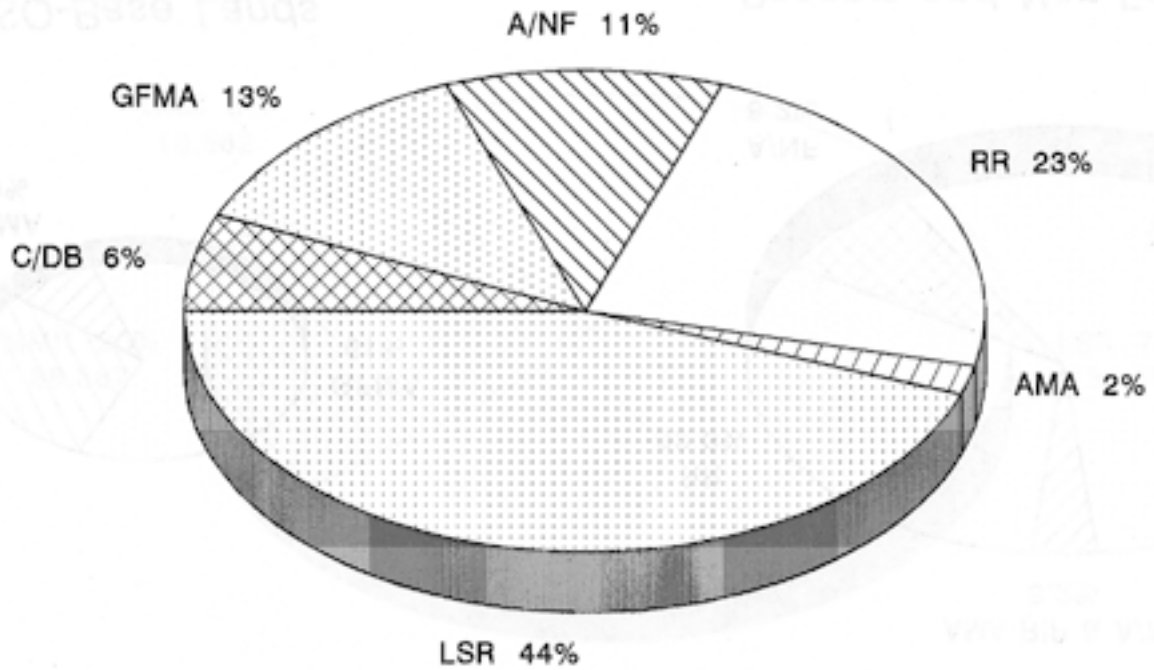
Figure 1. Roseburg District Land Use Allocations

Resource Management Plan

Gross Acreage 419,007



BLM PSQ-Modeling LUA's

The Dunning exchange, which became the North Bank ACEC, added 6,581 acres to the BLM ownership. This acquisition, which increases the gross acreage total to 425,588, is not included in this chart.

GFMA: General Forest Management Areas
LSR: Late Successional Reserves
RR: Riparian Reserves
C/DB: Connectivity/Diversity Blocks
AMA: Adaptive Management Area
A/NF: Administrative & Non-Forest Withdrawals

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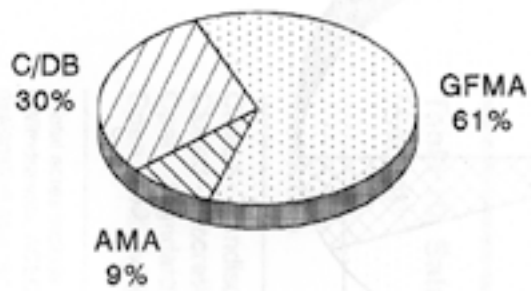
Figure 2. Roseburg District RMP Land Use Allocations

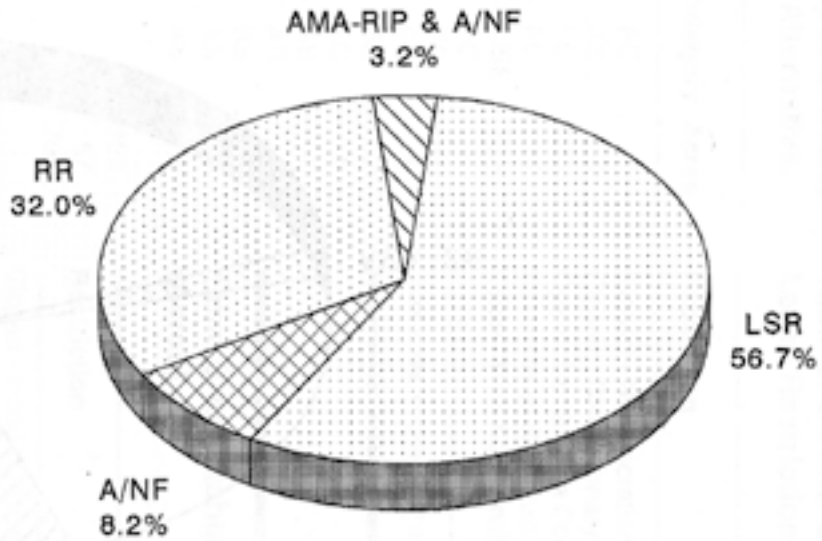
PSQ-Base versus Reserves and Non-Forest Lands

Gross Acreage 419,007



PSQ-Base Lands
Total Acreage 89,932

21.5%



Reserve and Non-Forest Lands
Total Acreage 329,075

78.5%

The Dunning exchange, adding 6,581 to the Roseburg BLM ownership, is not included in these charts.

PSQ-Base: Matrix (GFMA & Connectivity/Diversity Blocks) & Adaptive Management Area
Reserves & Non-Forest: Late Successional Reserves (LSR), Riparian Reserves (RR) from the Matrix and AMA, Administrative Withdrawals, roads & non-forest (A/NF) lands.

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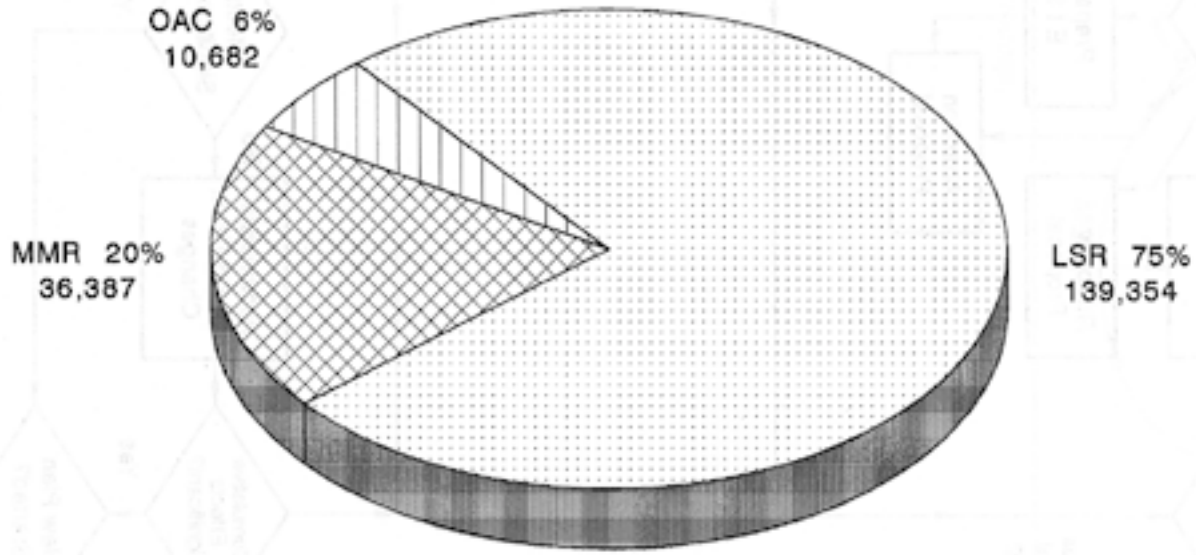
Figure 3. Late Successional Reserve Elements

Roseburg District Resource Management Plan

Total Gross Acreage 419,007



LSR total Gross Acreage 186,423

LSR: Late Successional Reserves OAC: Owl Activity Centers MMR: Marbled Murrelet Reserves

Occupied marbled murrelet sites protected in existing LSRs and MMRs.

Protection Buffers for specific endemic species not yet identified.

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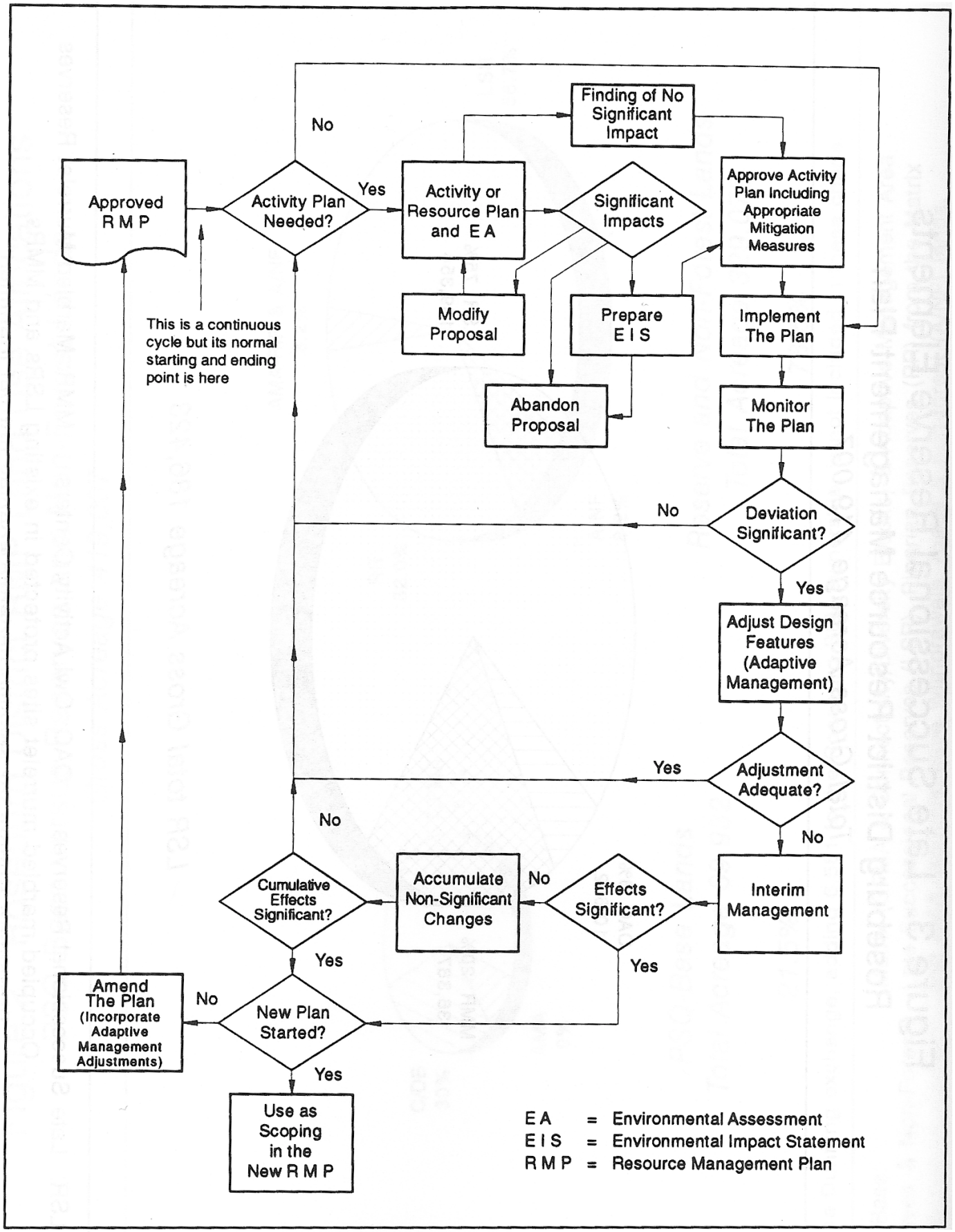

Figure 4: *Process for Changing the Resource Management Plan.*

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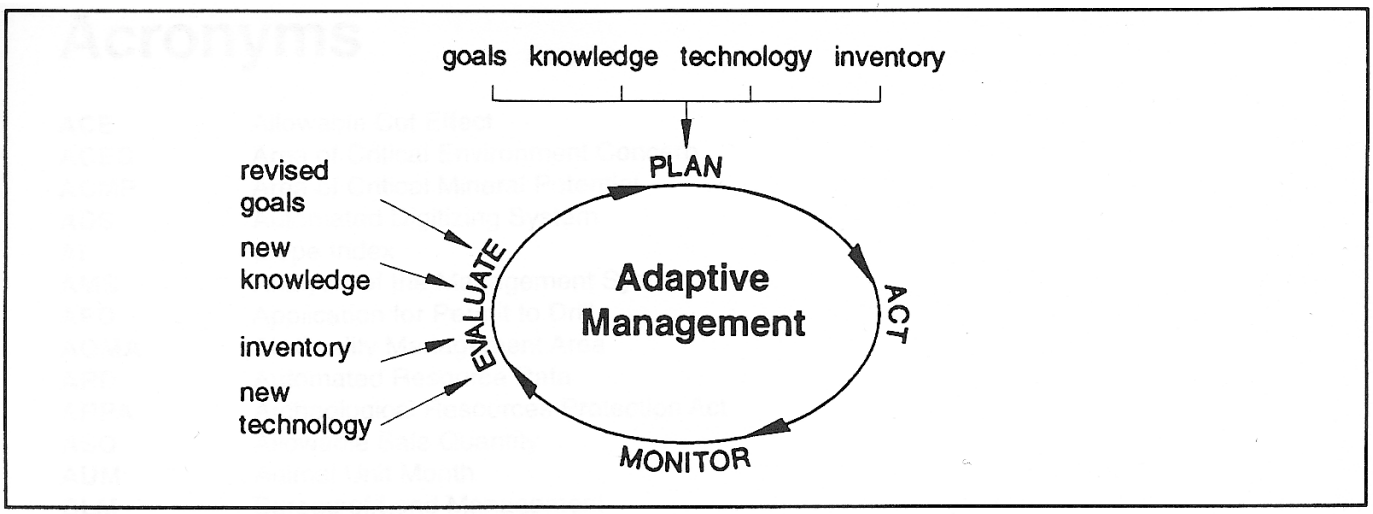

Figure 5: *Adaptive Management Process.*

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Acronyms

ACE	Allowable Cut Effect
ACEC	Area of Critical Environment Concern
ACMP	Area of Critical Mineral Potential
ADS	Automated Digitizing System
AI	Slope Index
AMS	Analysis of the Management System
APD	Application for Permit to Drill
AQMA	Air Quality Management Area
ARD	Automated Resource Data
ARPA	Archeological Resources Protection Act
ASQ	Allowable Sale Quantity
AUM	Animal Unit Month
BLM	Bureau of Land Management
BMP	Best Management Practices
BRU	Basic Resource Unit
CBWR	Coos Bay Wagon Road
CCD	Coos, Curry, and Douglas County (Business Development Corporation)
CEQ	Council of Environmental Quality
Cf	Cubic Feet
CFI	Continuous Forest Inventory
CFL	Commercial Forest Land
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CMAI	Culmination of Mean Annual Increment
COPE	Coastal Oregon Productivity Enhancement
CSU	Controlled Surface Use
DBH	Diameter Breast Height
DDT	Dichloro-Diphenye-Tricholorethene
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality
DI	Density Index
DOT	United States Department of Transportation
EA	Environmental Assessment
EEA	Environmental Education Area
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EQC	Environmental Quality Commission
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
ESC	Existing Stand Condition
FEIS	Final Environmental Impact Statement
FEMAT	Forest Ecosystem Management Team Report
FERC	Federal Energy Regulatory Commission
FHA	Federal Highway Administration
FI	Flow Index
FLPMA	Federal Land Policy and Management Act
FOI	Forest Operations Inventory
FOOGLRA	Federal Onshore Oil and Gas Leasing Reform Act
FPHT	Forest Products Harvest Tax
FY	Fiscal Year
GFMA	General Forest Management Area
GIS	Geographic Information System
HCA	Habitat Conservation Area
HMP	Habitat Management Plan

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IDT	Interdisciplinary Team
IPM	Integrated Pest Management
ISC	Interagency Scientific Committee
JTU	Jackson Turbidity Unit
KGRA	Known Geothermal Resource Area
LEIS	Legislative Environmental Impact Statement
LTSY	Long-Term Sustained Yield
LWD	Large Woody Debris
MBF	Thousand Board Feet
MFP	Management Framework Plan
Mg/l	Milligrams per Liter
MHA	Minimum Harvest Age
MI	Mining Index
MI	Management Intensity
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MOSS	Map Overlay and Statistical System
MOU	Memorandum of Understanding
MTP	Master Title Plat
MWS	Municipal Watershed
NA	No Action
NAAQS	National Ambient Air Quality Standards
EPA	National Environmental Policy Act
NOS	Notice of Staking
NPPC	Northwest Power Planning Council
NPS	Nonpoint Source
NSO	No Surface Occupancy
NTL	Notice to Lease
NTU	Nephelometric Turbidity Unit
NWSRS	National Wild and Scenic River System
O&C	Oregon and California Act of 1937 (Revested Oregon and California Railroad and Reconveyed Coos Bay Wagon Road Grant Lands)
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OFPA	Oregon Forest Practices Act
OGEA	Old-Growth Emphasis Area
OI	Operations Inventory
ONA	Outstanding Natural Area
ONHP	Oregon Natural Heritage Plan
ORS	Oregon Revised Statutes
ORV	Off-Road Vehicle
ORV	Outstanding Remarkable Values
OSB	Oriented Strand Board
OSU	Oregon State University
PA	Preferred Alternative
PCT	Precommercial Thinning
PD	Public Domain
PI	Precipitation Index
PL	Public Law
PLS	Public Land Survey
PNW	Pacific Northwest Research Station
PM	Particulate Matter
PM 10	Particulate Matter 10 Microns or Smaller
PPB	Parts Per Billion
PPM	Parts Per Million
PRMP	Proposed Resource Management Plan
PSQ	Probable Sale Quantity

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R&PP	Recreation and Public Purpose
R and R	Restoration and Retention Blocks
RI	Riparian Index
RIA	Rural Interface Area
RMA	Riparian Management Area
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SCFL	Suitable Commercial Forest Land
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SCS	Soil Conservation Service
SDI	Soil Disturbance Index
SEIS	Supplemental Environmental Impact Statement
SEIS ROD	Supplemental Environmental Impact Statement, Record of Decision
SI	Silvicultural Index
SIP	State Implementation Plan
SMP	Smoke Management Plan
SRMA	Special Recreation Management Area
SWL	Suitable Woodland
SYU	Sustained Yield Unit
T&E	Threatened and Endangered (species)
TMDL	Total Maximum Daily Load
TMP	Timber Management Plan
TPCC	Timber Production Capability Classification
Ug/l	Micrograms per Liter
uS	Conductivity as Measured in Micro Siemens
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
USDI	United States Department of Interior
VI	Vegetation Index
VRM	Visual Resource Management
WCI	Watershed Condition Index
WODDB	Western Oregon Digital Data Base
WRRI	Water Resources Research Institute
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WSRA	Wild and Scenic Rivers Act

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Glossary

Activity Plan - A document which 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.

Age Class - One of the intervals into which the age range of trees is divided for classification or use.

Airshed - A geographical area which 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 major drainage basin subdivision of the planning area used for analyzing watershed condition.

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.

Animal Unit Month (AUM) - The amount of forage necessary for the sustenance of one cow or its equivalent for one month.

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 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 Area of Critical Environmental Concern.)

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 allowable sale quantity (ASQ). 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.

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 groundwater 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.

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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, Best Management Practices are applied as a system of practices rather than a single practice.

Biological Diversity - The variety of life and its processes.

Biological Legacies - Large trees, down logs, snags, and other components of the forest stand left after harvesting for the purpose of maintaining site productivity and providing structures and ecological functions in subsequent stands.

Board Foot (BF) - A unit of solid wood, one foot square and one inch thick.

Broadcast Burning - 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 Fish and Wildlife Service 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 Fish and Wildlife Service has information to indicate that listing is possibly appropriate. Additional information is being collected.

Canopy - The more or less continuous cover of branches and foliage formed collectively by adjacent trees and other woody species in a forest stand. Where significant height differences occur between trees within a stand, formation of a multiple canopy (multi-layered) condition can result.

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 Nester - Wildlife species, most frequently birds, that require cavities (holes) in trees for nesting and reproduction.

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.

Class I (air quality) Areas - Special areas (i.e., national parks, certain wilderness areas) protected for their air quality related values.

Clearcut 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.

Closed Discretionary - Areas closed to mineral exploration and development by authority of law or regulation, but where such lands can be opened by action of BLM without legislation, regulation change, Secretarial decision of Executive Order.

Closed Nondiscretionary - Areas specifically closed to mineral exploration and development by authority of law, regulation, Secretarial decision (including Public Land Orders), or Executive Order.

Coarse Woody Debris - Portion of tree that has fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter. FEMAT

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.

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Commercial Tree Species - Conifer species used to calculate the commercial forest land ASQ. 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.

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.

Constrained Timber Production Base - Acreage managed for timber production at less than full intensity in consideration of non-timber resource management objectives.

Coos Bay Wagon Road (CBWR) Lands - Public lands granted to the Southern Oregon Company and subsequently reconveyed to the United States.

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 which 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 which 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 which 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.

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.

Developed Recreation Site - A site developed with permanent facilities designed to accommodate recreation use.

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Diameter At Breast Height (dbh) - The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

District Defined Reserves - 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 Probable Sale Quantity.

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.

Domestic Water Supply - Water used for human consumption.

Early Seral Stage - See Seral Stages.

Ecosystem Based Management - 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.

Ecological Forestry - A set of forest management concepts which seek to maintain or recreate timber stand and landscape biological diversity. Also termed "New Perspectives", "New Forestry" and "Sustainable Forestry."

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 Diversity - The variety of species and ecological processes that occur in different physical settings.

Ecosystem Management - 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.

Economically Feasible - Having costs and revenues with a present net value greater than zero.

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 National Environmental Protection Agency when no Environmental Impact Statement 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 Stream - Streams that contain running water only sporadically, such as during and following storm events.

Established Stand - A reforestation unit of suitable trees which 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 which creates forest stands that are primarily of a single age or limited range of ages.

Extensive Recreation Management Areas (ERMA) - 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,

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disease, climatic changes, flood, resource management practices and resource demands.

Forest Land - Land that is now, or is capable of becoming, at least ten percent stocked with forest trees and that has not been developed for nontimber use.

Forest Operations Inventory - See Operations Inventory.

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 Timber Production Capability 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 - Forest land managed on a regeneration harvest cycle of 70-110 years. A biological legacy of six to eight 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.

Gross Yarding - Removal of all woody material of specified size from a logging unit to a landing.

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 l830 in western Oregon).

Home Range - The area which an animal traverses in the scope of normal activities; not to be confused with territory which is the area an animal defends.

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.

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.

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.”

Intermittent Stream - Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what

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are sometimes referred to as ephemeral streams if they meet these two criteria.

Land Use Allocations - Allocations which 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.

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 Block - A specific landscape unit used in analysis (example: a drainage).

Landscape Diversity - The size, shape and connectivity of different ecosystems across a large area.

Landscape Ecology - Principles and theories for understanding the structure, functioning, and change of landscapes over time. Specifically it considers (1) the development and dynamics of spatial heterogeneity, (2) interactions and exchanges across heterogeneous landscapes, (3) the influences of spatial heterogeneity on biotic and abiotic processes, and (4) the management of spatial heterogeneity. The consideration of spatial patterns distinguishes landscape ecology from traditional ecological studies, which frequently assume that systems are spatially homogeneous.

Landscape Features - The land and water form, vegetation, and structures which compose the characteristic landscape.

Landscape Grain - The finest level of spatial resolution possible with a given data set or the smallest habitat unit significant for the study or analysis of a specific ecological processes. (Example: a spotted owl nest grove or an individual canopy gap.) Habitat grains are often referred to as “fine scale” or “broad scale”.

Landscape Pattern - The number, frequency, size, and juxtaposition of landscape elements (patches) which are important to the determination or interpretation of ecological processes.

Landscape Scale - The spatial dimension of an object or process, characterized by both grain and extent (example: the scale used in this analysis consisted of landscape blocks of 20,000 acres in extent with the finest level of spatial resolution being canopy gaps of 1/4 acre in size).

Late Seral Stage - See Seral Stages.

Late-Successional Forests - Forest seral stages which 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 which 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 five 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 ten 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.

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

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communities on BLM-administered lands are made up of late seral species rather than climax species in the upper canopy.

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.

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 graphic representation of each township showing all actions affecting title.

Matrix Lands - Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels.

Mature Seral Stage - See Seral Stages.

Micro*Storms - A micro-computer database system providing background information and recommended treatment for each operations inventory unit.

Mid Seral Stage - See Seral Stages.

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 which (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.

Mortality Salvage - The harvest of dead and dying timber.

Multi-aged Stand - A forest stand which has more than one distinct age class arising from specific disturbance and regeneration events at various times. These stands normally will have multi-layered structure.

Multi-layered Canopy - Forest stands with two or more distinct tree layers in the canopy; also called multi-storied stands.

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. 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, fish, and natural scenic, scientific and historical values.

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 ten microns in size

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(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.

National Register of Historic Places - A formal list established by the National Historic Preservation Act of l966 of cultural resources worthy of preservation. The Register is maintained by the National Park Service; and lists archaeological, historic, and architectural properties.

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.

Nonchargeable Volume - Timber harvest not included in the allowable sale quantity calculations.

Noncommercial Forest Land - Land incapable of yielding at least 20 cubic feet of wood per acre per year of commercial species; or land which is capable of producing only noncommercial tree species.

Noncommercial Tree Species - Minor conifer and hardwood species whose yields are not reflected in the commercial conifer forest land ASQ. Some species may be managed and sold under a suitable woodland ASQ and, therefore, may be commercial as a woodland species.

Nonforest Land - Land developed for nontimber uses or land incapable of being ten percent stocked with forest trees.

Nonpoint Source Pollution - Water pollution that does not result from a discharge at a specific, single location (such as a single pipe) but generally results from land runoff, precipitation, atmospheric deposition or percolation, and normally is associated with agricultural, silvicultural and urban runoff, runoff from construction activities, etc. Such pollution results in the human-made or human-induced alteration of the chemical, physical, biological, radiological integrity of water.

Nonsuitable Commercial Forest Land - Sites that would take longer than 15 years to meet or exceed minimum stocking levels of commercial species. Further classified as suitable woodland.

Nonsuitable Woodland - All fragile nonsuitable forest land.

Nonsuitable Woodland - All fragile nonsuitable forest land and sites that are not biologically and/or environmentally capable of supporting a sustained yield of forest products.

Noxious Plant - A plant specified by law as being especially undesirable, troublesome, and difficult to control.

Noxious Weed - See Noxious Plant.

O&C Lands - Public lands granted to the Oregon and California Railroad Company and subsequently revested to the United States.

Objectives - Expressions of what are the desired end results of management efforts.

Obligate Species - A plant or animal that occurs only in a narrowly defined habitat such as tree cavity, rock cave, or wet meadow.

Off Highway Vehicle (OHV) - Any motorized vehicle capable of, or designed for, travel on land, water, or 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.

Off Highway Vehicle Designations:

> **Open Area** - 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 43 CFR, subparts 8341 and 8342.
>
> **Limited Area** - An area restricted at certain times, in certain areas, and/or to certain vehicular use.
>
> **Closed Area** - An area where off-highway vehicle use is prohibited. Use may be allowed for certain reasons with the approval of the authorized officer.

Old-Growth Conifer Stand - Older forests occurring on western hemlock, mixed conifer, or mixed evergreen sites which differ significantly from younger forests in structure, ecological function, and species composition. Old growth characteristics begin to appear in unmanaged forests at 175-250 years of age. These characteristics include (a) a patchy, multi-layered canopy with trees of several

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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 which 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 ten percent stocked with trees of 200 years or older and are ten 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.

Old-Growth Seral Stage - See Seral Stages.

Old-Growth-Dependent Species - An animal species so adapted that it can exist only in old growth forests.

Old-Growth-Dependent Species - An animal species so adapted that it exists primarily in old growth forests or is dependent on certain attributes provided in older forests.

Open Additional Restrictions - Areas open to mineral exploration and development subject to additional restrictions that can be legally required by BLM pursuant to law, regulation, or other legal authority such as Area of Critical Environmental Concern designation, Off Highway Vehicle or other closure order, community pit designation, etc.

Open Standard Requirements - Areas open to mineral exploration and development subject only to requirements over which BLM has no discretionary control such s the Clean Air/Clean Water Acts, National Environmental Policy Act, Resource Conservation and Recovery Act, Coastal Zone Management Act, Endangered Species Act, National Historic Preservation Act, etc.

Operations Inventory (OI) (also Forest Operations Inventory - FOI) - An intensive, site-specific forest inventory of forest stand location, size, silvicultural needs, and recommended treatment based on individual stand conditions and productivity.

Operations Inventory Unit - An aggregation of trees occupying an area that is sufficiently uniform in composition, age, arrangement and condition to be distinguishable from vegetation on adjoining areas.

Optimal Cover - For elk, cover used to hide from predators and avoid disturbances, including man. It consists of a forest stand with four layers and an overstory canopy which can intercept and hold a substantial amount of snow, yet has dispersed, small openings. It is generally achieved when the dominant trees average 21 inches dbh or greater and have 70 percent or greater crown closure.

Outstanding Natural Area (ONA) - An area that contains unusual natural characteristics and is managed primarily for educational and recreational purposes.

Overstory - That portion of trees which form the uppermost layer in a forest stand which consists of more than one distinct layer (canopy).

Overstory Removal - The final stage of cutting where the remaining overstory trees are removed to allow the understory to grow. Overstory removal is generally accomplished three to five years after reforestation and when adequate stocking has been achieved.

Partial Cutting - Removal of selected trees from a forest stand.

Partial Log Suspension - During yarding operations, suspension of one end of the log above the ground.

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 which 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

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management plan; however, BLM planning decisions apply only to BLM-administered lands and mineral estate.

Plant Association - A plant community type based on land management potential, successional patterns, and species composition.

Plant Community - An association of plants of various species found growing together in different areas with similar site characteristics.

Plantation Maintenance- Actions in an unestablished forest stand to promote the survival of desired crop trees.

Plantation Release - All activities associated with promoting the dominance and/or growth of desired tree species within an established forest stand.

Potential Area of Critical Environmental Concern - An area of BLM-administered land that meets the relevance and importance criteria for Area of Critical Environmental Concern 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.

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.

Prevention Strategy - The amelioration of conditions that cause or favor the presence of competing or unwanted vegetation.

Priority Animal Taxa - Species or subspecies having special significance for management. They include endangered, threatened and special status species; species of high economic or recreation value; and species of significant public interest.

Priority Habitats - Aquatic, wetland and riparian habitats, and habitats of priority animal taxa.

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 or National Marine Fisheries 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 fifteen service connections or regularly serves at least twenty-five 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.

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

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the point where favored tree species will be reestablished.

Regional Ecosystem Office (REO) - The main function of this office is to provide staff work and support to the Regional Interagency Executive Committee 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.

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.

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 Reserves - Designated riparian areas found outside Late-Successional Reserves.

Riparian Zone - Those terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated high water tables and soils which exhibit some wetness characteristics. Normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs and wet meadows.

Ripping - The process of breaking up or loosening compacted soil to assure better penetration of roots, lower soil density, and increased microbial and invertebrate activity.

Road - A vehicle route which has been improved and maintained by mechanical means to ensure relatively regular and continuous use. A route maintained solely by the passage of vehicles does not constitute a road.

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 which is used in determining the Visual Resource Management Classification.

Scenic River - See Wild and Scenic River System.

Scribner Short Log - A log measurement rule constructed from diagrams which shows the number of 1-inch boards that 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.

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 trade-offs which 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.

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Seral Stages - The series of relatively transitory plant communities which 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 first merchantability. Usually ages 15 through 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.

These definitions are used by BLM to separate age classes for analysis of impacts.

Shelterwood Cutting - A regeneration method under an even-aged silvicultural system. With this method a portion of the mature stand is retained as a source of seed and/or protection during the regeneration period. The retained trees are usually removed in one or more cuttings. In the irregular shelterwood variation of this method, the retained trees are usually not removed until the end of the next harvest rotation.

Short-Term - The period of time during which the RMP will be implemented; assumed to be ten 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 which 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

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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 ten inches in diameter at breast height (dbh) and at least six 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.

Special Areas - Areas that may need special management, which may include management as an Area of Critical Environmental Concern, Research Natural Area, Outstanding Natural Area, Environmental E
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 Habitat - A forested or nonforested habitat which contributes to overall biological diversity within the District. Special habitats may include: ponds, bogs, springs, sups, marshes, swamps, dunes, meadows, balds, cliffs, salt licks, and mineral springs.

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 Special Recreation Management Areas.

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.

Split Estate - An area of land where the surface is nonfederally owned and the subsurface mineral resources are federally owned or vice versa.

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-replacement Wildfire - A wildfire that kills nearly 100 percent of the stand.

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, which describes and analyzes the organization and function of the outdoor recreation system of the state. The plan provides an analysis of the roles and

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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 which 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. 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 which 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. Revised Forest Practices Act may have a new system within a year.

Stream Order - A hydrologic system of stream classification based on stream branching. Each small unbranched tributary is a first order stream. Two first order streams join to make a second order stream. Two second order streams join to form a third order stream and so forth.

Stream Reach - An individual first 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, 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 ASQ 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.

Thermal Cover - Cover used by animals to lessen the effects of weather. For elk, a stand of conifer trees which 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 five 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

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all or a significant portion of its range and published in the Federal Register.

Tilling - See Ripping.

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 forestland into major classes indicating relative suitability to produce timber on a sustained yield basis.

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.

Understocked - The condition when a plantation of trees fails to meet the minimum requirements for number of well spaced trees per acre.

Understory - That portion of trees or other woody vegetation which form the lower layer in a forest stand which consists of more than one distinct layer (canopy).

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.

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.

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 (l”=400') geographic digital (computer) data base 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 life 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.

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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.

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 which 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 ASQ.

Yarding - The act or process of moving logs to a landing. set of conditions.

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Appendices

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Appendix A. SEIS Record of Decision.

Record of Decision
for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl

Standards and Guidelines
for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl

This appendix consists of the Record of Decision and its Attachment A, published in April 1994, for 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. It is referred to in this Record of Decision and Approved Resource Management Plan as the SEIS ROD.

The ROD for the SEIS is bound separately from the Record of Decision and Approved Resource Management Plan and is incorporated by reference. The Draft and Final SEIS and the SEIS ROD were sent to those who received copies of the Draft Roseburg District Resource Management Plan and Environmental Impact Statement. It was also sent to agencies, libraries, and others who requested it. It is available upon 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
PO Box 3623
Portland, Oregon 97208-3623

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Appendix B. Land Tenure Adjustment Criteria.

In accordance with Federal Land Policy Management Act and other laws, Executive Orders, and Departmental and Bureau policy, the following criteria will be used to evaluate opportunities for disposal or acquisition. This list is not considered all inclusive, but represents the major factors to be evaluated. They include:

- Threatened or Endangered or sensitive plant and animal species habitat.
- Riparian areas and wetlands.
- Fish habitat.
- Nesting/breeding habitat for game and nongame animals.
- Key big game seasonal habitat.
- Developed recreation sites and recreation use areas.
- High quality scenery.
- 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.
- Designated wilderness areas and areas being studied for possible wilderness designation.
- 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 to 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.

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Appendix C. Land Tenure Zone 3 Lands.

The following lands meet the criteria for Zone 3 lands as described in the approved Resource Management Plan. They are isolated and would be difficult and uneconomical to manage. These lands would be available for disposal through exchange or sale.

Acreage and Land Status

Legal Description	O&C	P.D.	CBWR
1. T. 30 S., R. 2 W., W.M.			
Sec. 32, Lot 3;		42	
Sec. 34, SE$^{1}/_{4}$ SW$^{1}/_{4}$		40	
2. T. 31 S., R. 2 W., W.M.			
Sec. 4, Lots 1 and 8.		84	
3. T. 24 S., R. 3 W., W.M.			
Sec. 9, W$^{1}/_{2}$ W$^{1}/_{4}$;	160		
Sec. 15, E$^{1}/_{2}$NE$^{1}/_{4}$, W^{1}/2SE$^{1}/_{4}$, SE$^{1}/_{4}$ SE$^{1}/_{4}$;	200		
Sec. 17, Lots 1,2,3, and 4;	154		
Sec. 19, Lots 5 to 12, inclusive;	217		
Sec. 21, NW$^{1}/_{4}$ SW$^{1}/_{4}$	40		
Sec. 22, SW$^{1}/_{4}$ NE$^{1}/_{4}$, NW$^{1}/_{4}$ SW$^{1}/_{4}$		80	
Sec. 23, NW$^{1}/_{4}$ NW$^{1}/_{4}$	40		
Sec. 31, Lot 1, N$^{1}/_{2}$NE$^{1}/_{4}$, SW$^{1}/_{4}$ NE$^{1}/_{4}$, E^{1}/2NW$^{1}/_{4}$, SE$^{1}/_{4}$ SE$^{1}/_{4}$.	281		
4. T. 25 S., R. 3 W., W.M.			
Sec. 3, Lots 5,6,7,and 8;	98		
Sec. 4, Lot 5;		23	
Sec. 5, Lots 5 and 6;	52		
Sec. 9, Lots 1 to 5, inclusive.	223		
5. T. 27 S., R. 3 W., W.M.			
Sec. 34, SE$^{1}/_{4}$ SW$^{1}/_{4}$		40	
6. T. 30 S., R. 3 W., W.M.			
Sec. 5, Lots 1 and 2.	19		
7. T. 21 S., R. 4 W., W.M.			
Sec. 19, NW$^{1}/_{4}$ SE$^{1}/_{4}$	40		
Sec. 31, SW$^{1}/_{4}$ SW$^{1}/_{4}$, S$^{1}/_{2}$SE$^{1}/_{4}$;	122		
Sec. 33, S^{1}/2SW$^{1}/_{4}$	80		
8. T. 22 S., R. 4 W., W.M.			
Sec. 7, NE$^{1}/_{4}$, NW$^{1}/_{4}$ NW$^{1}/_{4}$, NE$^{1}/_{4}$ SE$^{1}/_{4}$.	250		

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Legal Description	O&C	P.D.	CBWR
9. T. 23 S., R. 4 W., W.M.			
Sec. 7, Lot 4, NE1/4 NE1/4 , SE1/4 SW1/4 , W1/2SE1/4 , SE1/4 SE1/4 ;	240		
Sec. 17, All;	640		
Sec. 19, Lots 2,3,4, NE1/4 ,SE1/4 NW1/4 ,E1/2SW1/4 ;	407		
Sec. 20, SW1/4 NE1/4 , NW1/4 SE1/4 ;		80	
Sec. 29, N1/2NW1/4 , SE1/4 NW1/4 , NE1/4 SW1/4 , SW1/4 SW1/4 .	200		
10. T. 24 S., R. 4 W., W.M.			
Sec. 5, Lots 3 and 4, W1/2SE1/4 ,	154		
Sec. 25, N1/2, NW1/4 SW1/4 , SE1/4;	520		
Sec. 29, NE1/4 SE1/4 *;	40		
Sec. 33, SE1/4 *;	160		
Sec. 35, W1/2NE1/4 , E1/2NW1/4 , SW1/4 NW1/4 , N1/2SW1/4 *.	280		
11. T. 25 S., R. 4 W., W.M.			
Sec. 3, NE1/4 NW1/4 , NW1/44 SE1/4 *;	82		
Sec. 16, NE1/4 NW1/4 ;		40	
Sec. 17, Lot 5.	17		
12. T. 26 S., R. 4 W., W.M.			
Sec. 10, Lot 1*;		7	
Sec. 17, Lots 9 and 10*.	12		
13. T. 27 S., R. 4 W., W.M.			
Sec. 7, Lot 2*;	4		
Sec. 33, NW1/4 SW1/4.		40	
14. T. 28 S., R. 4 W., W.M.			
Sec. 29, SE1/4 NE1/4 .	40		
15. T. 30 S., R. 4 W., W.M.			
Sec. 1, Lot 9.	4		
16. T. 21 S., R. 5 W., W.M.			
Sec. 13, NE1/4 SW1/4, W1/2SE1/4 ;	120		
Sec. 21, NE1/4 NW1/4 ;	40		
Sec. 25, S1/2NE1/4 , E1/2NW1/4 , NE1/4 SE1/4 ;	200		
Sec. 27, E1/2NE1/4 , NE1/4 SW1/4 ;	120		
Sec.29, NE1/4 SW1/4;	40		
Sec.33, W1/2NW1/4 .	80		

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Legal Description	O&C	P.D.	CBWR
17. T. 22 S., R. 5 W., W.M.			
Sec. 1, Lots 1, 2, 3, and 4, $S^1/_2N^1/_2$, $S^1/_2$;	634		
Sec. 3, Lots 1, 2, $SW^1/_4$ $NE^1/_4$, $S^1/_2NW^1/_4$;	197		
Sec. 5, $NW^1/_4$ $NE^1/_4$, $N^1/_2NW^1/_4$, $SW^1/_4$ $NW^1/_4$, $NW^1/_4$ $SW^1/_4$,	206		
Sec. 11, $NE^1/_4$, $SWNW^1/_4$, $W^1/_2SW$;	280		
Sec. 15, $N^1/_2NE^1/_4$, $SW^1/_4$ $NE^1/_4$;	120		
Sec. 19, $SE^1/_4$ $NE^1/_4$	40		
Sec. 23, $NE^1/_4$ $SE^1/_4$, $S^1/_2$ $SE^1/_4$;	120		
Sec. 25, $SW^1/_4$ $NE^1/_4$, $S^1/2NW^1/_4$, $SW^1/_4$, $W^1/_2SE^1/_4$;	360		
Sec. 33, $W^1/_2NE^1/_4$, $NW^1/_4$, $NE^1/_4$ $SW^1/_4$;	280		
Sec. 35, Lot 1, $E^1/_2NE^1/_4$, $N^1/_2NW^1/_4$.	180		
18. T. 23 S., R. 5 W., W.M.			
Sec. 5, $NW^1/_4$, $N^1/_2SW^1/_4$, $SE^1/_4$ $SW^1/_4$;	276		
Sec. 7, $NW^1/_4$ $NE^1/_4$, $SE^1/_4$ $SE^1/_4$	80		
Sec. 13, $E^1/_2NE^1/_4$, $SE^1/_4$;	240		
Sec. 17, $S^1/_2SW^1/_4$	80		
Sec. 21, $NW^1/_4$ $NW^1/_4$	40		
19. T. 24 S., R. 5 W., W.M.			
Sec. 29, Lot 5.	28		
20. T. 25 S., R. 5 W., W.M.			
Sec. 23, $NE^1/_4$ $SW^1/_4$	40		
Sec. 27, $N^1/_2NW^1/_4$	80		
Sec. 29, $S^1/_2NE^1/_4$	80		
21. T. 28 S., R. 5 W., W.M.			
Sec. 23, $SW^1/_4$ $NW^1/_4$	40		
Sec. 28, $NW^1/_4$ $NW^1/_4$		40	
Sec. 29, $E^1/_2NE^1/_4$	80		
Sec. 31, $NE^1/_4$ $SE^1/_4$	40		
22. T. 29 S., R. 5 W., W.M.			
Sec. 29, $NE^1/_4$ $NE^1/_4$	40		
23. T. 30 S., R. 5 W., W.M.			
Sec. 9, Lots 3 and 4;	77		
Sec. 13, Lot 1;	21		
Sec. 17, $NE^1/_4$ $NE^1/_4$, $N^1/_2NW^1/_4$, $SW^1/_4$ $NW^1/_4$;	160		
Sec. 19, Lot 1;	38		
Sec. 29, $SE^1/_4$ $SW^1/_4$, $S^1/_2SE^1/_4$.	120		
24. T. 31 S., R. 5 W., W.M.			
Sec. 4, Lot 6.	33		

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Legal Description	O&C	P.D.	CBWR
25. T. 22 S., R. 6 W., W.M.			
Sec. 15, SE$^{1}/_{4}$ SW$^{1}/_{4}$	40		
Sec. 23, W$^{1}/_{2}$NW$^{1}/_{4}$, SW$^{1}/_{4}$, S$^{1}/_{2}$SE$^{1}/_{4}$;	320		
Sec. 35, S$^{1}/_{2}$S$^{1}/_{2}$.	160		
26. T. 23 S., R. 6 W., W.M.			
Sec. 1, Lots 5, 6, and 7.	134		
27. T. 24 S., R. 6 W., W.M.			
Sec. 27, W$^{1}/_{2}$, SW$^{1}/_{4}$ SE$^{1}/_{4}$.	360		
28. T. 25 S., R. 6 W., W.M.			
Sec. 3, NW$^{1}/_{4}$ NE$^{1}/_{4}$, NE$^{1}/_{4}$ SW$^{1}/_{4}$, NE$^{1}/_{4}$ SE$^{1}/_{4}$;	122		
Sec. 7, Lots 1, 2, 3, and 4, E$^{1}/_{2}$NW$^{1}/_{4}$;	244		
Sec. 33, SE$^{1}/_{4}$ SE$^{1}/_{4}$	40		
29. T. 26 S., R. 6 W., W.M.			
;Sec. 3, SE$^{1}/_{4}$ NE$^{1}/_{4}$, NE$^{1}/_{4}$ SE$^{1}/_{4}$	80		
Sec. 17, Lot 2, SE$^{1}/_{4}$ NW$^{1}/_{4}$, SE$^{1}/_{4}$ SW$^{1}/_{4}$, SW$^{1}/_{4}$ SE$^{1}/_{4}$.	126		
30. T. 29 S., R. 6 W., W.M.			
Sec. 17, Lots 9, 10, and 11, SE$^{1}/_{4}$ SE$^{1}/_{4}$;	102		
Sec. 19, NW$^{1}/_{4}$ NE$^{1}/_{4}$, N$^{1}/_{2}$NW$^{1}/_{4}$, SW$^{1}/_{4}$ SE$^{1}/_{4}$.	164		
31. T. 30 S., R. 6 W., W.M.			
Sec. 18, Lots 1 and 2;		39	
Sec. 20, Lots 1,2, and 3;		58	
Sec. 21, NW$^{1}/_{4}$ NE$^{1}/_{4}$, NE$^{1}/_{4}$ NW$^{1}/_{4}$, SE$^{1}/_{4}$;	240		
Sec. 25, SE$^{1}/_{4}$ SE$^{1}/_{4}$	40		
Sec. 29, N$^{1}/_{2}$NW$^{1}/_{4}$	80		
32. T. 28 S., R. 7 W., W.M.			
Sec. 11, SW$^{1}/_{4}$ SE$^{1}/_{4}$			40
Sec. 14, Lot 1, N$^{1}/_{2}$NE$^{1}/_{4}$		99	
Sec. 15, Lots 7 to 13, inclusive;			197
Sec. 21, N$^{1}/_{2}$, N$^{1}/_{2}$S$^{1}/_{2}$, SW$^{1}/_{4}$ SW$^{1}/_{4}$;			520
Sec. 22, SE$^{1}/_{4}$ NE$^{1}/_{4}$, S^{1}/2NW$^{1}/_{4}$;		120	
Sec. 27, Lots 3 and 4.			85
33. T. 29 S., R. 7 W., W.M.			
Sec. 5, NW$^{1}/_{4}$ SW$^{1}/_{4}$.	40		
Sub Totals	11,678	832	842
Total		13,352	

*Columbian White Tail Deer habitat which would only be disposed after Columbia White Tailed Deer acquisition proposal completed.

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Appendix D. Best Management Practices.

Introduction

Best Management Practices are identified and required by the Clean Water Act as amended by the Water Quality Act of 1987. Best Management Practices are the primary mechanism to prevent and control to the "maximum extent practicable" nonpoint source pollution and achieve Oregon water quality standards. Best Management Practices are also identified in this document for the protection of soil productivity.

Through the implementation of Best Management Practices, the Bureau of Land Management fulfills the requirement for federal agencies to comply with all State requirements and programs to control water pollution from nonpoint sources (per Clean Water Act Section 313 and Executive Order 12088). The Bureau of Land Management under a memorandum of agreement with the Oregon Department of Environmental Quality is a "Designated Management Agency charged with implementing and enforcing natural resource management programs for the protection of water quality on federal lands under its jurisdiction" through Best Management Practices.

Best Management Practices are defined as methods, measures or practices which are site specific to protect water quality or soil protective. Best Management Practices include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. In this document, Best Management Practices are a compilation of existing policies and guidelines and commonly employed practices to protect water quality and soil productivity.

Best Management Practices are selected during the NEPA interdisciplinary process on a site specific basis to meet overall ecosystem management goals. This document does not provide an exhaustive list of Best Management Practices. Additional measures may be identified during watershed analysis or the NEPA process for a specific activity. The selection and implementation of Best Management Practices initiates an iterative process that includes monitoring the effectiveness and modification when water or soil goals are not achieved.

Best Management Practices

I. Project or Activity

A. Project Planning and Design.

Objectives: Use the planning process to ensure that timber sales are designed to maintain favorable conditions of soil productivity, water flow, and water quality for the beneficial uses in the watershed.

Practices:

1. Use information from watershed analysis to prepare project level plans.

2. Use Timber Production Capability Classification to identify areas classified as nonsuitable for timber production.

3. Use Timber Production Capability Classification and field investigations to identify areas classified as fragile suitable, restricted.

4. Use the planning process to identify, evaluate, and map potential problems (e.g. slump prone areas, saturated areas, and slide areas). Design appropriate preventive measures.

5. Design proposed harvest units to avoid, mitigate, or minimize 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.

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6. Plan mitigation measures if adverse impacts to water quality/quantity or soil productivity may result from the proposed action.

7. Analyze watershed cumulative effects and provide mitigation measures if necessary to meet water quality standards.

8. Disperse activities over time and space.

9. Include the location of all stream channels and wetlands (spring, meadows, lakes, bogs, etc.) on timber sale maps and/or contracts.

10. Location of fragile (nonsuitable and suitable) areas that require special management practices.

11. Include on timber sale maps and/or contracts the location of protection required for each stream channel, wetland, and fragile area.

B. Riparian Reserve Protection

Objectives: To prevent damage to riparian ecosystems and disturbance to streambanks, protect the natural flow of streams and preserve nutrient cycling from woody debris consistent with the Aquatic Conservation Strategy.

Practices:

1. Allow no mineral lease operations, chemical loading operations, or similar toxic pollutant activities within 200 feet of all water bodies.

2. Directionally fell trees to protect Riparian Reserves when harvesting within a tree length of any Riparian Reserve.

3. All snags in the Riparian Reserve would be left except where safety dictate removal, consistent with the Aquatic Conservation Strategy.

4. Nonmerchantable down logs, including trees or logs down prior to logging, would be left in the Riparian Management Area; all down logs would be left in stream channels.

5. Avoid disturbance of unstable banks and headwalls.

C. Yarding Methods.

Objectives: To minimize loss of soil productivity and reduce potential for surface runoff and subsequent degradation due to surface disturbance or compaction.

Practices:

1. Cable.

   a. Use partial suspension when yarding on erodible or ravel prone areas, where practical.

   b. Use full suspension when yarding on fragile soils, where practical.

   c. Use seasonal restriction if appropriate suspension cannot be achieved by yarding equipment.

   d. Avoid downhill yarding where practical.

   e. Hand waterbar cable yarding corridors immediately after use on sensitive soils (Category 1) where gouging occurs.

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2. Ground-based

   a. Use existing skid roads wherever possible.

   b. Limit new skid trails to slopes less than 35 percent.

   c. Use designated skid roads to maintain compaction levels of skid roads plus landings at less than 10 percent.

   d. Restrict tractor operations to these trails and limiting operations to periods of low soil moisture, when soils have the most resistance to compaction (dry season).

   e. In partial cut areas, locate skid roads so that they can be used for final harvest.

   f. Till all 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 due to physical conditions.

   h. Avoid placement of skid roads through areas of highwater tables or where the skid roads would channel water into unstable headwall areas.

   i. Waterbar skid roads to minimize erosion.

   j. Avoid use of wide track vehicles or more than one machine on a skid road at any given time to minimize the width of the skidroads. (On multiple pass skid roads, wide tract vehicles result in wider skid roads, 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. Leave large downed woody debris on site.

   l. Rip existing tractor skid trials prior to felling timber with a properly designed winged subsoiler.

II. Roads

A. Planning

Objective: To plan road systems in a manner that meets resource objectives and minimize resource damage.

Practices:

1. Use an interdisciplinary process to develop an overall transportation system.

2. Establish road management objectives that minimize adverse environmental impacts given the use of the road.

3. Avoid fragile and unstable areas or plan appropriate mitigation measures.

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 surfaced.

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B. Location

Objectives: To minimize mass soil movement, erosion, and sedimentation.

Practices:

1. Locate roads out of Riparian Reserves where practical alternatives exist.

2. 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 necessary.

3. Avoid headwalls whenever possible.

4. Avoid construction on unstable areas where practical.

5. Locate roads to minimize heights of cuts. Avoid high, steeply sloping cuts in highly fractured bedrock.

6. Locate roads on well drained soil types.

7. Locate stream crossing sites where channels are well defined, unobstructed, and straight.

C. General Design Features

Objective: To design the lowest standard of road consistent with use objectives and resource protection needs.

Practices:

1. Road design standards and design criteria are based on road management objectives such as traffic requirements of the sale 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 two to ten percent with a maximum grade of 15 percent. Consider steeper grades in those situations where they will result in less environmental impact (such as a ridge top spur road). Avoid grade less than two percent.

4. Outsloping - 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 gradients over eight to ten percent.

5. Insloping - Insloping of the road prism is an acceptable practice on roads with gradients over ten percent where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.

6. Minimize excavation through the following actions whenever possible: use of balanced earthwork, narrow road width, and endhauling where slopes are greater than 60 percent.

7. Locate waste areas suitable for depositing excess excavated material.

8. Endhaul waste materials generated during road and ditch maintenance if side slopes exceed 60 percent or where unacceptable environmental damage may occur.

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9. Endhaul excess materials where slopes have been over loaded.

10. 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.

11. Provide for vegetative or artificial stabilization of cut and fill slopes in the design process. Avoid establishment of vegetation where it inhibits drainage from the road surface or where it restricts safety or maintenance.

12. Prior to completion of design drawings, field check the design to assure that it fits the terrain, drainage needs have been satisfied, and all critical slope conditions have been satisfied, and all critical slope conditions have been identified and adequate design solutions applied.

13. Avoid diverting water into headwalls — roll the grade to channel water away from headwalls — check maintenance on existing roads to ensure water isn't allowed to remain on the road and/or diverted into unstable headwall areas.

14. Unless a road is needed for continued resource management, use a temporary road and put it to bed after use, using methods such as blocking, ripping, seeding, mulching, fertilizing, and waterbarring.

15. Minimize potential erosion on a road — if unsurfaced, put it to bed; otherwise apply rock to minimize surface erosion.

16. Approve location of all landings and landing clearing limits prior to clearing.

17. Select landing locations on the basis of the least amount of excavation and erosion potential where sidecast will not enter drainages or damage other sensitive areas.

18. Avoid landing locations alongside or in meadows, or other wetland areas.

19. Restore the shape of landings back to the natural configurations or shape to direct the runoff to preselected spots where water can be dispersed to natural, well-vegetated, stable ground.

D. Design of Cross Drains

Objectives: To minimize concentrated water volume and velocity on the road prism, thus to reduce movement and sedimentation.

Practices:

1. Design placement of all surface 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 culverts or drainage dips in such a manner to avoid outflows onto unstable terrain such as headwalls and slumps 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 onto loose material or erodible soil or steep slopes.

4. Use the guide for drainage spacing by soil erosion classes and road grade shown in Table D-1.

5. Consider using drainage dips in lieu of culverts on roads which have gradients less than ten percent or where road management objectives result in blocking roads. Avoid drainage dips on road gradients over ten percent.

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6. Locate drainage dips where water might accumulate, or where there is an outside berm which prevents drainage from the roadway.

7. Cut all cannon culverts to the proper length, downspout, and provide for energy dissipation.

8. When sediment is a problem, design cross drainage culverts or drainage dips immediately upgrade of stream crossings to prevent ditch sediment from entering the stream.

9. Rolling gradients is a recommended design practice in erodible and unstable soils to reduce surface water volume and velocities and culvert requirements.

10. Consider use of slotted riser inlets on granitic and schist 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 provide unobstructed movement for aquatic fauna.

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 is suitable for nonfishery streams since fish passage is not a concern in these instances.

2. Use the theoretical 100 year flood as design criteria for new culverts, bridges, and other stream crossings.

3. Minimize the number of crossings on streams.

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 would occur. Avoid locations that require stream channel to 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 in terms of economics, maintenance, and resource requirements for access to the area during all seasons over the long tern.

6. Minimize the number of temporary crossings on a particular stream.

7. Low ford stream crossing is appropriate only when site conditions make it impractical or uneconomical to utilize a permanent or temporary crossing structure.

F. Construction

Objective: To create a stable roadway that will minimize soil erosion and water quality degradation.

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.

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2. Manage road construction so that any construction can be completed and bare soil can be protected and stabilized prior to fall rains.

3. Confine construction of pioneer road to within the roadway construction limits.

4. Conduct pioneering so as to prevent undercutting of the designated final cutslope and prevent avoidable deposition of materials outside the designated roadway limits. Conduct slope rounding included in the design during the pioneering stage when the pioneer road cut slope is the same as the road backslope. This avoids excess amounts of soil being moved after excavation and embankment operations are completed.

5. Construct embankments 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. Avoid sidecasting where it will adversely affect water quality or weaken stabilized slopes.

7. Place surface drainage prior to fall rains.

8. Clear drainage ditches and natural watercourses above culverts of woody material deposited by construction or logging prior to fall rains.

9. Confine major culvert installation to the period of June 15 to September 15 to minimize sedimentation and the adverse effects of sediment on aquatic life.

10. Divert the stream around the work area to minimize sedimentation effects downstream.

11. Install the culvert as close to zero percent slope as possible on fishery streams but not to exceed 0.5 percent. 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 culvert 20 percent of culvert diameter below the streambed to minimize scouring at the outlet. Increase culvert diameters accordingly.

13. Confine activities by heavy equipment in the streambed to the area that is necessary for installation of the structure. Restrict construction equipment to within the approved right-of-way and out of the streambed.

14. Permanent stream crossing structures on fishery streams 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 fills around culvert inlets and outlets where appropriate.

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 sediment on aquatic life.

17. Use backfill material that is as soil free as practicable over temporary culverts. Whenever possible use washed river rock covered by pit run or one inch minus as a compacted running surface.

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18. Spread and reshape clean fill material to the original lines of the streambed after a crossing is removed to ensure 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 it will be used much.

22. Rock the road approaches with 150 feet of each side of a low water ford to prevent washing and softening of the road surface.

23. Construct adequate waterbars on roads, spurs, and skid trails prior to fall rains.

24. Use the following table for waterbar spacing, based on gradient and erosion class.

Table D-1. Guide for Drainage Spacing by Soil Erosion Classes and Road Grade.

Water Bar Spacing (in feet)

	Erosion Class		
Gradients (%)	**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 in a manner that minimizes sediment production and water quality degradation.

Practices:

1. Improve flat gradients to a minimum of two percent or provide raised subgrade sections (turnpike) to avoid saturation of the road prism.

2. Reconstruct culvert catchbasins to specifications. Catchbasins in sold rock need not be reconstructed provided that culvert entrance specifications are met.

3. Identify potential water problems caused by offsite disturbance and add necessary drainage facilities.

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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. Improve existing culverts, bridges, and other stream crossings to accommodate at least a 100 year flood when they pose a substantial risk to riparian conditions.

6. Add additional full-rounds, half-rounds, 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 backslope while reconstructing ditches.

11. Surface inadequately surfaced roads that are to be left open to traffic during wet weather.

12. Require roadside brushing be done in a manner that prevents disturbance to root systems (i.e. avoid using excavators for brushing).

    - Exposed soil would be seeded or protected when necessary to keep surface erosion within accepted standards.

    - Install stabilization features such as debris racks, bin walls, and rock blankets as needed.

13. Reconstruct poorly built stream crossings with bridges or culverts, insuring proper alignment and grade.

H. Maintenance

Objective: To maintain roads in a manner which provides for water quality protection by minimizing surface erosion, rutting failures, sidecasting, and blockage of drainage facilities.

Practices:

1. Provide the basic custodial required to protect the road investment and to ensure that 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, prevent or remove rutting berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid wasting loose ditch or surface material over the shoulder where it will cause stream sedimentation or weaken slump prone areas. Avoid undercutting of backslopes.

3. Keep road inlet and outlet ditches, catchbasins, and culverts free of obstruction, particularly before and during prolonged winter rainfall. However, hold routine machine cleaning of ditches to a minimum during wet weather.

4. Remove slide material when it is obstructing road surface and ditchline drainage and either utilize for needed road improvement elsewhere or place in a stable waste area. Avoid sidecasting of slide material where it will damage, overload, or saturate embankments, or flow into downslope drainage courses.

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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 runoff.

7. Reclaim/revegetate all roads not needed for future management activities.

8. Exposed soil would be seeded or protected when necessary to keep surface erosion within accepted standards.

9. Stabilize major 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.

Practices:

1. Barricade or block road surface using gates, guard rails, earth/log barricades, boulders, logging debris or a combination of these methods. Avoid blocking roads that will need future maintenance (i.e. culverts, potential slides, etc.) with unremovable barricades. Using 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 waterbars, cross drains, cross sloping, or drainage dips if not already on road to assure drainage.

4. Till with a winged subsoiler, revegetate for erosion control and site productivity restoration.

J. Water Source Development

Objective: To supply water for road construction, dust abatement and fire protection while maintaining existing water quality and supply and consistent with the Aquatic Conservation Strategy.

Practices:

1. Design and construct durable, long-term water sources.

2. Avoid reduction of downstream flow that would detrimentally affect aquatic resources, fish passage, or other uses.

3. Direct overflow from water holding developments back into the stream.

4. Locate road approaches to 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.

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Practices:

1. Wherever possible, prior to excavation of the site, remove and stockpile topsoil for surface dressing during the post-operation rehabilitation.

2. Stabilize pit sides and smooth the general pit area.

3. Use seeding, mulching, and drainage to minimize erosion.

4. Rip, waterbar, block, fertilize, and seed access roads to rock pits where no future entry is planned. Rehabilitate or restore quarries in this category to renewable resource levels.

III. Silviculture

A. Riparian Reserve Protection

Objectives: To prevent damage to riparian ecosystems, disturbance to streambanks, deterioration of water quality, and accumulation of slash in streams.

Practices:

1. Directionally fell trees to protect Riparian Reserves when slashing within a tree length of a Riparian Reserve.

B. Mechanical Methods of Site Preparation

Objectives: To maintain soil productivity and water quality while meeting the silviculture objectives.

Practices:

1. Limit the use of tracked equipment that would cause unacceptable soil disturbances or compaction to areas of less than 30 percent slopes.

2. Do not compact skeletal or shallow soils.

3. Till all compacted areas with a properly designed winged subsoiler. This could be waived if inspection reveals that less than two percent of the area is compacted. Compaction of less than two percent is considered to equal less than one percent growth loss.

4. On sites which do not annually dry out enough to provide resistance to traditional tracked equipment, use low-ground-pressure, tracked-type excavators (including: backhoe/grapple/loader/ slasher).

5. Restrict tractor operations to dry conditions with less than 25 percent soil moisture content in the upper six inches of soil.

6. Avoid piling concentrations of 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 pollution, and to enhance soil productivity.

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Practices:

1. Refer to vegetation Management EIS.

2. Avoid aerial application when wind speeds would cause drift.

3. Locate heliports and storage areas away from stream channels.

4. Restrict the application within Riparian Reserves.

D. Broadcast Burning

Objectives: To maintain long term soil productivity, organic matter and duff, water quality, retain legacy, and to meet hazard reduction objectives.

Practices:

1. Evaluate need for burning based in soils, plant community, and site preparation criteria. Burn under conditions when a light or moderate burn can be achieved (see guidelines below) on all units to protect soil productivity. The following standards should be followed.

   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.

      - Gross yard to break up heavy slash concentrations, and reduce burn intensities.

      - 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. Firetrails.

   a. Construct tractor fire trails with one pass construction during periods of dry soil moisture.

   b. Where the fire trail construction has resulted in compacted surfaces, rip, and waterbar the fire trail (use properly designed winged ripper).

   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 instability or headwalls.

   e. Waterbar all fire trails that may carry water to minimize surface erosion.

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E. Thinning

Objectives: To protect soil productivity, water quality, and riparian ecosystems.

Practices:

1. Refer to timber harvest.

IV. Other Activities

A. Firewood.

Objectives: To prevent erosion from road use and water quality degradation.

Practices:

1. Seasonal restriction on firewood cutting when access to cutting area is on an unsurfaced road.

2. Clean all road surfaces, ditches, and catchbasins of debris from wood cutting.

B. Wildfire Control

Objectives: To minimize water quality degradation and maintain soil productivity while achieving rapid and safe suppression of wildfire.

Practices:

1. Limit use of heavy equipment near Riparian Reserves and on steep slopes when possible. Where fire trail entry into a Riparian Reserves is essential, angle the approach rather than have it perpendicular to the Riparian Reserves.

2. Attempt to keep fire retardant out of water sources.

3. Utilize information from burned area surveys to determine if watershed emergency fire rehabilitation is needed.

4. Develop a fire rehabilitation plan through an interdisciplinary process.

5. 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.

6. 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) waterbars on firelines.

C. Watershed Rehabilitation and Fish Habitat Improvement Projects

Objectives: To mitigate and minimize damage to riparian vegetation, streambanks, and stream channels.

Practices:

1. Employ good project planning by an interdisciplinary team.

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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. Confine work in the stream channels to between June 15 and September 15 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 extent possible.

6. Limit the amount of streambank excavation to the minimum that is necessary to ensure stability of enhancement structures. Place excavated material as far above the high water marks as possible to avoid its reentry to the stream.

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.

8. Inspect all mechanized equipment daily to help ensure toxic materials such as fuel and hydraulic fluid do not enter the stream.

9. Utilize waterbars, barricades, and seeding to stabilize bare soil areas.

D. Mining

Objectives: To minimize disturbance to soils, riparian ecosystems, streambanks, and stream channels within constraints of surface mining regulations.

Practices:

1. Require the claimant to 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) requirements.

3. Design, locate, and construct stream crossings in conformance with Practices described in Sections II.C and II.D.

4. Use existing roads, skid trails, and stream crossings whenever possible.

5. Prior to the first wet season, rip, waterbar, seed, mulch, and barricade according to BLM specifications, all roads and trials constructed for exploratory purposes that are unnecessary for the mining operation.

6. Waterbar and barricade all natural surface roads and trails when the operation concludes.

7. Rip, waterbar, seed mulch, and barricade all natural surface roads and trails when the operation concludes.

8. Construct a berm or trench between disturbed areas and water courses.

9. Stockpile topsoil for use during reclamation of the site. Construct a berm or trench immediately downslope of the stockpile.

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10. Stabilize and contour the area, replace topsoil and mulch, seed and plant the area with tree seedlings in accordance with specifications when no further mining is contemplated.

11. During the period from October 15 to May 15 contour and mulch disturbed areas that will not be mined for at least 30 days.

12. 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.

13. Confine operations to bench areas rather than allow encroachment on the stream whenever possible.

14. Locate and maintain sanitation facilities in accordance with State DEQ Regulations.

E. Wetlands

Wetland protection: Maintaining the integrity and functional ability of wetlands by avoidance whenever possible. All wetlands destroyed by construction activities will be ameliorated by creating replacement wetland areas. Protection is accomplished in these areas during timber harvest activities by: a) avoiding disturbance of permanent high water table areas; b) falling and yarding away from wetlands; c) utilizing seasonal restrictions or full suspension over areas when entry is determined to be required; d) avoiding the use of tractors or other ground-basket equipment which may cause disturbance of the wetlands.

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Appendix E. Silvicultural Systems and Harvest Methods.

This appendix describes the silvicultural practices and systems planned for use in implementation of the Resource Management Plan (RMP).

Silvicultural systems define the sequence of management treatments that take place throughout the entire lives of forest stands that are conducted to meet management objectives. Systems are usually differentiated by the reproduction method or regeneration harvest method employed, e.g. clearcut, seed tree, selection etc. Systems are designed to move stands from their current condition along a developmental path toward a desired, or target stand condition. Reforestation or the establishment of desired vegetation is the critical part of any silvicultural system.

In the design of the proposed action, a variety of general silvicultural systems are used for the different Land Use Allocations. Differences between systems are the result of differences in resource objectives and differences in forest condition and ecological types. Silvicultural systems are resource and objective neutral. They are designed to meet a wide range of management goals that include timber production, creation or maintenance of wildlife habitat, restoration of forest condition (health), restoration or improvement of riparian condition, and maintenance of site productivity. The description of silvicultural systems, therefore, is not limited to any one resource category. Within each system there is variation in the timing of and type of stand treatments depending on stand condition and other factors.

Silvicultural System Design

Silvicultural systems as well as individual management actions will be designed and used to:

1. Meet established land use objectives.

2. Maintain the health and sustainability of forest ecosystems and their processes or to restore forest condition so that management objectives can be met.

3. Incorporate current and developing knowledge of natural processes and the relationships between structures, landscape arrangements, and the maintenance of ecosystem function.

4. Involve landscape level (watershed) analysis at a variety of spatial and temporal scales.

5. Consider the elements of ecosystem and landscape function, composition, and structure.

Silvicultural system design will vary from site to site and will be based on:

1. Consideration of stand vigor, disease, live crown ratio, and general stand condition.

2. The autecological and synecological requirements of major or indicator plant and animal species and species groups.

3. Habitat requirements of rare or endangered species.

4. Requirements of avoidance strategies for vegetation management.

5. Economic feasibility.

6. Soil, slope, aspect, and other physical site conditions that influence reforestation potential, blowdown potential, or that otherwise influence the ability of prescribed treatments to meet target stand and landscape objectives.

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Simply stated, silvicultural systems and actions should be based on the objectives of the land allocation, ecological processes, site and stand characteristics, and economic feasibility within a framework of landscape analysis.

Silvicultural Systems

The silvicultural systems for the Roseburg District RMP are modifications of even aged systems. Modified even aged systems involve the management of both existing even aged or near even aged stands and the creation of new even aged stands through harvesting while retaining both living and dead structural elements i.e. “biological legacies”. Biological legacies include; green trees, snags, and coarse woody debris.

Stand regeneration methods under modified even aged silvicultural systems include variations of the reserve seed-tree and irregular shelterwood harvest methods (Smith 1962). The modifications of these systems are one of differing objectives, though there may not be an apparent difference in appearance. For example, green tree retention following a traditional system is done for seed production and additional volume/value increment. Green trees retained using the proposed modified systems are for the primary purpose of providing present and future wildlife habitat components.

Stand Regeneration

The modified reserve seed-tree method of harvest removes the majority of a stand in a single entry except for a small number of green trees; six to eight conifer trees per acre. In addition desired coarse woody debris and snags are retained to meet management objectives. Regeneration is usually achieved through planting following site preparation, although advanced regeneration may be present subsequent to harvest. Natural regeneration may occur through seed dispersed from retention trees or adjacent timber stands, although there is potential for regeneration delay from reliance on natural seeding alone. Genetically selected stock would be used when available. Units harvested in this manner could require actions in addition to conifer planting to secure regeneration. These practices include seedling shading, protection from animal damage, and control of competing vegetation.

The modified irregular shelterwood system removes the majority of a stand in a single entry except for a number of green trees; 12-18 conifer trees per acre that are retained. In addition desired coarse woody debris and snags are retained to meet management objectives. Regeneration is usually through planting following site preparation, although advanced regeneration may be present subsequent to harvest. Natural regeneration may occur through seed dispersed from retention trees or adjacent timber stands. There is greater potential for natural regeneration using this system compared to the reserve seed-tree system. Areas harvested in this manner could require actions in addition to conifer planting to secure regeneration. These practices include some or all of the actions described for the reserve seed-tree system.

Stand Management

Following the regeneration phase, modified even aged systems are subjected to treatments designed to produce desired stand conditions that include wood of desired quality, quantity, and value. Modified even aged systems may be managed at different levels of intensity.

Stand management practice include control of species composition and stand density. Release practices are employed to ensure tree growth is not slowed by competing, undesirable plants and that desired trees are not displaced. Density control through thinning assures that cubic foot volume growth is concentrated in the stems of selected trees.

Forest fertilization may be employed to temporarily increase stand growth. Some young stands in the planning area are in poor condition because of high densities or because of overstory competition. Stands may experience significant growth retardation called thinning shock following precommercial thinning, overstory removal, or release. The severity of this retardation may be reduced through the application of fertilizer. Forest fertilization may also be used to improve tree vigor and to reduce insect and drought related mortality.

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Stand Harvesting

Stand harvesting may occur at any age above a minimum harvest age set to meet land use objectives as well as economic and logging practicality requirements.

The sustainable harvest level is highest if minimum harvest age is set at the lowest practical age. Over time, however, rotation lengths would approach the age of culmination of mean annual increment (CMAI). CMAI varies with site quality, the kinds of silvicultural practices employed, and the timing of those practices. For most silvicultural regimes and sites on the Roseburg District CMAI occurs from about 80-110 years of age.

Silvicultural Practices

For each silvicultural system a variety of practices, other than harvesting, may be planned for specific periods in the life of the stand. These practices act to keep forest stands on desired developmental trajectories, speed the development of desired habitat components, and maintain or improve stand vigor. Silvicultural practices in this region have traditionally been applied to conifers stands and their development, however, many of the same principles and treatments have application for the growth and development of other desired vegetation.

While both the types of practices used and timing vary between systems, most silvicultural systems require the full range of forest management tools and practices for their successful implementation. To predictably direct forest stands (ecosystems) so that structural and other objectives are met may require some level of intensive stand tending practices whatever the system employed.

Site Preparation

If needed, site preparation procedures will be used to prepare newly harvested or inadequately stocked areas for planting, seeding, or natural regeneration. Site preparation methods would be selected to: provide physical access to planting sites; control fire hazard; provide initial physical control of the site to channel limited resources on the site into desired vegetation; influence the plant community that redevelops on the site; influence or control animal populations; and ensure the retention of site productivity.

Within the planning area, four types of site preparation techniques will be used. These are prescribed burning, mechanical and manual methods, and herbicide application.

Prescribed burning, including broadcast and pile burns, is expected to be the primary method of site preparation. To protect air quality, burning would occur under conditions consistent with the Oregon Smoke Management Plan. Broadcast burning prescriptions will be written to minimize the detrimental effects of fire on other resources. Emphasis will be placed on protecting soils properties and the retention of coarse woody debris. Prescribed fire on sensitive soils will be designed to result in low to moderate intensity burns.

Mechanical site preparation consists of either: tractor piling or windrowing of slash and unwanted vegetation; or the use of a low ground pressure backhoe, loader, grapple, or other special equipment to move or pile slash and unwanted vegetation.

Manual site preparation consists of shrub pulling or cutting and hoeing or grubbing of unwanted vegetation and slash.

Application of herbicides for site preparation purposes will occur only after careful site-specific environmental analysis and local public involvement. Decision for use would be governed by the procedures established in BLM’s Record of Decision, Western Oregon Program Management of Competing Vegetation.

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Regeneration

Conifer planting will be done where appropriate to assure that reforestation objectives are promptly met. The production of planting stock requires seed (cone) collection from wild stands and/or from seed orchards and the production of planting stock in bare root nurseries or container shadehouses.

The release and management of existing natural regeneration has the potential to speed stand development. Natural regeneration can, in many situations, be both adequate and relatively prompt and of appropriate species. A result of relying on natural regeneration is the loss of the ability to use genetically selected stock. When applicable, silvicultural systems would utilize existing regeneration, natural seeding, and prompt planting of desired species to assure that regeneration targets and timeframes are met.

Existing vegetation will be used to the extent possible in meeting management objectives that are dependent upon nonconifer vegetation. Where necessary to meet objectives, nonconifer vegetation would be established through seeding or the planting of bare root or containerized plants.

Stand Protection

Stand protection procedures will be designed to protect newly planted conifer seedlings and in some cases natural seedlings from natural hazards. Treatments include but are not limited to protecting seedlings from the sun by shading and placing plastic tubes/netting over seedlings to protect from animal browsing. Control measures to deal with populations of animals such as mountain beaver, gophers, or porcupines would be initiated if populations of these animals reached levels high enough to threaten stands. Treatment acres will be determined annually in conjunction with reforestation surveys.

Similar treatments will be used when appropriate to protect planted or seeded nonconifer vegetation.

Stands will also be managed to decrease the risk of destruction by wildfire. Management practices include treatments such as underburning, limbing, density management, or hand piling or utilization of slash.

Stand Maintenance

Maintenance treatments occur after planting or seeding and are designed to promote the survival and establishment of conifers and other vegetation by reducing competition from undesired plant species. Maintenance and other vegetation management actions would be planned to meet species diversity goals.

Maintenance actions involve the implementation of preventive or ecosystem based strategies or direct control actions using techniques such as mulching, cutting or pulling of unwanted species, grazing, or herbicide application. As with other vegetation management treatments, preference for stand maintenance treatments would be given to strategies that redirect natural ecosystem processes where practical and where scientific knowledge was adequate to support such strategies. The choice between methods would be made under the same decision framework listed for site preparation.

Precommercial Thinning and Release

Precommercial thinning and release treatments will be designed to control stand density, influence species dominance, maintain stand vigor, and place stands on developmental paths so that desired stand characteristics result in the future. Thinning and release may occur simultaneously or separately.

Precommercial thinning and release treatments may be done either by manual methods such as falling and girdling or through herbicide application. Site specific decision making processes for herbicide release treatments follow the same procedures as those listed for site preparation.

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Commercial Thinning (Density Management)

Commercial thinnings will be designed to control stand density, maintain stand vigor, and place or maintain stands on developmental paths so that desired stand characteristics result in the future. Commercial thinnings are scheduled after developing stands reach a combination of stem diameter and surplus volume to permit an entry that is economical.

Fertilization

Stand growth is limited by the supply of available nutrients, particularly by available nitrogen. The supply of soil nutrients will be conserved through design of management actions and could be augmented through either fertilization or in some situations, through retention of species and structural diversity in stands. Fertilization actions are usually designed to apply 200 pounds of available nitrogen with helicopters in the form of urea based prill (46 percent available nitrogen). Occasionally, fertilizer may be applied in a liquid urea-ammonia form or with a mixture of other nutrient elements in addition to nitrogen. Hand application is usually impractical.

Pruning

Pruning of young stands is carried out to increase wood quality through the production of clear wood on rotations shorter than would be required without the action.

Pruning appears to be necessary to produce wood of acceptable quality from stands that are managed at very low densities to meet biological diversity objectives since trees in such stands would have long crowns and would produce wood with large knots without the action.

Underburning

Use of fire for the specific purpose of hazard reduction, reducing mortality of desired trees and improving stand vigor, resiliency, and stability.

Where appropriate, silvicultural systems and individual management actions will be adapted to meet the requirements of experimental designs that permit the agency and its publics to explore the results of the application of a range of alternative management options to both stands and landscapes. Where not in direct conflict with Land Use Allocation objectives, silvicultural systems would be designed to assure that resultant wood quality is suitable for the range of current and forecasted uses and that they would maintain or enhance log value.

Objectives, Habitat Criteria, and Management Practices Design for the Land Use Allocations

The description of the proposed action involves three separate criteria for each Land Use Allocation. These criteria are:

1. Resource condition objectives that summarize and highlight the important resource management goals for the Land Use Allocation for the next decade.

2. Stand and landscape condition objectives that are desired in the near future and in the longer run.

3. Management direction which sets sideboards and standards for stand and landscape composition.

Management direction described in this appendix incorporates “Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.”

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Matrix

General Forest Management Area

The general prescription will be one of modified even aged management primarily employing the modified reserve seed-tree system. Silvicultural practices include the full range of practices consistent with Land Use Allocation objectives.

A. Resource Condition Objectives

1. Commodity Production: Suitable commercial forest land would be managed to assure a high level of sustained timber productivity. Emphasis would be placed on use of intensive forest management practices and investments to maintain a high level of sustainable resource production while maintaining long-term site productivity, biological legacies, and a biologically diverse forest matrix.

2. Forest Condition (Forest Health): A very small and very limited acreage of stands in this allocation may not be in a condition to respond to treatments designed to meet management objectives. Management actions to improve forest condition include density management and understory reduction operations that reduce competition, increased use of understory prescribed fire, and fertilization.

3. Habitat Retention, Restoration, and Production: Selection of stands for management will involve consideration of the desired blend of seral stages and stand densities. Manage landscape planning blocks to maintain desired levels and distribution of early seral vegetation.

B. Stand and Landscape Condition Objectives

1. Target Stand Conditions: Manage forests of the Land Use Allocation so that over time landscapes would trend toward a forest composed of stands containing a variety of structures; stands containing trees of varying age and size, and stands with an assortment of canopy configurations. As stands age, within stand conditions should trend toward those characteristic of older forest types.

2. Seral Composition: Over time, manage for a balance of seral stages consistent with Land Use Allocation objectives.

3. Landscape Composition: Manage toward a mix of stand conditions and seral patterns with consideration to three levels of scale: physiographic province (river basin / mountain range), landscape block (watershed), and within stand detail.

C. Management Direction for program implementation

1. Variation by ecological type: Planning and implementation of specific projects will be based on an understanding of the ecological relationships and limitations of the communities proposed for management.

2. Qualifications of stands for management deferral: Stands whose current level of large green trees do not meet retention objectives will not be scheduled for regeneration harvests or overstory removals that removed those trees. Understory thinning and salvage of volume from these stands following partial or complete stand mortality would be permitted provided structural objectives were met.

3. Stand Structural and Species Composition:

Structural Composition: Maintain site productivity and wildlife habitat values through the retention of structure and the design of practices required to maintain ecosystem processes throughout the management cycle. Retain on the average six to eight large green trees per acre in harvest units. Large conifers reserved would proportionally represent the total range of tree size classes greater than 20 inches in diameter and would represent all conifer species present. Entries into younger stands would

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reserve the largest six to eight trees. For specific Standards and Guidelines on coarse woody debris, green tree, and snag retention refer to pages C-40 through C-44 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.

Species Composition: Manage so that tree species trend over time toward average species compositions consists of approximately 89 percent Douglas-fir, five percent pines, four percent grand fir, and two percent other connifers. Manage shrubs, forbs, and other vegetation consistent with Land Use Allocation objectives.

4. Landscape Design Elements: Situate harvest units to meet general landscape objectives on three levels of scale: physiographic province, landscape block or watershed, and the stand.

5. Regeneration harvests: Regeneration harvests will not be programmed for stands under 60 years of age with long term rotation age programmed for culmination of mean annual increment (CMAI). CMAI is between 80-110 years on the average for proposed silvicultural systems. Priority for harvest in stands under 80 years of age would be commercial thinning. Practices will be strongly influenced by consideration of ecological site potential and operability factors.

6. Commercial Thinning and other Density Management: Stand densities will be maintained within desired ranges through a combination of planting density, precommercial thinning, commercial thinning, and management of fine grained stand detail. Commercial thinning entries would be programmed for stands under 80 years of age. Thinnings will usually be designed to assure high levels of volume productivity. Units will retain patches of denser habitat where desired to meet wildlife habitat criteria.

7. Activity Scheduling: Stand treatment priority will result from the watershed analysis process.

8. Disease Management: Design silvicultural treatments so that within stand endemic levels of tree disease do not increase and so that, where possible, infected trees contribute to the achievement of Land Use Allocation objectives. Creation of snags over time, as the root rot center expands, would be an example of using tree disease to meet a structural objective. Mistletoe infected trees should be located in topographic positions that are not conducive to the spread of the disease.

9. Forest Condition (Forest Health) Restoration: Priority for restoration treatments will be determined at the stand level and will be based on the stand's ability to meet management objectives in the long-term.

Connectivity/Diversity Blocks

The general prescription will be one of modified even aged management primarily employing the modified irregular shelterwood system. Silvicultural practices include the full range of practices consistent with Land Use Allocation objectives.

A. Resource Condition Objectives

1. Connectivity and Diversity: Manage to provide ecotypic richness and diversity and to provide for habitat connectivity for old-growth dependent and associated species within the General Forest Management Area. Manage to maintain a minimum of 25 percent of each block in late successional condition both long-term and short term. Late-successional stands within riparian reserves and other allocations contribute toward this percentage. Minimize fragmentation of interior habitat within block and in adjacent older stands to provide as effective habitat as possible.

2. Commodity Production: Suitable commercial forest land within blocks will be managed to assure a moderately high level of sustained timber production.

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B. Stand and Landscape Condition Objectives

1. Target Stand Conditions: Manage forests of the Land Use Allocation so that over time landscapes would trend toward a forest composed of stands containing a variety of structures, stands containing trees of varying age and size, and stands with an assortment of canopy configurations. As stands age, within stand conditions should trend toward those characteristic of older forest types.

2. Seral Composition: Over time, manage for a minimum of 25 percent late-successional condition in each block.

3. Landscape Composition: Incorporate Connectivity/Diversity Blocks within landscape planning analysis. Manage toward a mix of stand conditions and seral patterns with consideration to three levels of scale: physiographic province (river basin / mountain range), landscape block (watershed), and within stand detail.

C. Management Direction for program implementation

1. Variation by ecological type: Planning and implementation of specific projects will be based on an understanding of the ecological relationships and limitations of the communities proposed for management.

2. Qualifications of stands for management deferral: Stands whose current level of large green trees do not meet retention objectives will not be scheduled for regeneration harvests or overstory removals that removed the large trees. Understory thinning and salvage of volume from these stands following partial or complete stand mortality will be permitted provided structural objectives were met. Manage so that best ecologically functioning stands will be seldom entered in the short term.

3. Stand Structural and Species Composition:

Structural Composition: Maintain site productivity and wildlife habitat values through the retention of structure and the design of practices required to maintain ecosystem processes throughout the management cycle. Retain on the average 12-18 large green trees per acre in harvest units. Large conifers reserved will proportionally represent the total range of tree size classes greater than 20 inches in diameter and will represent all conifer species present. Entries into younger stands will reserve the largest 12-18 trees. For specific Standards and Guidelines on coarse woody debris, green tree, and snag retention refer to pages C-40 through C-44 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. In addition, a minimum of two large hardwoods, if present will be left per acre. Logging safety and potential tree mortality would be considered when determining the distribution of retention trees and snags.

Species Composition: Manage so that tree species trend over time toward average percent species composition of 78 percent Douglas fir, four percent pines, two percent Grand fir, 12 percent other conifers, and four percent hardwood. Manage shrubs, forbs, and other vegetation consistent with Land Use Allocation objectives.

4. Landscape Design Elements: Situate harvest units to meet general landscape objectives on three levels of scale: physiographic province, landscape block or watershed and the stand. Harvest unit shapes would be constrained by economic practicality and logging system capabilities. Retain dead and green structure consistent with meeting long term stand composition goals. Situate harvest units to meet general landscape objectives, including minimizing fragmentation, and providing general landscape connectivity. Harvest methods could vary within stand to: a) reflect current within stand spatial patterns, b) as required to meet stand objectives, and c) to retain or create patches of reproductive or other habitat for key wildlife species.

5. Regeneration harvests: Regeneration harvests will only be programmed for late-successional stands. Harvest in stands under 120 years of age will emphasize density management. Connectivity/Diverity

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Block area would be managed using a 150 year area control rotation. Regeneration harvest will be at a rate of 1/15 of the available acres in the entire Connectivity/Diversity Block land use allocation per decade. Because of the limited size of operable areas within any given block, multiple decades of harvest could be removed at any one time from a single block in order to make viable harvest units. The future desired condition across the entire Connectivity/Diversity Block area will have up to 15-16 different ten year age classes represented. The multiple layer, multiple age class nature of the target old-growth condition makes age classes as applied to traditional forest management less applicable in the Connectivity/Diversity Blocks.

6. Commercial Thinning and other Density Management: Stand densities will be maintained within desired ranges through a combination of planting density, precommercial thinning, commercial thinning, and management of fine-grained stand detail. Commercial thinning entries would be programmed for stands under 120 years of age. Thinnings will usually be designed to assure high levels of volume productivity. Units will retain patches of denser habitat where desired to meet wildlife habitat criteria.

7. Activity Scheduling: Stand treatment priorities for the next decade will be dictated by stand conditions, habitat requirements, and fuel hazard.

8. Disease Management: Design silvicultural treatments so that within stand endemic levels of tree disease do not increase and so that, where possible, infected trees contribute to the achievement of Land Use Allocation objectives. Creation of snags over time as a root rot center expanded would be an example of using tree disease to meet a structural objective. Mistletoe infected trees should be located in topographic positions that are not conducive to the spread of the disease.

Late-Successional Reserves

Late-Successional Reserves will be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for the northern spotted owl and other late-successional and old-growth related species. Silvicultural practices and salvage should therefore be guided by the objective of maintaining adequate amounts of suitable habitat.

Silvicultural practices within reserves will be limited to those practices beneficial to the creation of late-successional forest conditions and would include reforestation, maintenance and protection of existing young stands, density management, and fertilization. In addition to practices that put or maintained stands on desired developmental pathways, practices designed to restore forest condition (forest health) and other practices designed to reduce the risks of stand loss will be done to maintain long-term habitat viability.

“While risk reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if: (1) the proposed management activities will clearly result in greater assurance of long-term maintenance of habitat, (2) the activities are clearly needed to reduce risks, and (3) the activities will not prevent the Late-Successional Reserves from playing an effective role in the objectives for which they were established.” (“Guidelines to Reduce Risks of Large-Scale Disturbance,” page C-13, Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl).

Salvage of mortality volume is limited to stand replacing disturbance events exceeding ten acres under standards outlined under “Guidelines for Salvage,” page C-13, Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

Riparian Reserves

Silvicultural activities within Riparian Reserves will be designed to meet the objectives of the Aquatic Conservation Strategy. Generally, standards and guidelines prohibit or regulate activities in the reserves that retard or prevent attainment of Strategy objectives. Silvicultural practices will be applied within the reserves to control stocking, to reestablish and manage stands, to establish and manage desired nonconifer vegetation, and

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to acquire desired vegetation characteristics needed to attain objectives of the Aquatic Conservation Strategy. Forest condition (forest health) restoration will be done where required to attain objectives of the Aquatic Conservation Strategy.

Salvage operations will be done only when watershed analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected. Conduct salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives where catastrophic events such as fire, flooding, volcanic, wind, or insect damage have resulted in degraded riparian conditions.

Adaptive Management Areas

Standards and guidelines for matrix management provide specific measures for coarse woody debris, and for green tree and snag retention. The intent of these measures must also be met in Adaptive Management Areas, however specific standards and guidelines are not prescribed for these areas.

Riparian Reserves within Adaptive Management Areas: Riparian protection in Adaptive Management Areas should be comparable to that prescribed for other federal land areas.

Other Allocations

Silvicultural practices where appropriate will be designed to be consistent with the objectives of the allocation.

Research

A variety of wildlife and other research activities may be ongoing, currently proposed, or proposed in the future in all land allocations. Provided certain requirements are satisfied, ongoing research may continue and new research may begin. For a discussion of research requirements see, “Research” page C-4, under “Standards and Guidelines Common to all Land Allocations” in Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Research discussions can also be found under some of the individual allocations.

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Appendix F. Forest Genetics Program.

Introduction

For thousands of years humans have selected and used the genetic variation which 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. Genetic diversity is a key component of an ecosystem. Broad genetic diversity is considered to be an asset because variability is a buffer against 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. Environmental conditions influence the expression of the genetic code. The physical characteristics of an organism is dependent on the interaction of it's genes with the environment. Ecosystems are dynamic communities which change over time and plants and animals are impacted by the changes. Species with wide tolerances can adapt to changes, while those with narrow tolerances can be heavily impacted.

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 as the environmental conditions select for or against specific genetic traits. Each species has 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 which can be infused into existing improved varieties. Many medicinal compounds are derived from plants and there is the potential for more undiscovered uses. Conserving genetic diversity for all 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 late 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.

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- Provide for seed production as needed for planting species on BLM-managed 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 fifty 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 are producing 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 which have slow growth in field tests or show undesirable characteristics are removed from the orchard. This practice is known as "roguing".
- Second generation programs 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.

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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 is specific actions taken to conserve the genetic variation of a species. The purpose is to maintain the range of natural diversity within the species. Gene management is the integration of genetic principals into resource management actions. Ecosystems are complex and genetic diversity is important for all organisms. Genetic principles must be considered when planning and implementing resource management projects so that genetic diversity is maintained.

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 and genetically appropriate guidelines will be provided for ecosystem management implementation.
- A forest genetic 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 which 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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Appendix G. Restrictions on Mineral and Energy Exploration and Development Activity.

Introduction

This appendix discusses the leasing stipulations as they will be applied to BLM managed lands in the planning area under the approved resource management plan. Operating standards pertinent to the locatable and salable minerals program are also described. Mineral exploration and development on Federal lands must also comply with laws and regulations administered by several agencies of the State of Oregon; however, these requirements are not discussed in this document.

Leasable Mineral Resources

Oil and Gas Leasing

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. Specific proposed notices and stipulations are listed by alternative later in this appendix.

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, or no surface occupancy stipulations used at the discretion of the Authorized Officer to protect identified surface resources of special concern.

The field office which reviews the lease tract will attach stipulations to each lease before it is offered for bid. 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 (NTL), 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.

Oil and Gas Operations

Geophysical Exploration

Geophysical operations may be conducted regardless of whether the land is leased or not. 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 pre-work 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.

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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 an 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 Leasing

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 non-competitively (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. 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, or no surface occupancy stipulations 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

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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.

Leasing Notice and Stipulation Summary

The standard and the special status species leasing stipulations will be utilized on most lands. The powersite stipulation (Form 3730-1) would be utilized on lands within powersite reservations.

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.

In the RMP, the “no surface occupancy” stipulation is used rather than not leasing, because leasable minerals, if present, can 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 (NSO), Timing, or Controlled Surface Use (CSU) 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.

Leasing Notices

The following Notices are 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.

Special Status Species Stipulation

Resources: Botany and Wildlife

Stipulation: (All the)/(Certain) lands within this lease are within the suitable habitat of the (identify all Federal Threatened (FT), Endangered (FE) or Proposed Threatened (PT) & Proposed Endangered (PE) species,

including scientific names), (an officially listed)/(a proposed for listing) Threatened or Endangered species. The Authorized Officer, through an environmental review process, has determined that because of the habitat characteristics of this species, all future post-lease operations must be analyzed and subjected to a U.S. Fish and Wildlife Service (FWS) 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.

(All the)/(Certain) lands within this lease are known to bear the species listed below which has (have) protected status as (State Threatened (ST); State Endangered (SE); Federal Candidate (FC); Bureau Sensitive (BS)); or are within the suitable habitat of (identify all State Threatened, State Endangered, Federal Candidate, or Bureau Sensitive species, including scientific names). 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 to insure 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)/ (the lands legally described as:_____), 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 will take longer than the normal 30 days and that surface activity approvals will be delayed.

If no FT, FE, PT, or PE species, or suitable habitat, are found during the inventories, then no formal Section 7 consultation with the FWS 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 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 insure 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 (common name of 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 no 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 (common name) 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.

Federal Threatened Species

Bald Eagle *(Haliaeetus leucocephalus)*
Marbled Murrelet *(Brachyramphus marmoratus)*

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Northern Spotted Owl *(Strix occidentalis caurina)*

Federal Endangered Species
Bradshaw's Lomatium *(Lomatium bradshawii)*
American Peregrine Falcon *(Falco peregrinus anatum)*
Columbian white-tailed deer *(Odocoileus virginianus leucurus)*

Proposed Federal Threatened Species
Nelson's checkermallow *(Sidalcea nelsoniana)*

Proposed Federal Endangered Species
Umpqua chub *(Oregonichthys Kalawatseti)*

Federal Candidate Species
Howell's montia *(Montia howellii)*
Umpqua swertia *(Frasera umpquaensis)*
pink sandverbena *(Abronia umbellata)*
Gorman's aster *(Aster gormanii)*
wayside aster *(Aster vialis)*
golden paintbrush *(Castelleja levisecta)*
peacock larkspur *(Delphinium pavonaceum)*
Willamette daisy *(Erigeron decumbens)*
howellia *(Howellia aquatilis)*
Kincaid's lupine *(Lupinus sulphureus)*
white-topped aster *(Aster curtus)*

northern red-legged frog *(Rana aurora aurora)*
foothill yellow-legged frog *(Rana boylei)*
spotted frog *(Rana pretiosa)*
northwestern pond turtle *(Clemmys marmorata marmorata)*
northern goshawk *(Accipiter gentilis)*
harlequin duck *(Histrionicus histrionicus)*
mountain quail *(Oreortyx pictus)*
Pacific fisher *(Martes pennanti pacifica)*
white-footed vole *(Phenocomys albipes)*
Pacific western big-eared bat *(Plecotus townsendii townsendii)*

Bureau Sensitive Species
tall bugbane *(Cimicifuga elata)*
Willamette Valley larkspur *(Delphinium oreganum)*
shaggy horkelia *(Horkelia congesta)*
moss *(Limbella fryii)*
lichen *(Nephroma occultum)*
Thompson's mistmaiden *(Romanzoffia "thompsonii")*

Oregon slender salamander *(Batrachoseps wrighti)*
fringed myotis *(Myotis thysanoides)*

State Threatened
Nelson's checkermallow *(Sidalcea nelsoniana)*

State Endangered
Bradshaw's Lomatium *(Lomatium bradshawii)*
pink sandverbena *(Abronia umbellata)*
Willamette daisy *(Erigeron decumbens)*

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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 ten-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 which may affect cultural properties eligible to the National Register of Historic Places. Section 6 of the Oil and Gas Lease Terms (Form 3100-11) requires that operations be conducted in a manner that minimizes adverse impacts to cultural and other resources.

Special Leasing Stipulations

The following special stipulations are to be utilized on specifically designated tracts of land as described under the various alternatives.

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

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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 (ACEC).

Objective: To protect important historic, cultural, scenic values, natural resources, natural systems or processes, threatened and endangered plant species, and/or natural hazard areas of the ACEC.

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: Progeny test sites.

Stipulation: Surface occupancy and use are prohibited within progeny test sites.

Objective: To protect progeny test sites.

Exception: None.

Modification: The boundaries of the stipulated area may be modified by the Authorized Officer, if the progeny test site boundaries are changed.

Waiver: This stipulation may be waived, if the Authorized Officer determines that the entire leasehold no longer contains progeny test sites.

No Surface Occupancy

Resource: Wildlife - Osprey Nest Sites

Stipulation: Surface occupancy and use is prohibited within one-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 which demonstrates that 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: Visual Resource Management (VRM) Class I

Stipulation: Surface occupancy and use are prohibited in VRM Class I areas.

Objective: To preserve the existing character of the landscape.

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 boundaries of the VRM Class I area are changed.

Waiver: This stipulation may be waived by the Authorized Officer, if all VRM Class I areas within the leasehold are reduced to a lower VRM class. Areas reduced to VRM Class II will be subject to the Controlled Surface Use stipulation for visual resources, and areas reduced to VRM Class III will be subject to standard lease stipulations.

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.

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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.

Locatable Minerals Surface Management Standards for Exploration, Mining, and Reclamation on the Roseburg District

The following operational standards for mining activities have been compiled to assist the miner in complying with the 43 CFR 3809 regulations, which apply to all mining operations on BLM administered lands in the Roseburg District. The manner in which the necessary work is to be done will be site specific and all of the following standards may not apply to every mining operation. It is the mining claimant's and operator's responsibility to avoid "unnecessary or undue degradation," and to perform all the necessary reclamation work. Refer to the 43 CFR 3809 regulations for general requirements. BLM's Solid Mineral Reclamation Handbook (H-3042-1) provides the basic standards for the reclamation of mining and exploration sites that are within the Roseburg District.

There is an intergovernmental agreement between the BLM and the Oregon Department of Geology and Mineral Industries that is designed to avoid duplication of regulations, inspections, and approval of reclamation plans as well as to 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.

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PROSPECTING, EXPLORATION, AND MINING

Surface Disturbance

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. All operators proposing occupancy, timber removal, use of mechanized earth moving equipment, or suction dredges having hoses with an inside diameter greater than 4 inches which 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 in sensitive areas or which will cause greater than 5 acres of surface disturbance, the operator is required to submit a plan of operations pursuant to the regulations in 43 CFR 3809.1-4.

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 groundwater 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 (D.E.Q.). In-stream use of suction dredges must be authorized by Permit #0700-J issued by the D.E.Q.

Fill, 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 mineral exploration that 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 disturbing one or more acres of land will require an operating permit from DOGAMI.

Vegetation/Timber Removal

Remove only that vegetation which 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 Roseburg BLM office recommends that small trees (less than 7 inches dbh) and shrubs be lopped and scattered, or shredded for use as mulch. Trees greater than or equal to 7 inches diameter breast height (dbh) are to be bucked and stacked in an accessible location unless they are needed for the mining operation.

Firewood

Merchantable 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 the BLM. Permits will be limited to hardwoods or salvage timber which is not considered to be merchantable. Firewood authorized for use in conjunction with a mining operation is not to be removed from the mining claim.

Topsoil

All excavations should have all the productive topsoil (usually the top 12 to 18 inches) first stripped, stockpiled, and protected from erosion for use in future reclamation. This also includes removal of topsoil before the establishment of mining waste dumps and tailings ponds, if the waste material will be left in place during reclamation.

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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 to minimize negative impacts to slope stability.

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

When mining will be in or near bodies of water, or sediment (or other pollutants) will be discharged, contact the Department of Environmental Quality. A settling pond is required when mining operations discharge turbid water. It is the operator's responsibility to obtain any needed suction dredging, stream bed alteration, or water discharge permits required by the DEQ or other State agencies. Copies of such permits shall be provided to the 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 prohibits the use of plastic pipe for claim staking in Oregon. BLM policy requires all existing plastic pipe monuments to have all openings permanently closed. Upon loss or abandonment of the claim, all plastic pipe must be removed from the public lands.When old markers are replaced during normal claim maintenance, they shall be either wood posts or stone or earth mounds, constructed in accordance with the requirements of State law.

Drill Sites

Exploratory drill sites should be located next to or on existing roads when possible without blocking public access. When drill sites must be constructed, the size of the disturbance shall be as small as possible. operations. 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.

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

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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. Most do not.

Mining claimants shall not exclude the public from mining claims with force, intimidation, or no trespassing signs. In the interest of safety, the general public can be restricted only from specific dangerous areas (underground mines, open pits or heavy equipment storage areas) by erecting fences, gates and warning signs. It is the operator's responsibility to protect the public from mining hazards. 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 such 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.

Roads which cross private land to reach BLM administered lands are controlled by the private parties. While some of these roads have been assigned BLM road numbers access may only be granted for administrative use to the BLM, and its licensees and permittees under a nonexclusive easement. Mining claimants are not considered licensees or permittees and so must make their own arrangements with the private party in order to use such roads. No 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 generally to be used at exploration or mining operations and their contents shall be disposed of at approved dump stations. Outhouses and uncontained pit toilets are considered unnecessary and undue degradation and are not allowed. Uncontained pit toilets are not allowed for other users of the public land in this district, and we believe no special rights regarding this issue are granted under the mining laws. County sanitation permits are required for all other types of sanitation facilities.

Structures

It is District policy that permanent structures will not be allowed for exploration or prospecting operations. Permanent structures are 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 a structure placed on the ground that lacks foundations, slabs, piers or poles, and that can only be moved through disassembly into its component parts or by techniques commonly used in house moving. 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 and that can be moved without disassembly into their component parts.

Permanent structures (as described above) may be allowed for mining operations if they are deemed reasonably incident to conducting the operations. 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.

Equipment

The claimant must maintain the claim site, including structures and equipment, in a safe and orderly condition. Only equipment and supplies that are appropriate, reasonable, and in regular use for exploration or mining will be allowed on the claim. Equipment transportable by a pickup or small trailer or used only infrequently should not be stored on the claim and will not be considered as a justification for site occupancy. Accumulation of unused and/or inoperable equipment, materials not related to actual operations, and trash, garbage, or junk is

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not allowed on the public lands. The storage of such on the public land is unnecessary and undue degradation and will be treated accordingly.

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.

Suction Dredging

BLM Requirements

Cases Where a Notice or Plan of Operations is Required:

Filing either a Notice or Plan of Operations may be required for all suction dredge operations where the dredge has an intake nozzle equal to or less than 4 inches in diameter, or where any suction dredge operator proposes occupancy on BLM land (in excess of 14 calendar days per year) or the installation of structures of any kind. The determination of the need for a notice on smaller dredges will be made on a case by case basis.

No Notice or Plan of Operations Required:

The use of a suction dredge in a stream and having an intake nozzle of less than 4 inches in diameter, where no structures or occupancy beyond the 14 calendar day per year camping limit is proposed, will not generally require the filing of a Notice or Plan of Operations. Such activity is generally considered casual use.

At the existing Cow 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 of four inches or less, is allowed with no permits required by the BLM district office. Recreational miners are required to comply with the D.E.Q. requirements as described below. Larger suction dredges with suction hoses having a 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.

State of Oregon Requirements

All suction dredge operations must be authorized by Permit #0700-J issued by the Department of Environmental Quality. 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. Mining operators should contact the Department of Environmental Quality, Water Quality Division, 811 S.W. Sixth Avenue, Portland, Oregon 97204, or the Roseburg DEQ office.

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.

Tailings Ponds

Settling ponds must be used to contain sediment, and any discharge must meet the standards of the Oregon Department of Environmental Quality.

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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 or any identified traditional use areas. The operator shall immediately bring to the attention of the Authorized Officer, any paleontological (fossil) remains or any historical or archaeological site, identified traditional cultural properties, 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.

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. 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 will result in a notice of noncompliance and may result in criminal penalties. 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 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 for an extended period or 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 one to two days during the week.

Only those persons working on a continuous mining or exploration operation will be allowed to live on the claim beyond the 14-day per calendar year camping limit. A continuous mining or exploration operation is defined as an operation necessitating at least 40 hours of work per week at the operating site. The Oregon State Bureau of Labor and Industries generally considers that full-time work consists of a minimum of 40 hours worked per week. Each person proposing to live full-time at the site would be expected to conduct a minimum of 40 hours of work each week. Work hours are to be specified in the Notice or Plan of Operation at the time of submittal to the district BLM office. Should work hours be altered periodically or seasonally, it is the responsibility of the operator to notify the BLM (prior to the change) so that the Notice or Plan can be modified. Camping sites used in conjunction with mineral exploration or extraction operations are expected to be kept in a neat and orderly condition. If operations cannot be pursued due to high fire danger in forested areas, then living on the claim site will not be permitted. Any occupancy beyond 90 days must be in accordance with the requirements of the Douglas County Planning Department.

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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, or workings which are necessary for the mining operation, or to protect the public from site hazards. 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.

Reclamation

Reclamation of all disturbed areas must be performed concurrently or as soon as possible after exploration or mining ceases and shall conform to the guidelines described in BLM Handbook H-3042-1. Reclamation shall include, but shall not be limited to: 1) saving topsoil for final application after reshaping disturbed areas; 2) measures to control erosion, landslides, and water runoff; 3) measures to isolate, remove or control toxic materials; 4) reshaping the area disturbed, applying topsoil, and revegetating disturbed areas where reasonably practicable; and 5) 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 extended periods of nonoperation 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 or a citation under State law.

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. The fertilizer (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, wildlife habitat, and productive secondary uses of public lands. Seeding should be done in September or October in the

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Roseburg 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. All culverts shall be removed from drainage crossings and the fill shall be cut back 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 adjacent area.

Guidelines for Development of Salable Mineral Resources in the Roseburg 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.

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Quarry Design

Due to steep terrain in the operating area, most quarry developments would require a series of benches to effectively maximize the amount of mineral materials to be removed in a safe manner. In all cases, bench height shall not exceed 40 feet. If the bench would 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 won't 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. Most often the brush would 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 two 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 unless otherwise specified.
>
> 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.
>
> 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 the 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.

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Appendix H. Management for SEIS Special Attention Species.

Table H-1. Species to be Protected Through Survey and Manage.

	Survey Strategies[1]			
Species	**1**	**2**	**3**	**4**
Fungi				
Mycorrhizal Fungi				
Boletes				
Gastroboletus subalpinus	X		X	
Gastroboletus turbinatus			X	
Boletes, low elevation				
Boletus piperatus			X	
Tylopilus pseudoscaber	X		X	
Rare Boletes				
Boletus haematinus	X		X	
Boletus pulcherrimus	X		X	
Gastroboletus imbellus	X		X	
Gastroboletus ruber	X		X	
False Truffles				
Nivatogastrium nubigenum	X		X	
Rhizopogon abietis			X	
Rhizopogon atroviolaceus			X	
Rhizopogon truncatus			X	
Thaxterogaster pingue			X	
Uncommon False Truffle				
Macowanites chlorinosmus	X		X	
Rare Fase Truffles				
Alpova alexsmithii	X		X	
Alpova olivaceotinctus	X		X	
Arcangeliella crassa	X		X	
Arcangeliella lactarioides	X		X	
Destuntzia fusca	X		X	
Destuntzia rubra	X		X	
Gautieria magnicellaris	X		X	
Gautieria otthii	X		X	
Leucogaster citrinus	X		X	
Leucogaster microsporus	X		X	
Macowanites lymanensis	X		X	
Macowanites mollis	X		X	
Martellia fragrans	X		X	
Martellia idahoensis	X		X	
Martellia monticola	X		X	
Octavianina macrospora	X		X	
Octavianina papyracea	X		X	
Rhizopogon brunneiniger	X		X	
Rhizopogon evadens var. *subalpinus*	X		X	
Rhizopogon exiguus	X		X	

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Species	Survey Strategies[1] 1	2	3	4
Rhizopogon flavofibrillosus	X		X	
Rhizopogon inquinatus	X		X	
Sedecula pulvinata	X		X	
Undescribed Taxa, Rare Truffles and False Truffles				
Alpova sp. nov. #Trappe 9730	X		X	
Alpova sp. nov. #Trappe 1966	X		X	
Arcangeliella sp. nov. #Trappe 12382	X		X	
Arcangeliella sp. nov. #Trappe 12359	X		X	
Chamonixia pacifica sp. nov. #Trappe 12768	X		X	
Elaphomyces sp. nov. #Trappe 1038	X		X	
Gastroboletus sp. nov. #Trappe 2897	X		X	
Gastroboletus sp. nov. #Trappe 7515	X		X	
Gastrosuillus sp. nov. #Trappe 7516	X		X	
Gastrosuillus sp. nov. #Trappe 9608	X		X	
Gymnomyces sp. nov. #Trappe 4703,5576	X		X	
Gymnomyces sp. nov. #Trappe 5052	X		X	
Gymnomyces sp. nov. #Trappe 1690,1706,1710	X		X	
Gymnomyces sp. nov. #Trappe 7545	X		X	
Hydnotrya sp. nov. #Trappe 787,792	X		X	
Hydnotrya subnix sp. nov. #Trappe 1861	X		X	
Martellia sp. nov. #Trappe 649	X		X	
Martellia sp. nov. #Trappe 1700	X		X	
Martellia sp. nov. #Trappe 311	X		X	
Martellia sp. nov. #Trappe 5903	X		X	
Octavianina sp. nov. #Trappe 7502	X		X	
Rhizopogon sp. nov. #Trappe 9432	X		X	
Rhizopogon sp. nov. #Trappe 1692	X		X	
Rhizopogon sp. nov. #Trappe 1698	X		X	
Thaxterogaster sp. nov. #Trappe 4867,6242,7427,7962,8520	X		X	
Tuber sp. nov. #Trappe 2302	X		X	
Tuber sp. nov. #Trappe 12493	X		X	
Rare Truffles				
Balsamia nigra	X		X	
Choiromyces alveolatus	X		X	
Choiromyces venosus	X		X	
Elaphomyces anthracinus	X		X	
Elaphomyces subviscidus	X		X	
Chanterelles				
Cantharellus cibarius			X	X
Cantharellus subalbidus			X	X
Cantharellus tubaeformis			X	X
Chanterelles - Gomphus				
Gomphus bonarii			X	
Gomphus clavatus			X	
Gomphus floccosus			X	
Gomphus kauffmanii			X	

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Species	Survey Strategies[1] 1	2	3	4
Rare Chanterelle				
Cantharellus formosus	X		X	
Polyozellus multiplex	X		X	
Uncommon Coral Fungi				
Ramaria abietina			X	
Ramaria araiospora	X		X	
Ramaria botryis var. *aurantiiramosa*	X		X	
Ramaria concolor f. tsugina			X	
Ramaria coulterae			X	
Ramaria fasciculata var. *sparsiramosa*	X		X	
Ramaria gelatiniaurantia	X		X	
Ramaria largentii	X		X	
Ramaria rubella var. *blanda*	X		X	
Ramaria rubrievanescens	X		X	
Ramaria rubripermanens	X		X	
Ramaria suecica			X	
Ramaria thiersii	X		X	
Rare Coral Fungi				
Ramaria amyloidea	X		X	
Ramaria aurantiisiccescens	X		X	
Ramaria celerivirescens	X		X	
Ramaria claviramulata	X		X	
Ramaria concolor f. marri	X		X	
Ramaria cyaneigranosa	X		X	
Ramaria hilaris var. *olympiana*	X		X	
Ramaria lorithamnus	X		X	
Ramaria maculatipes	X		X	
Ramaria rainierensis	X		X	
Ramaria rubribrunnescens	X		X	
Ramaria stuntzii	X		X	
Ramaria verlotensis	X		X	
Ramaria gracilis	X		X	
Ramaria spinulosa	X		X	
Phaeocollybia				
Phaeocollybia attenuata			X	
Phaeocollybia californica	X		X	
Phaeocollybia carmanahensis	X		X	
Phaeocollybia dissiliens	X		X	
Phaeocollybia fallax			X	
Phaeocollybia gregaria	X		X	
Phaeocollybia kauffmanii	X		X	
Phaeocollybia olivacea			X	
Phaeocollybia oregonensis	X		X	
Phaeocollybia piceae	X		X	
Phaeocollybia pseudofestiva			X	
Phaeocollybia scatesiae	X		X	
Phaeocollybia sipei	X		X	
Phaeocollybia spadicea			X	

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Species	Survey Strategies[1] 1	2	3	4
Uncommon Gilled Mushrooms				
Catathelasma ventricosa			X	
Cortinarius azureus			X	
Cortinarius boulderensis	X		X	
Cortinarius cyanites			X	
Cortinarius magnivelatus	X		X	
Cortinarius olympianus	X		X	
Cortinarius spilomius			X	
Cortinarius tabularis			X	
Cortinarius valgus			X	
Dermocybe humboldtensis	X		X	
Hebeloma olympiana	X		X	
Hygrophorus caeruleusX	X		X	
Hygrophorus karstenii			X	
Hygrophorus vernalis	X		X	
Russula mustelina			X	
Rare Gilled Mushrooms				
Chroogomphus loculatus	X		X	
Cortinarius canabarba	X		X	
Cortinarius rainierensis	X		X	
Cortinarius variipes	X		X	
Cortinarius verrucisporus	X		X	
Cortinarius wiebeae	X		X	
Tricholoma venenatum	X		X	
Uncommon Ecto-Polypores				
Albatrellus ellisii			X	
Albatrellus flettii			X	
Rare Ecto-Polypores				
Albatrellus avellaneus	X		X	
Albatrellus caeruleoporus	X		X	
Tooth Fungi				
Hydnum repandum			X	
Hydnum umbilicatum			X	
Phellodon atratum			X	
Sarcodon fuscoindicum			X	
Sarcodon imbricatus			X	
Rare Zygomycetes				
Endogone arcogena	X		X	
Endogone oregonensis	X		X	
Glomus radiatum	X		X	
Saprobes (Decomposers)				
Uncommon Gilled Mushrooms				
Baeospora myriadophylla			X	
Chrysomphalina grossula			X	
Collybia bakerensis	X		X	
Fayodia gracilipes (rainierensis)			X	
Gymnopilus puntifolius	X		X	

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Species	Survey Strategies[1] 1	2	3	4
Marasmius applanatipes	X		X	
Mycena hudsoniana	X		X	
Mycena lilacifolia			X	
Mycena marginella			X	
Mycena monticola	X		X	
Mycena overholtsii	X		X	
Mycena quinaultensis	X		X	
Mycena tenax			X	
Mythicomyces corneipes			X	
Neolentinus kauffmanii	X		X	
Pholiota albivelata	X		X	
Stagnicola perplexa			X	
Rare Gilled Mushrooms				
Clitocybe subditopoda	X		X	
Clitocybe senilis	X		X	
Neolentinus adherens	X		X	
Rhodocybe nitida	X		X	
Rhodocybe speciosa	X		X	
Tricholomopsis fulvescens	X		X	
Noble Polypore (rare and endangered)				
Oxyporus nobilissimus	X	X	X	
Bondarzewia Polypore				
Bondarzewia montana	X	X	X	
Rare Resupinates and Polypores				
Aleurodiscus farlowii	X		X	
Dichostereum granulosum	X		X	
Cudonia monticola			X	
Gyromitra californica			X	X
Gyromitra esculenta			X	X
Gyromitra infula			X	X
Gyromitra melaleucoides			X	X
Gyromitra montana (syn. G. gigas)			X	X
Otidea leporina			X	
Otidea onotica			X	
Otidea smithii	X		X	
Plectania melastoma			X	
Podostroma alutaceum			X	
Sarcosoma mexicana			X	
Sarcosphaera eximia			X	
Spathularia flavida			X	
Rare Cup Fungi				
Aleuria rhenana				
Bryoglossum gracile				
Gelatinodiscus flavidus	X		X	
Helvella compressa	X		X	
Helvella crassitunicata	X		X	
Helvella elastica	X		X	
Helvella maculata	X		X	
Neournula pouchetii	X		X	

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Species	Survey Strategies[1] 1	2	3	4
Pithya vulgaris	X		X	
Plectania latahensis	X		X	
Plectania milleri	X		X	
Pseudaleuria quinaultiana	X		X	
Club Coral Fungi				
Clavariadelphus ligula			X	X
Clavariadelphus pistilaris			X	X
Clavariadelphus truncatus			X	X
Clavariadelphus borealis			X	X
Clavariadelphus lovejoyae			X	X
Clavariadelphus sachalinensis			X	X
Clavariadelphus subfastigiatus			X	X
Jelly Mushroom				
Phlogoitis helvelloides			X	X
Branched Coral Fungi				
Clavulina cinerea			X	X
Clavulina cristata			X	X
Clavulina ornatipes			X	X
Mushroom Lichen				
Phytoconis ericetorum			X	X
Parasitic Fungi				
Asterophora lycoperdoides			X	
Asterophora parasitica			X	
Collybia racemosa			X	
Cordyceps capitata			X	
Cordyceps ophioglossoides			X	
Hypomyces luteovirens			X	
Cauliflower Mushroom				
Sparassis crispa			X	
Moss Dwelling Mushrooms				
Cyphellostereum laeve			X	
Galerina atkinsoniana			X	
Galerina cerina			X	
Galerina heterocystis			X	
Galerina sphagnicola			X	
Galerina vittaeformis			X	
Rickenella setipes			X	
Coral Fungi				
Clavicorona avellanea			X	
Lichens				
Rare Forage Lichen				
Bryoria tortuosa	X		X	

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Species	Survey Strategies[1] 1	2	3	4
Rare Leafy (arboreal) Lichens				
Hypogymnia duplicata	X	X	X	
Tholurna dissimilis	X		X	
Rare Nitrogen-fixing Lichens				
Dendriscocaulon intricatulum	X		X	
Lobaria hallii	X		X	
Lobaria linita	X	X	X	
Nephroma occultum	X		X	
Pannaria rubiginosa	X		X	
Pseudocyphellaria rainierensis	X	X	X	
Nitrogen-fixing Lichens				
Lobaria oregana				X
Lobaria pulmonaria				X
Lobaria scrobiculata				X
Nephroma bellum				X
Nephroma helveticum				X
Nephroma laevigatum				X
Nephroma parile				X
Nephroma resupinatum				X
Pannaria leucostictoides				X
Pannaria mediterranea				X
Pannaria saubinetii				X
Peltigera collina				X
Peltigera neckeri				X
Peltigera pacifica				X
Pseudocyphellaria anomala				X
Pseudocyphellaria anthraspis				X
Pseudocyphellaria crocata				X
Stricta beauvoisii				X
Stricta fuliginosa				X
Stricta limbata				X
Pin Lichens				
Calicium abietinum				X
Clicium adaequatum				X
Calicium adspersum				X
Calicium glaucellum				X
Calicium viride				X
Chaenotheca brunneola				X
Chaenotheca chrysocephala				X
Chaenotheca ferruginea				X
Chaenotheca furfuracea				X
Chaenotheca subroscida				X
Chaenotheca pusilla				X
Cyphelium inquinans				X
Microcalicium arenarium				X
Mycocalicium subtile				X
Stenocybe clavata				X
Stenocybe major				X

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Species	Survey Strategies[1] 1	2	3	4
Rare Rock Lichens				
Pilophorus nigricaulis	X		X	
Stricta arctica	X		X	
Riparian Lichens				
Cetrelia cetrarioides				X
Collema nigrescens				X
Leptogium burnetiae var. *hirsutum*				X
Leptogium cyanescens				X
Leptogium saturninum				X
Leptogium teretiusculum				X
Platismatia lacunosa				X
Ramalina thrausta				X
Usnea longissima				X
Aquatic Lichens				
Dermatocarpon luridum	X		X	
Hydrothyria venosa	X		X	
Leptogium rivale	X		X	
Rare Oceanic Influenced Lichens				
Bryoria pseudocapillaris	X		X	
Bryoria spiralifera	X		X	
Bryoria subcana	X		X	
Buellia oidalea	X		X	
Erioderma sorediatum	X		X	
Hypogymnia oceanica	X		X	
Leioderma sorediatum	X		X	
Leptogium brebissonii	X		X	
Niebla cephalota	X		X	
Pseudocyphellaria mougeotiana	X		X	
Teloschistes flavicans	X		X	
Usnea hesperina	X		X	
Oceanic Influenced Lichens				
Cetraria californica	X		X	
Heterodermia leucomelos	X		X	
Loxospora sp. nov. "corallifera" (Brodo in dit)	X		X	
Pyrrhospora quernea	X		X	
Additional Lichen Species				
Cladonia norvegica			X	
Heterodermia sitchensis			X	
Hygomnia vittiata			X	
Hypotrachyna revoluta			X	
Ramalina pollinaria			X	
Nephroma isidiosum			X	
Bryophytes				
Antitrichia curtipendula				X
Bartramiopsis lescurii	X		X	
Brotherella roelli	X		X	
Diplophyllu albicans	X		X	
Diplophyllum plicatum	X	X		

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Species	Survey Strategies[1] 1	2	3	4
Douinia ovata				X
Encalypta brevicolla var. *crumiana*	X		X	
Herbertus aduncus	X		X	
Herbertus sakurali	X		X	
Iwatsuklella leucotricha	X		X	
Kurzia makinoana	X	X		
Marsupella emarginata var. *aquatica*	X	X		
Orthodontlum gracile	X		X	
Plagiochila satol	X		X	
Plagiochila semidecurrens	X		X	
Pleuroziopsis ruthenica	X		X	
Ptilidium californicum	X	X		
Racomitrium aquaticum	X		X	
Radula brunnea	X		X	
Scouleria marginata				X
Tetraphis geniculata	X		X	
Tritomaria exsectiformis	X	X		
Tritomaria quinquedentata	X		X	
Amphibians				
Del Norte salamander		X		
Larch Mountain salamander		X		
Shasta salamander	X	X		
Siskiyou Mountains salamander	X	X		
Van Dyke's salamander (Cascades)		X		
Mammals				
Red tree vole (P. longicaudus)		X		
Mollusks				
Cryptomastix devia	X	X		
Cryptomastix hendersoni	X	X		
Monadenia fidelis minor	X	X		
Helminthoglypta hertleini	X	X		
Helminthoglypta talmadgei	X	X		
Megomphix hemphilli	X	X		
Monadenia chaceana	X	X		
Monadenia churchi	X	X		
Monadenia fidelis minor	X	X		
Monadenia troglodytes troglodytes	X	X		
Monadenia trglodytes wintu	X	X		
Oreohelix n. sp.	X	X		
Pristiloma articum crateris	X	X		
Trilobopsis roperi	X	X		
Trilobopsis tehamana	X	X		
Vertigo n. sp.	X	X		
Vespericola pressleyi	X	X		
Vespericola shasta	X	X		
Deroceras hesperium	X	X		
Hemphillia barringtoni	X	X		
Hemphillia glandulosa	X	X		
Hemphillia malonei	X	X		
Hemphillia pantherina	X	X		
Prophysaon coeruleum	X	X		

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Species	Survey Strategies[1] 1	2	3	4
Prophysaon dubium	X	X		
Fluminicola n. sp. 1	X	X		
Fluminicola n. sp. 11	X	X		
Fluminicola n. sp. 14	X	X		
Fluminicola n. sp. 15	X	X		
Fluminicola n. sp. 16	X	X		
Fluminicola n. sp. 17	X	X		
Fluminicola n. sp. 18	X	X		
Fluminicola n. sp. 19	X	X		
Fluminicola n. sp. 2	X	X		
Fluminicola n. sp. 20	X	X		
Fluminicola n. sp. 3	X	X		
Fluminicola seminalis	X	X		
Juga (O.) n. sp. 2	X	X		
Juga (O.) n. sp.3	X	X		
Lyogyrus n. sp. 1	X	X		
Lyogyrus n. sp. 2	X	X		
Lyogyrus n. sp. 3	X	X		
Vorticifex klamathensis sinitsini	X	X		
Vorticifex n. sp. 1	X	X		
Vascular Plants				
Alotropa virgata	X	X		
Arceuthobium tsugense	X	X		
Aster vialis	X	X		
Bensoniella oregana (California)	X	X		
Botrychium minganense	X	X		
Botrychium montanum	X	X		
Clintonia andrewsiana	X	X		
Coptis asplenifolia	X	X		
Coptis trifolia	X	X		
Corydalis aquae-gelidae	X	X		
Cypripedium fasciculatum	X	X		
Cypripedium montanum (west Cascades)	X	X		
Galium kamtschaticum	X	X		
Habenaria orbiculata	X	X		
Pedicularis howellii	X	X		
Scoliopus biglovei	X	X		
Anthropods				
Canopy herbivores (south range)				X
Coarse wood chewers (south range)				X
Litter and soil dwelling species (south range)				X
Understory and forest gap herbivores				X

[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 (page C-19).

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Table H-2. Species to be Protected Through Protection Buffers.

Species	Land Use Allocation Estabilished for the Protection Buffer
Nonvascular Plants	
Ptilidium californicum (Liverwort)	Late-Successional Reserve
Ulota meglospora (moss)	Late-Successional Reserve
Buxbaumia piperi (moss)	Managed Late -Successional Area
Buxbaumia viridis (moss)	Managed Late -Successional Area
Rhizomnium nudum (moss)	Managed Late -Successional Area
Tetraphis geniculator (moss)	Managed Late -Successional Area
Aleuria rhemana (fungus)	Late-Successional Reserve
Polyozellus multiplex (fungus)	Managed Late -Successional Area
Sarcosoma mexicana (fungus)	Managed Late -Successional Area
Otidea leporina (fungus)	Late-Successional Reserve
Otidea onotica (fungus)	Late-Successional Reserve
Otidea smithii (fungus)	Late-Successional Reserve
Amphibians	
Shasta salamander	Late-Successional Reserve
Larch Mountain salamander	Managed Late -Successional Area
Siskyou Mountain salamander	Managed Late -Successional Area
Del Norte salamander	Managed Late -Successional Area
Birds	
Great Grey Owl	Late-Successional Reserve
White-headed woodpecker	No Special Land Use Allocation
Black-backed woodpecker	No Special Land Use Allocation
Pygmy nuthatch	No Special Land Use Allocation
Flammulated Owl	No Special Land Use Allocation

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Appendix I. Resource Management Plan Monitoring.

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 H conducted before ground disturbing activities occur?

2. Are protection buffers being provided for specific rare and locally endemic species and other species in the upland forest matrix?

3. Are the sites of amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropod species listed in Appendix H being protected?

4. Are the sites of amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens and arthropod species listed in Appendix H being surveyed?

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, 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 re-examined following project completion, to determine if: surveys are conducted for species listed in Appendix H, protection buffers are provided for specific rare and locally endemic species and other species in the upland forest matrix, and sites of species listed in Appendix H are protected.

2. The Annual Program Summary will address Implementation Questions 4-6.

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.

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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?
   (e.g., did the conditions that existed before management activities change in ways that are not in accordance with the SEIS Record of Decision 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 Record of Decision 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 Record of Decision 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 re-examined 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 Record of Decision Standards and Guidelines, RMP management direction, and Aquatic Conservation Strategy Objectives. In

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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 if: 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) and 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 plan? Were the activities consistent with SEIS Record of Decision Standards and Guidelines, RMP management direction and Regional Ecosystem Office review requirements, and the Late-Successional Reserve assessment?

3. What is the status of development and implementation of plans to eliminate or control non-native species which adversely impact late-successional objectives?

Monitoring Requirements

1. 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 harvest activities) 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 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 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

Questions

1. Are the Adaptive Management Area plans being developed, and do they establish future desired conditions?

Monitoring Requirements

1. The Annual Program Summary will address Implementation Question 1.

Effectiveness and Validation Monitoring

Deferred to SEIS Monitoring Plan and individual Adaptive Management Area management plans.

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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, following timber harvest, as called for in the SEIS Record of Decision 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. 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 Record of Decision 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.

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Air Quality

Expected Future Conditions and Outputs

Attainment of National Ambient Air Quality Standards, Prevention of Significant Deterioration goals, and Oregon Visibility Protection Plan and Smoke Management Plan goals.

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 which 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. At least twenty percent of prescribed burn projects will be randomly selected for monitoring to assess what efforts were made to minimize particulate emissions, and whether the environmental analysis that preceded the decision to burn addressed the questions set forth in the SEIS discussion of Emission Monitoring (Chap. 3&4 p. 100).

2. At least twenty percent of the construction activities and commodity hauling activities will be monitored 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.

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Water and Soils

Expected Future Conditions and Outputs

Restoration and maintenance of the ecological health of watersheds. See Aquatic Conservation Strategy Objectives.

Improvement and/or maintenance of water quality in municipal water systems.

Improvement and/or maintenance of soil productivity.

Reduction of existing road mileage within Key Watersheds or at a minimum no net increase.

Implementation Monitoring

Questions

1. Are site specific Best Management Practices, identified as applicable during interdisciplinary review, 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 which govern the operation, maintenance, and design for the 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 reviews of ongoing research in Key Watersheds to insure 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 which are inconsistent with attainment of Aquatic Conservation Strategy objectives?

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Monitoring Requirements

1. At least 20 percent of the timber sales and silviculture projects stratified by management category will be randomly selected for monitoring to determine whether or not Best Management Practices were implemented as prescribed. The selection of management actions to be monitored will be based on which Best Management Practices are being prescribed and on which beneficial uses are likely to be impacted.

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 3-14.

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 is 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 and length) 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 Record of Decision 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 restoration projects?

4. What is the status of designing and constructing wildlife interpretive and other user-enhancement facilities?

Monitoring Requirements

1. 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.

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The same timber sales will also be inventoried pre- and post-harvest to determine if SEIS Record of Decision and RMP down log retention direction has been followed.

2. 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 4 and 5.

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 which 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.

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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 which 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 which 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 Record of Decision Standards and Guidelines and RMP management direction. If mitigation was 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 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.

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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 which 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. At least 20 percent of the files on each year's timber sales and other relevant actions (e.g., rights-of-way, instream structures) will be reviewed annually to evaluate documentation regarding special status species and related recommendations and decisions in light of Endangered Species Act requirements, policy and SEIS Record of Decision Standards and Guidelines, and RMP management direction. If mitigation was 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. 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 Candidates, 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, etc.)

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Special Areas

Expected Future Conditions and Outputs

Maintenance, protection, and/or restoration of the relevant and important values of the special areas which include: Areas of Critical Environmental Concern, Outstanding Natural Areas, Research Natural Areas, and Environmental Education Areas.

Provision of recreation uses and environmental education in Outstanding Natural Areas. 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 Research Natural Areas.

Provision and maintenance of environmental education opportunities in Environmental Education Areas. 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 Areas of Critical Environmental Concern management plans?

3. Are interpretive programs and recreation uses being developed and encouraged in Outstanding Natural Areas? Are the outstanding values of the Outstanding Natural Areas being protected from damage?

4. What environmental education and research initiatives and programs are occurring in the Research Natural Areas and Environmental Education Areas?

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 which 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 upland forest matrix?

Monitoring Requirements

1. Annually, 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 Area of Critical Environmental Concern values was considered, and whether any mitigation identified as important for maintenance of Area of Critical Environmental Concern values was 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 2-7.

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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 three years to determine if the values for which it was designated are being maintained.

2. Each Area of Critical Environmental Concern will be monitored annually to determine if proactive management actions met their objectives.

Cultural Resources Including American Indian 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 American Indian 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 taked 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 the American Indian 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, instream structures) will be reviewed annually to evaluate documentation regarding cultural resources and American Indian values and decisions in light of requirements, policy and SEIS Record of Decision Standards and Guidelines and RMP management direction. If mitigation was 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.

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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 American Indians 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 Visual Resource Management Class I and II management; partial retention of the existing character on lands allocated for Visual Resource Management Class III management and major modification of the existing character of some lands allocated for Visual Resource Management Class IV management.

Continuation of emphasis on management of scenic resources in selected high-use areas to retain or preserve scenic quality.

Implementation Monitoring

Questions

1. 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

1. Twenty percent of the files for timber sales and other substantial projects in Visual Resource Management 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 objectives?

2. Are Visual Resource Management objectives being met consistently, over long periods of time, in Class II management areas?

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Monitoring Requirements

1. All timber sales and other selected projects in Visual Resource Management 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 monitored to evaluate the effectiveness of the practices used to conserve visual resources.

2. In Visual Resource Management Class II management areas, where two or more sales or actions have occurred, impacts will be monitored at a minimum interval of five years.

Wild and Scenic Rivers

Expected Future Conditions and Outputs

Protection of the Outstandingly Remarkable Values 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 Outstandingly Remarkable Values 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.

Designation of important and manageable river segments suitable for designation where such designation contributes to the National Wild and Scenic Rivers System.

Implementation Monitoring

Questions

1. Are BLM actions and BLM authorized actions consistent with protection of the Outstandingly Remarkable Values 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 was considered, and whether any mitigation identified as important for maintenance of the values was 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 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 Outstandingly Remarkable Values for which the Wild and Scenic Rivers were designated being maintained?

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2. Are the Outstandingly Remarkable Values of the rivers which were found suitable or eligible, but not studied, protected?

Monitoring Requirements

1. Each Wild and Scenic River will be monitored at least once a year to determine if the Outstandingly Remarkable Values are being maintained.

2. Each river which was found suitable or eligible, but not studied, will be monitored at least once a year to determine if the Outstandingly Remarkable Values are being maintained.

Rural Interface Areas

Expected Future Conditions and Outputs

Consideration of the interests of adjacent and nearby rural land owners, including residents, during analysis, planning, and monitoring related to managed rural interface areas. (These interests include personal health and safety, improvements to property and quality of life.)

Determination of how land owners might be or are affected by activities on BLM-administered land.

Implementation Monitoring

Questions

1. Are design features and mitigation measures developed and implemented to avoid/minimize impacts to health, life and property and quality of life and to minimize the possibility of conflicts between private and federal land management?

Monitoring Requirements

1. At least 20 percent of all actions within the identified rural interface areas will be examined to determine if special project design features and mitigation measures were included and implemented as planned.

Effectiveness and Validation Monitoring

Questions

1. Are the rural interface area design features and mitigation measures effective in minimizing impacts to health, life, and property?

Monitoring Requirement

1. At least 20 percent of actions within the identified rural interface areas which had design features or mitigation measures will be examined 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.

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Implementation Monitoring

Questions

1. What 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 that enhance local communities, such as recreation and wildlife viewing facilities?

Monitoring Requirements

1. The Annual Program Summary will address Implementation Questions 1-3.

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 Coos Bay Wagon Road 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

Questions

1. What is the status of the development and implementation of recreation plans?

Monitoring Requirements

1. The Annual Program Summary will address Implementation Question 1.

Effectiveness and Validation Monitoring

Questions

1. Based on the Statewide Comprehensive Outdoor Recreation Plan, 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 designations adequate to protect resource values while providing appropriate motorized vehicle recreation opportunities?

Monitoring Requirements

1. Each Special Recreation Management Area will be monitored at least every three 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 Off Highway Vehicle 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 Record of Decision 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 non-planned 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, Connectivity/Diversity Blocks and Adaptive Management Areas, stratified to identify them individually.

2. An annual district wide report will be prepared to determine if the silvicultural and forest health practices identified and used in the calculation of the Allowable Sale Quantity were implemented. This report will be summarized in the Annual Program Summary.

Effectiveness and Validation Monitoring

Questions

1. Is reforestation achieving desired stocking?

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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

1. First, third, and fifth year surveys will be used to determine if reforestation is meeting reforestation objectives.

The balance is deferred to SEIS Monitoring Plan.

Special Forest Products

Expected Future Conditions and Outputs

Production and sale of special forest products 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 Requirements

1. The Annual Program Summary will address Implementation Questions 1 and 2.

Effectiveness and Validation Monitoring

Questions

1. 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.

Avoidance of the introduction or spread of noxious weed infestations in all areas.

Implementation Monitoring

Questions

1. Are noxious weed control methods compatible with Aquatic Conservation Strategy Objectives?

Monitoring Requirements

1. 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

Questions

1. Are management actions effectively containing or reducing the extent of noxious weed infestations?

Monitoring Requirements

1. At least twenty 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?

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Monitoring Requirements

1. 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 which retains the amount of coarse woody debris, snags, and duff at levels determined through watershed analysis?

3. Are fuel profiles being modified in order 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.

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Appendix J. Acreage Standards for the Resource Management Plan

GIS Acres

For this planning process, GIS acreage estimates have been adopted as the standard. All acres for this RMP are derived from digitized computer maps, called GIS thematic layers. These resource inventories, maintained as separate GIS themes, can be overlaid with the aide of computer software to evaluate the impacts of various management alternatives. Examples of GIS thematic layers used to generate GIS acreage estimates for the RMP include: TPC (Timber Productivity Capability Classification), FOI (Forest Operations Inventory), PLS (Public Land Survey System), HYD (hydrology), REC (recreation and Wild and Scenic Rivers), Pnn (bald eagle protected habitat), and TRB (roads). Analysis of the different RMP alternatives incorporated numerous other GIS themes and their associated resource attributes.

GIS acreage data from the TPC and FOI themes were loaded into the Micro*STORMS (M*S) database on the district inventory machine. At the District level, comparison of GIS data with resident GLO acreage estimates showed a difference of 4,824 acres. This is a 1.14% reduction from the 1990 GLO district total of 423,818 acres, which had been derived from Master Title Plats (MTP). It should be noted that the Cadastral Survey is continually upgrading the survey information on BLM ownership. The MTPs are updated and new versions issued through the BLM State Office after new surveys are completed, approved, and mapped. This means that the GLO section acre totals which were considered correct just a few years ago may now be out-of-date. The table below summarizes the district acreage estimates for this and the two previous planning cycles.

This level of accuracy was verified with Roseburg District data by examining all sections in the South Umpqua SYU, which showed a difference of ten or more acres between their GIS and GLO totals in the Micro*STORMS database. GIS estimates for 70 sections were compared against their MTP acreage. Of those reviewed (in 1990), 32 had incorrect or outdated GLO section acre totals in the M*S database. In the majority of these cases, sections which had been completely surveyed and fully subdivided (lotted), showed differences of only one or two acres between GIS and MTP acreage. A two-acre difference is equivalent to about 0.3% in a normal 640-acre section.

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Appendix K. Existing Withdrawals and Classifications.

Withdrawals

Authority[1]	Location T	R	S	Acreage[2]	Purpose	Segregative Effect[3]	Surface Management Agency
PSR* 629, WPD* 11	20S	7W	25 27 33 35	200.00 40.00 280.00 80.00	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 3869	21S	6W	1	80	Gunter Recreation Site	B	BLM
PSR* 629, WPD* 11	21S	7W	5 9	352.59 40.00	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
WPD* 15, PSR* 658	22S	5W	33		Transmission Line Purposes (unconstructed)	C	BLM/FERC[4]
PSR* 633, WPD* 11	22S	7W	19 31	29.93 17.52	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PSR* 280, 633, WPD* 11	23S	7W	15 23 27 32 33	94.00 134.27 74.20 1.70 118.20	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PSR* 280, 633, WPD* 11	24S	7W	3 11 13 15 17 20 21 23 28 33	146.05 186.32 26.62 122.19 116.06 14.35 75.58 40.03 34.62 95.20	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 3869	24S	7W	13	23.70	Tyee Recreation Site	B	BLM
PLO 754	24S	7W	20 21	14.35 13.93	Timber Preservation	A	BLM
PLO 3869	25S	1W	23 24 25	20 40 20	Scaredman Recreation Site	B	BLM
Executive Order* 865	25S	1W	27 30	200 40	Umpqua National Forest	None	USDA,FS[6]
PLO 3869	25S	2W	15	160	Rock Creek Recreation Site	B	BLM
			21	320	Mill Pond Recreation Site	B	BLM

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Withdrawals

Authority[1]	Location T	R	S	Acreage[2]	Purpose	Segregative Effect[3]	Surface Management Agency
PSR* 280, 630, 633, WPD* 11	25S	7W	5 6 7 9 15 17 21 23 27	37.00 105.25 205.49 78.39 13.83 80.00 40.00 80.00 80.00	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 4537	25S	7W	9 10 15	78.40 0.15 13.33	Umpqua Recreation Site	B	BLM
PSC* 162,	25S	8W	12	20.80	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
Public Law* 100-557	26S	2W	7,8,13,14, 15,16,17, 18,20,21, 22,23,24	1620	North Umpqua Wild and Scenic River	C	BLM
PP 1927*	26S	2W	7 13 14 15 17 21 29 30 31	110.11	Electric transmission line. Occupies 100 foot wide strip of land.	B	BLM/FERC[4]
PSC* 416, PSR* 631, 280 WPD* 11, 16	26S	2W	7 13 14 15 17 21 22 23 24	397.30 40 300 160 280 33.78 220 353.94 250	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 3869	26S	2W	14	160	Susan Creek Falls	B	BLM
PP* 1927	26S	3W	1 35	5.88 6.29	Electric Trans-mission line. Occupies 100 foot wide strip of land.	B	BLM/FERC[4]
PLO 4848	26S	3W	1	80	Swiftwater Recreation Site	B	BLM
PLO 3869			9	6.44	Lone Rock	B	BLM
PSR* 631, 280 WPD* 11 SO Intpr* 83	26S	3W	1 9 11	120 25 + 121.44	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]

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Withdrawals

Authority[1]	Location T	R	S	Acreage[2]	Purpose	Segregative Effect[3]	Surface Management Agency
PSR* 631, WPD* 11	26S	4W	17	11.56	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PSR* 280, 633, WPD* 11	26S	6W	7 8	139.87 62.43	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 4521	27S	2W	1	0.80	Negro Creek Road	B	USDA,FS
Executive Order* 865	27S	2W	9 32 33	320.4 110.25 308.03	Umpqua National Forest	None	USDA,FS
PLO 4848	27S	2W	1	80	Emile Creek Recreation Site	B	BLM
			8	80	Little River Wayside	B	BLM
PLO 3869			16	178.53	Wolf Creek Trail	B	BLM
PLO 3869	27S	3W	23	80	Cavitt Creek	B	BLM
Executive Order* 865	28S	2W	30	320.15	Umpqua National Forest	None	USDA,FS
PLO 4448	29S	7W	17 21	40 20.22	Umpqua River Reclamation Project	B	BR[5]BLM
PSR* 659, WPD* 14	29S	9W	35	40	Protect Water Power & Reservoir Development Potential	C	BLM/FERC[4]
PLO 4448	29S	7W	32	58.43	Umpqua River Reclamation Project	B	BR[5]BLM
PSC* 198, 315, PSR* 280,	30S	2W	12 23 28 29 31	80 80 40 120 80	Protect Water Power and Reservoir Development Potential	C	BLM/FERC[4]
PLO 4626	30S	2W	23	1.3	Pickett Butte Road	B	USDA,FS
PSC* 315, PSR* 659, WPD* 11	30S	3W	19 25 29 31 33 35	120 120 80 164.62 40 80	Protect Water Power and Reservoir Development Potential	C	BLM/FERC[4]
	30S	4W	15 21 23 25 27 29 35	99.34 80.14 161.95 112.76 40.00 76.84 167.76	Protect Water Power and Reservoir Development Potential	C	BLM/FERC[4]

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Withdrawals

Authority[1]	Location T	R	S	Acreage[2]	Purpose	Segregative Effect[3]	Surface Management Agency
PLO 4448,	30S	7W	5 6	20 31.15	Umpqua River Relcamation Project	B	BR[5]
PSR 659, WPD 14	30S	9W	3	40	Protect Water Power and Reservoir Development Potential	C	BLM/FERC[4]
PSC* 315	31S	3W	3	83.61	Protect Water Power and Reservoir Development Potential	C	BLM/FERC[4]
PLO 3869	31S	8W	35	20	Darby Creek Recreation Site	B	BLM
PLO 5490	All Public Domain (PD) lands			18,426	Multiple Use	D	BLM
Small Tract Act	T 24 S, R 7 W, Sec 3; Lot 3			4.43	Community Site Lease OR 011654	B	BLM
Recreation and Public Purpose Act	T 26 S, R 2 W, Sec 7; E1/2SE1/4			7.50	County Park Lease OR 012162	B	BLM
Recreation and Public Purpose Act	T 26 S, R 2 W, Sec 23 and 24; Metes and Bounds			147.99	State Park Lease (expired) OR 010044	B	BLM
Small Tract Act	T 28 S, R 7 W, Sec 15; Lot 6			2.69	Occupancy Lease OR 05564	B	BLM
Small Tract Act	T 28 S, R 4 W, Sec 13; SE1/4NE1/4			0.61	Occupancy Lease OR 16775	B	BLM

Segregative Effect Acreage Summary[3]:

	A	B	C	D
District Total:	28.28	1,943.65	9,102.53	18,426.00

* Withdrawals remaining to be reviewed through the FLPMA withdrawal review process.

[1] Authority Abbreviations:
PLO - Public Land Order
PSC - Power Site Classification
PSR - Power Site Reserve
WPD - Water Power Designation
PP - Power Project
SO Intpr - Secretarial Order Interpretive

The Water Power Designations, Power Site Reserves, Power Site Classifications and S.O. Interpretative Withdrawals have similar segregations. These withdrawals are listed together on a township basis. Note all of the listed withdrawals apply to every section listed under that township.

[2] Table does not include lands that have been transferred out of federal ownership subsequent to withdrawal which are subject to Section 24 of the Federal Power Act (U.S. Congress 1920).

[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 (U.S. Congress 1926), sales or exchanges.

[4] Federal Energy Regulatory Commission.

[5] Bureau of Reclamation.

[6] US Department of Agriculture, Forest Service

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ROSEBURG DISTRICT OFFICE
777 N.W. Garden Valley Boulevard
Roseburg, Oregon 97470

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

FORWARDING AND ADDRESS
CORRECTION REQUESTED

FIRST CLASS MAIL
POSTAGE & FEES PAID
Bureau of Land Management
Permit No. G-76

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