



Summary

This *Summary* provides a synopsis of the information presented in this draft environmental impact statement for the proposed revision of the resource management plans of the six western Oregon BLM districts that are within the planning area.

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Introduction

Key Points

This draft environmental impact statement has been written because (1) the BLM plan evaluations found that the BLM has not been achieving the timber harvest levels directed by the existing plans, (2) there is an opportunity to coordinate the BLM management plans with new recovery plans and re-designations of critical habitat currently under development and (3) the BLM has re-focused the goal for management to the objectives of its statutory mandate to utilize the principles of sustained yield management on the timber lands covered under the O&C Act. There are four alternatives—the No Action Alternative and three action alternatives (Alternative 1, Alternative 2, and Alternative 3).

This draft environmental impact statement is broken up into the following sections:

- Chapter 1, which provides the purpose and need for revising the resource management plans.
- Chapter 2, which details the alternatives found to be reasonable solutions for the purpose and need presented in Chapter 1.
- Chapter 3, which details the current condition of the affected environment.
- Chapter 4, which provides the effects on the environment that result from each of the alternatives.
- Chapter 5, which lists those that participated in the development of this draft environmental impact statement.
- And an appendix volume and a map packet that each provides details regarding the analyses of the alternatives.

For details about the process up to this point (e.g., the published notice of intent, the scoping effort, and the planning criteria) and beyond the public commenting period, go to <http://www.blm.gov/or/plans/wopr>.

The Bureau of Land Management (BLM) administers the use of a variety of natural resources on approximately 2.6 million acres within an area of approximately 22 million acres, which is the western Oregon planning area. Resource management plans (RMPs) define the management direction for specified areas of BLM-administered lands (typically, for individual BLM districts or BLM resource areas). Resource management plans are typically designed to continue a defined management direction for a specified period of time that includes periodic evaluation. Resource management plans are formally evaluated periodically to determine whether there is a significant cause for amending or revising them.

The primary direction for administrating the approximately 2.2 million acres of what are called the O&C lands that lie within the approximately 2.6 million acres of BLM-administered lands in western Oregon is derived from the statutory authority of the Oregon and California Railroad and Coos Bay Wagon Road Grant Lands Act (O&C Act). The remaining BLM-administered lands within the western Oregon planning area are public domain lands, and other statutory authorities direct the administration of those lands.

The BLM is proposing to revise existing plans to replace the Northwest Forest Plan land use allocations and management direction because (1) the BLM plan evaluations found that the BLM has not been achieving the timber harvest levels directed by the existing plans, and the BLM now has more detailed and accurate information than was available in 1995 on the effects of sustained yield management on other resources, (2) there is an opportunity to coordinate the BLM management plans with new recovery plans and re-designations of critical habitat currently under development and (3) the BLM has re-focused the goal for management of the BLM-administered lands to the objectives of its statutory mandate to utilize the principles of sustained yield management on the timber lands covered under the O&C Act of contributing to the economic stability of local communities and industries, and other benefits from such management to watersheds, stream flows, and recreation.



What is the purpose and need for the action being proposed?

The goals for the Northwest Forest Plan were broader than the specific requirements of the Endangered Species Act and Clean Water Act and sought to provide consistent management of the Forest Service and the BLM-administered lands, by applying National Forest Management Act requirements to the BLM-administered lands. The selected alternative for the Northwest Forest Plan was selected because it would “maintain the late-successional and old-growth forest ecosystem and provide a predictable and sustainable supply of timber, recreational opportunities and other resources at the highest level possible.” The purpose and need for this plan revision is focused on specific legal requirements and intended benefits of the BLM’s unique mandate under the O&C Act, distinct from the mandate to the Forest Service under National Forest Management Act.

The purpose and need for this proposed action is to manage the BLM-administered lands for permanent forest production in conformity with the principles of sustained yield, consistent with the O&C Act.¹ The plans will also comply with all other applicable federal laws including, but not limited to, the Endangered Species Act, the Clean Water Act, and, to the extent that it is not in conflict with the O&C Act, the Federal Land Policy and Management Act. In accord with the Endangered Species Act, the plans will use the BLM’s authorities for managing the lands it administers in the planning area to conserve habitat needed from these lands for the survival and recovery of species listed as threatened or endangered under the Endangered Species Act.²

In selecting among the alternatives in this plan revision, BLM will evaluate which alternative or combination of alternatives best meets the Purpose and Need. In addition, BLM will consider the environmental consequences related to the issues identified during scoping and the cost of implementation.

¹ The Ninth Circuit in *Headwaters v. BLM*, 914 F.2d 1174 (9th Cir. 1990) confirmed that in the O&C Act Congress mandated timber production as the dominant use of these BLM-administered lands.

² This revision process will satisfy a settlement agreement resolving long-standing litigation of the Northwest Forest Plan (*AFRC v. Clarke*, Civil No. 94-1031-TPJ (D.D.C.)) that alleged the current RMPs violate the O&C Act. The settlement agreement requires BLM to consider revisions to the RMPs by the end of the year 2008, and include at least one alternative that “will provide permanent forest production across the O&C lands without reserves except as required to avoid jeopardy under the Endangered Species Act.” See *Appendix A* for a discussion of the Settlement Agreement.



What alternatives are being proposed?

There are three action alternatives, along with the No Action Alternative, being proposed. The No Action Alternative would continue the management of the current resource management plans, which were approved in 1995 and subsequently amended. The three action alternatives consist of a range of management strategies that are designed to meet the purpose and need discussed in *Chapter 1*. These management strategies encompass management objectives, management actions, and land use allocations. Some management objectives, management actions, and land use allocations are common to all three action alternatives. Examples of management objectives, management actions, and land use allocations that are common to the three action alternatives are:

- Congressionally reserved areas would be retained and managed for the purposes for which they were established.
- A diversity of developed and dispersed outdoor recreational experiences would be maintained. District recreation sites, management areas, facilities, trails, and visitor service programs would be carried forward.
- The BLM would take actions to reduce fire hazards to communities that are at risk from uncharacteristic wildfires.
- The BLM would provide for the harvest and collection of special forest products.

Some management objectives, management actions, and land use allocations vary by action alternative. These differences would result in a variance in the degree or rate in which each action alternative achieves the identified purpose and need for the proposed action. See *Table 1 (Limited comparison of the key features of the four alternatives)*. It highlights specific examples of these differences between the alternatives. For a complete comparison of the key features of the four alternatives, see *Table 39 (Comparison of the key features of the four alternatives)* in *Chapter 2*.

The key differences between the four alternatives include:

- the width and management of riparian areas;
- the retention of green trees, snags, and down wood;
- the salvaging after disturbances; and
- the management of habitat for the northern spotted owl and the marbled murrelet.

Following are the key land use allocations that vary by action alternative.



Alternative 1

The key land use allocations for this alternative are:

- **Late-successional management areas.** These areas are designated to provide structurally complex forests. They are similar to the existing late-successional reserves under the No Action Alternative. There would be no salvaging after disturbances in these areas, except for safety or operational reasons.
- **Riparian management areas.** These areas would maintain or promote the development of mature or structurally complex forests, and provide for the riparian and aquatic conditions that supply streams with shade, sediment filtering, leaf litter and large wood, and root masses that stabilize stream banks. They are half the width of the current riparian reserves under the No Action Alternative (with the exception of non-fish-bearing perennial streams which remain the same).
- **Timber management areas.** In these areas, forests would be managed to achieve a high level of continuous timber production that could be sustained through a balance of growth and harvesting and an allowable sale quantity of timber. The rotation age would be approximately 80 to 100 years and there would be no green tree retention after regeneration harvesting.

Alternative 2

The key land use allocations for this alternative are:

- **Late-successional management areas.** These areas would provide habitat for the northern spotted owl (large, connected blocks of suitable habitat) and the marbled murrelet. Salvaging would be allowed to recover economic value from the timber harvested after stand-replacement disturbances. These areas are based on new recovery planning efforts for the northern spotted owl.
- **Riparian management areas.** These areas would maintain or promote the development of mature or structurally complex forests and provide for the riparian and aquatic conditions that supply streams with shade, sediment filtering, leaf litter and large wood, and root masses that stabilize stream banks.

All streams, except for intermittent non-fish-bearing streams, would have a 100 foot nonharvesting and shade retention area on each side of the stream. Intermittent non-fish-bearing streams that have a high risk of debris flows (a source of large wood) would also have a 100 foot nonharvesting and shade retention area on each side of the stream. Other intermittent non-fish-bearing streams would retain a 25 foot area with noncommercial vegetation on each side of the stream and 12 conifer trees per acre.

- **Timber management areas.** These areas would be managed to achieve a high level of continuous timber production that could be sustained through a balance



of growth and harvesting and an allowable sale quantity of timber. The rotation age would be approximately 80 to 100 years and there would be no green tree retention after regeneration harvesting.

Alternative 3

The key land use allocations for this alternative are:

- **General landscape areas.** These areas would provide for the habitat conditions that are required for late-successional species, would maintain and promote the development of mature or structurally complex forests, would provide continuous timber production that could be sustained through a balance of growth and harvesting, and would offer an allowable sale quantity of timber. The rotation age would approximate natural stand-replacement disturbances (generally, 360 years north of Grants Pass and 240 years south of Grants Pass).

There would be a deferral of regeneration harvests until 50% of an assessment area is older than the threshold stand age of 90 years north of Grants Pass and 140 years south of Grants Pass. In the meantime, partial harvesting and commercial thinning would be applied to stands that are at or beyond the partial harvest interval age (60 to 120 years, depending on the vegetation series).

There would be 6 to 9 green trees retained after harvesting depending on the vegetation series, and salvaging for economic purposes would be allowed after a disturbance (with legacy retention requirements).



- Riparian management areas.** These areas would maintain or promote the development of mature or structurally complex forests and provide for the riparian and aquatic conditions that supply streams with shade, sediment filtering, leaf litter and large wood, and root masses that stabilize stream banks.

All streams, except for intermittent non-fish-bearing streams, would have a 100 foot nonharvesting and shade retention area on each side of the stream. Intermittent non-fish-bearing streams would allow no harvesting within 25 feet of the stream.

Comparing the Alternatives

The areas included within the land use allocations vary significantly under the alternatives. See *Figure 1 (Land use allocations under the alternatives)*. Note that Alternative 3 contains a land use allocation called general landscape area that covers much of the landscape and provides habitat for late-successional species as well as timber production.

Figure 1. Land use allocations under the alternatives

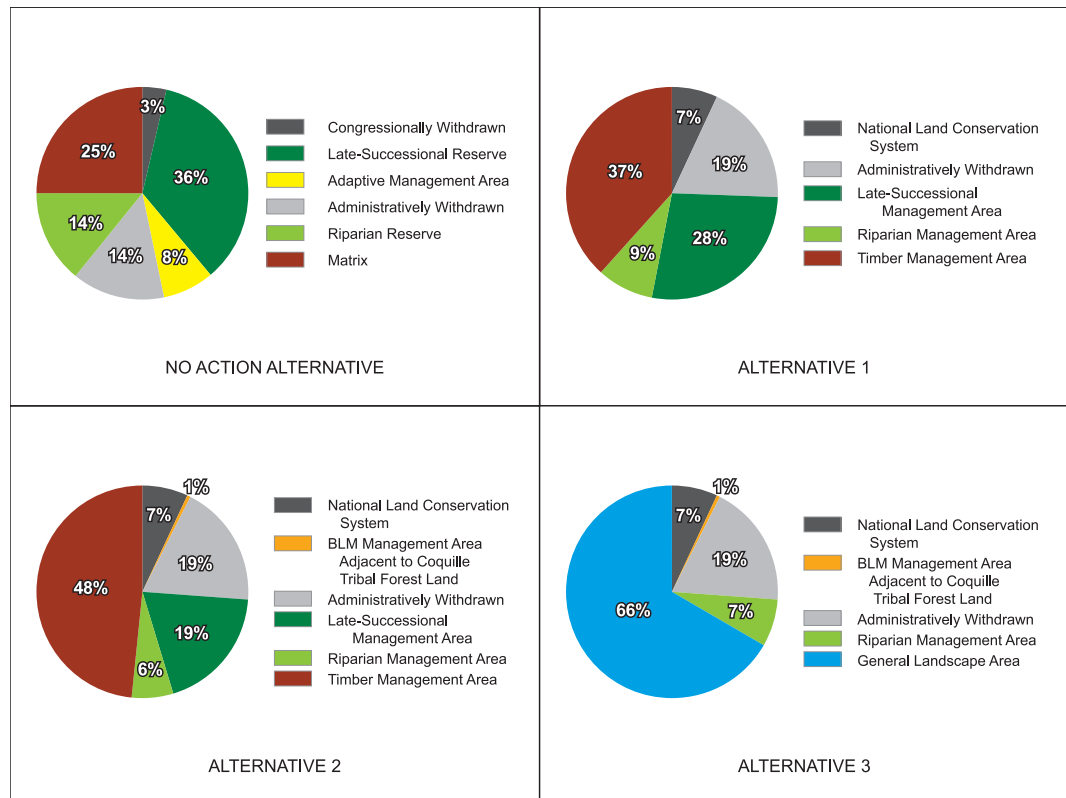




Table 1. Limited comparison of the key features of the four alternatives (for a complete comparison of the key features of the four alternatives, see the comparison table in *Chapter 2*)

Features	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Late-Successional Vegetation	<ul style="list-style-type: none"> Maintains the Northwest Forest Plan's late-successional reserves (LSRs) Allows no treatment of stands that are older than 80 years 	<ul style="list-style-type: none"> Establishes late-successional management areas (LSMAs) Treats LSMAs to promote the development of structurally complex forests 	<ul style="list-style-type: none"> Establishes late-successional management areas (LSMAs) Treats LSMAs to promote the development of suitable habitat 	Creates a landscape target for regeneration harvesting that requires 50% or more of the acres in an assessment area be of the required age for harvesting, which is 90 years north of Grants Pass and 140 years south of Grants Pass
Critical Habitat Units (CHUs) for the Northern Spotted Owl and the Marbled Murrelet	<ul style="list-style-type: none"> CHUs for the marbled murrelet completely match with the LSRs CHUs for the northern spotted owl partially match the LSRs 	<ul style="list-style-type: none"> CHUs for the marbled murrelet completely match with the LSMAs CHUs for the northern spotted owl partially match the LSMAs 	<ul style="list-style-type: none"> CHUs for the marbled murrelet partially match with the LSMAs CHUs for the northern spotted owl partially match the LSMAs 	No special management
Northern Spotted Owl Activity Centers	Retains the owl activity centers that were known as of January 1994	Retains no owl activity centers in the timber management areas (TMAs)	Retains no owl activity centers in the timber management areas (TMAs)	<ul style="list-style-type: none"> Retains 215 acre owl activity centers in the general landscape areas Manages the owl activity centers until the landscape target is reached
Green Tree Retention	<ul style="list-style-type: none"> North of Grants Pass: 6 to 8 trees per acre South of Grants Pass: 18 to 25 trees per acre In connectivity diversity blocks: 12 to 18 trees per acre 	None	None	6 to 9 trees per acre depending on the vegetation series
Snag Retention	1.1 snags per acre	<ul style="list-style-type: none"> In the LSMAs: 2 to 6 snags per acre depending on the vegetation series In the TMAs: Noncommercial only 	<ul style="list-style-type: none"> In the LSMAs: 2 to 6 snags per acre depending on the vegetation series In the TMAs: Noncommercial only 	2 to 4 snags per acre depending on the vegetation series
Down Wood	120 to 240 ft./ac.	<ul style="list-style-type: none"> In the LSMAs: <ul style="list-style-type: none"> 120 to 240 ft./ac. for stands with QMD > 14 in. 60 to 120 ft./ac. for stands with QMD ≤ 14 in. In the TMAs: Noncommercial only 	<ul style="list-style-type: none"> In the LSMAs: <ul style="list-style-type: none"> 40 to 240 ft./ac. for stands with QMD > 14 in. 20 to 120 ft./ac. for stands with QMD ≤ 14 in. In the TMAs: Noncommercial only 	<ul style="list-style-type: none"> In the western hemlock zone: 240 ft./ac. In the Douglas fir/true fir and tanoak zones: 120 ft./ac.
Salvaging	<ul style="list-style-type: none"> Allows salvaging in the LSR reserves when a disturbance is greater than 10 acres Allows salvaging in the matrix land use allocations for economic purposes 	<ul style="list-style-type: none"> Allows no salvaging in the LSMAs, except to reduce hazards in the wildland urban interface areas Allows salvaging in the wildland urban interface areas to reduce hazards Allows salvaging in the TMAs for economic purposes 	<ul style="list-style-type: none"> Allows salvaging in the LSMAs for economic purposes with retention of legacy Allows salvaging in the wildland urban interface areas to reduce hazards Allows salvaging in the TMAs for economic purposes 	Allows salvaging for economic purposes with retention of legacy



Features	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Zones for Riparian Management Areas	<p>For all fish-bearing streams: 2 site potential tree ht.</p> <p>For all non-fish-bearing streams: 1 site potential tree ht.</p>	<p>For all but intermittent non-fish-bearing streams: 1 site potential tree ht.</p> <p>For intermittent non-fish-bearing streams: 1/2 site potential tree ht.</p>	<p>For all but intermittent non-fish-bearing streams:</p> <ul style="list-style-type: none"> • 0 to 25 ft. no harvest • 25 to 60 ft. 80% shade retention • 60 to 100 ft. 50% canopy retention <p>For non-debris-flow prone intermittent non-fish-bearing streams: 0 to 25 ft. noncommercial vegetation +12 tpa</p> <p>For debris-flow prone intermittent streams:</p> <ul style="list-style-type: none"> • 0 to 25 ft. no harvest • 25 to 100 ft. managing for mature or structurally complex forests 	<p>For all but intermittent non-fish-bearing streams:</p> <ul style="list-style-type: none"> • 0 to 25 ft. no harvest • 25 to 60 ft. 80% shade retention • 60 to 100 ft. 50% canopy retention <p>For all intermittent non-fish-bearing streams: 0 to 25 ft. no harvest</p>
	LSMA (late-successional management area)	LSR (late-successional reserve)	QMD (quadratic mean diameter)	TMA (timber management area)

What are the environmental consequences of the alternatives?

The following sections summarize the environmental consequences that are described in detail in *Chapter 4*. The consequences vary between the alternatives for the different resources and programs. See *Table 40 (Comparison of the key impacts by alternative)* in *Chapter 2* for which resources and programs do and do not vary, and the amount of variance for those that do vary.

Note that the preciseness of the analyses for this draft environmental impact statement has improved due to the increased quality and quantity of the data and the increased sophistication of the forest vegetation and habitat modeling that is now available as opposed to when the current resource management plans were first analyzed in 1995.



Ecology

Forests are classified in the analysis of this draft environmental impact statement by the following four-stage structural classification system:

- **Stand establishment.** Forests that approximate the early-successional conditions that follow disturbances, such as timber harvesting or wildfires. This classification is subdivided based on whether or not the stand establishment forest includes trees (structural legacies) from the previous forest.
- **Young.** Forests that approximate the small conifer forests that are described in the FEMAT Report and Northwest Forest Plan. This classification is subdivided, like stand establishment, based on whether or not the young forest includes trees (structural legacies) from the previous forest.
- **Mature.** Forests that are defined similarly to the mature forests that are described in the FEMAT Report and Northwest Forest Plan. This classification is subdivided based on whether the forest has a single canopy layer or multiple canopy layers.
- **Structurally complex.** Forests that approximate the old-growth forests that are described in many analyses (e.g., the medium/large conifer multi-story forests of the FEMAT Report and the large, multi-storied older forests of the *Late-Successional Forest Monitoring Report*).

Together, the mature and structurally complex forests approximate the late-successional forests that are described in the FEMAT Report, the Northwest Forest Plan, and the resource management plans of the six western Oregon BLM districts that are within the planning area.

The abundance and spatial patterns of the forest structural stages (stand establishment, young, mature, and structurally complex) that would exist under the alternatives for the BLM-administered lands, as well as across all ownerships compared to average historic conditions, would be as follows:

- Across all ownerships, the abundance of the structural stages would not return to the average historic conditions within 100 years, even if there was no timber harvesting on the BLM-administered lands.
- The differences in the alternatives would result in only a 1% shift in the structural stage abundances across all ownerships within 100 years.
- On BLM-administered lands, only the No Action Alternative would result in a structural stage abundance that would be consistent with the average historic conditions. However, all four alternatives would decrease the abundance of young forests and increase the abundance of mature&structurally complex forests from current amounts.
- The retention of structural legacies in regeneration harvested areas, which would occur in the No Action Alternative and Alternative 3, would result in



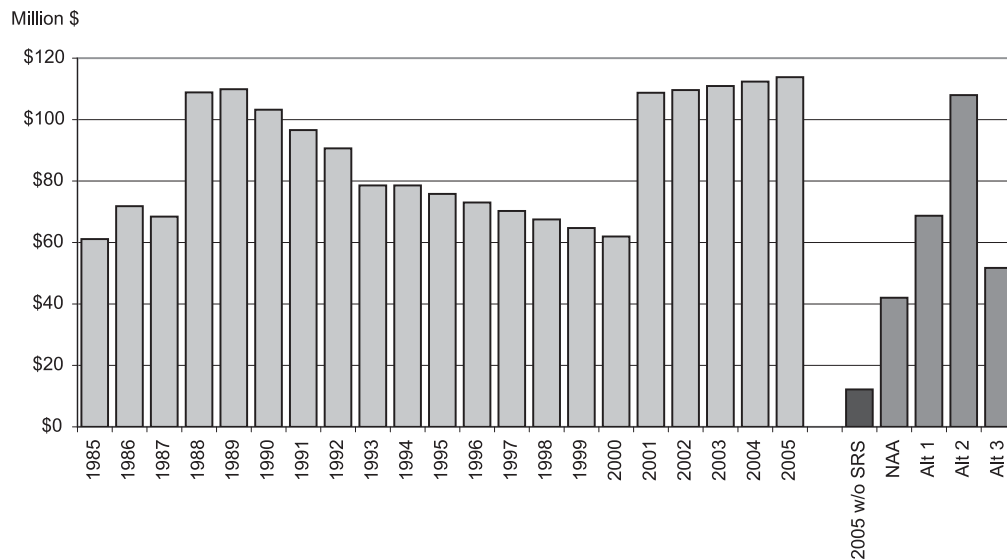
structurally complex forests that develop almost twice as fast after harvesting as in Alternatives 1 and 2.

- The No Action Alternative would reduce fragmentation in most physiographic provinces. Alternatives 1 and 2 would increase fragmentation in most provinces. Alternative 3 would increase fragmentation in all provinces.

Socioeconomics

As shown in *Figure 2 (BLM projected county payments compared to historic payments)*, none of the alternatives would produce timber receipts sufficient to bring payments to the O&C counties to the level provided by the BLM portion of the Secure Rural Schools payments. Alternative 2 would produce the highest payments to the counties at 94% of the O&C portion of the 2005 Secure Rural Schools payments, while the No Action Alternative would produce the lowest payments at 37% of the O&C portion of the 2005 payment.

Figure 2. BLM projected county payments compared to historic payments



Effects vary widely by county. The BLM plays the greatest role in the Douglas County budget, where it accounts for 20% of the total budget and 70% of the discretionary budget.

Alternative 2 would have the most favorable impact on local economies and would result in a net increase of 3,442 jobs and \$136.5 million of earnings (wages). The No Action Alternative would have the least favorable impact on local economies and would result in a net decrease of 3,770 jobs and \$125.5 million of earnings. Under all four alternatives, economic losses would be greatest in southwestern Oregon where the O&C lands are concentrated. *Table 2 (Total economic impacts by alternative)* shows that under all, but Alternative 2, the loss of Secure Rural Schools funding, coupled with the reduction in



the plywood industry, would be greater than the increased employment and earnings that would be linked to increased BLM harvest levels.

Table 2. Total economic impacts by alternative

Totals	Current Condition	O&C County Totals by Alternative (change compared to current)			
		No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Jobs (number of)	8,948	-3,770	-516	3,442	-1,275
Earnings (\$millions)	319.4	-125.5	-7.3	136.5	-34.7

Present net value is a measure of economic return. Future revenues and costs over a 50-year period are discounted back to the present using a 5% discount rate. As shown in *Table 3 (First decade revenues and costs and the present net value over 50 years)*, the present net value of the BLM timber harvest would range from \$46.1 million under Alternative 3 to \$962.3 million under Alternative 2.

Table 3. First decade revenues and costs and the present net value over 50 years

Alternative	Decade 1			Present Net Value (over 50 years) (\$ million)
	Total Revenues (\$ million)	Total Costs (\$ million)	Net Revenues (\$ million)	
No Action	83.9	-78.7	5.2	107.5
Alternative 1	137.5	-117.7	19.8	342.8
Alternative 2	215.8	-166.9	48.9	962.3
Alternative 3	103.3	-103.8	-0.4	46.1

Environmental Justice

No high or adverse human health or environmental consequences have been identified for any of the alternatives. The consequences of the alternatives are not expected to fall disproportionately on minority or low-income populations.



Timber

As shown in *Figure 3 (Percentage of BLM-administered lands in the harvest land base by alternative)*, the harvest land base varies between the alternatives from a high of 1.4 million acres, which is 65% of the forested acres, under Alternative 3 to a low of 607,000 acres, which is 27% of the forested acres, under the No Action Alternative.

Figure 3. Percentage of BLM-administered lands in the harvest land base by alternative

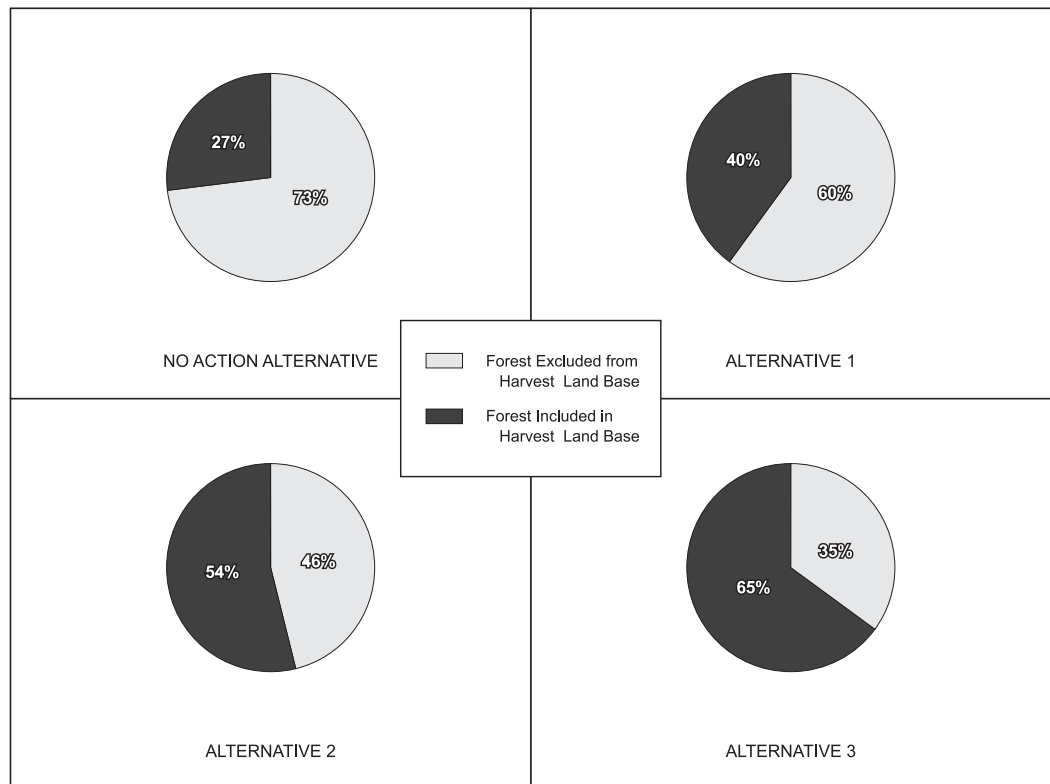




Figure 4 (Total allowable sale quantity by alternative for the planning area) shows that the annual allowable sale quantity would range from a high of 727 mmbf under Alternative 2 to a low of 268 mmbf under the No Action Alternative.

Figure 4. Total allowable sale quantity by alternative for the planning area

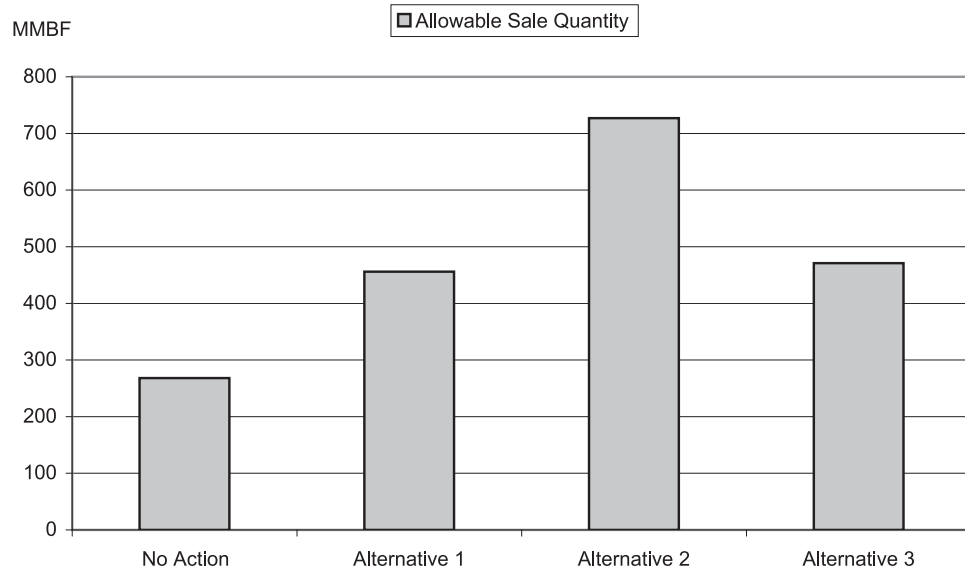
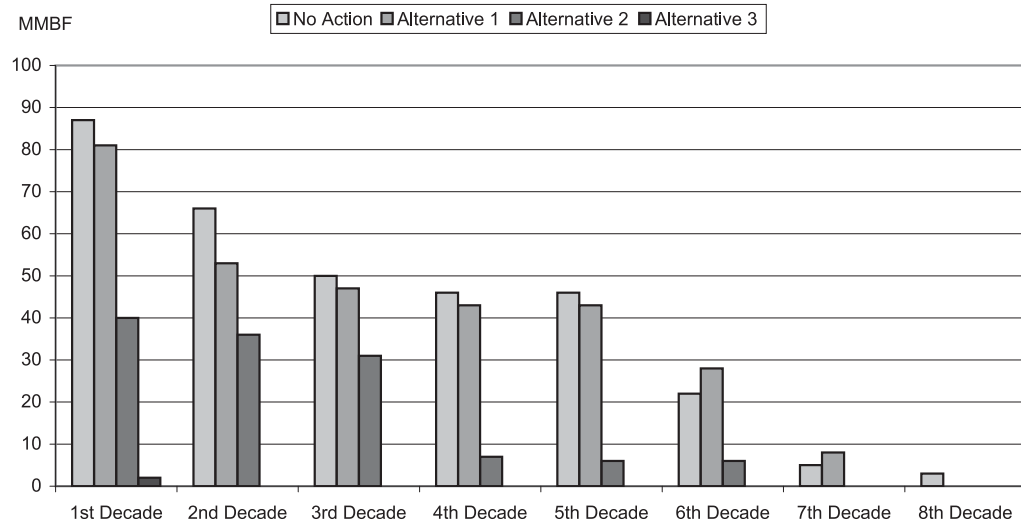


Figure 5 (Nonharvest land base volume over time) shows that over the next 10 years the volume from thinnings in the nonharvest land base would range from a high of 87 mmbf under the No Action Alternative to virtually no volume under Alternative 3. Figure 5 also shows that the volume from thinnings would gradually decrease over time and would cease by the eighth decade.

Figure 5. Nonharvest land base volume over time





The different types of harvesting that occur under the alternatives include thinning, partial harvesting, uneven-aged management, and regeneration harvesting. Thinning can occur in both the harvest land base and the nonharvest land base. On an annual basis, the timber harvest acres of all harvest types would range from approximately 16,000 acres for the No Action Alternative to 29,000 acres for Alternative 3.

Special Forest Products

The location of specific special forest products moves with the location of management activities. As in the past, special forest products would be harvested from common and abundant plant and fungi species.

All four alternatives would maintain similar levels of availability and quantity of special forest products. Special forest products would generally be abundant relative to demand over the long term for all four alternatives.

Botany

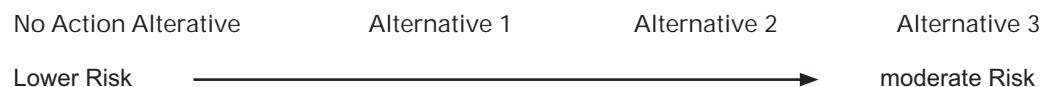
There are 134 (nonfederally listed) special status plant and fungi species that occur on BLM-administered lands within the planning area. These species are not evenly distributed or predictable across the landscape, even when good potential habitat exists.

The risk of population loss varies with the number of populations, the patch size (density of known populations) of populations, and the location of management activities. The risk of population loss is higher where the patch size per population is smaller, where management activity includes regeneration or partial harvesting, and where there would be multiple treatments over 10 to 15 years (timber harvest, fuels, and silviculture).

Under the No Action Alternative and on the public domain lands under the three action alternatives, there would be little risk of loss of populations and extirpation or extinction of bureau sensitive species or bureau assessment species.

Under the three action alternatives, some populations on O&C lands would be lost and the risk of local extirpation or extinction to bureau sensitive species and bureau assessment species would increase compared to the No Action Alternative.

The ranking of the alternatives for the risk of loss is as follows:





The three action alternatives would cause a low-moderate risk of local extirpation or extinction for the conifer-related species that are known from 20 or fewer sites on BLM-administered lands.

There are 13 federally listed species that are found within the planning area. Only five of the thirteen federally listed species occur on BLM-administered lands. Under all four alternatives, populations of species listed under the Endangered Species Act would be maintained and all four alternatives would contribute to the recovery of these species.

Invasive Plants

The greatest risk for the introduction of invasive plants would be in areas where they are abundant and when management activity results in increased light and soil disturbance, and when activities are proximate to riparian areas.

Alternative 2 would have the greatest risk of introduction based on levels of timber harvesting and associated roads. Alternative 2 also has the greatest risk of introduction into riparian areas based on riparian management widths, prescriptions, and levels of timber harvesting activities. The No Action Alternative would have the lowest risk of invasive plant introduction.

The greatest risk for the spread of invasive plants would be when management activities are dispersed and proximate to riparian areas.

Alternative 3 would have the highest risk of spread, since harvesting under Alternative 3 would be the most dispersed and occur on a larger proportion of lands. The No Action Alternative would have the lowest risk of spread.

Wildlife

For special status wildlife species, the habitat needs of aquatic- and riparian-associated species would be met for perennial and fish-bearing streams under all four alternatives. The habitat needs of aquatic- and riparian-associated species along intermittent streams would be met under the No Action Alternative and Alternative 1, but would not be met under Alternatives 2 and 3.

The habitat needs of forest-floor-associated species that are highly endemic to one or several locations would be at risk of decline in abundance and distribution under the three action alternatives.



Marbled Murrelet

The nesting habitat for the marbled murrelet on BLM-administered lands would increase under all four alternatives within 100 years. There are 891,000 acres of BLM-administered lands capable of growing nesting habitat for the marbled murrelet. Marbled murrelet habitat exists in stands that are classified as mature with multilayered canopies forest or structurally complex forest. By the year 2106, the habitat would increase from the current condition of 373,000 acres to:

- 715,000 acres under the No Action Alternative
- 620,000 acres under Alternative 1
- 439,000 acres under Alternative 2
- 493,000 acres under Alternative 3

In the short term (50 years), there would be a 16% decrease from the current condition in the quantity of marbled murrelet nesting habitat under Alternative 2 and a 14% decrease under Alternative 3.

Under the No Action Alternative and Alternative 1 in the Coast Range province, and the No Action Alternative in the Klamath province, there would be an increase in the mean patch and core area size and an increase in the edge density from the current condition. Under Alternatives 2 and 3, there would be a decrease in the mean patch and core area size and an increase in the edge density.

Northern Spotted Owl

For the northern spotted owl, the No Action Alternative and Alternative 1 would steadily increase the total amount of suitable habitat. Alternative 2 would maintain approximately the current amount of suitable habitat over time. Alternative 3 would maintain approximately the current amount of suitable habitat for the first 20 years, and then increase the amount of habitat to more than it would under Alternative 1 by 2106.

As shown in *Table 4 (Suitable habitat within the late-successional reserves and the late-successional management areas)* and *Figure 6 (Northern spotted owl suitable habitat on BLM-administered lands by alternative and reference analysis)*, the No Action Alternative, Alternative 1, and Alternative 2 would contribute to large blocks of suitable habitat to support clusters of reproducing owls. However, the BLM contribution to large blocks would require 50 to 100 years to develop into almost all suitable habitat. Alternative 3 would not contribute to large blocks of suitable habitat to support clusters of reproducing owls, because it would fragment suitable habitat from the current condition.



Figure 6. Northern spotted owl suitable habitat on BLM-administered lands by alternative and reference analysis

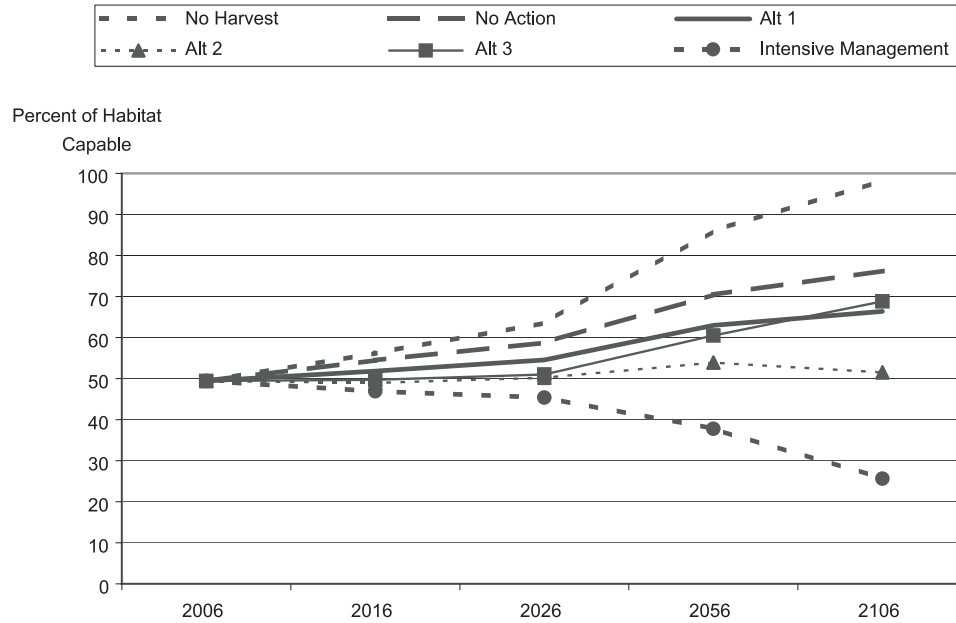


Table 4. Suitable habitat within the late-successional reserves and the late-successional management areas

Alternatives	Total Habitat-Capable Acres	% of Habitat-Capable Acres									
		2006		2016		2026		2056		2106	
		acres	%	acres	%	acres	%	acres	%	acres	%
No Action Alternative	809,400	458,900	57	490,400	61	535,300	66	693,100	86	797,300	99
Alternative 1	807,400	456,800	57	485,600	60	528,000	65	682,000	84	796,500	99
Alternative 2	521,500	281,300	54	300,400	58	334,800	64	452,400	87	515,000	99

Note: Alternative 3 is not included, because it would not allocate late-successional management areas.

The development of suitable habitat outside of large blocks is important because owl populations would need to rely on it until habitat within the blocks is capable of supporting clusters of reproducing owls. The development of suitable habitat outside of the large blocks would differ widely among the alternatives as a result of differing amounts of riparian management area acres and the differing management direction within the harvest land base.

As shown in Table 5 (*Acres of suitable habitat outside of the late-successional reserves and the late-successional management areas*), during the first 50 years after implementation, while large blocks would be developing into suitable habitat, the No Action Alternative would increase the amount of suitable habitat outside of the large blocks. Alternative 1 would maintain and Alternative 2 would decrease the current amount of suitable habitat.



Table 5. Acres of suitable habitat outside of the late-successional reserves and the late-successional management areas

Alternatives	Total Habitat-Capable Acres	% of Habitat-Capable Acres									
		2006		2016		2026		2056		2106	
		acres	%	acres	%	acres	%	acres	%	acres	%
No Action Alternative	1,404,000	661,300	47	706,100	50	755,000	54	854,700	61	877,500	62
Alternative 1	1,406,000	637,900	45	653,200	46	670,400	48	701,700	50	661,400	47
Alternative 2	1,675,000	808,100	48	774,900	46	767,900	46	731,800	44	615,900	37
Alternative 3	2,196,700	1,085,800	49	1,092,000	50	1,119,200	51	1,329,000	60	1,512,000	69

Note: For Alternative 3, this table presents the amount of suitable habitat on all BLM-administered lands, because Alternative 3 does not allocate late-successional management areas.

Dispersal habitat conditions within and between the large blocks of suitable habitat would facilitate owl movement between the blocks. The No Action Alternative and Alternative 1 would maintain the current total quantity of dispersal habitat and would increase the quality of the dispersal habitat from the current condition. Alternative 2 would decrease the total quantity of dispersal habitat and would not increase the quality of dispersal habitat. Alternative 3 would decrease the total quantity of dispersal habitat, but would increase the quality of the dispersal habitat over time.

Fish

The abundance and survival of salmonids is closely linked to the abundance of large woody debris in streams.

The No Action Alternative would have almost twice the acreage in riparian management areas as Alternative 1, four times the acreage as Alternative 2, and more than three times the acreage as Alternative 3. Despite this difference in the size of the riparian management areas, large wood contributions would increase and nearly reach the maximum potential under every alternative; though slightly less under Alternatives 2 and 3.

This is because:

- all areas in the watershed (not just the riparian management areas) serve as source areas that can deliver large wood to streams; and
- the riparian management areas under all four alternatives incorporate some portion of large wood source areas.

There would be slight differences in the contribution of large wood in three of the five representative watersheds that were modeled. The differences are greater in the watersheds where a greater amount of debris-flow prone channels and fish-bearing streams is coupled with higher land ownership. The No Action Alternative and Alternative 1 would have similar levels of large wood contribution and Alternatives 2 and 3 would have slightly lower contributions.



The differences among the alternatives, in terms of fish productivity, would be less than 3%.

Increases in fine sediment delivery under all four alternatives would be less than 1% of the baseline sediment rates, and therefore would not degrade fish habitat under any of the alternatives.

None of the alternatives would result in increases in peak flows in fifth-field watersheds to a level that would affect fish habitat.

None of the alternatives would result in increases in stream temperature that would affect fish habitat or populations, except that under Alternatives 2 and 3 there would be some localized increases in stream temperature in the management area adjacent to the Coquille Forest land use allocation.

Water

Timber harvesting influences peak flows where a large proportion of the timber has been harvested in a watershed. The magnitude of the effect is affected by the type of harvesting (thinning or regeneration harvesting), amount, and distribution of harvesting within watersheds. For all four alternatives, there would be four sixth-field subwatersheds (out of 1,071) susceptible to increased peak flows from timber management.

Subwatersheds are more sensitive to extremes in environmental conditions than alternative variations of harvest levels. Regeneration harvesting under the alternatives is not great enough to increase susceptibility to increased peak flows.

Effective shade is the total solar radiation blocked from reaching a stream over a 24-hour period. All four alternatives would maintain effective stream shade that would limit the increase of stream temperature within the range of natural variability.

Roads near streams are primary sites where mobilization of chronic fine sediment would take place. Most new roads would be located outside of a stream influence zone where possible, and therefore these miles would mostly likely not deliver fine sediment to streams channels. Between 8 and 37 miles of permanent new roads with a natural or aggregate surface would be constructed within a distance that could deliver sediment to streams over the next 10 years under the all four alternatives.

Under all four alternatives over the next 10 years, the increase in the amount of fine sediment delivered to streams from new permanent roads would be less than three-tenths of 1% of the amount delivered from the existing road network. Road improvements and the decommissioning of roads near streams would be of greater importance to decreasing fine sediment delivery than the effect of new roads.



Under all four alternatives, best management practices would be applied and are assumed to maintain or improve water quality. Best management practices include methods that limit the delivery of sediment to streams.

Fire and Fuels

The analysis of fire and fuels divides the planning area into two areas:

- the Salem, Eugene, Roseburg, and Coos Bay districts (north of Grants Pass), which generally have a low-frequency and high-severity fire regime; and
- the Medford District and Klamath Falls Resource Area of the Lakeview District (south of Grants Pass), which generally have a high-frequency and low-severity fire regime.

Fire severity, hazard, and resiliency can generally be equated to broad descriptions of vegetation conditions. Under moderate and extreme conditions, the primary source of high-severity fire would be in stand establishment and young forests that consist of even-aged stands.

All four alternatives would reduce fire severity and hazards north of Grants Pass, because all four alternatives would reduce the combined abundance of stand establishment and young forests. The No Action Alternative and Alternative 1 would result in the largest decrease and Alternative 2 would result in the smallest decrease.

All four alternatives would reduce fire severity and hazard in the Medford District, but the amount of decrease would vary widely among the alternatives. The amount of decrease is relative to the reduction in acreage of stand establishment and young forests compared to the current condition. The No Action Alternative would result in the most decrease and Alternative 2 would have the least decrease.

Alternatives 1 and 2 would increase fire severity and hazards in the Klamath Fall Resource Area of the Lakeview District while the No Action Alternative and Alternative 3 would decrease fire severity and hazards at approximately the current levels.

Alternatives 1 and 2 would decrease the acreage of fire-resilient forests from current conditions, because they would create forests without green tree structural legacies, which have a lower fire resiliency compared to forests with such structural legacies.

In both the Medford District and Klamath Falls Resource Area, the No Action Alternative and Alternative 3 would increase the acreage of fire-resilient forests from current conditions, because they would create forests with structural legacies.



Air

Under all four alternatives, emissions from prescribed burning would occur at the local level, but all burning would follow the Oregon Smoke Management Plan. This would result in the protection of all air quality, Class 1 visibility areas, and air quality maintenance areas.

Recreation

All four alternatives meet recreational demand and improve the quality of visitor experiences.

The off-highway vehicle designations would be the same under the three action alternatives. See *Table 6 (Off-highway vehicle designations under the alternatives)*. Additionally, in the Medford District, the number of off-highway vehicle emphasis areas would vary from 0 to 10 under all four alternatives.

Table 6. Off-highway vehicle designations under the alternatives

Off-highway Vehicle Designation	No Action Alternative (acres)	All Action Alternatives (acres)
Open	330,000	77
Closed	84,600	98,800
Limited to Existing Roads and Trails	950,000	0
Limited to Designated Roads and Trails	1,100,000	2,400,000

Under the three action alternatives, the redesignation of off-highway vehicle areas, and the designation of 10 new emphasis areas in the Medford District (under Alternative 2), would reduce visitor conflicts and increase off-highway vehicle opportunities. This would improve public safety and visitor experiences compared to the No Action Alternative.

Harvesting and associated roads can change the remoteness and naturalness of an area, which in turn can cause changes in the recreational settings used by the public. Remoteness would be little changed under all four alternatives since there are relatively few new permanent roads. The naturalness of BLM areas would also be little changed overall. The alternatives would maintain a mix of naturalness settings that provide a variety of opportunities and experiences for visitors.

Wilderness Characteristics

The BLM evaluated 146 public wilderness proposals that were received during scoping. It was determined that nine of these areas (26,123 acres) contained wilderness characteristics. Under the three action alternatives, there would be special management (no harvesting) to maintain the wilderness characteristics on five of these areas.



It was assumed that timber harvesting would not maintain wilderness characteristics. *Table 7 (Acres of wilderness characteristics maintained under the alternatives)* shows that each of the four alternatives would maintain 52 to 63% of the 26,123 acres that have wilderness characteristics.

Table 7. Acres of wilderness characteristics maintained under the alternatives

Wilderness Characteristics Maintained	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Acres	16,485	15,610	13,637	13,918
Percentage	63	60	52	53

Visual Resources

Visual resource quality is determined through the visual resource inventory process, which is based on a combination of scenic quality, sensitivity levels, and distance zones. The results of this inventory process classified all BLM lands within the planning area as Class I, II, III, or IV. Class I areas are determined to have the highest level of visual resource quality, while Class IV areas have the lowest level (see *Chapter 3*).

The BLM also designates visual resource management classes through the land use planning process. These classes also range from Class I through IV. Class I areas are managed to preserve visual resource quality, while Class IV areas allow for major modifications. Management classes can vary from the original inventory classes to be consistent with the goals and objectives of resource management plans.

Areas inventoried as Class I and IV would be maintained under all four alternatives. Regeneration harvests would diminish existing visual resource quality within Class II and III areas. Alternative 1 would maintain existing visual resource quality on the greatest portion of BLM lands within the planning area compared to the other two action alternatives.

National Landscape Conservation System

The three action alternatives would continue to protect all National Landscape Conservation System designated lands.

Soils

The same or improved practices would be used to minimize the loss of soil productivity under the three action alternatives as under the No Action Alternative.

Despite some residual detrimental soil disturbance, overall soil productivity would be maintained or improved under all four alternatives.



Grazing

Under the three action alternatives, the acres of livestock grazing authorizations would decrease from 560,000 acres to 418,500 acres. This decrease is largely in the Medford District and Klamath Falls Resource Area of the Lakeview District, where the acres are vacant and not currently grazed.

Under all four alternatives, there would be an increase in forage production in the Medford District and the western portion of the Klamath Falls Resource Area of the Lakeview District. The highest increase under the three action alternatives would occur under Alternative 3. None of the alternatives would substantially change the quantity of forage production in the eastern portion of the Klamath Falls Resource Area, since little regeneration or partial harvesting would occur there.

Wild Horses

The Pokegama Herd Management Area is located partially (84%) within the planning area. Forage production in support of the herd would be affected by changes to vegetation due to management activity. Stand establishment forests, where regeneration or partial harvesting would occur, provides the best forage.

All four alternatives would increase forage production with the highest increase being under Alternative 3. All four alternatives would maintain the current appropriate herd management level of 30 to 50 head.

Areas of Critical Environmental Concern and Research Natural Areas

During the planning process, the status of 94 existing and 38 proposed areas of critical environmental concern were reviewed. There were 124 that met the designation criteria and that were carried forward under the three action alternatives.

Relevant and important values are the unique values for which an area of critical environmental concern is managed. Some land use allocations may provide for these values, so there would be no need for designation. Under the three action alternatives, areas of critical environmental concern were analyzed for designation, and if areas were not viable without O&C lands they were not designated.

See *Table 8 (Total existing and potential ACECs designated by alternative)* for the number of areas of critical environmental concern under the alternatives.

Table 8. Total existing and potential ACECs designated by alternative

Designated	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Number of ACECs	94	92	93	82



It was assumed that if an area of critical environmental concern was not designated due to the loss of O&C lands, the relevant and important values would be degraded or lost. See *Table 9 (Relevant and important value categories that would receive no special management attention)* for the action alternatives that would not maintain 25 to 35% of the relevant and important values. Note that an area of critical environmental concern can have more than one relevant and important value.

Table 9. Relevant and important value categories that would receive no special management attention

Value Category	Alternatives							
	No Action		Alternative 1		Alternative 2		Alternative 3	
	number	%	number	%	number	%	number	%
Cultural, historic, and scenic	0	0	5	16	4	13	7	22
Fish and wildlife	0	0	19	34	15	27	24	43
Natural process or system			34	28	33	28	43	36
Natural hazard	0	0	0	0	0	0	0	0
Totals	0	0	58	27	52	25	74	35

Note: See *Appendix M. Areas of Critical Environmental Concern and Research Natural Areas* for information about the specific important and relevant values for each area of critical environmental concern.

Cultural Resources

Impacts to sites would be largely reduced or eliminated due to predisturbance site discovery and avoidance or protection measures. However, there would be some residual incidental or inadvertent loss of sites. Damage to cultural, paleontological, and traditional use sites would vary little between the alternatives. For all four alternatives, 2% or less of the number of sites would be damaged per decade.

Energy and Minerals

All four alternatives would maintain similar levels of availability and quantity of energy and mineral resources. Opportunities to explore for energy and mineral resources on public land within the planning area would generally be abundant relative to the demand under all four alternatives.

Under all four alternatives, those portions of the Coos Bay District that are in the Coos geologic basin would be of special interest for exploration and development of coal bed natural gas, as an extension of development already under way. As many as 77 wells may be drilled on federal land, which would result in approximately 525 acres of disturbance.