

Wild Horses

Key Points

- The Pokegama herd is currently within the appropriate management level of 30 to 50 horses.
- The Pokegama herd relies primarily on private land within the Herd Management Area.
- Alternative D, which would eliminate livestock grazing, would reduce competition for forage and provide the potential for increased growth of the Pokegama herd. Otherwise, the alternatives would not differ in their effects on the Pokegama herd.

Background

The Pokegama Herd Management Area (HMA) is the only HMA within the planning area. It encompasses a total of 85,022 acres in Oregon and California and includes private, state, and Federal lands. About 83 percent of the HMA (70,550 acres) is within the planning area, and about 23 percent of the HMA is on BLM-administered lands managed by the Klamath Falls Field Office. The remainder of the HMA within the planning area is on private land. Most of the California portion of the HMA (95 percent, or 13,016 acres) is located on private and state land; only 5 percent is located on BLM-administered lands (outside of the planning area).

The Pokegama herd primarily occupies the private land within the HMA. Private landowners allow wild horses on their lands, if the herd size is maintained within the established appropriate management level, and that the horses do not range outside the HMA.

The Pokegama herd spends 94 percent of its time in meadows, open areas, and in tree cover on the edge of meadows (Gottlieb 1993). During the spring and summer, the horses are generally in the northern and central portions of the HMA. Due to the typically high winter snow accumulations in the northern and central portions of the HMA, the horses concentrate in the southern portion (California) from December through March, although they can be found there at any time of the year.

The diet of the Pokegama herd is predominantly grasses and grass-like species. Their primary water sources include creeks, springs, and reservoirs. Most developed water sources for the Pokegama herd (70-80 percent) are on private land. The BLM and private landowners have constructed several exclosures to protect riparian areas from wild horses.

The Pokegama Wild Horse Herd Management Area Plan (USDI BLM 2002) identifies specific management objectives and actions for the management of the Pokegama HMA.

Issue 1

How would the alternatives affect BLM's ability to maintain the Appropriate Management Level of 30 to 50 wild horses within the Pokegama Herd Management Area?

Summary of Analytical Methodology

The BLM qualitatively analyzed effects to wild horses within the Pokegama HMA, based on other resource management programs. Wild horses in the Pokegama Herd would be managed the same under all alternatives. The management plan for the HMA is currently being revised and guides BLM management activities in the HMA.

This analytical approach is a change from the Planning Criteria, which described analyzing changes in forage availability based on changes in forest structural stages (USDI BLM 2014, pp. 170-171). The alternatives would result in negligible differences in the acreage of non-forest, early-successional, and stand establishment forest within the HMA. In addition, a 2014 wildfire in the HMA has had a much greater influence on forest structure within the HMA than any potential changes under each of the alternatives.

Affected Environment

The Pokegama herd is currently within the appropriate management level of 30 to 50 horses, based on the HMA management plan. Since designation of the HMA in 1971, census counts of the Pokegama wild horse population have ranged from 25 in 1972 to 55 in 2000 (Figure 3-209). The 2012 census counted 24 horses, although the BLM estimates the current herd size is 30 to 40 horses.¹¹² The BLM completed captures in 1996 and 2000, removing 20 and 18 horses, respectively.

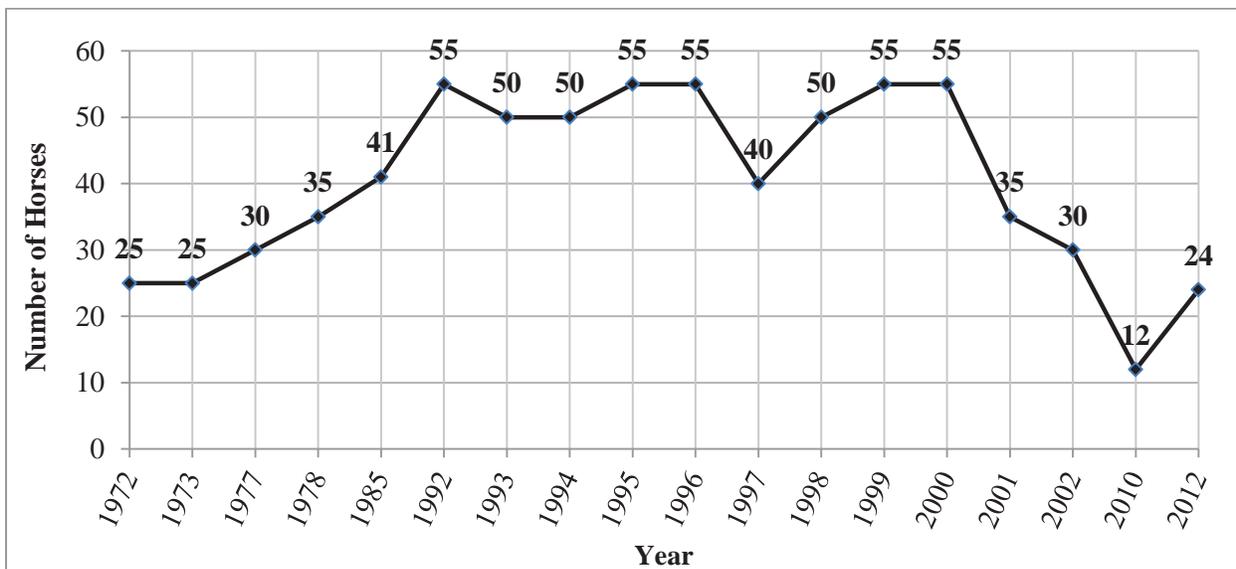


Figure 3-209. Pokegama herd census, 1972-2012.

The average growth rate for the Pokegama herd is 4-5 percent per year, which is below the average rate of 20 percent for other wild horse herds. The lower growth rate for the Pokegama herd may be related to a higher ratio of male to female horses than is normally found in wild horse herds (Gottlieb 1993). The lower growth rate may also be related to young horses being killed by mountain lions during the winter or being illegally removed (USDI BLM 2002). The overall condition of the herd is excellent (USDI BLM 1996 and 2002).

The portion of the HMA within the planning area lies within the boundaries of two grazing allotments: the Dixie and Edge Creek allotments. There is abundant forage and available water within the two allotments in the HMA. Forage is allocated for livestock, wild horses, deer, and elk (USDI BLM 1994).

¹¹² The BLM estimates that actual horse numbers are 25 to 50 percent higher than census counts, due to difficulty of counting animals on forested landscapes.

The BLM allocates 150 animal unit months of forage on BLM-administered lands to the Pokegama herd, based on the proportion of BLM-administered lands in the HMA. The Pokegama herd requires approximately 600 animal unit months of forage a year.

Environmental Effects

Vegetation management actions under the alternatives would have very little if any effect on wild horses in the HMA. All alternatives would manage all or most of the forested areas in the HMA with uneven-aged management. Unlike all other alternatives, Alternative C includes two small areas of HITA within the HMA, in which timber management actions would include clearcuts. This increased intensity of timber management under Alternative C could result in some increase in forage over time. However, the small acreage would render this overall effect negligible in the context of the entire HMA.

Vegetation management actions, road maintenance and construction, recreation areas, and travel management designations for OHV use could affect wild horse movements, the habitat they occupy, and associated available forage. These activities would have only temporary and localized effects on horse distribution and movement within the HMA, which cannot be quantified at this scale of analysis with the data available.

There is a proposed ACEC within the HMA, which is currently fenced. The designation of this area as an ACEC would not affect the wild horse herd, because the horses have no access.

Alternative D would eliminate livestock grazing and would reduce competition for forage within the HMA. Alternative D would increase the animal unit months of forage available to horses by 627. This increase in forage would provide sufficient forage to support a horse population at the high end of the appropriate management level on BLM-administered lands alone. This elimination of direct competition to horses within the HMA would provide the potential for increased growth of the Pokegama herd.

References

- Gottlieb, S. 1993. Habitat utilization and population characteristics of the Pokegama Wild Horse Herd. B.S. Thesis. State University of New York, Purchase, NY.
- USDI BLM. 1994. Klamath Falls Resource Area Resource Management Plan/Environmental Impact Statement.
- . 1996. Topsy/Pokegama Landscape Analysis. Lakeview District, Klamath Falls Resource Area. Klamath Falls, OR.
- . 2002. Pokegama Wild Horse Herd Management Area Plan. Lakeview District, Klamath Falls, OR.
- . 2014. Resource management plans for western Oregon planning criteria. Bureau of Land Management, Oregon/Washington State Office, Portland, OR. <http://www.blm.gov/or/plans/rmpswesternoregon/plandocs.php>.

Wild and Scenic Rivers

Key Points

- Under the Common to All Alternatives, the 12 river segments found suitable for inclusion into the National Wild and Scenic Rivers System through the previous western Oregon RMPs (1995) are carried forward as suitable in this plan.
- Under the No Action Alternative, all 51 eligible Wild and Scenic River segments would continue to be managed as eligible, protecting the rivers and their associated values, until suitability determinations are made.
- Under Alternative A, the BLM would not designate as suitable any of the 51 eligible Wild and Scenic River segments, resulting in effects to all eligible river segments and their associated values.
- Under Alternatives B and C, the BLM would designate as suitable six eligible Wild and Scenic River segments, resulting in protection for those six segments, non-suitable determinations for the remaining 45 rivers would result in effects to those segments and their associated river values.
- Under Alternative D, the BLM would designate as suitable all 51 eligible Wild and Scenic River segments, resulting in the greatest protection for all segments and their associated river values.

Issue 1

How would the proposed management actions in each alternative affect identified Outstandingly Remarkable Values, water quality, tentative classification, and free-flowing condition on eligible Wild and Scenic River segments in western Oregon?

Summary of Analytical Methods

The BLM established impact indicators based on key resources to measure the effects that the management actions associated with each alternative would have on the Outstandingly Remarkable Values (ORVs), water quality, free-flowing characteristics and tentative classification of eligible segments.

The Planning Criteria provides additional information on analytical assumptions, methods and techniques, and geographic and temporal scales, which the BLM incorporates here by reference (BLM 2014, pp. 120-122).

Descriptions of Indicators Used for Analysis

The effect of the alternatives on eligible river segments is assessed by considering the extent to which each alternative protects four factors: the ORVs, water quality, free-flowing characteristics, and tentative classification. These factors are protected for a given eligible segment when that segment is administratively designated as suitable in an alternative; these factors are left unprotected when a particular segment is not administratively designated as suitable and when the eligible status is dropped (in all action alternatives, segments not administratively designated as suitable are also no longer protected as being eligible). Where an alternative does not protect a particular segment, the analysis considers the potential effect of other management on the four factors.

Several key resources will be used to determine effects to ORVs. Impact indicators include: 1) Recreation Management Areas, ACECs, riparian, forest management and Visual Resource Management (VRM) designations; and (2) establishing limitations for lands and minerals resources (e.g., timing limitations, establishing no surface occupancy stipulations, establishing right-of-way exclusion areas).

Effects Analysis Assumptions

- A no surface occupancy stipulation generally provides protection by prohibiting surface occupancy and surface-disturbing activities that might degrade or continue degradation of the ORVs, and by preventing projects that might affect the tentative classification (i.e., wild, scenic, or recreational) or free-flowing nature of the segment.
- A controlled surface use stipulation would provide a slightly lesser degree of protection to the Wild and Scenic River characteristics, as surface-disturbing activities are allowed, but must be modified or moved so as not to affect the resource.
- Timing limitation stipulations provide a similar level of protection as no surface occupancy, but only during certain times of the year. These are especially important in protecting aquatic and terrestrial wildlife species and their habitat during critical times. The acres affected by each type of stipulation are detailed under each alternative as follows.
- Non-native invasive weed treatments in the short term may affect ORVs or tentative classification as evidence of human activity may be seen. In the long-term, weed treatment and eradication would benefit ORVs as riparian health improves.
- Wild and Scenic River segments with scenic ORVs, VRM Class I and II management would provide the most protection to the scenic ORV. VRM Class I and II management may also provide indirect protection for other ORVs or tentative classification by preventing certain types of development that would affect the ORVs or tentative classification.
- For Wild And Scenic River segments with scenic ORVs, VRM Class III and IV management would most likely lead to effects on scenic ORVs by allowing development that would directly impair scenic quality. VRM Class III and IV management may also indirectly affect other ORVs or tentative classification by allowing certain types of development.
- Increased recreation has the potential to affect ORVs associated with each segment. Building infrastructure to keep people away from sensitive resources could mitigate impacts. Closing areas to motorized travel would protect areas from impacts associated with such use. Designating routes for motorized uses would help protect ORVs to a lesser degree.
- Where Wild and Scenic River segments overlap ACECs, ACEC management would complement Wild and Scenic River objectives.
- Where the BLM would designate a segment as suitable under a particular alternative, the BLM would actively protect these characteristics; this analysis assumed that this protection would result in the continued maintenance of the ORVs, water quality, free-flowing characteristics, and tentative classification for at least the life of the plan.
- The corridor width for suitable or eligible rivers cannot exceed an average of 320 acres per mile, which if applied uniformly along the entire river segment, is one-quarter mile on each side of the rivers from the high water mark. For analysis purposes, the affected river corridors are 0.25 mile from the high water mark on both sides of the river.

Background

Wild and Scenic Rivers (WSRs) are rivers or river sections designated by Congress under the authority of the Wild and Scenic Rivers Act of 1968 (WSR Act) (16 U.S.C. 1271 *et seq.*). Congress designates rivers under this act for the purposes of preserving the river or river section in its free-flowing condition, preserving water quality, and protecting its ORVs. River segment ORVs may include scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

Congress classifies all designated Wild and Scenic River segments as wild, scenic, or recreational. These classifications are also applicable to suitable and eligible river segments, which are described below. Definitions of these classifications are the following:

- **Wild river segments.** Wild river segments are free of impoundments and generally inaccessible, except by trail. Their watersheds or shorelines are essentially primitive and their waters unpolluted. These represent vestiges of primitive America.
- **Scenic river segments.** Scenic river segments are free of impoundments. Their shorelines or watersheds are largely primitive and undeveloped, but their shorelines are accessible in places by roads. Limited timber harvesting may take place.
- **Recreational river segments.** Recreational river segments are readily accessible by road or railroad. They may have some development along their shorelines and may have undergone some impoundment or diversion in the past. Limited timber harvesting may take place.

Section 5(d)(1) of the WSR Act directs Federal agencies to consider potential WSRs in their land use planning process. To fulfill this requirement, the BLM inventories and evaluates rivers when the BLM develops or revises resource management plans. In order to fulfill the WSR Act Section 5(d)(1) obligations, the BLM is considering potential WSR segments within the planning area as part of this planning process.

In order to be eligible for inclusion into the National Wild and Scenic River System, a river segment must be free-flowing and contain at least one river-related value considered to be outstandingly remarkable (BLM Manual 6400 – Wild and Scenic Rivers, USDI BLM 2012). An eligible river's ORVs should be located in the river itself or on its immediate shore lands. Whether management decisions or actions that would affect individual resources or resource uses affect an eligible river depends on the segments qualifying ORVs and tentative classification. Eligible segments are preliminarily classified as wild, scenic, or recreational based primarily on level of development (shoreline and in stream) accessibility and water quality.

Each eligible river segment is further evaluated to determine whether it is suitable for inclusion into the National System. The suitability analysis provides the basis for determining which rivers to recommend to Congress as potential additions to the National System. A suitable river is an eligible river segment found through administrative study to meet criteria for designation as a component of the National System, as specific in Section 4(a) of the WSR Act. The following questions are addressed when evaluating suitability:

- Should the river's free-flowing condition, water quality, and outstandingly remarkable values be protected, or are one or more other uses important enough to warrant doing otherwise?
- Will the river's free-flowing condition, water quality, and outstandingly remarkable values be protected through designation?
- Is designation the best method for protecting the river corridor?
- Is there a demonstrated commitment to protect the river by any non-Federal entities that may be partially responsible for implementing protective management?

The BLM must provide permanent protection of designated wild and scenic rivers. Interim protection is required for eligible and suitable river segments, until either—

- The BLM determines, through a suitability study, that an eligible river segment is unsuitable for inclusion as a Wild and Scenic river; or
- Congress adds or precludes the addition of a suitable river segment to the National Wild and Scenic River System.

The BLM’s protective management of eligible and suitable river segments includes managing the segments for the protection of their ORVs, water quality, free-flowing characteristics, and tentative classification. The BLM is also obligated to protect the water quality necessary to support the ORVs.

For permit applications under BLM authority, the BLM does not permit projects that would adversely affect the ORVs, water quality, free-flowing characteristics, and tentative classification of eligible and suitable segments. Other Federal agencies considering permit applications (not under BLM authority) that could affect the resources associated with the six suitable river segments are required to seek formal comments from the BLM.

River Designations that will not be Affected by this Planning Effort

Previous planning efforts (1995 Resource Management Plans for Western Oregon) analyzed river segments as potential Wild and Scenic Rivers. This analysis found river segments to be eligible, ineligible, or not suitable for inclusion into the National System. A revalidation effort found these determinations unchanged.

Of the 78 designated, suitable, and eligible Wild and Scenic River segments:

- 9 are designated
- 12 are suitable for recommendation to Congress
- 51 are eligible and currently being studied for suitability and will be affected by this planning effort (described further below under Affected Environment)

Designated Rivers in the National Wild and Scenic Rivers System

The BLM administers nine designated Wild and Scenic Rivers within the planning area (**Table 3-275**). These rivers are designated by Congress or the Secretary of the Interior for the preservation of the ORVs, water quality, free-flowing characteristics, and tentative classification.

Table 3-275. Designated Wild and Scenic Rivers within the planning area.

Designated River Name	District/Field Office	Classification	River Miles
Clackamas	Salem	Recreational	0.5
Elkhorn Creek	Salem	Wild/Scenic	3.0
North Umpqua	Roseburg	Recreational	8.4
Quartzville Creek	Salem	Recreational	9.7
Rogue	Medford	Wild/Recreational	47.0
Salmon	Salem	Scenic/Recreational	8.0
Sandy	Salem	Scenic/Recreational	12.5
South Fork Clackamas	Salem	Wild	0.6
Upper Klamath	Klamath Falls	Scenic	11.0
Totals			100.7

Current Suitable Wild and Scenic River Segments

Under the 1995 RMPs, the BLM found 13 river segments suitable (**Table 3-276**). The BLM currently manages these segments under interim protection until Congress designates the river segment or releases it for other uses. During this current planning process, the BLM revalidated the finding of suitability for these 13 river segments. These segments are incorporated by reference and they are not affected by any of the action alternatives.

Table 3-276. Suitable Wild and Scenic Rivers within the planning area.

River Segment Name	District	Wild and Scenic River Classification	River Miles
Big Windy Creek Segment A	Medford	Rec/Scenic	1.6
Big Windy Creek Segment B	Medford	Rec/Scenic	5.7
Dulog Creek Segment A	Medford	Rec/Scenic	0.5
Dulog Creek Segment B	Medford	Rec/Scenic	0.9
East Fork Big Windy Creek Segment A	Medford	Rec/Scenic	0.2
East Fork Big Windy Creek Segment B	Medford	Rec/Scenic	3.6
Howard Creek Segment A	Medford	Rec/Scenic	0.7
Howard Creek Segment B	Medford	Rec/Scenic	6.8
McKenzie River Segment B	Eugene	Fish/Scenic	36.7
Molalla River Segment B	Salem	Geo/Rec/Scenic	13.5
Nestucca River Segment A	Salem	Fish/Rec/Scenic/Wild	13.1
Siuslaw River Segment B	Eugene	Fish/Wild	46.3
Siuslaw River Segment C	Eugene	Rec/Wild	11.7
Totals			141.3

Affected Environment

Eligible Wild and Scenic River Segments and Associated Values

Under the 1995 RMPs, the BLM found 51 river segments eligible. These segments are currently managed under interim protection until the BLM makes land use plan decisions regarding their suitability. As part

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of the current planning effort, the BLM studied these 51 eligible segments for suitability. While suitability determinations can only be made through a land use plan, the BLM identified six segments that the BLM believes meet the suitability criteria for inclusion in the National Wild and Scenic River System. The Draft Suitability Report and subsequent determinations are located in <http://www.blm.gov/or/plans/rmpswesternoregon/recreation.php> and are incorporated here by reference.

Table 3-277 identifies these six segments, their ORVs, segment length, and the acreage under BLM administration. **Table 3-278** lists the river segments identified as suitable.

Table 3-277. Eligible Wild and Scenic Rivers within the planning area.

Study River Name	Outstandingly Remarkable Values	Miles	BLM-administered Lands (Acres)
Alsea River	Fish, Recreation	16.5	404
Antelope Creek	Fish	21	718
Applegate River	Fish	48	839
Big Butte Creek	Fish	12	706
Cheney Creek	Fish	7	710
Clackamas River	Recreation, Fish	15.4	30
Cow Creek	Fish	61	3339
Drift Creek	Fish	30.1	150
Elk Valley Creek	Fish	6	464
Fall Creek - Eugene	Recreation	2	87
Fall Creek - Salem	Fish	11.7	670
Kilches River	Fish, Recreation	15.7	66
Lake Creek	Fish, Recreation	19.4	483
Left Fork Foots Creek	Fish	4	131
Little Applegate River	Fish	23	1367
Little Luckiamute River	Ecology	27.1	40
Little North Santiam River	Fish, Recreation, Scenery	17.2	1,205
Lobster Creek	Fish	16.6	352
Luckiamute River	Cultural, Ecology	61.2	623
McKenzie River	Fish, Recreation, Scenery	48.7	1,203
Middle Santiam River	Cultural, Ecology	7.9	193
Nehalem River	Recreation, Fish	123.6	40
Nelson Creek	Fish	9.7	833
Nestucca River Segment B	Recreation, Wildlife	8	212
North Fork Clackamas River	Fish	14.4	389
North Fork Gate Creek	Fish	1.7	199
North Fork Siletz River	Fish, Recreation, Scenery	66.2	54
North Fork Trask River	Fish, Recreation	19.5	444
North Santiam River	Fish, Recreation, Scenery	46	375
Quines Creek	Fish	7	816
Riffle Creek	Fish	6	762
Rogue River	Fish, Recreation	63	708
Sams Creek	Fish	8	497

Study River Name	Outstandingly Remarkable Values	Miles	BLM-administered Lands (Acres)
Sandy River	Recreation, Fish Cultural, Scenery	26.3	1519
Siletz River	Fish, Recreation, Scenery	66.2	54
Sixes River	Fish, Historic	28.9	281
South Fork Coos River	Fish, Recreation	31.6	551
South Fork Coquille	Fish, Prehistoric	35.2	152
South Fork Gate Creek	Fish	2.1	108
South Fork Little Butte Creek	Fish	24.5	452
South Fork Trask River	Fish	9.3	69
South Umpqua	Cultural, Fish, Historic, Wildlife	75.2	602
South Yamhill River	Cultural, Ecology	62.5	0
Table Rock Fork – Molalla River	Cultural	13.4	1,480
Trask River	Fish, Recreation, Wildlife	19.5	444
Tualatin River	Cultural	80.4	326
Umpqua River	Fish, Geologic, Historic, Prehistoric, Recreation, Scenery	109.5	2,403
West Fork Illinois River	Scenery	17	1154
Willamette River	Cultural, Ecology, Fish, Recreation, Wildlife	161.3	83
Wilson River	Fish, Recreation, Wildlife	30.8	108
Yaquina River	Fish	54.38	269
Totals		1,692.7	29,378

Table 3-278. Eligible rivers that the BLM identified as meeting suitability criteria.

River Segment Name	District	Wild and Scenic River Classification	River Miles
Little North Santiam River	Salem	Recreational	17
North Fork Siletz	Salem	Scenic	11
Rogue River	Medford	Recreation	63
Sandy River	Salem	Recreation	26
Table Rock Fork Molalla	Salem	Recreation	13
West Fork Illinois	Medford	Scenic	17
Totals			147

Environmental Effects

This section analyzes the environmental impacts to WSRs within the decision area that could result from the implementation of the management actions proposed under the four alternatives in relation to other resources and resource uses. This analysis is two-part; 1) effects resulting from WSR determinations under each alternative; and 2) effects to segments not managed as suitable under the alternatives from management of other resources. Because of WSR determinations, those study rivers that were determined non-suitable, by alternative, are analyzed to determine the effects to the identified ORVs, water quality, free-flowing characteristics, and tentative classification on non-suitable study rivers.

Effects on Designated Wild and Scenic Rivers

All designated WSR segments have their own comprehensive river management plans providing management meeting the intent of the WSR Act. This planning effort has no bearing on these segments other than these plans being incorporated by reference.

River Segments for which the BLM has Previously Made Suitability Decisions

The BLM will continue to manage these segments to protect their components until Congress either designates them or releases them for other purposes. This planning effort has no bearing on these segments other than decisions from the 1995 RMPs being incorporated by reference.

River Segments Currently Identified as Eligible

The analysis of management and subsequent effects for WSRs is limited to river segments currently identified as eligible. This analysis focused on the effects of the alternatives on the 51 river segments within the planning area that are currently designated as eligible and for which the BLM is considering a range of suitability determinations. While the BLM has identified six of these segments as meeting the suitability requirements (Wild and Scenic River Suitability Report at <http://www.blm.gov/or/plans/rmpswesternoregon/recreation.php>), in conformance with direction and related agency guidance in the WSR Act, this Draft RMP/EIS analyzes a full range of alternatives for the designation of suitable segments.

As described in the analytical methodology section, the BLM considered the effect of each alternative's suitability designations and the potential effects from the management of other resources on each segment's ORVs, water quality, free-flowing characteristics, and tentative classification.

Where the BLM would not designate a particular segment as suitable under a given alternative that segment would no longer have administrative protections. In this analysis, the BLM will refer to such segments as "not suitable." The BLM would manage such segments under prescriptions for other resource programs. Management for other programs could be either detrimental or indirectly protective of each segment's ORVs, water quality, free-flowing characteristics, and tentative classification.

The BLM assumed that management for the following resources would have negligible effects on not suitable segments under all of the alternatives: air and atmospheric values (air quality), vegetation (forest and woodlands, riparian; rangelands), fish and wildlife, Special Status Species (plants), cultural resources, paleontology resources, lands with wilderness characteristics outside existing Wilderness Study Areas, energy and minerals (coal), ACECs, transportation system management, and public health and safety.

Effects to Currently Eligible Rivers Resulting from WSR Determinations (Suitable and Eligible Determinations)

As described in more detail below, the No Action alternative and Alternative D would provide the most protection for the 51 current eligible river segments and their associated characteristics. While the No Action alternative would not meet the BLM's policy requirement to consider the suitability of eligible segments, it would continue protective management of all segments and their values, as would Alternative D's determination that all 51 segments are suitable. Alternative A would provide no protective management for eligible rivers. Alternatives B and C would provide protective management for six rivers. **Table 3-279** compares the miles and acres of eligible Wild and Scenic Rivers that would be protected across all action alternatives. **Table 3-280** compares the acres of eligible rivers that would receive protective management based on their finding of suitability.

Table 3-279. Wild and Scenic River protection totals across range of alternatives.

Alternative	Eligible Rivers Determined Suitable (Number of Segments)	Protected River Miles (Total Miles)	Protected River Acres (Total Acres)
No Action	-	-	-
Alt. A	-	-	-
Alt. B	6	147	6,120
Alt. C	6	147	6,120
Alt. D	51	1,692.7	29,164

Table 3-280. Suitable river segments receiving protection from minerals and right-of-way management under applicable action alternatives.

Alternative	Suitable River Segments (Number)	Stipulation (Acres)	Right-of-way (Acres)		Recommended for Withdrawal From Locatable Mineral Entry (Acres)	Closed to Salable Mineral Development	Total BLM Acres
		No Surface Occupancy, Controlled Surface Use, Timing Limitation	Exclusion	Avoidance			
Alt. B	6	7,143	806	6,337	7,143	7,143	7,143
Alt. C	6	7,143	806	6,337	7,143	7,143	7,143
Alt. D	51	29,378	806	28,573	29,378	29,378	29,378

No Action Alternative

Under the No Action alternative, the BLM would continue to manage the 51 segments identified as eligible during the 1995 RMP process to protect their ORVs, water quality, free-flowing characteristics, and tentative classification as wild, scenic, or recreational until suitability is determined on the 1693 river miles and 29,378 acres within the study river corridors. Under this protective management, the BLM would not approve any action that would adversely affect the 51 segments’ ORVs, water quality, and free-flowing characteristics, and the BLM assumes that these characteristics would persist for at least the life of the plan.

Alternative A

Under Alternative A, the BLM would determine that all 51 eligible river segments in the planning area are not suitable for inclusion into the National Wild and Scenic Rivers System. The BLM would no longer manage these 1,693 river miles and 29,378 acres of land to protect their ORVs, water quality, free-flowing characteristics, and tentative classification.. The BLM assumed that removing protective management would result in long-term adverse impacts to the ORVs, water quality, free-flowing characteristics, and tentative classification identified during the eligibility assessments. The BLM describes the effects of management for other resources on these non-suitable segments below.

Alternatives B and C

Under Alternatives B and C, the BLM would determine that six segments (**Table 3-279**) are suitable for inclusion into the National Wild and Scenic Rivers System. The BLM would continue to manage these six segments, totaling 7,143 acres and 149 river miles, to ensure the continued protection of their ORVs, water quality, free-flowing characteristics, and tentative classification until Congress makes a determination whether to designate the segment(s) as part of the National Wild and Scenic River System.

This protective management would include requiring mineral leasing stipulations to protect WSR characteristics, recommending to withdraw suitable segment corridors from locatable mineral entry, closing suitable segment corridors to salable mineral development, managing suitable river segments as VRM II, and managing as ROW avoidance areas. **Table 3-280** shows the suitable river segments receiving protection from minerals and rights-of-way management.

Compared with Alternative A, Alternatives B and C provide more protection to WSR characteristics based on the establishment of minerals and rights-of-way restrictions. Compared with Alternative D, Alternatives B and C provide less protection to river values from the establishment of minerals and rights-of-way restrictions.

Under these alternatives, the BLM would determine that 45 segments are not suitable. The BLM assumes that removing protective management would result in long-term adverse effects to the ORVs, free-flowing characteristics, and tentative classification identified during the eligibility assessments.

Alternative D

Under Alternative D, the BLM would determine that all 51 eligible segments are suitable for inclusion into the National Wild and Scenic Rivers System. The BLM would continue managing the segments to protect the ORVs, water quality, free-flowing characteristics, and tentative classification. Implementation of Alternative D would result in effects similar to or the same as those described under the No Action alternative as the BLM would not approve any action that would adversely affect the 51 segments' ORVs, water quality, free-flowing characteristics, and tentative classification, and the BLM assumes that these characteristics would persist for at least the life of the plan. This protective management would include requiring mineral leasing stipulations to protect WSR characteristics, recommending to withdraw suitable segment corridors from locatable mineral entry, closing suitable segment corridors to salable mineral development, managing suitable river segments as VRM II, and managing the corridors as ROW avoidance areas.

Table 3-280 shows the Suitable River segments receiving protection from minerals and rights-of-way management restrictions. Compared with Alternatives A, B and C, Alternative D provides the greatest level of protection to river values based on the establishment of minerals and rights-of-way restrictions.

Effects to Non-Suitable Segments from Management for Other Resources

While the BLM would not continue to provide protective management for segments it determines are non-suitable in any given alternative, these non-suitable segments might receive indirect protection for their WSR characteristics (i.e., ORVs, free-flowing nature, water quality, and tentative classification) from management intended to protect other resources. Where protection is not indirect, the BLM assumes that the WSR characteristics associated with the non-suitable segments will degrade over time. The No Action alternative and Alternative D are not included in this section of the analysis. By continuing existing management, under the No Action alternative, study river corridors would continue to receive protective management under existing eligible determinations. In Alternative D, all study river corridors would be designated suitable; therefore, adequate protections to maintain or enhance relevant and important values within these study river segments are already in place through their designation as suitable.

Effects from Minerals and Lands and Realty Management

Development of leasable and locatable minerals has the potential to affect some ORVs and the tentative classification of non-suitable segments. Similarly, granting of rights-of-way along non-suitable segments could have adverse effects through sedimentation and damage to riparian vegetation, which could result in degradation of water quality. Mineral or right-of-way development along the non-suitable segments could result in a substantially higher level of surface disturbance and visual effects than would be allowed under eligible status.

The lands and realty management action to retain major river corridors and perennial streams would keep all non-suitable segments in BLM ownership; however, retention would not guarantee protection of the free-flowing nature, ORVs, or the tentative classification. **Table 3-281** shows the incidental protection of non-suitable river segments from minerals and rights-of-way restrictions.

Table 3-281. Non-suitable river segments receiving incidental protection from minerals and rights-of-way management.

Alternative	Non-Suitable River Segments (Number)	Stipulation	Right-of-way		Recommended for Withdrawal from Locatable Mineral Entry (Acres)	Closed to Salable Mineral Development (Acres)
		No Surface Occupancy, Controlled Surface Use, Timing Limitation (Acres)	Exclusion (Acres)	Avoidance (Acres)		
Alt. A	51	1,744	1,156	3,226	1,782	2,170
Alt. B	45	747	-	915	516	804
Alt. C	45	1,128	-	2,610	691	892

Where alternatives require leasable mineral stipulations for the protection of other resources along non-suitable river segments these stipulations would provide some level of protection for certain WSR characteristics. Six percent of non-suitable river segments in Alternative A receive incidental protection from mineral stipulations, compared to three percent in Alternative B and five percent in Alternative C.

Non-suitable segments may also receive incidental protection from being within ROW avoidance or exclusion areas designated for the protection of other resources. ROW exclusion would provide the most protection to ORVs and tentative classification by prohibiting all new ROWs in the area. Four percent of non-suitable river segments in Alternative A receive incidental protection from ROW exclusion and eleven percent from ROW avoidance. Four percent of non-suitable segments in Alternative B receive incidental protection from ROW avoidance compared to eleven percent in Alternative C. None of the 23,044 acres of non-suitable river corridors in Alternatives B and C receive incidental protection from ROW exclusion.

Effects from Visual Resource Management

Variations in Visual Resource Management (VRM) classes relative to the location of non-suitable rivers would allow for impacts to the scenic quality and potential loss of a qualifying ORV. Rivers with a scenic ORV would be impacted if visual resources were altered. Visual resources are protected from alteration through VRM Class designations I or II and would maintain the regionally unique scenic quality. VRM Class III and IV would allow decreases to the scenic quality. **Table 3-282** identifies the non-suitable study segments with scenery as a qualifying ORV by alternative.

Table 3-282. Study rivers with scenery as a qualifying outstandingly remarkable value.

Study Rivers with Outstandingly Remarkable Scenic Value	Miles	Corridor Acres	VRM Class I or II			
			No Action (%)	Alt. A (%)	Alt. B (%)	Alt. C (%)
Clackamas River	14.5	4,528	1%	-	-	-
McKenzie River	48.7	15,342	-	-	-	-
Nestucca River	21.1	5,921	-	-	-	-
North Fork Trask River	11.9	3,288	-	-	-	-
North Santiam River	45.9	14,441	2%	-	-	-
Siletz River	66.2	20,040	-	-	-	-
Umpqua River	109.5	34,840	1%	-	-	-
Totals	317.8	98,400	4%	-	-	-

The No Action alternative does not identify a VRM Class specifically for eligible rivers with a scenic ORV; however, 4 percent of study river corridors are currently being managed as VRM Class I or II, which helps to retain the existing visual character. Alterations to the visual landscape that impact the scenic ORV are currently allowed on 96 percent of study rivers. None of the action alternatives would provide protection to the scenic ORVs on any of the seven rivers found non-suitable through VRM Class I or II designations. None of the action alternatives would impact the visual quality of these study rivers since 96 percent of these study river corridors are currently being managed as VRM Class III or IV.

Effects from ACEC Management

Management of relevant and important values within ACECs would generally be complementary to management for study river values. Where ACEC and non-suitable study river boundaries occur simultaneously, ORVs and classification would be less likely to change than when the segment is managed only as a WSR.

The relevant and important values for an ACEC are often identical to ORVs identified for an eligible or suitable river that occurs in the same area. In such cases, overlapping ACEC management for that relevant and important value would also directly maintain or enhance that ORV. Management for overlapping ACECs may also indirectly maintain or enhance a study river’s ORVs, even if the ORV is not also a relevant and important value. **Table 3-283** displays acres of non-suitable study rivers with overlapping ACEC designations.

Table 3-283. Non-suitable study river corridors with overlapping Area of Critical Environmental Concern designations (acres).

Study Rivers with ACEC Overlap	Alt. A (Acres)	Alt. B (Acres)	Alt. C (Acres)
Big Butte Creek (including South Fork)	33	33	33
Cow Creek	138	138	138
Fall Creek – Salem	11	11	11
Lake Creek	54	54	54
Little Applegate River	10	10	10
McKenzie River	869	869	869
Middle Santiam River	172	172	172
Nestucca River	1,203	1,203	1,203
North Fork Siletz River	353	-	-
North Santiam River	-	-	-
Riffle Creek	9	9	9
Rogue River	47	-	-
Sandy River	1,516	-	-
Umpqua River	20	20	20
West Fork Illinois River	897	-	-
Willamette River	-	-	-
Total Non-Suitable Acres that Overlap with ACECs	5,332	2,519	2,519

No Action Alternative

By continuing existing management, under the No Action alternative, study river corridors would continue to receive protective management under existing eligible determinations, therefore complementary ACEC designations are not relevant under the No Action alternative because adequate protection maintain or enhance relevant and important values within these study river segments are already in place.

Alternative A

In Alternative A, 14 non-suitable study rivers would have complimentary overlap with ACEC management. The majority of this overlap is a relatively low percentage of each study river’s corridor. The highest percentage of overlap occurs on the West Fork Illinois segment (80 percent overlap), Sandy River segment (98 percent overlap) and McKenzie River (95 percent). Management of public lands to maintain or enhance relevant and important values within these ACECs would effectively maintain or enhance study river ORVS and tentative classification on these three segments under Alternative A.

Alternative B and C

In both alternatives B and C, nine non-suitable study rivers would have complimentary overlap with ACEC management. When compared with Alternative A, the overlap is relatively low. The highest percent of overlap occurs on the McKenzie River.

Alternative D

In Alternative D, all study river corridors would receive suitable designations; therefore complementary ACEC designations are not relevant under Alternative D.

Effects from Recreation and Visitor Services Management

Management of recreation outcomes and setting characteristics within Recreation Management Areas (RMAs) would generally be complementary to management for study river values where Recreation was identified as an ORV. In such cases, overlapping recreation management for recreation values would also directly maintain or enhance that ORV regardless of whether or not an eligible river segment was found suitable or not. **Table 3-284** identifies the WSR segments with recreation as a qualifying ORV and the acres that overlap with RMAs by alternative for all non-suitable river segments.

Table 3-284. Non-suitable study river corridors with recreation ORVs with overlapping Recreation Management Area designations (acres).

Non-Suitable WSR Segments with Recreation ORVs Overlapping RMAs	Alt. A (Acres)	Alt. B (Acres)	Alt. C (Acres)
Totals	519	585	2,882

No Action Alternative

The previous definition for Special and Extensive Recreation Management Areas made under the No Action alternative is not comparable to the current RMA definitions. Because of this, the BLM cannot measure the effect from overlapping study river corridor segments with RMA designations under the No Action alternative.

Alternative A

In Alternative A, the fewest acres with recreation ORVs associated with non-suitable river corridors would be incidentally protected by RMAs when compared to the other alternatives.

Alternative B

In Alternative B, a slightly higher acreage with recreation ORVs associated with non-suitable river corridors would be incidentally protected through complimentary RMA designation. Alternative B, provides a greater level of protection for recreation ORVs associated with non-suitable rivers when compared to Alternative A and less protection for recreation ORVs when compared to Alternative D.

Alternative C

In Alternative C, a substantially higher acreage with recreation ORVs associated with non-suitable river corridors would be protected through complimentary RMA designation when compared to Alternatives A and B. Alternative C provides a greatest level of protection for recreation ORVs associated with non-suitable rivers when compared to Alternatives A and B.

Alternative D

In Alternative D, all eligible Wild and Scenic Rivers would be found suitable for inclusion into the National Wild and Scenic River System. All eligible rivers with recreation ORVs would receive adequate protections through suitable determinations regardless of where study rivers with recreation ORVs overlap with RMA designations.

Effects from Riparian Management

Fish have been identified an ORV on 79 percent of BLM-administered acres within the eligible river corridors. Fish have been identified as the sole ORV on 47 percent of BLM-administered lands within the eligible river corridors.

Under all alternatives, there will be no impact to fish-related ORVs for any of the 51 currently eligible segments, regardless of whether they are determined to be suitable in any particular alternative. As stated in the fisheries and hydrology sections of the EIS (the Fisheries and Hydrology sections contain more information) the riparian management strategies would all have similar consequences in that they would be protective of stream shade and will not increase stream temperatures for any of the alternatives. Absent any affect to stream temperature, there will be no affect to fish ORVs resulting from any of the alternatives.

Effects from Forest Management

For those rivers found non-suitable, ORVs would be negatively impacted where non-suitable river corridors overlap with the Harvest Land Base. Forest management would impact the river corridors and associated ORVs of scenery, wildlife, botany, ecology, and recreation. **Table 3-285** displays acres of non-suitable study river corridors that overlap with the timber Harvest Land Base.

Table 3-285. Non-suitable river corridors with overlapping timber Harvest Land Base.

Alternative	Number of Non-Suitable River Segments	Harvest Land Base (Acres)	Total BLM-Administered Acres in River Corridor
Alt. A	51	2,469	29,378
Alt. B	45	3,882	22,236
Alt. C	45	5,442	22,236

No Action Alternative

In the No Action alternative, all 51 eligible rivers would continue to receive interim protection through their current eligible designations.

Alternative A

Alternative A would have 8 percent of non-suitable river corridors within the Harvest Land Base. Alternative A has a fewest acres of non-suitable river corridor within the Harvest Land Base when compared to Alternatives B and C. When compared to the other action alternatives, the effects from forest management activities on non-suitable corridors will be the least under Alternative A.

Alternative B

Alternative B has 17 percent of non-suitable river corridors within the Harvest Land Base. Alternative B has a larger number of acres of non-suitable river corridor within the Harvest Land Base when compared to Alternative A and fewer acres than Alternative C.

Alternative C

Alternative C has 24 percent of non-suitable river corridors within the Harvest Land Base. Alternative C has the largest number of non-suitable river acres within the Harvest Land Base when compared to all Alternatives.

Alternative D

In Alternative D, forest management activities would not affect the river values and associated ORVs of scenery, wildlife, botany, ecology, and recreation because all eligible rivers would be found suitable for inclusion into the National Wild and Scenic River system, receiving long-term river protection.

Effects from Comprehensive Trail and Transportation Management

OHV use could affect ORVs and classifications of non-suitable river segments. Eligible Wild and Scenic River segments are better protected from sedimentation and erosion by shifting from an *open* to a *limited to existing* or *limited* area designation. Closing areas to OHV travel, or restricting OHV use to existing or designated routes, would reduce effects in the corridors of the study segments. Damage to vegetation and sedimentation would be reduced or eliminated, which would protect water quality that supports ORVs, specifically history, ecology, scenic, wildlife, and botany. **Table 3-286** displays non-suitable river corridor acres that overlap with the Harvest Land Base for each alternative.

Table 3-286. OHV area designations for eligible river corridors.

OHV Area Designations Within Segments	No Action (Acres)	Alt. A (Acres)	Alt. B (Acres)	Alt. C (Acres)	Alt. D (Acres)
Closed	790	327	1,760	3,243	3,470
Limited to Designated	20,763	110	218	1,501	537
Limited to Existing	-	28,942	27,401	24,635	25,371
Open	6,066	-	-	-	-
Totals	27,619	29,379	29,379	29,379	29,379

No Action Alternative

In the No Action alternative, 6,066 acres would be open to cross-country OHV use. When compared to the action alternatives, the No Action alternative has the greatest number of acres open to cross-country OHV use. Cross-country OHV use affects ORVs and classifications of study river segments. The rugged terrain and topography that characterizes some of the study rivers has presented a barrier to OHV intrusions in the past and would likely continue to do so in the future, although increased recreation demand and evolving motorized and mechanized equipment technology could allow vehicles to enter and affect areas OHVs have not been able to access in the past.

Alternative A

In Alternative A, the majority of acres within non-suitable river corridors are designated as limited to existing. Under Alternative A there are no acres designated as *open* to OHV use.

By shifting to *limited to existing* and *limited to designated routes* from an *open* designation, the non-suitable river corridors would be better protected from sedimentation and erosion in Alternative A when compared to the No Action alternative, and less protective when compared to Alternatives B and C.

Alternative B

In Alternative B, effects are similar to those in Alternative A when comparing the number of acres designated as limited to existing OHV use. Under Alternative B, approximately 6 percent of the non-suitable river corridors would be designated closed to OHV use. Alternative B has a higher percentage of closed area designations when compared to Alternative A and a smaller percentage of closed area designations compared to Alternatives C and D.

Alternative C

In Alternative C, effects are similar to those described in Alternative A and B when comparing the number of acres and corresponding percentage of the study river corridors designated as limited to existing OHV use. Under Alternative C approximately 11 percent of the study river corridors are closed to OHV use. Alternative C has a higher percentage of study river corridors closed to OHV use when compared to the No Action alternative and Alternatives A and B. Alternative C has a smaller percentage of study river corridors closed to OHV use when compared to Alternative D.

Alternative D

In Alternative D, effects are similar to those described in Alternative A, B, and C when comparing the number of acres and corresponding percentage of the study river corridors designated as limited to existing OHV use. Under Alternative D, approximately 12 percent of the study river corridors are closed to OHV use. Alternative D has the highest percentage of study river corridors closed to OHV use when compared to all alternatives.

References

USDI BLM. 2014. BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management. Washington D.C.
http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.76771.File.dat/6400.pdf

Chapter 4 – Consultation and Coordination



Introduction

This chapter describes the public involvement and collaboration that occurred during the preparation of this Draft RMP/EIS. That collaboration includes government-to-government relationships with Tribes, formal cooperators in the planning process, and consultation with Federal and State agencies. This chapter also includes a list of staff involved in the RMPs for Western Oregon.

Public Involvement

Formal scoping for the RMPs started with printing of the Notice of Intent in the Federal Register on March 9, 2012 (77 FR 14414). The BLM initially requested that the public submit comments in response to the Notice of Intent by July 5, 2012. The BLM continued to accept any public comments for an additional 90 days. By October 5, 2012, the BLM had received 584 comment letters. During the scoping period, the BLM held public meetings in Medford, Grants Pass, Klamath Falls, Salem, Springfield, Coos Bay, Roseburg, and Portland.¹¹³ At each of these meetings, the BLM provided a brief overview of the planning process and a list of questions to prompt feedback, and then opened the meeting for discussion. The BLM prepared a scoping report, which contains a summary of this scoping process. The scoping report and other scoping documents are available at <http://www.blm.gov/or/plans/rmpswesternoregon/scoping.php>.

During the winter of 2013, the BLM initiated a multi-phase outreach strategy to engage the public specifically on recreation management issues. The BLM sought to gain a better understanding of the social values associated with recreational users across western Oregon. This strategy included an interactive website and four regional workshops in Medford, Roseburg, Springfield, and Portland. The regional workshops included the participation of the National Park Service-Rivers, Trails and Conservation Assistance program, the Association of O&C Counties, the Outdoor Alliance, Travel Oregon, the Cow Creek Band of the Umpqua Tribe of Indians, and the Mazamas. The BLM designed this recreation outreach to answer planning questions, collect quantitative and qualitative data specific to recreation management area delineation, and to understand better the role, value, and importance that recreation plays within each planning region. Outreach also yielded data related to public demand for specific types of recreation activities, experiences, beneficial outcomes, and the desired character of BLM-administered recreation settings. **Appendix N** - Recreation key findings report contains a summary of the results of this outreach effort.

¹¹³ The BLM has listed the cities in this chapter in order by meeting date.

In June of 2013, the BLM released the Purpose and Need Statement for the RMPs for Western Oregon. While this is not a typical step in the planning process, the BLM shared the Purpose and Need Statement earlier than usual in order to augment dialogue on the direction of the planning process. The Purpose and Need Statement is available at <http://www.blm.gov/or/plans/rmpswesternoregon/files/purpose.pdf>.

In August of 2013, the BLM released the Analysis of the Management Situation for the RMPs for Western Oregon (USDI BLM 2013). The BLM managers use the Analysis of the Management Situation as a snapshot to understand the status of the BLM resources and management opportunities in western Oregon, and the BLM shared this document for informational purposes. The Analysis of the Management Situation is available at <http://www.blm.gov/or/plans/rmpswesternoregon/files/ams-rmps-western-oregon.pdf>.

During December of 2013, the BLM conducted four community listening sessions on elements of the RMP. The BLM held public meetings in Corvallis, Medford, Coos Bay, and Roseburg. The community listening sessions included BLM updates on the planning process and attendees had a chance to share their input with the BLM and each other through small group discussions. A report (USDI BLM 2014a) on the community listening sessions is available at <http://www.blm.gov/or/plans/rmpswesternoregon/files/comm-listen-report.pdf>.

On February 24, 2014, the BLM released the Planning Criteria (USDI BLM 2014b), which provided an in-depth look at guidance, policy, analytical methodology, and preliminary alternatives. The comment period for the Planning Criteria continued until March 31, 2014. The BLM received approximately 3,000 letters during this comment period. During March 2014, the BLM conducted seven public meetings about the Planning Criteria and the preliminary alternatives. The BLM held public meetings in Portland, Springfield, Salem, Roseburg, Coos Bay, Medford, and Klamath Falls. The BLM also held an additional public meeting in Roseburg with invited elected officials. The Planning Criteria is available at <http://www.blm.gov/or/plans/rmpswesternoregon/files/rmp-criteria.pdf>.

Additionally, the BLM has provided information to the public through various digital media outlets, including the BLM's public website, Twitter, and Facebook. The public can send inquiries to the agency at any time through a publicly available email address, BLM_OR_RMPs_WesternOregon@blm.gov.

The BLM is planning a series of public meetings after the release of the Draft RMP/EIS. The purpose of these meetings is to help members of the public understand the content of the Draft RMP/EIS and provide meaningful and constructive comments. There will likely be six “open-house” public meetings (one meeting per District) where people can engage with BLM employees on all resources addressed in the Draft RMP/EIS. The BLM will likely also be organizing issue-specific meetings on topics such as socio-economics, forestry, aquatics, and wildlife. Information on meeting locations and dates and more information about agency outreach is available at <http://www.blm.gov/or/plans/rmpswesternoregon/public.php>.

List of Recipients of the Draft RMP/EIS

The BLM will distribute the Draft RMP/EIS to a mailing list of those agencies, organizations, Tribes, and individuals that have requested copies. This mailing list, which includes approximately 1,700 hard copy mailings and 1,800 electronic copy mailings, is incorporated here by reference (USDI BLM, 2014).

Government-to-Government Relationships

Federally recognized tribes have a unique relationship with the Federal Government in that they are sovereign nations and retain inherent powers of self-government. They interact with the United States on a government-to-government level.

When preparing RMPs, the BLM consults with Tribes to provide Tribes with an opportunity to identify any issues or concerns that Tribes may have with the management of lands and resources in the decision area; to identify places of religious or cultural significance (and if any issues exist with access to places needed for the practice of traditional religions); and whether there are other Indian individual or traditional cultural leaders who the BLM should also contact.

There are nine federally recognized Tribes located within, or that have interests within, the planning area:

- The Confederated Tribes of Grand Ronde: www.grandronde.org
- The Confederated Tribes of Siletz Indians: www.ctsi.nsn.us
- The Coquille Indian Tribe: www.coquilletribe.org
- The Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians: www.ctclusi.org
- The Confederated Tribes of Warm Springs: www.warmsprings.com
- The Cow Creek Band of Umpqua Tribe of Indians: www.cowcreek.com
- The Klamath Tribes: www.klamathtribes.org
- The Quartz Valley Indian Reservation: www.qvir.com
- The Karuk Tribe: www.karuk.us

The BLM invited all of the above Federally-recognized Tribes to be formal cooperators in the RMP revisions because of their special expertise, as described below. The Confederated Tribes of Grand Ronde, the Confederated Tribes of Siletz Indians, the Coquille Indian Tribe, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, the Cow Creek Band of Umpqua Tribe of Indians, and the Klamath Tribes are formal cooperators in the RMP revisions, in addition to their government-to-government status.

In 2013, the BLM offered all Tribes within the planning area an opportunity to schedule individual Tribal listening sessions. The BLM met with five tribes on different dates spanning from May 14, 2013, to December 13, 2013.

In addition to their government-to-government relationship and their role as a formal cooperator, the Coquille Indian Tribe has a representative on the Westside Steering Committee, as noted below. The BLM has also agreed to meet regularly with the Coquille Indian Tribe to facilitate open and recurring communication. The Coquille Indian Tribe is directly engaged in the planning process, because the management of the Coquille Forest is subject by law (25 U.S.C. 715c(d)) to the standards and guidelines of forest plans for adjacent or nearby Federal forest lands. Title V of the Oregon Resource Conservation Act of 1996 (Public Law 104-208) included the creation of the Coquille Forest to be held in trust for the benefit of the Coquille Indian Tribe. The Act states that the Coquille Forest shall be managed “under

applicable State and Federal forestry and environmental protection laws, and subject to critical habitat designations under the Endangered Species Act, and subject to the standards and guidelines of Federal forest plans on adjacent or nearby Federal lands, now and in the future.” This Act also requires the Secretary of the Interior, through the Bureau of Indian Affairs, to take the Coquille Forest lands into trust for the benefit of the Coquille Indian Tribe. For the purposes of interpreting Title V of this Act, the management direction that will be described within the eventual RMP is synonymous with the “standards and guidelines” referenced in this Act.

Formal Cooperators

The FLPMA and NEPA provide direction regarding the coordination and cooperation of Federal agencies with other agencies and local and state governments and tribes. The FLPMA specifically emphasizes the need to ensure coordination and consistency of the BLM’s proposed actions with the plans and policies of other relevant jurisdictions. The Council on Environmental Quality’s regulations for implementing NEPA specifically requires cooperative relationships between lead and cooperating agencies.

Cooperating agency status provides a formal framework for governmental units (including local, State, Federal, and tribal) to engage in active collaboration with a lead Federal agency to implement requirements of the National Environmental Policy Act. For these RMP revisions, the BLM has worked with cooperators from many agencies. With all formal cooperators, the BLM has signed a memorandum of understanding, identifying the roles and responsibilities of the BLM and the cooperating agency in the planning process. **Table 4-1** contains a list of the formal cooperators for these RMP revisions.

Table 4-1. Formal cooperators.

Government Type	Cooperator
County Governments ¹¹⁴	Benton County
	Clackamas County
	Columbia County
	Coos County
	Curry County
	Douglas County
	Klamath County
	Lane County
	Lincoln County
	Linn County
	Marion County
	Multnomah County
	Polk County
	Tillamook County
Washington County	

¹¹⁴ With the exception of Benton County, all of the listed counties have authorized the Association of O&C Counties to act as the counties’ agent and representative in their role as cooperating agencies in this planning process. Occasionally, some counties represented by the Association of O&C Counties have had a county commissioner participate in the activities of the planning process. When that has happened, the county commissioner, rather than the Association of O&C Counties, has represented the county.

Government Type	Cooperator
	Yamhill County
State Government	State of Oregon ¹¹⁵
Federal Government	Environmental Protection Agency
	National Marine Fisheries Service
	U.S. Fish and Wildlife Service
	U.S. Forest Service
Tribes	Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians
	Confederated Tribes of Grand Ronde
	Confederated Tribes of Siletz Indians
	Coquille Indian Tribe
	Cow Creek Band of Umpqua Tribe of Indians
	Klamath Tribes

Working through a robust engagement process with neutral facilitation, the cooperators have provided expertise on much of the subject matter the BLM is addressing in the Draft RMP/EIS, as well as advice based on experience with similar planning efforts. The cooperators have provided feedback on public outreach sessions, data sources and analytical methods, and components of the draft alternatives. They have provided oral and written feedback and ideas throughout the process of developing the Draft RMP/EIS. DS Consulting, working through Oregon Consensus, has facilitated all meetings of the full Cooperating Agency Advisory Group and the five individual working groups.

The full Cooperating Agency Advisory Group first met in the summer of 2012, when the facilitators led them through an orientation to the cooperating agency task and assisted the group in defining its desired outcomes. In the fall and winter of 2012, the Cooperating Agency Advisory Group met five times to provide and review RMP scoping comments and to discuss the RMP process. They also met three times to provide comments and review documents developed by the BLM for the planning effort, including the purpose and need for action and the planning criteria, in addition to providing written comments on the BLM’s methodology for analyzing the effects of the alternatives. The Cooperating Agency Advisory Group met once to provide feedback on the public meetings held in 2013 and 2014. The BLM conducted a rehearsal of the public meetings with the Cooperating Agency Advisory Group, which provided feedback on the content and format, leading the BLM to make improvements to the outreach sessions. The Cooperating Agency Advisory Group also met five times to discuss the results of the analysis and to provide feedback to the BLM on the identification of a preferred alternative.

In addition to meeting as a full group periodically throughout the development of the Draft RMP/EIS, the Cooperating Agency Advisory Group also created five working groups in the winter of 2013 in order to facilitate a more detailed level of engagement with the BLM. These groups focused, respectively, on the following topics: aquatics, outreach, terrestrial, socio-economics, and tribal issues.

The Aquatics Working Group met six times during the development of the Draft RMP/EIS. The BLM updated the group on the status of alternative development. The working group provided comments on the

¹¹⁵ Department of Environmental Quality, Department of Fish and Wildlife, and Department of Forestry are the Oregon State agencies actively engaged in the planning process.

development of the riparian management strategies and the methodology for analyzing impacts of the alternatives on aquatic habitat and water quality.

The Outreach Working Group met six times during the development of the Draft RMP/EIS. The group discussed outreach planning and goals and provided input on the outreach timeline. During the winter of 2013, they met to revisit ideas for outreach during the planning criteria comment period.

The Terrestrial Working Group met five times during the development of the Draft RMP/EIS. The BLM updated this group on the development of the terrestrial components of the RMP (e.g., alternative approaches for the large block reserve design). The group reviewed and provided input on the methodology for analyzing the impacts of the alternatives on terrestrial resources and met to discuss and provide feedback on components of the draft alternatives related to timber harvest, northern spotted owl conservation, marbled murrelet conservation, and fire and fuels management.

The Socio-Economic Working Group met eight times during the development of the Draft RMP/EIS. This group reviewed and refined the methodology for analyzing the socio-economic analysis of the alternatives, including working with BLM and its contractors on the development of a method to analyze impacts to community capacity and resiliency. Members of this group assisted the BLM in obtaining county economic data and identifying city officials for information-collection interviews.

The Tribal Working Group met six times during the development of the Draft RMP/EIS. This group provided input on the process by which the BLM conducted tribal listening sessions and consultation. They also provided input on aspects of the draft alternatives and analytical methodology that address resources of concern to the tribes represented in the group. Members of the group also reviewed and provided content for appendices to the Tribal Interests section of the Draft RMP/EIS.

Additionally, the Coquille Indian Tribe, in their capacity as a cooperating agency, suggested to the BLM a riparian strategy. The BLM worked with the Coquille Indian Tribe to develop this suggestion in detail and include it among the alternatives in the Draft RMP/EIS, in addition to the riparian strategies developed by the Riparian Technical Team described below.

The BLM district managers and planning personnel have met with individual county commissioners on an ongoing basis to provide updates on progress and key milestones. As noted above, several county governments are formal cooperators in the planning process. While the Association of O&C Counties represents most of the counties at the Cooperating Agency Advisory Group meetings, BLM district managers also maintain relationships with local county representatives.

Documenting Disagreement or Inconsistencies with Cooperating Agencies¹¹⁶

The Cooperating Agency Advisory Group and its sub-groups have provided the BLM with a unique opportunity to share the BLM's thinking early in the planning process and for the BLM to hear the ideas and concerns cooperating agencies have with how the BLM has been planning and analyzing thus far. At this point in the process, all cooperators have had numerous opportunities to express their opinions about content and process, and to make suggestions about how the BLM might improve its plan. By and large,

¹¹⁶ This summary documenting disagreement or inconsistencies with cooperating agencies was provided to the BLM by the outside, impartial facilitation team from Oregon Consensus after reviewing meeting summaries and letters from the Cooperating Agency Advisory Group.

most disagreements that have arisen have been resolved through dialogue at meetings of the full group and its work groups. Nearly all cooperators have been positive about the level of engagement and the general direction of the planning process. However, the Association of O&C Counties (which is the designated representative of 15 counties) has continued to express a high level of concern about the BLM’s planning process.

Specifically, the Association of O&C Counties continues to assert that the BLM’s Purpose and Need statement was fatally flawed by failing to place sustained yield timber production as the primary purpose of the planning effort. In letters to the BLM Director, State Director and Project Manager, and at nearly all Cooperating Agency meetings, the Association of O&C Counties representatives have maintained that the BLM should have placed sustained yield timber as the primary focus of the planning effort with all other actions required by other laws and treaties falling secondary to that purpose. As a result, the Association of O&C Counties has expressed disagreement with the purpose and need, the planning criteria, and the range of alternatives. The Association of O&C Counties maintains that the O&C Act and legal opinions that have stemmed from it mandate that the BLM should first provide a minimum of 500 million board feet of sustained yield timber harvest per year, then balance all other needs after that has been provided. The Association of O&C Counties and its member counties have stated that, because the BLM has sought to analyze what a balanced approach between the competing laws, treaties and needs of all cooperating agencies might look like, the BLM has created a range of alternatives that is too narrow to achieve the primary purpose and the level of sustained yield required by law and court decisions.

That said, the Association of O&C Counties continues to attend and actively participate in the Cooperating Agency Advisory Group and its work groups, making certain that all members are aware of this fundamental disagreement—and requesting that the BLM broaden the range of alternatives by including the alternative developed in the 2008 Western Oregon Plan Revision.

Consultation

Endangered Species Act

Before signing a Record of Decision on the RMP revisions, the BLM will consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service under Section 7(a)(2) of the Endangered Species Act (ESA). The BLM, U.S. Fish and Wildlife Service, and National Marine Fisheries Service signed an ESA Consultation Agreement, which identifies responsibilities for each agency and defines the processes, products, actions, timeframe, and expectations for the consultation process. The ESA Consultation Agreement, signed June 18, 2013, is available at <http://www.blm.gov/or/plans/rmpswesternoregon/files/esa-consult-agree.pdf>.

As part of this consultation, the BLM will prepare biological assessments of the potential effects of implementing the proposed RMP. In these biological assessments, the BLM will describe the proposed RMP, the geographic area addressed by the RMP, and the manner in which the RMP would affect threatened, endangered, and proposed species and their designated and proposed critical habitats.

As part of this consultation, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service will provide their biological opinions. These biological opinions will include assessments of the status of the species and critical habitats involved, contain reviews of the potential effects of the RMP on these species and habitats, and provide evaluations of whether the RMP would be likely to jeopardize the continued existence of any species or destroy or adversely modify their critical habitats. The U.S. Fish and Wildlife Service and National Marine Fisheries Service will prepare separate biological opinions dealing with terrestrial and aquatic species under their respective ESA jurisdiction. Additional

information on the biological assessments and biological opinions is available in the ESA Consultation Agreement.

In addition to their role as formal cooperators, the U.S. Fish and Wildlife Service and National Marine Fisheries Service have met with the BLM repeatedly throughout the planning in preparation for the ESA consultation on the RMPs for Western Oregon. As part of that work and consistent with the ESA Consultation Agreement, the BLM and U.S. Fish and Wildlife Service have met as a Terrestrial Technical Team in April 2013, September 2013, January 2014, February 2014, and March 2014 to discuss the analytical methodology for evaluating the effects of the alternatives on listed species and producing analytical information for the biological assessments. The BLM also met directly with the U.S. Fish and Wildlife Service in April 2014 to discuss specifically the forest management approach for northern spotted owl critical habitat in Alternative D considered in the Draft RMP/EIS.

The BLM convened a group including representatives of the National Marine Fisheries Service and Environment Protection Agency in April and May 2013 to develop a strategic proposal for riparian management. The Environmental Protection Agency has participated in these meetings in the capacity of their technical expertise related to water quality. The BLM, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Environmental Protection Agency met as a Riparian Technical Team to develop that strategic proposal in detail to be included among the alternatives in the Draft RMP/EIS. DS Consulting facilitated all meetings of the Riparian Technical Team. The Riparian Technical Team met seven times from August 2013 to January 2014 and presented their work to the Cooperating Agency Advisory Group on January 30, 2014.

In addition, the BLM has met directly with the National Marine Fisheries Service in March 2014, April 2014, and June 2014 to discuss analytical methodology for evaluating the effects of the alternatives on listed fish species and producing analytical information for the biological assessment. The BLM met again in December 2014 with the National Marine Fisheries Service, Environmental Protection Agency, and U.S. Fish and Wildlife Service to continue discussions on the biological needs of listed fish species.

Water and Air Quality Management

As part of these RMP revisions, the BLM will concurrently coordinate with various agencies on water and air quality management. The BLM will coordinate with the Environmental Protection Agency and the Oregon Department of Environmental Quality (the federally designated management agency) on water quality standards and other requirements of the federally designated management agency as authorized by the Clean Water Act. Similarly, the BLM will coordinate with the Environmental Protection Agency, Oregon Department of Environmental Quality, and U.S. Forest Service when authorizing implementation actions to minimize the impacts of the emissions from prescribed burns.

List of Preparers

Westside Steering Committee

The Westside Steering Committee is comprised of BLM Oregon/Washington Deputy State Director - Division of Resources, the six BLM district managers represented in the RMP revisions, and a representative from the Coquille Indian Tribe. This committee provides leadership and direction to the RMP revisions planning process.

Key Project Staff

An interdisciplinary team of resource specialists and managers from the BLM districts and state office, and contract personnel prepared the Draft RMP/EIS for the RMPs for Western Oregon. The following table lists the staff, the organization where each staff member works, and their area of responsibility. Brief biographies for each BLM interdisciplinary team member are included below in **Table 4-2**.

Table 4-2. List of key project staff.

Name	BLM Office	Area of Responsibility
Michael Allen	Oregon State Office	Management and Program Analyst
Stewart Allen	Oregon State Office	Socioeconomics
Peter Broussard	Coos Bay District	Sustainable Energy
Mark Brown	Oregon State Office	Project Manager
Dan Carpenter	Coos Bay District	Hydrology
Susan Carter	Roseburg District	Rare Plants and Fungi
J. Byron Clayton	Oregon State Office	Lands and Realty
Lori Crumley	Lakeview District	Grazing and Wild Horses
Craig Ducey	Oregon State Office	Inventory Data Support
Louisa Evers	Oregon State Office	Air Quality and Climate Change
Paul Fyfield	Oregon State Office	Cartography
Eric Greenquist	Oregon State Office	Wildlife – Northern Spotted Owl
Richard Hardt	Oregon State Office	Interdisciplinary Team Leader
Claire Hibler	Salem District	Invasive Species and Areas of Critical Environmental Concern
Eric Hiebenthal	Oregon State Office	GIS Data Management
Aimee Hoefs	Coos Bay District	Writer, Editor, and Records
Carolina Hooper	Oregon State Office	Vegetation Modeling
Zach Jarrett	Salem District	Recreation, Visual Resource Management, and the National Landscape Conservation System
Craig Kintop	Roseburg District	Forest Management
Sarah Levy	Oregon State Office	Public Affairs Officer
Rex McGraw	Roseburg District	Wildlife – All but the Northern Spotted Owl
Arthur Miller	Oregon State Office	GIS and Data Analysis
Diane Parry	Medford District	Minerals
Heather Partipilo	Coos Bay District	Assistant Editor
Lauren Pidot	Oregon State Office	Associate Interdisciplinary Team Leader
Cory Sipher	Roseburg District	Fisheries
Dale Stewart	Oregon State Office	Soils
Brian Thauland	Oregon State Office	Roads
Shelli Timmons	Oregon State Office	Management Analyst
Heather Ulrich	Eugene & Salem Districts	Cultural Resources and Tribal Interests
Jena Volpe	Medford District	Fire and Fuels
Abe Wheeler	Roseburg District	Forest Management

Mike Allen – Management and Program Analyst. Mike earned a Bachelor of Science in Wildlife Management at Humboldt State University. Mike started his 37-year career with the BLM as a wildland firefighter on the Lakeview District. That led to wildlife biologist positions in Lakeview and Prineville.



Chapter 4 – Consultation and Coordination

He worked 16 years on the Salem District as a Natural Resource Specialist performing wildlife surveys, timber sale preparation, and public outreach. Mike has been a Management and Program Analyst at the Oregon State Office for 3 years.

Stewart Allen – Socioeconomics. Stewart earned a Bachelor of Arts in mass communications and a Bachelor of Arts in psychology at the University of Utah, a Master of Arts in social/environmental psychology at Claremont Graduate School, and a Ph.D. in forestry (with a minor in psychology) at the University of Montana. He has 34 years of experience in the human dimensions of natural resources including 20 years with the Federal Government and one and a half years with the BLM as Socioeconomic Specialist, a zoned position shared by Oregon/Washington, California, and Alaska.

Peter Broussard – Sustainable Energy. Pete earned a Bachelor of Science in mechanical engineering at the University of Southwestern Louisiana. Registered as a professional engineer for 36 years, he currently holds professional engineering licenses in three states. Most of his private-sector career has been in the electric utility, gas pipeline, and petroleum industries. His public service includes eight years in the military as a combat engineer, and five years with the BLM as the Engineering Supervisor in the Coos Bay District.

Mark Brown – Project Manager. Mark Brown currently serves as the RMPs for Western Oregon Project Manager in the BLM Oregon State Office. He previously served as the BLM Partnership Coordinator. His federal career began as a Presidential Management Fellow with the National Park Service and U.S. Forest Service before joining the BLM in 2002. He earned a Master of Environmental Management from Yale University, School of Forestry and Environmental Studies, and a Master of Public Administration at Portland State University, Hatfield School of Government.

Dan Carpenter – Hydrology. Dan earned a Bachelor of Science in soil conservation from Washington State University. He has worked as a professional hydrologist for the past 35 years with the U.S. Forest Service and the BLM on the Oregon Coast, Western Cascades, and Great Basin in Nevada. He is currently the District Hydrologist in the Coos Bay District.

Susan Carter – Rare Plants and Fungi. Susan earned a Bachelor of Arts in botany and environmental biology (double major) from Humboldt State University and has 25 years of experience working as a botanist with the BLM and the U.S. Forest Service. She is currently the District Botanist in the Roseburg District.

J. Byron Clayton – Lands and Realty. Byron earned a Bachelor of Arts in geography at Appalachian State University and a Master of Science in geography at Portland State University. He began work for the BLM in 2001 as a student cartographer with the Land Records Team in the Branch of Lands and Minerals. He is currently the Supervisory Geographer of the Land Records Team in the Branch of Geographic Sciences in the BLM Oregon State Office.

Lori Crumley – Grazing and Wild Horses. Lori earned a Bachelor of Science in range ecology and a Master of Science in plant science at the University of Idaho. She has seven years of experience working for the Federal Government as a Range Management Specialist. For the last three years, she has been a Range Management Specialist for the Lakeview Field Office in the Lakeview District.

Craig Ducey – Inventory Data Support. Craig earned a Bachelor of Science in botany at the University of Wyoming and a Master of Science in geography at Portland State University. He has 14 years of experience as a GIS/Remote Sensing Specialist in the BLM Oregon State Office.

Louisa Evers – Air Quality and Climate Change. Louisa earned a Bachelor of Science in forestry from the University of Tennessee, a Master of Science in forestry with an emphasis in fire ecology from the University of Idaho, and a Ph.D. in environmental science with an emphasis in rangeland ecology from Oregon State University. She has 28 years of experience with BLM and the U.S. Forest Service in fuels and fire management, fire ecology, vegetation ecology, and climate change. She is currently the Research Liaison and Climate Change Coordinator in the BLM Oregon State Office.

Paul Fyfield – Cartography. Paul earned a Bachelor of Arts and a Master of Science in geography at Portland State University. He has worked for the BLM Oregon State Office in Portland since 2001. He is currently a Cartographer with the BLM Oregon State Office.

Eric Greenquist – Wildlife – Northern Spotted Owl. Eric earned a Bachelor of Arts in biology at the University of Missouri and a Master of Science in wildlife ecology at Ohio University. He has worked as a professional wildlife biologist for 37 years, including 34 years with the BLM with the past 22 years in western Oregon. He is the District Wildlife Biologist in the Eugene District, where he leads the wildlife and endangered species management programs.

Richard Hardt – Interdisciplinary Team Leader. Richard earned a Bachelor of Arts in natural sciences at Johns Hopkins University, a Master of Landscape Architecture at Harvard University, and a Ph.D. in Forest Resources at the University of Georgia. He has 20 years of experience working for the BLM and is currently a planner in the BLM Oregon State Office.

Claire Hibler – Invasive Species and Areas of Critical Environmental Concern. Claire earned a Bachelor of Science in forest management at Oregon State University and a Bachelor of Arts in general biology at Humboldt State University. Claire is a founding member of, and participates on, the steering committee for the Western Invasives Network, which spans northwest Oregon, part of southwest Washington, and the Columbia River Gorge. She has worked in the Salem District for more than 25 years, serving as the District Botanist since 2001.

Eric Hiebenthal – GIS Data Management. Eric earned a Bachelor of Science in geography at Oregon State University. He has 18 years of experience with the BLM working with GIS, specializing in GIS Data Management. He is currently a GIS Data Management Specialist in the BLM Oregon State Office.

Aimee Hoefs – Writer, Editor, and Records. Aimee earned a Bachelor of Arts in molecular biology at Colgate University. She has worked for the BLM for nineteen years and has been a NEPA specialist for the past seven years. She is currently the Myrtlewood Field Office Planning and Environmental Coordinator in the Coos Bay District.

Carolina Hooper – Vegetation Modeling Lead. Carolina earned a Bachelor of Science in forestry at Humboldt State University and a Master of Science in forestry at Oregon State University. She has worked in forest inventory and planning for the last 20 years with the U.S. Forest Service and the BLM. She is currently a Forester/Resource Information Analyst in the BLM Oregon State Office.

Zach Jarrett – Recreation, Visual Resource Management, and the National Landscape Conservation System. Zach earned a Bachelor of Science in recreation resource management at Oregon State University and a Master of Science in natural resource planning at Humboldt State University. He has 13 years of experience working for the BLM in western Oregon and is currently an outdoor recreation planner in the Oregon State Office working on regional recreation and travel planning projects.



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Craig Kintop – Forest Management. Craig earned a Bachelor of Science in forest resources management at the University of Minnesota. He has more than 38 years of experience working for the U.S. Forest Service and the BLM and is currently the District Forester/Silviculturist in the Roseburg District.

Sarah Levy – Public Affairs Officer. Sarah earned a Bachelor of Arts at the University of Southern California, and a Master of Science in natural resources and environment at the University of Michigan, School of Natural Resources and Environment. Sarah has six years of experience with the U.S. Forest Service working in public affairs, recreation, and research and is currently a Public Affairs Officer with the BLM Oregon State Office.

Rex McGraw – Wildlife. Rex earned a Bachelor of Science and a Master of Science in wildlife biology at the University of Montana, Missoula. He has 16 years of experience with the BLM and is currently the District Wildlife Biologist in the Roseburg District.

Arthur Miller – GIS and Data Analysis Lead. Arthur earned Bachelor of Science and Bachelor of Arts in geography at Oregon State University. He has over 25 years of experience working with the BLM in Oregon, with an emphasis on the use of geographic information systems for resource and land use planning. He is currently a Geographic Information Specialist with the BLM Oregon State Office.

Diane Parry – Minerals. Diane earned a Bachelor of Arts in geology at Humboldt State University. She has 28 years of experience as a geologist with the BLM and is currently the Lead Geologist in the Medford District, zoned to the westside of Oregon.

Heather Partipilo – Assistant Editor. Heather earned her Bachelors of Science degree in Botany and a Master of Science degree in Botany and Plant Pathology from Oregon State University. She has worked on the Lakeview District as a botanist and is currently a Planning and Environmental Coordinator for the Umpqua Field Office of the Coos Bay District.

Lauren Pidot – Associate Interdisciplinary Team Leader. Lauren earned a Bachelor of Arts in government at Wesleyan University and a Master of Science in natural resource policy at the University of Michigan. She has over six years of experience with the BLM and is currently a planner for the BLM Oregon State Office.

Cory Sipher – Fisheries. Cory earned a Bachelor of Science in biology at the State University of New York at Cortland and a Master of Science in fishery biology at Colorado State University. Cory has been with the BLM for 12 years, starting his career as a fisheries biologist in the South River Field Office of the Roseburg District. He has served as the District Fisheries Biologist in the Roseburg District since 2012.

Dale Stewart – Soils. Dale earned a Bachelor of Science in forestry and a Master of Science in biological sciences at Michigan Technological University. He has over 35 years of experience working in the forestry, soil, and hydrology disciplines with the BLM and U.S. Forest Service in Oregon. He is currently the Soil, Water, and Air Program Lead in the BLM Oregon State Office.

Brian Thauland – Roads. Brian earned a Bachelor of Science in forest management at Iowa State University. He has 36 years of experience with the BLM in forest engineering and currently provides transportation program support at the BLM Oregon State Office.

Shelli Timmons – Management Analyst. Shelli earned a Bachelor of Arts in Business Communication at the University of Phoenix. Shelli has over 15 years of experience in the administration and management fields, the last 4 of which have been in the BLM Oregon State Office.

Heather Ulrich – Cultural Resources and Tribal Interests. Heather earned a Bachelor of Arts and Master of Science in anthropology at the University of Oregon. She has been with the BLM since 2007 and currently works as the District Archaeologist and Tribal Liaison in both the Salem and Eugene Districts.

Jena Volpe – Fire and Fuels. Jena earned a Master of Science in biology/fire ecology from Southern Oregon University. She has 12 years of experience in fire ecology and fuels management with the National Park Service and the BLM in southwest Oregon and is currently a Fire Ecologist in the Medford District.

Abe Wheeler – Forest Management. Abe earned an Associate of Arts in business administration at Linn Benton Community College, and a Bachelor of Science in forest management at Oregon State University. He has seven years of experience with the BLM in field forestry, timber sale contract preparation, sale planning, and project leadership. Abe was also a key player in the recent design, analysis, and implementation of Roseburg District's Secretarial Pilot Project, as well as other more recent ecological forestry projects. He is currently a Plans Forester in the South River Field Office of the Roseburg District.

Several contract efforts support the work of the interdisciplinary team:

- A team of specialists at Mason, Bruce, & Girard, Inc., under the project management of Mark Rasmussen (Mason, Bruce, & Girard, Inc.), has conducted vegetation modeling of the alternatives using the Woodstock Optimization Platform model (Woodstock). Carolina Hooper of the interdisciplinary team has directed this work.
- A team of specialists at Environmental Resources Management (ERM) and subcontractors, under the project management of Clive Graham, ERM, has conducted socioeconomic analysis of the alternatives. Stewart Allen of the interdisciplinary team has directed this work.
- David W. LaPlante of Natural Resource Geospatial in Yreka, California, and Jeffrey R. Dunk of Humboldt State University in Arcata, California, have assisted the BLM with its evaluation of the northern spotted owl. They used the MaxEnt computer model to forecast how northern spotted owl habitat conditions would change on BLM-administered lands in western Oregon under different management scenarios. They used the spatially explicit, individual-based population model HexSim to forecast how northern spotted owls would respond demographically to such changes. Eric Greenquist and Craig Ducey of the interdisciplinary team have directed this work.
- A team of specialists at ECONorthwest assisted the BLM with its evaluation of recreation supply and demand throughout the project area. ECONorthwest collected recreation supply and demand data to identify particularly valuable recreation activities or resources for development, and estimate the value of recreation use and improvements. Zach Jarrett of the interdisciplinary team has directed this work.

Acronyms and Abbreviations

This section provides the main acronyms and abbreviations used in the document.

ACEC	area of critical environmental concern
AQI	Air Quality Index
ASQ	allowable sale quantity
AUM	animal unit month
bf	board foot or board feet
BLM	Bureau of Land Management
BMP	best management practice
C	carbon
CBWR	Coos Bay Wagon Road
CDP	Census Designated Place
CFR	Code of Federal Regulations
CMAI	culmination of mean annual increment
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CVS	Current Vegetation Survey
DBH	diameter at breast height
DPS	distinct population segment
EIS	environmental impact statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
FEMAT	Forest Ecosystem Management Assessment Team
FLPMA	Federal Land Policy and Management Act
FOI	Forest Operations Inventory
FR	Federal Register
FRI	fire return interval
FS	U.S. Forest Service
FVS	Forest Vegetation Simulator
FWS	U.S. Fish and Wildlife Service
GFMA	General Forest Management Area
GIS	geographic information system
GNN	gradient nearest neighbor
HITA	High Intensity Timber Area
HLB	Harvest Land Base
HMA	herd management area
HUC	hydrologic unit code
ILAP	Integrated Landscape Assessment Project
LITA	Low Intensity Timber Area
LSR	Late-Successional Reserve
Mbf	thousand board feet
Mg	megagram
MITA	Moderate Intensity Timber Area
Mmbf	million board feet
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act



Acronyms and Abbreviations

NMFS	National Marine Fisheries Service\
NO _x	nitrogen oxides
O ₃	ozone
O&C	Oregon and California Lands Act
ODEQ	Oregon Department of Environmental Quality
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OHTA	Owl Habitat Timber Area
OHV	off-highway vehicle
ORV	outstandingly remarkable value
PCT	Pacific Crest Trail
PM _{2.5}	particular matter with a diameter less than or equal to 2.5 micrometers
PM ₁₀	particular matter with a diameter less than or equal to 10 micrometers
QMD	quadratic mean diameter
RCP	representative concentration pathway
RMA	Recreation Management Area
RNA	Research Natural Area
ROW	right-of-way
SCC	social cost of carbon
SFP	special forest product
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPTH	site-potential tree height
SSRA	Smoke Sensitive Receptor Area
SYU	Sustained Yield Unit
RMP	resource management plan
RNA	research natural area
ROD	record of decision
SRMA	Special Recreation Management Area
TDSA	Tribal Designated Statistical Area
Tg	teragram
TMDL	Total Maximum Daily Load
TPCC	Timber Productivity Capability Classification
UTA	Uneven-aged Timber Area
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USC	United States Code
VOC	volatile organic compound
VRI	visual resource inventory
VRM	visual resource management

Glossary

Aboriginal homelands – Lands referenced in treaties and or legislation, although not officially ceded by a ratified treaty. It can also describe an area where people originated from prior to being relocated to reservations.

Acquired lands – Public lands that the Federal government has obtained by purchase, condemnation, gift, or exchange, as distinguished in the decision area from Coos Bay Wagon Road lands, O&C lands, and public domain lands.

Active crown fire – A solid flame consistently maintained in the canopy of the stand of trees or shrubs.

Age class – A system that categorizes forest *stands* by interval of years. For this analysis, the interval is 10-year increments. For example, a stand of ten-year age class of 60 includes ages 56-65.

Aggregated retention – See *variable-retention harvest system*.

Air quality attainment area – A geographic area with air quality as good as or better than the National Ambient Air Quality Standards as defined in the Clean Air Act. An area may be in attainment for one or more criteria pollutants but also be in nonattainment for one or more other criteria pollutants.

Air quality maintenance area – A geographic area that had a history of nonattainment, but are now consistently meeting the National Ambient Air Quality Standards. Maintenance areas have been re-designated by the U.S. Environmental Protection Agency (EPA) from “nonattainment” to “attainment with a maintenance plan,” or designated by the Environmental Quality Commission.

Air quality nonattainment area – A geographic area that has not consistently met the clean air levels set by the U.S. Environmental Protection Agency in the National Ambient Air Quality Standards.

Allotment – An area of land in which one or more livestock operators graze their livestock. Allotments generally consists of BLM-administered lands but may include other federally managed, state-owned, and private lands.

Allowable Sale Quantity/Annual Productive Capacity – These terms are synonymous. The timber volume that a forest can produce continuously under the intensity of management described in the RMP for those lands allocated for permanent timber production.

Anadromous fish – Fish that are born and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce.

Ancestral territory – Homelands and traditional territory of ancestral Tribes. Lands that may or may not have been formally ceded by a Tribe. May reference lands from which Tribes were forcibly removed and may or may not have been compensated for later. May also reference reservation lands that were taken back later.

Animal Unit Month (AUM) – The amount of forage necessary for the sustenance of one cow or its equivalent for 1 month.

Annual productive capacity – See *allowable sale quantity*.

Annual sustained yield capacity – Synonymous with *annual productive capacity*.

Aquatic habitat – Habitat that occurs in free water.

Area of Critical Environmental Concern (ACEC) – 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.

Basal area – The cross-sectional area of a single plant stem, of all stems of a species in a stand, or of all plants in a stand (including the bark) that is measured at breast height (about 4.5 feet up from the ground) for larger plants (like trees) or measured at ground level for smaller plants.

Beneficial use – In water use law, reasonable use of water for a purpose consistent with the laws and best interest of the people of the state. Such uses include, but are not limited to, the following: instream, out of stream, and ground water uses, domestic, municipal, industrial water supply, mining, irrigation, livestock watering, fish and aquatic life, wildlife, fishing, water contact recreation, aesthetics and scenic attraction, hydropower, and commercial navigation.

Best Management Practices (BMPs) – Methods, measures, or practices designed to prevent or reduce water pollution. Usually, BMPs are applied as a system of practices rather than a single practice.

Bioclimatic envelope – The range of climatic conditions in which a species can survive and reproduce.

Biological legacies – An organism, a reproductive portion of an organism, or a biologically derived structure or pattern inherited from a previous ecosystem. Biological legacies often include large trees, snags, and down logs left after harvesting to provide refugia and to enrich the new stand structurally. See *variable-retention harvest*.

Biological Opinion – The document resulting from formal consultation that states the opinion of the Fish and Wildlife Service or National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the continued existence of listed species or results in destruction or adverse modification of critical habitat.

Biomass – Plant materials used as a source of renewable combustible fuel. Also includes woody material ground up into fiber and used in secondary wood products.

Board foot (BF) – Lumber or timber measurement term. The amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide.

Breeding, nesting, roosting, foraging habitat – The vegetation with the age class, species composition, structure, sufficient area, and adequate food source to meet some or all of the life needs of specific species.

British thermal unit – A common unit of measuring energy in the English Inch-Pound (vs. Metric) system. Abbreviated Btu or BTU, it is the amount of heat required to raise 1 pound of water 1 °F.

Broadcastburn (ing) – A prescribed burning activity where fire is applied generally to most or all of an area within well-defined boundaries for reduction of fuel hazard, as a resource management treatment, or both. Canopy is generally either non-existent or not an objective to retain.

BTU – See *British thermal unit*.

Bureau sensitive species – Plant or animals 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 BLM State Director.

Cable yarding – The movement of cut trees or logs from the area where they are felled to the *landing* on a system composed of suspended cables.

Candidate species – Taxa for which the U.S. Fish and Wildlife Service has sufficient information on their status and threats to propose the species for listing as endangered or threatened under the Endangered Species Act, but for which issuance of a proposed rule is currently precluded by higher priority listing actions. Separate lists for plants, vertebrate animals, and invertebrate animals are published periodically in the Federal Register.

Canopy – The area consisting 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 multi-layered condition can result.

Canopy base height – The average distance (height) from the ground level to the lower branches of the trees that form the main forest canopy where there is sufficient crown loading in needle and 1-hour fuels for a certain level of surface fire intensity to transition into the crown.

Canopy bulk density – The mass of available canopy fuel per unit canopy volume.

Canopy cover – a measure of the percentage of ground covered by a vertical projection of the tree crowns.

Canopy closure – The proportion of the sky hemisphere obscured by vegetation when viewed by a single point.

Ceded lands – Tribal lands acquired by the United States government that a tribe ceded, granted, relinquished, sold, or lost rights to under a treaty or other agreement or law of the United States in exchange for rights and/or benefits.

Checkerboard ownership – A land ownership pattern in which every other section (square mile) is in federal ownership as a result of federal land grants to early western railroad companies.

Clearcut – A timber harvesting method that removes essentially all trees in an area, producing a fully exposed microclimate over the majority of the harvested area.

Climax stage – See *seral stages*.

Closed canopy – The degree to which the canopy (forest layers above one's head) blocks sunlight or obscures the sky. It can only be accurately determined from measurements taken under the canopy to account for openings in the branches and crowns.

Coarse woody debris/downed woody debris – Portion of a tree that has fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter.

Conditional crown fire – A crown fire that will not initiate within the stand under given conditions, but canopy fuels are sufficiently dense to support an active crown fire entering from an adjacent stand.

Commercial forest land base – Forest lands declared suitable for producing timber and having a minimum level of productivity of 20 cubic feet/acre/year. Contrast with *harvest land base*.

Commercial thinning – Any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting. See *thinning*.

Condition class (fire regimes) – Fire regime condition classes are a measure describing the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components, such as species composition, structural stage, stand age, canopy closure, and fuel loadings. One or more of the following activities may have caused this departure: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, introduced insects or disease, or other management activities.

Conservation strategy – A management plan for a species, group of species, or ecosystem that prescribes standards and guidelines that if implemented provide a high likelihood that the species, groups of species, or ecosystem, with its full complement of species and processes, will continue to exist well-distributed throughout a planning area.

Consultation – A formal interaction between the U.S. Fish and Wildlife Service and another federal agency when it is determined that the agency's action may affect a species that has been listed as threatened or endangered or its critical habitat.

Convection – Transfer of heat by the automatic circulation of fluids.

Cooperating agency – A tribe or Federal, State, or local government agency that assists the lead federal agency in developing an environmental assessment or environmental impact statement. These can be any agency with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6).

Coos Bay Wagon Road (CBWR) Lands – Public lands that were granted to the Southern Oregon Company for construction of a military road, but subsequently reconveyed to the United States.

Council on Environmental Quality (CEQ) – An advisory council to the President of the US established by the National Environmental Policy Act of 1969. It reviews federal programs to analyze and interpret environmental trends and information.

County service area – Refers to those counties where tribal members reside that all tribally-operated programs and services are available to them. The particular number and specific counties vary from Tribe to Tribe.

Criteria pollutants – Six principle pollutants considered most harmful to public health and the environment and that can be monitored effectively. They include carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), sulfur dioxide (SO₂), ozone (O₃), and particulate matter of two different aerodynamic diameters (PM₁₀ and PM_{2.5}).

Critical habitat – Under the Endangered Species Act, critical habitat is defined as: (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.

Crown – Upper part of a tree or other woody plant that carries the main system of branches and the foliage.

Crown fire – A fire that burns in the upper tree or shrub canopy. Crown fires are sometimes classified as independent (conditional) or dependent (active or passive) to distinguish the degree of independence from the surface fire.

Cubic foot – A unit of solid wood, one foot square and one foot thick.

Culmination of mean annual increment (CMAI) – The age in the growth cycle of a tree or stand at which the mean annual increment (MAI) for which some attribute, e.g., wood volume of a tree or stand growth is at maximum. At culmination, MAI equals the periodic annual increment (PAI).

Cultural resources – Locations of human activity, occupation, or use. Cultural resources include archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and locations of traditional cultural or religious importance to specified social and/or cultural groups.

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

Current Vegetation Survey – BLM's regional permanent plot inventory. Each sampling point has a series of nested concentric sub-plots, in which trees of different diameter classes are measured. Live and dead trees, coarse woody debris, and understory vegetation are measured. The plots are located on a 1.7-mile grid, on BLM land, if at least one subplot is forested.

Debris flow – A rapid moving mass of rock fragments, soil, and mud, with more than half of the particles being larger than sand size.

Decision area – The lands within the planning area of this RMP revisions for which the BLM has authority to make land use and management decisions. In general, the BLM has jurisdiction over all BLM-administered lands (surface and subsurface) and over subsurface minerals in areas of split estate (i.e., areas where the BLM administers federal subsurface minerals, but the surface is not owned by the BLM).

Deciview – a unit of visibility proportional to the logarithm of the atmospheric extinction; a measure of how hazy the atmosphere is over a period; the smaller the number, the clearer the air.

Desired future condition – For rangeland vegetation, the condition of rangeland resources on a landscape scale that meet management objectives. It is based on ecological, social, and economic considerations during the land planning process. It is usually expressed as ecological status or management status of vegetation (species composition, habitat diversity, and age and size class of species) and desired soil qualities (soil cover, erosion, and compaction). In a general context, desired future condition is a portrayal of the land or resource conditions that are expected to result if goals and objectives are fully achieved.

Detrimental soil disturbance – The limit where the innate soil properties change and the inherent capacity to sustain growth of vegetation is reduced. Detrimental soil disturbance generally represents unacceptable levels of erosion, loss of organic matter, soil compaction, soil heating, or soil displacement.

Diameter breast height (DBH) – The diameter of the stem of a tree measured at 4.5 feet above the ground level on the uphill side of the stem. See *quadratic mean diameter*.

Dispersal habitat (northern spotted owl) – Forest stands with average tree diameters of greater than 11 inches, and conifer overstory trees having closed canopies (greater than 40 percent canopy closure) with open space beneath the canopy to allow owls to fly.

Dispersed retention – See *variable-retention harvest system*.

Disposal – Transfer of public land out of federal ownership to another party through sale, exchange, Recreation and Public Purposes Act of 1926, Desert Land Entry or other land law statutes.

Disturbance (natural) – A force that causes significant change in structure and/or composition through natural events such as fire, flood, wind, or earthquake, mortality caused by insect or disease outbreaks, or by human-caused events such as the harvest of forest products.

Eligible river – A river or river segment found to meet criteria found in Sections 1(b) and 2(b) of the Wild and Scenic Rivers Act of being free flowing and possessing one or more outstandingly remarkable value.

Endangered species – Any species of plant or animal 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 Impact Statement (EIS) – A detailed statement prepared by the responsible official in which a major federal action that significantly affects the quality of the human environment is described, alternatives to the proposed action are provided, and effects are analyzed.

Even-aged management – A *silvicultural system*, which creates forest stands that are primarily of a single age or very narrow range of ages. See *even-aged stand*.

Even-aged stand – A *stand* composed of a single distinct *age class* managed as a discrete operational unit. See *even-aged management*.

Fire frequency – The number of times that fires occur within a defined area and time period.

Fire hazard – A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

Fire regime – Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites.

Fire resilient forest – A forest having characteristics that limit fire severity and increase the resistance of the forest to mortality.

Fire return interval – The time between fires in a defined area, usually at the scale of a point, stand or relatively small landscape area. This is called Mean Fire Interval (MFI) in the LANDFIRE system, where it refers to the average number of years between fires in representative stands.

Fire suppression – Fire management actions taken to extinguish a fire or confine fire spread.

Fifth-field watershed – Individual watershed within a Hydrologic Unit as defined by the U.S. Geological Survey, typically averages 87,000 acres in size.

Floodplain – Level lowland bordering a stream or river onto which the flow spreads at flood stage.

Forage – All browse and herbaceous foods available to grazing animals, including wildlife and domestic livestock.

Forest Operations Inventory (FOI) – An intensive inventory that provides managers with information regarding age, species, stand location, size, silvicultural needs, and recommended treatment based on individual stand conditions and productivity.

Forestland – Land at least 10 percent stocked by forest trees of any size, and including land that formerly had such tree cover and capable of redeveloping forested conditions.

Fluid minerals – Oil, gas, coal bed natural gas, and geothermal resources.

Fuel loads – The amount of combustible material present per unit area.

Genetic gain – The average improvement of a specific trait in a population of progeny over the average of the parental population, e.g., height growth increase.

Geographic Information System (GIS) – A system of computer hardware, software, data, people, and applications that capture, store, edit, analyze, and display a potentially wide array of geospatial information.

Geothermal energy – Natural heat from within the Earth, captured for production of electric power, space heating or industrial steam.

Gradient Nearest Neighbor – A method to characterize forest vegetation across a region that integrates vegetation measurements from regional networks of field plots, mapped environmental data, and Landsat TM data. The method applies direct gradient analysis (canonical correspondence analysis) and nearest-neighbor imputation to ascribe detailed ground attributes of vegetation to each patch in a regional landscape.

Gravel interstitial space – The pockets between pieces of gravel.

Green-tree – A live tree.

Green-tree retention – A stand management practice in which live trees are left within harvest units to provide a legacy of habitat components over the next management cycle. See *variable-retention harvest*.

Ground-based yarding – The movement of cut trees or logs from the area where they are felled to the landing through the use of mechanical equipment or animals that move along the ground.

Group selection harvest – In an uneven-aged system, trees are harvested in small groups. Synonymous with “patch cut.” See *selection cutting*.

Growth and yield modeling – Simulated projections of forest stand growth and development, from which timber volume estimates and other stand attributes expected to be produced per unit area under a certain set of conditions are derived.

Handpile – Piling of fuels by hand.

Harvesting – The process of cutting and removing of merchantable trees from a forested area.

Harvest land base – Those lands on which the determination and declaration of the Annual Productive Capacity / Allowable Sale Quantity (ASQ) is based. The ASQ is based on implementing a set of specific timber management activities and assumes those practices will be repeated over time and results in a sustainable harvest level.

Helicopter yarding – The movement of cut trees or logs from the area where they are felled to the landing through the use of helicopters.

Herbaceous vegetation – Seed-producing annual, biennial, or perennial vegetation that does not develop persistent woody tissue, but dies down at the end of a growing season.

Herd Management Area – Public land under the jurisdiction of the BLM that has been designated for special management emphasizing the maintenance of an established wild horse or burro herd.

High-severity fire – Greater than 75 percent of the total canopy cover, or basal area, is killed by the sum of all fire effects.

Intermittent stream – A stream that flows most of the time, but occasionally is dry or reduced to pools.

Intrinsic potential (stream) – A stream’s inherent ability to provide high quality habitat for salmonids.

Invasive species – A non-native species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health.

Ladder fuel – Fuel that provides vertical continuity between forest strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease.

Landing – A cleared area in the forest to which logs are yarded for loading onto trucks for transport.

Landscape – A heterogeneous land area with interacting ecosystems that are repeated in similar form throughout.

Land Use Allocation – The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions.

Leasable minerals – Minerals generally found in bedded deposits and include oil, gas, coal, chlorides, sulfates, carbonates, borates, silicates, and nitrates of potassium (potash) or sodium and related products; sulfur; phosphate and its associated and related minerals; asphalt; and gilsonite.

Locatable minerals – Metallic minerals (gold, silver, lead, copper, zinc, nickel, etc.) and nonmetallic minerals (fluorspar, mica, certain limestone and gypsum, tantalum, heavy minerals in placer form and gemstones) in land belonging to the United States that are open to citizens of the United States for exploration, discovery, and location which conveys the exclusive right to extract the locatable minerals upon receiving all required authorizations in accordance with regulations at 43 CFR 3802 for lands in wilderness review and 3809 for other public lands.

Lop and scatter – The cutting of branches, tops, and unwanted boles into lengths that will lie close to the ground and spreading debris more or less evenly.

Low-severity fire – Less than 25 percent of the total canopy cover or basal area is killed by the sum of all fire effects.

Machine pile – The piling of activity fuels with machinery.

Mass wasting – The downslope movement of earth materials caused by gravity. This is an all-inclusive term that includes, but is not limited to: landslides, rock falls, debris avalanches, and creep. It does not, however, include surface erosion by running water.

Mean annual increment (MAI) – the total cumulative quantity produced over time of some attribute of a tree or *stand* growth, e.g., wood volume divided by the total age of the tree or *stand*.

Mechanical mastication – The mechanical crushing, grinding, shredding of shrubs, small trees, and downed woody material, leaving a low-profile matted continuous surface fuel bed.

Merchantable – Trees or *stands* having the size, quality and condition suitable for marketing under a given economic condition, even if not immediately accessible for logging.

Mineral estate – The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

Mining claim – A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, millsite, and tunnel site.

Mixed-severity fire – The severity of fires varies between nonlethal understory and lethal stand-replacement fire with the variation occurring in space or time. The result may be a mosaic of young, older, and multiple-aged vegetation patches as a function of landscape complexity or vegetation patterning. Typically, more than 25% and less than 75% of the total canopy cover or basal area is killed by the sum of all effects. Fires may also vary over time between low-intensity surface fires and longer-interval stand replacement fires.

Modeling – A scientific method that operates by a structured set of rules and procedures to simulate current conditions and predict future conditions.

Monitoring – The review on a sample basis, of management practices to determine how well objectives are being met, as well as the effects of those management practices on the land and environment.

Multi-layered canopy – Forest *stands* with two or more distinct *canopy* layers.

Multi-aged stand – *Two*-aged and *uneven*-aged stands.

National Landscape Conservation System – Special Congressional or Presidential land use designations such as National Monuments, Wild and Scenic Rivers, and Wilderness Areas.

Non-commercial thinning (management) – Cutting *merchantable* trees but not removing them from the *stand*.

No Surface Occupancy – A fluid minerals leasing constraint that prohibits occupancy or disturbance on all or part of the lease surface to protect special values or uses. Lessees may exploit the fluid mineral resources under the leases restricted by this constraint through use of directional drilling from sites outside the No Surface Occupancy area.

O&C lands – Public lands granted to the Oregon and California Railroad Company and subsequently reverted to the United States.

Off-Highway Vehicle (OHV) – Any motorized track or wheeled vehicle designed for cross-country travel over any type of natural terrain.

Off-highway vehicle designation – Designation of lands made in a land use plan for use of off-highway vehicles:

Open: All types of vehicle use is permitted at all times, anywhere in the area subject to certain operating regulations and vehicle standards.

Limited: Restricted at certain times, in certain areas, and/or to certain vehicular use.

Closed: Off-road vehicle use is prohibited.

Outstandingly Remarkable Values – Values among those listed in Section 1(b) of the Wild and Scenic Rivers Act of 1968: “scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values...” Other similar values that may be considered include ecological, biological, or botanical.

Overstory – That portion of trees forming the uppermost canopy layer in a forest stand and that consists of more than one distinct layer.

Paleontological resource – Remnants of life from past geological ages as seen in fossil plants and animals.

Particulate matter (PM) – A complex mixture consisting of varying combinations of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid, typically measured in micrometers (e.g., PM_{2.5} – particular matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers).

Passive crown fire – A fire that initiates from the surface fuels, up through the ladder fuels, and into the aerial fuels in the crowns of trees in which individual trees or groups of trees torch.

Peak flow – The highest amount of stream or river flow occurring in a year, or from a single storm event.

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

Periodic annual increment (PAI) – the difference in a stand attribute at two successive measurements, divided by the number of years between measurements. PAI is an approximation to current annual increment, which is not directly measurable.

Physiographic province – A geographic area having a similar set of biophysical characteristics and processes due to effects of climate and geology, which result in patterns of soils and broad-scale plant communities. Habitat patterns, wildlife distributions, and historical land use patterns may differ significantly from those of adjacent provinces.

Pile burning – Activity fuels, once piled by machine or by hand, are burned in place.

Planning area – All lands within the geographic boundary of this RMP revision regardless of jurisdiction.

Planned ignition – The intentional initiation of a wildland fire by hand-held, mechanical or aerial device where the distance and timing between ignition lines or points and the sequence of igniting them is determined by environmental conditions (weather, fuel, topography), firing technique, and other factors which influence fire behavior and fire effects.

Plant association group – A vegetation classification including five to ten closely related plant associations, or groupings of plants that occur together in similar environments, typically defined by their climates (temperature and moisture), soils, and history of natural disturbances, such as wildfires, diseases and insect outbreaks.

Pre-commercial thinning (PCT) – The practice of reducing the density of trees within a stand by manual cutting, girdling, or herbicides to maintain or promote growth increases of desirable tree species. The trees killed are generally not *merchantable* and not removed from the treated area.

Preferred Alternative – Term used in the Council on Environmental Quality’s implementing regulations of the National Environmental Policy Act (NEPA) and BLM planning regulations. Guidance from the Council on Environmental Quality explains that the preferred alternative is the alternative that the agency believes would fulfill its statutory mission and responsibilities, considering economic, environmental, technical, and other factors.

Prescribed fire – A wildland fire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which NEPA requirements have been met prior to ignition. See *planned ignition*.

Progeny test site – A test area for evaluating parent seed trees by comparing the growth of their offspring seedlings.

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 land – Land or interest in land owned by the U.S. and administered by the Secretary of the Interior through the BLM without regard to how the U.S. acquired ownership, except lands located on the Outer Continental Shelf and land held for the benefit of Indians, Aleuts, and Eskimos.

Quadratic mean diameter – The diameter of the tree of average *basal area* in a stand at breast height. See *diameter breast height*.

Recovery plan – A plan for the conservation and survival of an endangered species or a threatened species listed under the Endangered Species Act, for the purpose of improving the status of the species to the point where listing is no longer required.

Regeneration – (n.) Tree seedlings or saplings existing in a stand. (v.) The process of re-establishing trees on a tract of forest land where harvest or some natural event has removed existing trees.

Regeneration harvest(ing) – Any removal of trees intended to assist regeneration already present or make regeneration possible.

Relative density (RD) – A means of describing the level of competition among trees or site occupancy in a stand, relative to some theoretical maximum based on tree density, size and species composition. Relative density is determined mathematically by dividing the stand *basal area* by the square root of the *quadratic mean diameter*.

Relevant and important resource value – Criteria used to evaluate nominated Areas of Critical Environmental Concern.

Renewable energy – See *sustainable energy*.

Resource Management Plan (RMP) – A land use plan as prescribed by the Federal Land Policy and Management Act that establishes, for a given area of land, land-use allocations, management objectives, and management direction.

Right-of-way – A permit or an easement that authorizes use of public lands for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, reservoirs, and so on; also, the lands covered by such an easement or permit.

Riparian area – A geographic area containing an aquatic ecosystem and adjacent upland areas that directly affect it.

Rotation [age] – The planned number of years between the establishment of an even-aged or two-aged forest *stand* and its *regeneration harvest*.

Salable minerals – Minerals including but not limited to: petrified wood and common varieties of sand, stone, gravel, pumice, pumicite, cinder, clay, and rock.

Salvage harvest(ing) – Removal of dead trees or of trees damaged or dying because of injurious agents other than competition, to recover their economic value.

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 harvest(ing) – A method of uneven-aged management involving the harvesting of single trees from stands (single-tree selection) or in groups up to four (4) acres in size (group selection) without harvesting the entire stand at any one time.

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

Shelterwood harvest(ing) – A *regeneration* harvest method under an *even-aged* silvicultural system. With this method a portion of the mature stand is retained as a source of protection during the *regeneration* period. The retained trees are removed when protection requirements have been met.

Silvicultural practices (or treatments or system) – The set of field techniques and general methods used to modify and manage a forest stand over time to meet desired conditions and objectives. Examples include reforestation, precommercial thinning, and commercial thinning.

Silvicultural prescription – A planned series of treatments designed to change current stand structure to one that meets management goals.

Silvicultural system – A planned series of treatments for tending, harvesting, and reestablishing a *stand*. The system name is based on the number of *age classes* managed within a *stand*, e.g., *even-aged*, *two-aged*, *uneven-aged*).

Site class – A classification of an area’s relative productive capacity for tree growth commonly expressed in terms of the heights of the largest trees in a stand at a common “index” age, usually 50 or 100 years-old. Site classes are numbered from 1 (most productive) to 5 (least productive).

Site potential tree height – Is the average maximum height of the tallest dominant trees (200 years or older) for a given *site class*.

Slash – The branches, bark, tops, cull logs, and broken or uprooted trees left on the ground after logging has been completed.

Slope stability – The resistance of a natural or artificial slope, or other inclined surface, to failure by landsliding (mass movement).

Snag – Any standing dead, partially-dead or defective (cull) tree at least 10 inches in diameter at breast height and at least 6 feet tall. A hard snag is composed primarily of sound wood, generally merchantable. A soft snag is composed primarily of wood in advanced stages of decay and deterioration, generally not merchantable.

Soil compaction – An increase of the soil bulk density (weight per unit volume) compared to undisturbed soil, and a decrease in porosity (particularly macropores) resulting from applied loads, vibration or pressure.

Soil productivity – Capacity or suitability of a soil, for establishment and growth of a specified crop or plant species.

Soil quality – The capacity of a soil to function for specific land uses or within ecosystem boundaries. This capacity is an inherent characteristic of a soil and varies from soil to soil. Indicators such as organic-matter content, salinity, tillth, compaction, available nutrients, and rooting depth help measure the health or condition of the soil-its quality-in any given place.

Special forest products – Those plant and fungi resources that are harvested, gathered or collected by permit, and have social, economic, or spiritual value. Common examples include mushrooms, firewood, Christmas trees, tree burls, edibles and medicinals, mosses and lichens, floral and greenery, and seeds and cones, but not soil, rocks, fossils, insects, animal parts, or any timber products of commercial value.

Special status species – Plant or animal species in any of the following categories:

- Threatened or endangered species
- Proposed threatened or endangered species
- Candidate species

- State-listed species
- Bureau sensitive species

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 and managed as a discrete operational unit.

Stand conversion – Converting one type of forest *stand* to another type. Typically refers to changing areas dominated by hardwood species to one dominated by conifer species.

Stand replacement fire – A fire that is lethal to most of the dominant above ground vegetation and substantially changes the vegetation structure. Stand replacement fires may occur in forests, woodlands and savannas, annual grasslands, and shrublands. They may be crown fires, or high-severity surface fires, or ground fires.

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.

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 0.5 mile to 1.5 miles in length unless channel character, confluence distribution, or management considerations dictate variance.

Stumpage price – The value of standing timber.

Suitable river – An eligible river segment found through administrative study to meet the criteria for designation as a component of the National System, as specified in Section 4(a) of the Wild and Scenic Rivers Act.

Surface fire – A fire that burns on the surface of the ground and consumes surface fuels.

Surface fuel – Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

Sustainable energy – Energy that comes from resources that are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves, and geothermal heat, as opposed to “fossil energy” which comes from resources replenished on a geological timescale.

Sustained yield – The board foot volume of timber that a forest can produce in perpetuity at a given intensity of management; the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources without impairment of the productivity of the land.

Sustained yield unit (SYU) – An administrative unit for which an allowable sale quantity is calculated; in western Oregon, a BLM district.

Thinning – A silvicultural treatment made to reduce the density of trees primarily to improve tree/stand growth and vigor, and/or recover potential mortality of trees, generally for commodity use. See *pre-commercial thinning*, *commercial thinning*, *variable-density thinning*.

Timber Production Capability Classification (TPCC) – The process of partitioning forestland within the Sustained Yield Unit into major classes based on the biological and physical capability of the site to support and produce forest products on a sustained yield basis using operational management practices.

Timber volume – Amount of timber contained in a log, a stand, or a forest, typically measured in board feet or cubic feet.

Threatened species – Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. A plant or animal identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Torching – The burning of the foliage of a single tree or a small group of trees, from the bottom up. See *passive crown fire*.

Tribal consolidation area of ancestral lands – The specific area of land described by the Tribe, approved by the Secretary of the Interior, and placed into trust for the Tribe according to 25 CFR 151.2.

Tribal fee land – Lands in which a Tribe has acquired title to through purchase or donation but the federal government has not put into trust, therefore state and local laws apply including payment of property and timber harvest taxes.

Trust land – Land in which the federal government holds title to for the use and benefit of a Tribe.

Two-aged stand – A stand composed of two (2) distinct age classes intimately mixed and/or in aggregated groups producing a two-story structure managed as a discrete operational unit.

Two-aged system – A *silvicultural system* intended to regenerate and maintain stands with two distinct age classes.

Underburn – A fire that consumes surface fuels but not the overstory canopy.

Underburning – Prescribed burning under a forest canopy.

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.

Uneven-aged management – A *silvicultural system* that simultaneously maintains high degree of tall forest cover, recurring *regeneration* of desirable species, and the orderly growth and development of trees through a range of diameter or *age classes*. *Harvesting* methods that develop and maintain uneven-aged stands are *single-tree selection*, *group selection*, and *thinning*.

Uneven-aged stand – A *stand* composed of at least three (3) distinct age classes intimately mixed and/or in aggregated groups producing a *multi-layered canopy* structure managed as a discrete operational unit.

Use of wildland fire – Management of either wildfire or prescribed fire to meet resource objectives.

Usual and accustomed areas – Areas regularly utilized and accessed by antecedent tribes or bands prior to treaty signing.

Variable-density thinning (VDT) – A *thinning* method where two or more densities of retained trees are used to promote *stand* heterogeneity through the development of *multi-layered canopies*. Provision of conditions conducive to the initiation and growth of *regeneration* is usually an objective of VDT.

Variable-retention harvest (VRH) – An approach to *regeneration* harvesting that is based on the retention of structural elements or *biological legacies* from the harvested stand for integration into the new stand to achieve various ecological objectives. The resultant stand is generally *two-aged*. The major variables in variable-retention harvest systems are the types, densities and spatial arrangement of the retained structures; 1) *aggregated retention* is the retention of structures as (typically) intact forest patches within or adjacent to the harvest unit; 2) *dispersed retention* is the retention of structures or *biological legacies* in a more or less scattered pattern. Variable-retention harvest is synonymous with *green-tree retention*, retention harvest, retention forestry.

Visual Resource Management (VRM) – The inventory and planning actions to identify values and establish objectives for managing those values and the management actions to achieve those 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 change allowed in the characteristic landscape.

Water quality – The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Watershed – An area in which all surface waters flow to a common point.

Wild and Scenic Rivers system – A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and are preserved in a free-flowing condition.

Wilderness – An area defined in Section 2(c) of the Wilderness Act, and formally designated by Congress as part of the National Wilderness Preservation System.

Wilderness characteristics – These attributes include the area's size, its apparent naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation. They may also include supplemental values. Lands with wilderness characteristics are those lands that have been inventoried and determined by the BLM to contain wilderness characteristics as defined in section 2(c) of the Wilderness Act.

Wilderness Study Area – Areas with wilderness characteristics identified and designated through the inventory and study processes authorized by Section 603 of FLPMA, and, prior to 2003, through the planning process authorized by Section 202 of FLPMA.

Wildfire – Unplanned ignition of a wildland fire (such as a fire caused by lightning or unauthorized and accidental human – caused fires) and escaped prescribed fires.

Wildfire risk – The likelihood and susceptibility for a wildfire to adversely affect human values (e.g. life, property, ecological functions and resources, etc.).

Wildland Developed Areas – A delineation of where people live in the wildland, classifying a minimum of one structure per 40 acres as a developed area.

Wildland fire – A general term describing a non-structure fire that occurs in the wildland.

Wildland Urban Interface (WUI) – The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.

Windthrow – A tree or trees uprooted or felled by the wind.

Yarding – The process of moving cut logs to a landing, particularly by cable, ground-based or helicopter yarding systems.

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