5401
EA-04-04
Bear Creek

April 28, 2004

Concerned Citizen,

The Upper Willamette Resource Area of the Eugene District Bureau of Land Management has completed the Environmental Assessment (EA) and Finding of No Significant (FONSI) for the proposed Bear Creek Timber Sale located in Sections 21, 28 and 29, T. 16 S., R. 3 E., Will. Mer.

You have expressed an interest in receiving copies of Environmental Assessments for district projects. Enclosed is a copy of the Environmental Assessment for your review and any comments. Public notice of this proposed action will be published in the Eugene Register Guard on April 28, 2004. The EA will also be available on the internet at http://www.edo.or.blm.gov/nepa. The public comment period will end on May 28, 2004. Please submit comments to me at the district office, by mail or by e-mail at OR090mb@or.blm.gov by close of business (4:15 p.m.) on or prior to May 28, 2004. If you have any questions concerning this proposal, please feel free to call Richard Hardt at 683-6690.

Comments, including names and street addresses of respondents, will be available for public review at the district office, 2890 Chad Drive, Eugene, Oregon during regular business hours (7:45 a.m. to 4:15 p.m.), Monday through Friday, except holidays, and may be published as part of the EA or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Sincerely,

Emily Rice, Field Manager
Upper Willamette Resource Area

Enclosure

BEAR CREEK
Timber Sale

Upper Willamette Resource Area
BLM Eugene District

ENVIRONMENTAL ASSESSMENT
Environmental Assessment No. 090 EA 04-04

April 2004

Contents

Bear Creek Timber Harvest
Upper Willamette Resource Area
BLM Eugene District

Environmental Assessment
Environmental Assessment No. OR 090 EA 04-04

PURPOSE AND NEED FOR ACTION
The Bureau of Land Management (BLM) proposes to harvest timber in the Bear Creek Watershed. The proposed action is within the Central Cascade Adaptive Management Area (CCAMA) land use allocation. The area of analysis, for the purposes of this environmental document, is approximately 380 acres of BLM lands located in T. 16 S., R. 3 E., sections 21, 28, and 29, Will. Meridian (see maps in Appendix B).

The purpose of the action is to manage stands to maintain forest health and productivity, to meet Aquatic Conservation Strategy objectives, to provide timber products, and to develop a learning component within the CCAMA. The emphasis for the CCAMA land use allocation is on developing approaches for integrating forest and stream management; implications of natural disturbance regimes; intensive research on ecosystem and landscape processes and its application to forest management in experiments and demonstrations at the stand and watershed level; and management of young and mature stands to accelerate development of late-successional conditions (Northwest Forest Plan ROD p. D-12).

The need for the action is established in the *Eugene District Record of Decision and Resource Management Plan* (RMP), which directs that the CCAMA contribute substantially to the provision of a stable timber supply (RMP, p. 32). The need for this action is also established by the high tree density of these stands, which is reducing stand vigor and tree growth.

BLM developed a landscape design for the BLM lands in the CCAMA. This design, called the Middle McKenzie Landscape Design (MMLD), uses a landscape management strategy to achieve ecological and social objectives based upon historical disturbance regimes, specifically some historical fire regimes. The assumption is that the more the future landscapes resemble historical landscapes, the higher the likelihood of retaining native habitats, species, and ecological function. The MMLD generally recommends that 60 - 80-year-old stands be thinned to increase wind-firmness and to develop crowns on future retention trees, but also includes opportunities for regeneration harvest of stands of this age (MMLD pp. 22-23).

The project area is within the Low Elevation Headwaters of the McKenzie River Potential Area of Critical Environmental Concern (ACEC) (RMP, p. 71). The RMP directs that any timber harvest in the potential ACEC must be consistent with maintaining or enhancing the primary values of the ACEC nomination area (RMP, p. 73). Most of the project area is also within a Tier 1 Key Watershed (RMP, p. 19). The RMP directs that BLM reduce existing road mileage within Key Watersheds (RMP, p. 20).

Conformance

This environmental assessment (EA) is tiered to the Northwest Forest Plan ROD and the Eugene District RMP, as amended by the *Record of Decision (ROD)* for *Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (January 2001), the *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (March 2004) (Survey and Manage ROD), and the *Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy* (March 2004). These documents are available for review at the BLM Eugene District Office or on the internet at http://www.or.blm.gov/nwfp.htm. The Bear Creek project file contains additional information used by the Interdisciplinary Team (ID Team) to analyze impacts and is available for review at the Eugene District Office.

Issues

The following issues serve to focus the analysis and the comparison of the alternatives. The Critical Elements of the Human Environment were considered and are summarized in the Environmental Consequences Section.

Issue # 1 - *How would timber harvest affect crown development and wind-firmness of retained trees?*

The analysis models stand development for 50 years using Forest Vegetation Simulator (FVS). Crown development is described based on the stand average crown ratio (the ratio of the depth of the crown to the entire tree height) and canopy closure. Wind-firmness is evaluated based on stand average tree height:diameter ratios.

Issue #2 - *Would timber harvest maintain or enhance primary values of the ACEC nomination area?*

The ACEC nomination identified four key issues: south bank scenery; large blocks of low elevation land; fish resources; and wildlife resources. South bank scenery would not be affected by this action. The cumulative effect of timber harvesting on landscape patterns was modeled in the MMLD, which is incorporated by reference. Although the MMLD considered the landscape pattern of all BLM lands within the CCAMA, of which the potential ACEC is only a part, the overall landscape patterns would be generally applicable to the potential ACEC as well. The aquatic habitat components that would affect fish resources and would be affected by this action are addressed in Issue #3.

Wildlife resources are qualitatively evaluated based on the habitat needs of the individual Special Status Species identified in the ACEC nomination that are known or likely to occur in the project area and are not addressed in other issues: tailed frogs, Oregon slender salamander, and northern red-legged frogs.

Northern red-legged frogs could breed in the project area in partially shaded, standing water or low gradient streams, but there are no known breeding locations or individuals in or near the project area. Upland habitats are used for foraging and dispersal.

Tailed frogs are known to occur in and near the project area in cold, clear, high-gradient streams. Upland habitats are used for foraging and dispersal.

Oregon slender salamander is a terrestrial salamander that requires stable (undisturbed), humid conifer forests with abundant, well-decayed logs and snags. Slender salamanders are generally intolerant of changes in stand humidity and log habitat. The species is not known to occur in the project area, but could be present in locations with well-decayed logs and snags or mesic rock outcrops.

The following species listed in the original ACEC nomination are not addressed in detail in this EA. Mountain quail was a Special Status Species at the time of the ACEC nomination but is no longer a Special Status Species. Northern spotted owls are addressed in a separate issue below. Northern

saw-whet and northern pygmy owls were Special Status Species at the time of the ACEC nomination but are no longer Special Status Species. Saw-whet and pygmy owls may be present in or near the project area, but the project area generally exhibits poor nesting conditions. Cascade torrent salamanders occur in the project area but are restricted to near-stream environments, and their habitat elements that may be affected by the action are addressed by the aquatic habitat components in Issue #3. Harlequin ducks are likely restricted to larger streams (4th-order or larger), but their habitat elements that may be affected by the action are addressed by the aquatic habitat components in Issue #3. White-footed voles are not analyzed, because they are no longer a Special Status Species. In addition, too little is known about their distribution or habitat needs to analyze effects, but no adverse affects would be anticipated to the species. Pacific fisher and pine marten are not analyzed, because they are unlikely to occur in the project area, and pine marten is no longer a Special Status Species.

Wildlife Species Listed in ACEC Nomination

Species	Status at time of ACEC Nomination	Special Status now	How species is addressed in this EA
Northern spotted owl	Threatened	Threatened	Issue #5
Tailed frog	Assessment	Assessment	Issue #2
Cascade torrent salamander	State Vulnerable	Assessment	Habitat elements addressed by Issue #3
Oregon slender salamander	Sensitive	Sensitive	Issue#2
Northern red-legged frog	Assessment	Assessment	Issue #2
Northern saw-whet owl	Assessment	None	None: not Special Status, poor nesting conditions
Northern pygmy owl	None (tracking)	None	None: not Special Status, poor nesting conditions
Mountain quail	Candidate (2)	None (tracking)	None: not Special Status, unlikely to occur
Harlequin duck	Candidate (2)	Assessment	Habitat elements addressed by Issue #3
White-footed vole	Candidate (2)	None (tracking)	None: not Special Status, too little known for analysis
Pacific fisher	Candidate (2)	Sensitive	None: unlikely to occur
Pine marten	Assessment	None (tracking)	None: not Special Status, unlikely to occur

Issue #3 - *Would timber harvest, road construction, and road decommissioning affect sediment delivery, stream temperature, and peak flows?*
Sedimentation is assessed based on canopy closure in harvested areas and the potential of yarding, road construction, and decommissioning to deliver sediment to streams. Effects on stream temperature are analyzed based on canopy closure in the primary shade zone (the area that shades the stream at midday: =60' from the stream) and the secondary shade zone (the area that shades the stream in early morning and late afternoon: 61-180' from the stream). The analysis uses the Water Available for Runoff (WAR) model (Washington Forest Practices, 1997) to assess the effect of timber harvesting on stream flow in the Bear Creek and South Fork Gate Creek 6th-field watersheds.

Issue #4 - *How would timber harvest and yarding affect fuel loading?*
The analysis measures fuel conditions over time by assigning specific quantities and qualities of surface fuels to specific "fuel models," which allow comparison of potential fire behavior and fire effects (Anderson 1982). The following fuel models (FM) are used in the analysis:

FM 5 (brush) – Fire is generally carried in the surface fuels, made up of litter, shrubs and the grasses or forbs in the understory. FM 5 can exhibit intense fire behavior under severe weather conditions involving high wind, high temperature and low humidity.
FM 8 (closed timber litter) – Fires are slow-burning, ground fires with low flame lengths, although fires may encounter heavy fuel concentrations that can flare up.
FM 10 (heavy timber litter/understory) – Fires burn in surface and ground fuels with greater intensity than other timber models due to higher fuel loadings. Crowning, spotting, and tree torching is frequent in this fuel type.
FM 11 (light logging slash) – Fires are fairly active in the slash and the intermixed herbaceous material. Relatively light fuel load, overstory shading and rapid aging of the fine fuels generally limit the fire potential.
FM 12 (moderate logging slash) – Rapidly spreading fires with high intensities capable of long range spotting can occur. If a fire starts, it is generally sustained until a fuel break or change in fuel type is encountered.

Issue #5 - *What would be the disturbance and habitat modification effects to spotted owls and their progeny due to harvesting?*
The analysis addresses whether disturbance from management activities would be likely to adversely affect northern spotted owls, and how harvest would modify existing dispersal, roosting, foraging, and nesting habitat.

Issue #6 - *What would be the disturbance and habitat modification effects to nesting bald eagles and their progeny due to harvesting?*
The analysis addresses whether disturbance from management activities would be likely to adversely affect nesting bald eagles and how harvest would modify existing nesting habitat.

Issues Not Analyzed

The ID Team considered how timber harvest and related actions would affect attainment of Aquatic Conservation Strategy objectives other than those related to sediment delivery, stream temperature, and peak flows. The ID team concluded that the action would either have a negligible effect on other aquatic objectives or the effect could not be analyzed. Of particular interest was the effect of timber harvest on slope stability. Areas of instability were identified based on field examination and excluded from timber harvest (see *Affected Environment – Soils)*. Therefore, the ID team concluded that none of the alternatives would have an effect on slope stability.

Effects of the action on Survey & Manage species are not analyzed, because the Survey and Manage ROD (March 2004) removed the Survey and Manage mitigation measure. The ID Team had considered the effects of the action on species that had Survey and Manage status prior to the Survey and Manage ROD. However, there are no known sites of species that required management within the project area. No surveys were conducted for red tree voles, because the project area does not meet the minimum stand conditions that required pre-project surveys. No surveys were conducted for Crater Lake tightcoil snail (*Pristoloma arcticum crateris*), because none of the alternatives would include thinning within 60' of potential habitat or regeneration harvest within 100' of potential habitat. Surveys for other species that previously had Survey & Manage status found no known sites of species requiring management.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes alternatives identified by the ID Team and alternatives eliminated from detailed analysis. Design features associated with these alternatives can be found in the appendices: Appendix A for project design features and Appendix B for maps of proposed harvest areas.

Alternative 1 – thinning according to the MMLD

This alternative would thin the stand consistent with the MMLD. The stand would be thinned from below to approximately 72 trees per acre (tpa), consistent with the transition thinning prescription described in the MMLD (pp. 20-23). Only Douglas-fir would be selected for cutting. From the cut trees, the bottom 20' of 8 tpa =20" diameter breast height (dbh) would be left for coarse woody debris (cwd). Approximately four years after timber harvest, 7 tpa =16" dbh would be killed to create snags. This proposed creation of snags may be modified or eliminated if comparable amounts are created naturally or as a result of harvest operations.

No treatment would occur within a slope stability/riparian buffer that varies from 60-250' from streams. No treatment would occur within a 15-acre area in the southeast of the project area which lies within a small basin reserve identified in the MMLD (see maps, Appendix B).

Two temporary, dirt-surfaced spur roads would be constructed, totaling 0.3 miles. All new construction would be decommissioned upon completion of harvest activities. Additional landings would be constructed along existing roads, and two existing landings would be enlarged as helicopter landings.

Approximately 6 acres would be yarded by ground-based machinery, 270 acres by cable systems, and 89 acres by helicopter. Slash adjacent to rocked roads, on landings and along the northwest boundary of the project area would be piled and burned to reduce fuel-related hazards.

Alternative 2 – regeneration harvest and thinning according to the MMLD

This alternative would include thinning in part of the project area and regeneration harvest in part of the project area consistent with the MMLD. Harvest treatments would be selected based on the landscape blocks delineated in the MMLD, and regeneration harvest units were selected according to the criteria in the MMLD (pp. 48-50). In blocks with regeneration harvest, the area within one site-potential tree of streams would be thinned similar to Alternative 1. Approximately 220 acres would be thinned, and 145 acres would be treated with regeneration harvest. The overall boundaries of the treated area would be the same as Alternative 1.

In areas with regeneration harvest, trees would be retained at a range from 6 tpa on ridgelines to 20 tpa on lower slopes. Retained trees would generally be >14" dbh and many would be >24" dbh. Generally the largest trees in the immediate area would be selected for retention to ensure stability. Harvested areas would be replanted with a mixture of Douglas-fir, western hemlock and western red-cedar. Coarse woody debris and snag creation in both the regeneration harvest and thinned areas would be the same as in Alternative 1.

Roads and yarding would be similar to Alternative 1. Slash would be piled and burned as in Alternative 1, except that 131 acres of the regeneration harvest area would be broadcast burned in the spring to reduce fuels and prepare the site for planting.

Alternative 3 – thinning according to Matrix standards and guidelines

This alternative would thin the stand consistent with the Matrix standards and guidelines. This alternative would be similar to Alternative 1, except that no cut trees would be left as coarse woody debris, no trees would be killed for snags, and the 15-acre area in the southeast of the project area which lies within a small basin reserve identified in the MMLD would be thinned. The additional 15 acres would be yarded by helicopter.

The portion of the stand within one site-potential tree of streams (but outside of the slope stability/riparian buffers described in Alternative 1) would be thinned with the purpose of speeding the development of late-successional forest structure. However, because of the high density and instability

of the current stand, the riparian thinning prescription would be designed, like the upland thinning prescription, as a transition prescription to increase the stability of the stand similar to Alternative 1.

Alternative 4 – no action

No timber harvest, road construction, or other management actions would occur within the project area at this time.

Alternatives Considered but Not Analyzed in Detail

Regeneration harvest of the whole project area consistent with the MMLD

This alternative would apply regeneration harvest to the entire 365-acre area that would be treated under Alternatives 1 and 2. However, this alternative would not be consistent with the MMLD, which directs that regeneration of landscape blocks be dispersed, and that no more than one landscape block adjacent to a Late-Successional Reserve be regeneration harvested in 20 years (three of the landscape blocks in the project area are adjacent to a Late-Successional Reserve on U.S. Forest Service land to the north and east) (MMLD, p. 49).

Regeneration harvest of the whole project area consistent with Matrix standards and guidelines

This alternative would apply regeneration harvest to the entire 380-acre area that would be treated under Alternative 3. However, regeneration harvest at this time in the lower slope portions of the southern part of the project area (which would be thinned under Alternative 2) would pose operational obstacles to any future harvest in the stands to the south.

Regeneration harvest and thinning according to Matrix standards and guidelines

This alternative would apply a combination of thinning and regeneration harvest similar to Alternative 2, but consistent with Matrix standard and guidelines rather than the MMLD. This alternative was not analyzed in detail, because it would have direct and indirect effects that would be similar to Alternative 2, and cumulative effects beyond the project area that would be similar to Alternative 3.

Matrix thinning with no riparian thinning

This alternative would be similar to Alternative 3 but would not thin stands within a distance of one site-potential tree of streams (or two site-potential trees of fish-bearing streams). This alternative was not analyzed in detail because it would have effects that would be similar to Alternative 3, except that the effect of not thinning these riparian stands would be similar to Alternative 4 (No Action).

Comparison of Alternatives

ELEMENTS	ALT. 1 MMLD THIN	ALT. 2 MMLD COMBO	ALT. 3 MATRIX THIN	ALT. 4 NO ACTION
Thinning Harvest Acres	365	220	380	0
Regeneration Harvest Acres	0	145	0	0
TOTAL ACRES HARVESTED	**365**	**365**	**380**	**0**

Temporary Road Construction (miles)	0.3	0.3	0.3	0
Roads Decommissioned (miles)	0.3	0.3	0.3	0

AFFECTED ENVIRONMENT

The resources in the project area do not differ substantially from those discussed in Chapter 3 of the RMP Environmental Impact Statement (EIS), the Bear/Marten Watershed Analysis, and the MMLD, and those analyses are incorporated here by reference. The resources analyzed below are also discussed in greater detail in the Bear Creek project file.

Vegetation

Additional discussion of the current vegetation conditions in the watershed is presented in the Bear/Marten Watershed Analysis (pp. 2-5 – 2-6, 4-26 – 4-33) and the MMLD (pp. 9-14, Appendix F), which are incorporated here by reference. The MMLD described the historic and current age class distribution and landscape pattern: much of the landscape currently has high-density, mature stands, and older forests are small and highly fragmented (MMLD, pp. 9-10).

The forests in the project area are an approximately 77-year-old, high-density stand that regenerated naturally, presumably after wildfire. The stand exhibits little structural complexity or canopy differentiation and therefore provides little value to wildlife species using late-successional forest structure. The overstory is heavily dominated by Douglas-fir, and the high overstory density is suppressing the growth of both overstory trees and understory vegetation. Current stand density is approximately 154 tpa, and canopy closure is approximately 75%. Stand conditions are generally similar downslope until the immediate near-stream environment (which would be left untreated in all alternatives). Immediately adjacent to the streams, the stand includes red alder and bigleaf maple.

No special status plant species or Survey and Manage species that require management have been found in the project area.

The current fuels condition is FM 8 (closed timber litter). Most upland parts of the project area lack down logs and snags, except for scattered well-decayed large logs and snags. However, most stream areas contain abundant accumulations of large logs.

Threatened and Endangered Species

Additional discussion of the current conditions for northern spotted owls and bald eagles is presented in the Bear/Marten Watershed Analysis (pp. 4-61 – 4-63) and the MMLD (pp. 9, 98-103), which are incorporated here by reference.

Northern Spotted Owl (Threatened)

The project area is within designated Critical Habitat Unit CHU-OR-16. Approximately 48% of the federal acres within the CHU are currently nesting habitat, and 56% are either nesting or dispersal habitat. The site centers of three owl sites are located near the project area: Bear Creek East (0.7 miles from project area), Wet Gulch (0.1 miles from project area), and Rough Creek (0.5 miles from project area). Bear Creek East was located in 1987 and has been continually occupied by pairs and single owls with one known nesting attempt. Wet Gulch was located in 1989 and has been occupied by various combinations of single and paired barred owls and spotted owls, including a probable spotted owl-barred owl pair in 2003. No known

nesting attempts have occurred at this site. Bear Creek East and Wet Gulch have been partially and inconsistently surveyed since 1990. Rough Creek was located in 1992 and was occupied by pairs and single owls from 1992-1995 with no known nesting attempts. No surveys have occurred since 1995.

All three owl sites are considered "at risk" for successful reproduction because of the small acreage of nesting habitat within their provincial home ranges (11%, 11%, and 34%, for Bear Creek East, Wet Gulch, and Rough Creek, respectively). Owl sites are generally considered "at risk" when the provincial home range contains less than 40% nesting habitat. All three owl sites have adequate amounts and distribution of dispersal and foraging habitat.

All of the project area is currently dispersal habitat, but not suitable nesting habitat. In the Eugene District, suitable nesting habitat is usually found in stands >80 years old. However, stands in and near the project area do not appear to be developing suitable nesting habitat in less than 100 years because of the dense, uniform stand conditions. 451 acres of suitable nesting habitat within 0.25 mile of the project area would have the potential to be disturbed by noise from project activities during the nesting season without seasonal restrictions.

Bald Eagle (threatened)

Approximately 40 acres of the project area is within 1.5 miles of the McKenzie River and could therefore provide potential bald eagle nesting habitat in the future, if it developed the appropriate late-successional forest structure. The project area does not provide any patches of bald eagle nesting habitat, but some individual trees may provide nesting structure. Approximately 75 acres of suitable eagle nesting habitat near the project area would have the potential to be disturbed by project activities without seasonal restrictions if eagles are nesting. These stands have a reasonable chance of use by eagles because of their age, structure, proximity to the McKenzie River, low human disturbance, and location relative to other known nests. No surveys for bald eagles have been conducted in or near the project area within the past 10 years. The area would be surveyed during the year project activities commence to determine if eagles are nesting.

Soils

Soils in the project area are primarily Klickitat and Kinney series, with lesser amounts of Peavine, Bohannon, and a mix of Blachly and McCully soils (Soil Conservation Service, 1987). Productivity (or resiliency) is intermediate or high for all of these soils. Soil quality is generally intact throughout the project area. Field examination identified approximately 30 acres in the project area as having a high potential for mass movement. These areas are over-steepened headwalls and hollows with deep soils, or within the inner gorges of streams. All of these areas are within stream buffers and would not be treated in any alternative. Klickitat soils have reforestation restrictions because of large amounts of rock which limit plantibility and droughty conditions for seedling establishment, especially on south-facing slopes.

Hydrology and Water Quality

The project area is entirely within the Lower McKenzie River 5th-field watershed. Approximately 30 acres on the north side of the project area is within the South Fork Gate Creek 6th-field watershed, and the remainder is within the Bear Creek 6th-field watershed (and is within the Tier 1 Key Watershed). Most of the project area lies within the North Fork Bear Creek 7th-field watershed, and a small portion of the project area has small streams that flow into the mainstem Bear Creek.

The project area varies in elevation from 1720-3060'. Most of the project area is in the transient snow zone (2130-2810') and is susceptible to rain-on-snow storm events.

The McKenzie River is on the 2002 Department of Environmental Quality (DEQ) 303(d) Water Quality Limited List for elevated spring, summer, and fall temperatures that exceed the bull trout temperature standard of 50º F. However, the streams in the project area do not have bull trout and have a DEQ temperature standard of 64º F. Water temperature monitoring conducted on Streams 5, 10, and 14 from 2000 to 2003 found that none of these streams exceeded the DEQ 64º F standard.

The existing roads in the project area and proposed haul route have been graded and maintained, and no obvious problems with sedimentation from roads to streams have been identified.

Fisheries

Descriptions of the fisheries conditions in the Bear/Marten watershed are contained in the Bear/Marten Watershed Analysis (pp. 2-7 – 2-8, 4-34 – 4-58) and the MMLD (pp. 5-6, 9, 103-104, 108-110), which are incorporated here by reference. The Watershed Analysis and MMLD noted that the streams in and near the project area generally have good water quality, and abundant existing woody debris and riparian trees of sufficient size to create and stabilize fish habitat in the future.

Fish use within the mainstem Bear Creek is known to include rainbow and/or steelhead trout, cutthroat trout, unknown sculpin species, and various dace species (Ziller, 2003). Stream gradient likely precludes other trout and salmon species from inhabiting the system.

A waterfall on the North Fork Bear Creek immediately above the confluence with the mainstem Bear Creek is considered a barrier to upstream fish movement. Another waterfall at the confluence with the East Fork of the North Fork Bear Creek and about 0.15 miles up the West Fork of the North Fork Bear Creek constitutes a complete barrier to fish movement. Because of these natural barriers, fish presence in the North Fork Bear Creek is limited to an isolated (geographically and genetically) population of cutthroat trout (Armantrout, 2003).

The portion of the project area in the South Fork Gate Creek 6th-field watershed includes one ephemeral stream which has no potential fish habitat.

ENVIRONMENTAL EFFECTS

This analysis incorporates by reference the analysis of cumulative effects in the Final Supplemental EIS for the Northwest Forest Plan (Chapters 3&4, pp. 4-10) and the RMP EIS (Chapter 4). Those documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives considered here would have cumulative effects on any resources beyond those effects analyzed in the above documents. The following section supplements those analyses, providing analysis particular to the alternatives considered here, the relevant issues for this action, and site-specific information.

Each alternative in this EA makes assumptions about the reasonably foreseeable future actions on BLM lands in the CCAMA. Alternatives 1 and 2 assume that future BLM actions in the CCAMA would be consistent with the MMLD. Alternatives 3 and 4 assume that future BLM actions would be consistent with the Matrix standards and guidelines. These assumptions are presented only for the purpose of cumulative effects analysis and do not represent a decision in principle about whether future actions will be consistent with the MMLD.

Summary of Direct and Indirect Effects

	Alternative 1 MMLD thinning	Alternative 2 MMLD combo	Alternative 3 Matrix thinning	Alternative 4 no action
Crown development and wind-firmness of retained trees	- crowns maintained - wind-firmness improves, but trees still unstable (H:D >70)	- crowns increase on leave trees in regen areas - wind-firmness improves, trees become stable in regen (H:D <70)	- crowns maintained - wind-firmness improves, but trees still unstable (H:D >70)	- crowns decrease - trees remain unstable (H:D >80)
Wildlife species analyzed for primary values of potential ACEC	- travel corridors degraded for frogs - salamander habitat degraded; CWD creation improves habitat in long-term	- travel corridors degraded and removed for frogs - salamander habitat degraded and removed; CWD creation improves habitat in long-term	- travel corridors degraded for frogs - salamander habitat degraded	No change in habitat conditions for frogs and salamanders
Sediment, temperature, and peak flows	no measurable change	no measurable change	no measurable change	no effect
Fuel loading	FM11: 276 acres FM12: 89 acres - pile burning	FM11: 161 acres FM12: 204 acres (pre-treatment) - pile burning and broadcast burning	FM11: 276 acres FM12: 104 acres - pile burning	380 acres change from FM8 to FM10 over 50 years if no harvest
Northern spotted owls and bald eagles	not likely to adversely affect	not likely to adversely affect	not likely to adversely affect	no effect

Unaffected Resources

The following resources or concerns are either not present or would not be affected by any of the alternatives: cultural resources, prime or unique farm lands, floodplains, wetlands, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, Native American trust resources, minority populations or low income populations, and invasive non-native species. The action would have no adverse energy impact.

Effects on Areas of Critical Environmental Concern, water quality, and threatened and endangered species are addressed in the issues below. All of the action alternatives would include activities that could affect air quality, including smoke from prescribed burning and dust from road use and construction. The project area is 15 miles east of the Willamette Designated Area (DA), as defined in the State Implementation Plan for air quality. Given the minor amount and diffuse nature of these activities that would occur, all of the alternatives would have a negligible effect on air quality, and the effects have been already analyzed in the RMP EIS (pp. 4-10 - 4-14). Additional information is presented in the Fuels Report which is included in the Bear Creek project file and available for review at the Eugene District Office.

Issue #1 - *How would timber harvest affect crown development and wind-firmness of retained trees?*

Alternative 1 – thinning according to the MMLD

Thinning would maintain crowns of the retained trees by increasing light within the stand, so that lower branches would die slightly more slowly than the tops would grow. Crown depth would remain steady or increase slightly, and average stand crown ratios would decline from 43% to 42% over 50 years, which would be a negligible change, given the coarseness of averaging crown ratios across the stand. Canopy closure would decrease to 45% from the initial thinning; then recover to 50% in four years; and then decrease again to 45% from the snag treatment. Canopy closure would return to 70% in approximately 15 years. Untreated portions of the project area would develop similar to Alternative 4.

Thinning would improve the wind-firmness of the stand by removing the smaller trees (which have higher height:diameter ratios) and by increasing the wind-firmness of the retained trees over time. During the modeled period of 50 years, the height:diameter ratios would decrease faster than in the unthinned stand, but would still remain above 70, which some studies have found to be unstable for Douglas-fir (Lohmander and Helles 1987; Wilson and Oliver 2000).

Thinning would make the stand less unstable, but, by itself, would not speed development of late-successional forest structure. Thinning would retain a relatively high overstory density and would result in only a modest increase in diameter growth of the retained trees. Additional thinning or other disturbance that would substantially lower overstory density would be needed before the stand would develop late-successional structure, such as multiple canopy layers, shade-tolerant conifer understory, or a wide range of tree diameters (Spies and Franklin 1991; see also BLM 2003, pp. 66-69, 171-174).

There would likely be some wind damage to the stand following thinning, although the extent of damage would be determined by the severity of windstorms in the first few years following thinning. If windstorms are not severe, damage would likely be limited to some windsnap of trees on the windward side of ridges, and windthrow on the lee side of ridges. In these areas, wind damage may include small areas where as much as 25% of the trees would be killed. Elsewhere in the project area, wind damage would likely be limited to occasional, individual trees, comprising less than 10% of the trees in an area.

Alternative 2 – regeneration harvest and thinning according to the MMLD

The effect of Alternative 2 on crown development and wind-firmness in thinned areas would be similar to Alternative 1.

Regeneration harvest would increase the crown depth of the retained trees by effectively halting the death of lower branches from competition. Average crown ratios on retained trees would increase from 43% to 52% over 50 years. Regeneration harvest would reduce canopy closure to 18% near ridgelines and to 28% near streams.

In areas treated with regeneration harvest, the larger trees (which have lower height:diameter ratios) would be selected for retention and would become increasingly wind-firm over time as they respond to increased growing space. Many of the retained trees would be >24" dbh and have height:diameter ratios less than 70, which would likely be stable. However, there would likely be some wind damage following harvest, especially among the smaller retention trees. Recent regeneration harvests of similar stands have experienced wind damage of 1/5-1/3 of the retained trees in the five years following harvest.

Alternative 3 – thinning according to Matrix standards and guidelines

The effect of thinning on crown development and wind-firmness would be similar to Alternative 1. Alternative 3 would not reduce canopy closure in four years from the snag treatment. However, the differences in overstory treatment between Alternatives 1 and 3 would be too slight to have a discernible difference in effects on overstory condition.

Alternative 4 – no action

The high stand density would result in smaller tree crowns, as lower branches would die faster than growth at the top. Average stand crown ratios would decline from 43% to 39% over 50 years, slightly more than Alternatives 1 and 3. Stand crown closure would remain at 70-80% until the stand would be harvested. If the stand is not thinned now, it is reasonably foreseeable that the stand would be regeneration harvested within the next several decades.

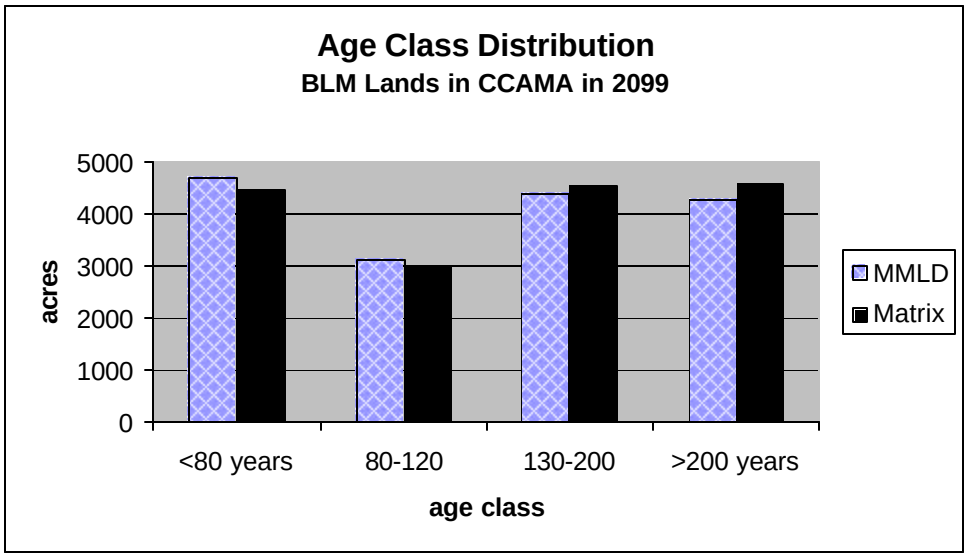
The stand would remain sensitive to wind damage throughout the 50-year modeling period if not harvested, with height:diameter ratios well above 80, which would likely be unstable (Lohmander and Helles 1987; Wilson and Oliver 2000). Should a severe windstorm occur, this stand would be more likely to experience catastrophic wind damage than the treated stands in the action alternatives.

Issue #2 - *Would timber harvest maintain or enhance primary values of the ACEC nomination area?*

Alternative 1 – thinning according to the MMLD

Large blocks of low elevation land: The MMLD, which is incorporated here by reference, compared the landscape pattern that would result from implementation of the MMLD and application of Matrix standards and guidelines (MMLD, pp. 51-54; 104-117). The MMLD concluded that the two approaches would result in similar age class distributions across the potential ACEC in 100 years, with approximately the same acreage of late-successional forests (see Figure 1). Both approaches would increase the amount of late-successional forest from the current condition. However, the MMLD would create larger units designed to reflect the scale of historical disturbances. The cumulative effect of implementation of the MMLD on each of the wildlife species in the potential ACEC nomination is also addressed in the MMLD, which is incorporated here by reference (MMLD, pp. 104-117).

Figure 1



Red-legged frog and tailed frog: Alternative 1 would have no adverse effects on red-legged frog or tailed frog breeding habitats, but thinning would degrade upland travel corridors between breeding locations for approximately 15 years until canopy closure recovers. Creation of coarse woody debris would mitigate some of the effects of canopy reduction and provide immediate and future benefits for individuals traveling upland. The cumulative effect of implementation of the MMLD across the landscape would provide equal or greater benefits than the Matrix standards and guidelines for red-legged and tailed frogs, primarily because of longer rotations and small basin reserves providing upland travel corridors between aquatic habitats (MMLD, pp. 96-97, 110-112).

Oregon slender salamander: Thinning would reduce canopy closure and thereby degrade or remove habitat for Oregon slender salamander for approximately 15 years until canopy closure recovers. Creation of coarse woody debris would mitigate some of the effects of canopy reduction by providing increased cover and would eventually improve breeding habitat when logs have sufficiently decayed. Although thinning would be designed to maintain existing coarse woody debris in treated areas, some existing debris would be degraded or destroyed by harvest activities. The cumulative effect of implementation of the MMLD across the landscape would provide equal or greater benefits than the Matrix standards and guidelines for Oregon slender salamander, primarily because longer rotations and small basin reserves would maintain source populations in undisturbed habitat, and greater creation of coarse woody debris would improve habitat quality (MMLD, p. 111).

Alternative 2 – regeneration harvest and thinning according to the MMLD

Large blocks of low elevation land:
Cumulative effects would be the same as Alternative 1.

Red-legged frog and tailed frog: Alternative 2 would have effects similar to Alternative 1, except that the 145 acres that would be treated with regeneration harvest would not function as travel corridors for 15-20 years.

Oregon slender salamander: Alternative 2 would have effects similar to Alternative 1, except that regeneration harvest would be more likely to damage existing coarse woody debris and would cause a greater reduction in canopy closure. It is unlikely any individuals

would persist in regeneration harvest areas, where habitat conditions would not recover for at least 30-40 years.

Alternative 3 – thinning according to Matrix standards and guidelines

Large blocks of low elevation land: The cumulative effect of application of Matrix standards and guidelines across the potential ACEC would result in similar age class distributions in 100 years, with approximately the same acreage of late-successional forests, though slightly more old-growth than the MMLD (see Figure 1). However, application of Matrix standards and guidelines would cause more forest fragmentation and sharper contrast between landscape patches (MMLD, pp. 51-54).

Red-legged frog and tailed frog: Alternative 3 would have direct and indirect effects similar to Alternative 1, except that there would be no creation of coarse woody debris to mitigate some of the effects of canopy reduction and provide immediate and future benefits for individuals traveling upland.

Oregon slender salamander: Alternative 3 would have direct and indirect effects similar to Alternative 1, except that there would be no creation of coarse woody debris to mitigate some of the effects of canopy reduction.

Alternative 4 – no action

Cumulative effects would be the same as Alternative 3. Alternative 4 would have no direct or indirect effects on red-legged frogs, tailed frogs, or Oregon slender salamander.

Issue #3 - *Would timber harvest, road construction, and road decommissioning affect sediment delivery, stream temperature, and peak flows?*

Alternative 1 – thinning according to the MMLD

Sediment delivery: Harvest and road activities pose a negligible risk of sediment delivery to streams. Areas identified in the field as having a high potential for mass movement have been excluded from harvest activity. Thinning would not cause any measurable increase in bare soil exposure, because the thinning prescription would maintain at least 45% canopy closure, and understory growth would quickly make up for the reduction in canopy closure to intercept moisture. Therefore, no measurable sediment would be available for transport. Cable yarding would cause some displacement of soil and localized compaction, but stream buffers would intercept any eroded soil before it could reach the water. There would be no yarding across streams. Sedimentation from roads and landings would be minimal, because existing roads (including the haul route) are gravel-surfaced and well-maintained. New temporary roads would be located high on the ridges with no stream crossings and would be tilled after harvest activities to restore infiltration and reduce the likelihood of erosion. A permanent landing would be enlarged at the end of Rd.16-3E-33 to service helicopters, and a stream is 125' below the road to this landing, but the road area drains away from this stream.

Stream temperature: Current stream temperature would be maintained. The primary shade zone would remain intact, because no harvest would occur within 60' of streams. Thinning the secondary shade zone would reduce canopy closure from 75% to 45-50%, which would be insufficient change to measurably alter stream temperature. Thinning

outside the secondary shade zone would have no measurable effect on stream temperature. Because Alternative 1 would provide adequate shade protection along the tributaries, there would be no cumulative effect on water temperature in the mainstem Bear Creek.

Peak flows: Alternative 1 would not result in measurable changes to the timing and magnitude of peak flows. Road construction and decommissioning would have no effect on stream flow, because the roads are on ridges and do not drain by ditch-lines towards the stream network. Soil compaction and/or displacement from harvesting would not route run-off to the stream network.

According to the WAR model, thinning would have no effect on peak flows in the South Fork Gate Creek 6th-field watershed for normal or unusual storm events. Thinning in the Bear Creek 6th-field watershed would result in a 1.4% increase in peak flows for normal storm events, and a 2.3% increase in peak flows for unusual storm events. The WAR model states that there are no adverse effects for peak flows where the model indicates increases less than 10%. Changes in peak flows of that magnitude are typically below detection limits using standard stream gauging methods and are unlikely to have any effect on stream channel morphology. Therefore, the slight increase in peak flows that the WAR model calculates for Alternative1 would constitute a negligible or immeasurable change in peak flows.

The effect of thinning on peak flows would be similar in smaller drainages (typically 3rd–order streams). The two drainages on the north side of the ridge that connect to South Fork of Gate Creek would result in peak flow increases up to 1.6% for normal storms, and up to 2.4% for unusual storms. On the tributaries of Bear Creek on the south side of the ridge, thinning would result in peak flow increases of 3.6% for normal storms and 6.0% for unusual storms. Even at this smaller scale, these increases constitute a negligible or immeasurable change in peak flows.

It is unknown whether timber harvesting would have a similar effect on the flow regime in the smallest drainages: 1st- and 2nd-order streams, which are important habitat for some species identified in the ACEC nomination: tailed frogs and Cascade torrent salamander. It is also unknown whether timber harvest would affect summer low flows or overall water yield. Although some studies have shown an increase in low flows due to harvesting and others have shown a decrease, none of the studies included the substantial stream buffers of this action and thus are not directly applicable.

Alternative 2 – regeneration harvest and thinning according to the MMLD

Sediment delivery: Harvest and road activities pose a negligible risk of sediment delivery to streams, generally similar in Alternative 1. Although regeneration harvest would reduce canopy closure to 18% near ridgelines and to 28% near streams, understory cover would quickly respond. Broadcast burning in the regeneration harvest areas would consume as much as 30% of the duff and litter, resulting in substantially more bare soil exposure than in thinned areas, and more soil detachment and localized erosion may occur in the short term. However, the likelihood of sediment delivery to streams would still be negligible because of the interception by stream buffers. Other effects on sediment delivery would be the same as Alternative 1.

Stream temperature: Effects on stream temperature would be the same as Alternative 1. Regeneration harvest would occur more than 220' from streams, outside the secondary shade zone, and thus would have no measurable effect on stream temperature.

Peak flows: The overall effects on peak flows would be similar to Alternative 1. The WAR analysis concluded that regeneration harvest would slightly increase the effect on peak flows in the Bear Creek 6th-field watershed: a 1.9% increase in peak flows for normal storm events, and a 3.3% increase in peak flows for unusual storm events. However, these slight increases are still well below the 10% threshold, and thus Alternative 2 would have a negligible or immeasurable effect on peak flows.

Alternative 3 – thinning according to Matrix standards and guidelines

Effects on sediment delivery, stream temperature, and peak flows would be the same as Alternative 1.

Alternative 4 – No action

There would be no change to the current sediment regime, stream temperatures, or peak flows.

Issue #4 - *How would timber harvest and yarding affect fuel loading?*

Alternative 1 – thinning according to the MMLD

Under Alternative 1, cable yarding would create approximately 276 acres of FM 11 (light logging slash), and helicopter yarding would create approximately 89 acres of FM 12 (moderate logging slash).

Slash within cable-yarded areas would not be uniform or continuous, resulting in a FM 11 condition. FM 11 under the site conditions of this project area would yield low to moderate fire behavior, except under extreme weather conditions. The residual slash would be moved and compacted by the yarding operations, creating openings in the fuel bed, buried slash, and slash concentrations. Skid trails and yarding corridors would have light fuels, with areas of bare soil creating fire breaks within the unit.

Helicopter yarding would create deeper, more continuous slash, resulting in a FM 12 (moderate logging slash) condition.

After approximately 3-5 years, all of the thinned areas would become FM 5 (brush).

Alternative 2 – regeneration harvest and thinning according to the MMLD

Alternative 2 would create approximately 161 acres of FM 11, which would persist for 3-5 years. Alternative 2 would also create approximately 204 acres of FM 12, of which 145 acres would be treated within 1-2 years, and 59 acres would persist as FM 12 for 3-5 years.

In areas treated with regeneration harvest, the post-harvest slash would be moderately heavy and uniform, resulting in FM 12. The depth and uniformity of the slash bed would make slash treatment necessary for hazard reduction and successful re-planting of the site. After treatment, these areas would be dominated by young, live fuel and become FM 5 within a few years.

Thinned areas would have effects on fuel loading similar to Alternative 1.

Alternative 3 – thinning according to Matrix standards and guidelines

Under Alternative 3, cable yarding would create approximately 276 acres of FM 11 (light logging slash), and helicopter yarding would create approximately 104 acres of FM 12 (moderate logging slash). The effects of Alternative 3 on fuel loading would be similar to

Alternative 1. Alternative 3 would create substantially less large-diameter dead fuels than Alternative 1, because no coarse woody debris would be created. However, this difference would not change the overall fuel model and would not change the likely fire behavior.

Alternative 4 – no action

Without treatment, the stand would experience increased tree mortality from competition and an increase in ground fuels as the dead trees fall to the forest floor. If the stand were not harvested, the current FM 8 (closed timber litter) would transition to FM 10 (heavy timber litter/understory) within 50 years. FM 10 fuels are considered a hazardous fuel type with potential for very active fire behavior under severe weather and fuel moisture conditions.

Issue #5 - *What would be the disturbance and habitat modification effects to spotted owls and their progeny due to harvesting?*

Alternative 1 – thinning according to the MMLD

Alternative 1 would not be likely to adversely affect owls by habitat modification of dispersal/foraging habitat or disturbance of suitable nesting habitat. Although thinning would degrade dispersal/foraging habitat for about 15 years on 365 acres within critical habitat, dispersal habitat is not limited in the area. Creation of coarse woody debris and snags would accelerate the recovery of foraging conditions by improving habitat conditions for prey species. Thinning would make the stand less unstable, but, by itself, would not speed development of late-successional forest structure. Therefore, thinning itself would do little to improve nesting habitat for owls.

Operating restrictions on project activities that may disturb nesting owls from March 1 to July 15 would avoid disturbance to nesting owls during the critical nesting period. Although owls can also be susceptible to disturbance during the late nesting period from July 16 - September 30, there is ample habitat for owls to move away from any disturbance. Although such disturbance is possible, it would not be expected to adversely affect juvenile owls.

Under the MMLD, additional timber harvest would be unlikely to occur for at least 10 years within the home ranges of the three owl sites near the project area. The MMLD, which is incorporated here by reference, considered cumulative effects to owls on BLM lands in the CCAMA and concluded that implementation of the MMLD would be similar to natural conditions, and benefits to owls would greatly exceed those expected under application of Matrix standards and guidelines (MMLD, pp. 98-101). Non-federal lands near the project area currently provide very little owl habitat, and it is reasonably foreseeable that any remaining nesting habitat on non-federal lands will be harvested within the next ten years and that non-federal lands will not provide any nesting habitat in the future because of harvest practices.

Alternative 2 – regeneration harvest and thinning according to the MMLD

Alternative 2 would not be likely to adversely affect owls by habitat modification of dispersal/foraging habitat or disturbance of suitable nesting habitat. In areas that would be thinned, effects would be the same as Alternative 1. Regeneration harvest would remove 145 acres of dispersal/foraging habitat in the provincial home ranges of the Wet Gulch and Rough Creek sites, which would not recover dispersal habitat conditions for at least 40 years. However, because dispersal habitat is not limited in the area, this removal of dispersal habitat would not adversely affect owls. Disturbance effects would be the same as Alternative 1. Cumulative effects would be the same as Alternative 1.

Alternative 3 – thinning according to Matrix standards and guidelines

Alternative 3 would not be likely to adversely affect owls by habitat modification of dispersal/forage habitat or disturbance of suitable nesting habitat. The direct and indirect effects on owls would be generally similar to Alternative 1, but the absence of coarse woody debris and snag creation would slow the recovery of foraging conditions compared to Alternative 1. Disturbance effects would be the same as Alternative 1.

The MMLD, which is incorporated here by reference, considered cumulative effects to owls and concluded that application of Matrix standards and guidelines on BLM lands in the CCAMA would be inferior to implementation of the MMLD (MMLD, pp. 98-101). Under Matrix standards and guidelines, shorter rotations would result in most upland stands never reaching the age and structure necessary to provide owl nesting habitat. In addition, less complex stands, lower levels of coarse woody debris and snags, and the absence of small basin reserves to augment unmapped LSRs would result in poorer dispersal, foraging, and nesting conditions across the landscape. Cumulative effects on non-federal lands would be the same as Alternative 1.

Alternative 4 – no action

Under Alternative 4, there would be no direct or indirect effects to nesting owls or their habitat due to habitat modification or disturbance. Cumulative effects on owls on federal and non-federal lands would be similar to Alternative 3.

Issue #6 - *What would be the disturbance and habitat modification effects to nesting bald eagles and their progeny due to harvesting?*

Alternative 1 – thinning according to the MMLD

Alternative 1 would not be likely to adversely affect bald eagles. Nesting habitat would not be modified because the project area has no patches of nesting habitat, and individual trees that could provide nesting structure would not be cut. If surveys detect bald eagles nesting in or near the project area, operating restrictions applied from January 1 to August 15 would avoid any disturbance to nesting bald eagles.

The MMLD, which is incorporated here by reference, considered cumulative effects to bald eagles on BLM lands in the CCAMA and concluded that implementation of the MMLD would be similar to natural conditions, and benefits to eagles would exceed those expected under application of Matrix standards and guidelines (MMLD, pp. 101-103). Eventual regeneration harvest under the MMLD would still retain many of nesting habitat characteristics in the succeeding stand and enhance its future suitability for eagle nesting.

Alternative 2 – regeneration harvest and thinning according to the MMLD

Effects on bald eagles would be the same as Alternative 1. Areas that would be treated with regeneration harvest are more than 1.5 miles from the McKenzie River and therefore would not be expected to provide nesting habitat.

Alternative 3 – thinning according to Matrix standards and guidelines

Direct and indirect effects on bald eagles would be the same as Alternative 1.

The MMLD, which is incorporated here by reference, considered cumulative effects to bald eagles and concluded that application of Matrix standards and guidelines on BLM lands in the CCAMA would be inferior to implementation of the MMLD (MMLD, pp. 101-103). Under Matrix standards and guidelines, shorter rotations and lower density of green tree retention would reduce future stand suitability for eagle nesting, and the absence of small basin reserves would reduce protection of potential nesting habitat. However, Bald Eagle Habitat Areas would continue to provide 1,644 acres of habitat managed for bald eagle nesting on BLM lands in the CCAMA.

Alternative 4 – no action

Under Alternative 4, there would be no direct or indirect effects to bald eagles. Cumulative effects on eagles would be similar to Alternative 3.

AGENCIES AND PERSONS CONSULTED

This Environmental Assessment is being mailed to the following members of the public or organizations that have requested to be on the mailing list:

John Bianco
Robert P Davison
Jim Goodpasture
Pam Hewitt
John Muir Project
James Johnston
Charles & Reida Kimmel
Lane County Land Management
Carol Logan, Kalapooya Sacred Circle Alliance
Neal Miller
Oregon DEQ
Oregon Dept of Fish and Wildlife
Oregon Dept of Forestry
Oregon Natural Resources Council
The Pacific Rivers Council
John Poynter
Bart Pratt
Leroy Pruitt
Roseburg Forest Products Co.
Peter Saraceno
Sierra Club - Many Rivers Group
David Simone
Tom Stave, U of O Library
Swanson Group
Craig Tupper
Kris and John Ward
Molly Widmer
JanWroncy

A summary of the proposed action was sent to those receiving the "Eugene BLM Planning and Project Focus," in January 2004 (approximately 250 mailings; a complete listing is available at the Eugene District Office).

Maps of the proposed action were sent to the Confederated Tribes of the Grand Ronde and Confederated Tribes of Siletz. No comments were received.

BLM will consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries on the effect of the proposed action on listed fish species. The proposed action may affect, but is not likely to adversely affect listed fish species.

BLM will consult with the U.S. Fish and Wildlife Service on the effect of the proposed action on northern spotted owls and northern bald eagles as part of the programmatic consultation in the Willamette Province FY 2005-2008 Habitat Modification Biological Assessment for Effects to Northern Spotted Owls and Northern Bald Eagles and would conform to the guidance in that document, including application of the biological opinion Reasonable and Prudent Measures to minimize disturbance to spotted owls, eagles, and their progeny. Based on the analysis in this EA, any of the action alternatives would result in a may affect, not likely to adversely affect determination for both species.

LIST OF PREPARERS

The Interdisciplinary Team

NAME	TITLE	RESOURCE/ DISCIPLINE
Mike Blow	Wildlife Biologist	Wildlife
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Dave DeMoss	Forester	Silviculture
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Dave Reed	Fuels Specialist	Fuels
Mike Sabin	Forester	Roads/Transportation
Michael Southard	Archaeologist	Cultural Resources
Kris Ward	Hydrologist	Water Resources
Rudy Wiedenbeck	Soil Scientist	Soils
Jack Zwiesler	Forester	Logging Systems

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DESIGN FEATURES COMMON TO ALL ACTION ALTERNATIVES

1. For spotted owls: Consistent with consultation with the USFWS, apply Reasonable and Prudent Measures to minimize disturbance to spotted owl pairs and their progeny, including: Apply seasonal restrictions on harvest, hauling, and road activities in/near all harvest areas and roads within 1/4 mile of harvest activities during the critical nest period for northern spotted owls (March 1-July 15). These restrictions may be reduced or extended by the Area wildlife biologist based on survey information regarding occupation or nesting activity.

2. For bald eagles: Consistent with consultation with the USFWS, apply Reasonable and Prudent Measures to minimize disturbance to nesting and their progeny, including: Apply seasonal restrictions on harvest, hauling, and road activities in/near all harvest areas and roads within 0.5 (1.0 line-of-sight) mile of bald eagle nests during the entire nest period of January 1 to August 31, if a nest is located. These restrictions may be reduced or extended by the Area wildlife biologist based on survey information regarding nesting and fledging activity.

3. Consistent with IM No. OR-99-036 ("E-4 Special Provisions"), apply seasonal restrictions or suspension of all harvest and road activities that would occur within 1/4 mile of: known nesting peregrine falcons, bald eagles, spotted owls, great grey owls, accipiter hawks, and other owls, hawks, or raptors that may be located at any time during project activities.

Design Features for Harvesting

1. Log lengths would be limited to 40' in length where necessary to protect residual trees, snags and coarse woody debris during yarding.

2. Directional falling and yarding would be utilized for the protection of retention trees, existing coarse woody debris, snags, and reserve areas.

3. One-end suspension of logs would be required wherever topography permits to reduce the potential for erosion and run-off during yarding. Intermediate supports may be required to accomplish this objective.
   - Cable corridors with the potential for accelerated erosion would be treated with waterbars and/or logging slash as needed.

4. Place cable corridors on the landscape to avoid disturbance to snags and down logs >30" diameter where feasible. Snags and large remnant trees would be retained undamaged where feasible and would not be cut, except those in temporary road construction right-of-ways, landings and yarding corridors, and those posing a safety hazard. If these are felled for the above reasons, they would be retained on site as coarse woody debris. Existing down logs (all decay classes), root wads, and stumps >15" diameter would be retained undamaged where feasible.

5. Ground-based yarding operations would only occur where designated (see Appendix B for map). Adherence to all of the following requirements for ground-based yarding systems would keep soil impacts/compaction within RMP standards:
   - Designated skid trails would be preplanned to occupy less than 10% of the harvest area.

- Trees would be felled to lead to skid trails and winching distances would be up to 75'. Distances between trails would be up to 150' where feasible.

- Yarding would be restricted to seasonally dry periods when soil moisture content provides the most resistance to compaction, typically less than 32% (usually July 1st - October 15th).

- Till all compacted skid trails with an excavator to a depth of 24", when soil moisture is appropriate. Minimize damage to residual tree roots adjacent to trails. Pull slash, logging debris, and brush onto the tilled surface.

- If tillage cannot be accomplished the same operating season, all skid trails and temporary native surface roads would be left in an erosion-resistant condition and blocked prior to the onset of wet weather. This would include construction of drainage dips, water bars, lead-off ditches, and barriers (rootwads or brush piles) to prevent vehicle access until final blockage and/or tilling.

6. Other methods of ground-based cutting (feller buncher, harvester processor, cut-to-length systems) may be used where slopes are generally less than 45%.

    - Activity would be restricted to seasonally dry periods, same as for ground-based yarding.

    - Limit movement off of primary trails to a single pass.

    - Harvester processors would be kept moving on top of slash whenever possible.

Design Features for Road Construction and Road Decommissioning

1. All new road construction would be temporary, with a surface of native sub-grade material. Road width would be 14' wide with drain dips or outsloped for drainage control.

2. For roads that would be closed after timber harvest activities:
    a. Waste or fill material would be stockpiled and disposed of along the temporary roads upon decommissioning.
    b. New construction, existing road upgrade work, and harvest operations conducted from dirt-surfaced roads would be limited to the dry season (generally between June 1 and October 15). Dirt-surfaced primary skid roads, newly constructed roads and landings requiring operation during more than one dry season would be placed in an erosion resistant condition and temporarily blocked prior to the onset of wet weather. This would include construction of drainage dips, water bars, lead-off ditches and earthen or brush barricades.
    c. Where sub-grade conditions allow, till the compacted road surface of temporary roads. If closed roads are not tilled, construct drainage dips, water bars or lead-off ditches to direct surface water to the forest floor and otherwise leave the road in an erosion-resistant condition. To block the roads and reduce erosion, pull slash, logging debris, and brush onto the road surface. This addition of woody material should be conducted along as much of the length of the road as possible.
    d. Construct earthen barricades with brush or slash additions to adequately restrict access to all vehicles.
    e. Decommissioning of Spur A would include pullback of over-steepened fill material to be placed against the cutslope of the road. Stockpiled soil would be deposited and spread in excavated segment prior to tillage.

Design Features for Fuels Treatment

1. Tracked equipment for slash treatment (e.g. hydraulic excavator) would be restricted to travel on gravel-surfaced roads so that piling and subsequent burning could occur during wet winter months without causing soil displacement or compaction.

2. Slash to be piled would be comprised of dead and downed woody material, both natural and activity-created. Sound and rotten logs >8" diameter and root wads would generally be excluded from piling.

3. On primary gravel roadways only, root wads and sound large logs created by harvest activities would be lifted and placed in the area at maximum boom length to eliminate roadside high-intensity heat sources. Rotten large logs near the road would be left in place where feasible.

4. Piles and fuel concentrations along temporary roads and landings that are not designated for excavator cleanup would be covered during the summer months and burned in the late fall (usually November and December), when soil and duff moistures are high, but before conditions become too wet for adequate fuel consumption. All burning would comply with the daily Oregon Smoke Management instructions and limitations. Roadside slash piles would not be left unburned, because they would compromise the objective of securing safer access and egress for the public and firefighting resources should a fire occur within the project area.

5. Hand-pile and burn slash in a 50' strip along the private and Forest Service land in the northwest corner of the project area to create a buffer of low fuels in the area that is helicopter yarded.

DESIGN FEATURES SPECIFIC TO ALTERNATIVES 1 & 3

Design Features for Harvesting

1. Retain all trees other than Douglas-fir except where necessary to accommodate safety and logging systems.

DESIGN FEATURES SPECIFIC TO ALTERNATIVE 2

Design Features for Harvesting

1. Select retention trees in regeneration harvest areas by species according to their abundance in the stand.

2. Replant harvested areas with a mixture of Douglas-fir, western hemlock, and western red-cedar.

3. In thinned areas, retain all trees other than Douglas-fir except where necessary to accommodate safety and logging systems.

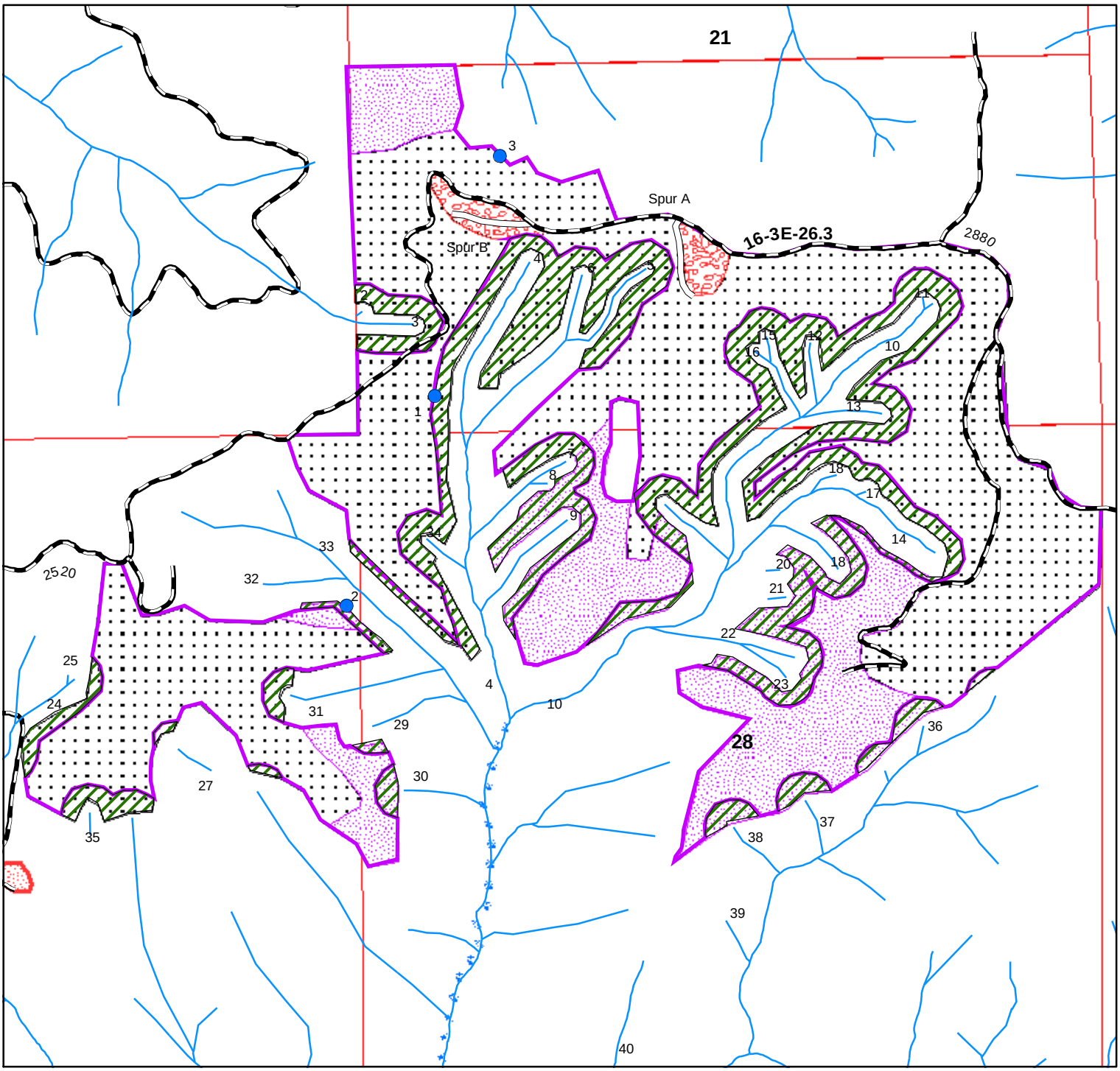
Design Features for Fuels Treatment

1. Broadcast burn suitable regeneration harvest areas between mid-March and June 30th, depending on weather conditions, fuel moistures, and smoke management. Hand-pile and burn regeneration harvest areas not suitable for broadcast burning. All burning would comply with the daily Oregon Smoke Management instructions and limitations.

2. Fire trails used for broadcast burning would be waterbarred and/or be treated with slash before the onset of wet weather

APPENDIX B

MAPS OF STREAMS, ROADS, AND HARVESTING IN ALL ACTION ALTERNATIVES



Legend

- Seep
- Streams
- Roads
- new_spur
- Potential_Rip_Thin_Alt1
- full_buffer_project_bndry_Alt1
- Helo_Log_Alt1
- Helo_Landing_Area
- Groundbased_logging
- Cable_Yard
- Fishbearing Stream
- Property Lines

Bear Creek (AMA)
Alternative No. 1
T.16S.,R.03E., Secs 21,28,29
MMLD Thin with Rip Res Thin

Unit Acres:
Upland = 282 ac
Riparian = 83 ac

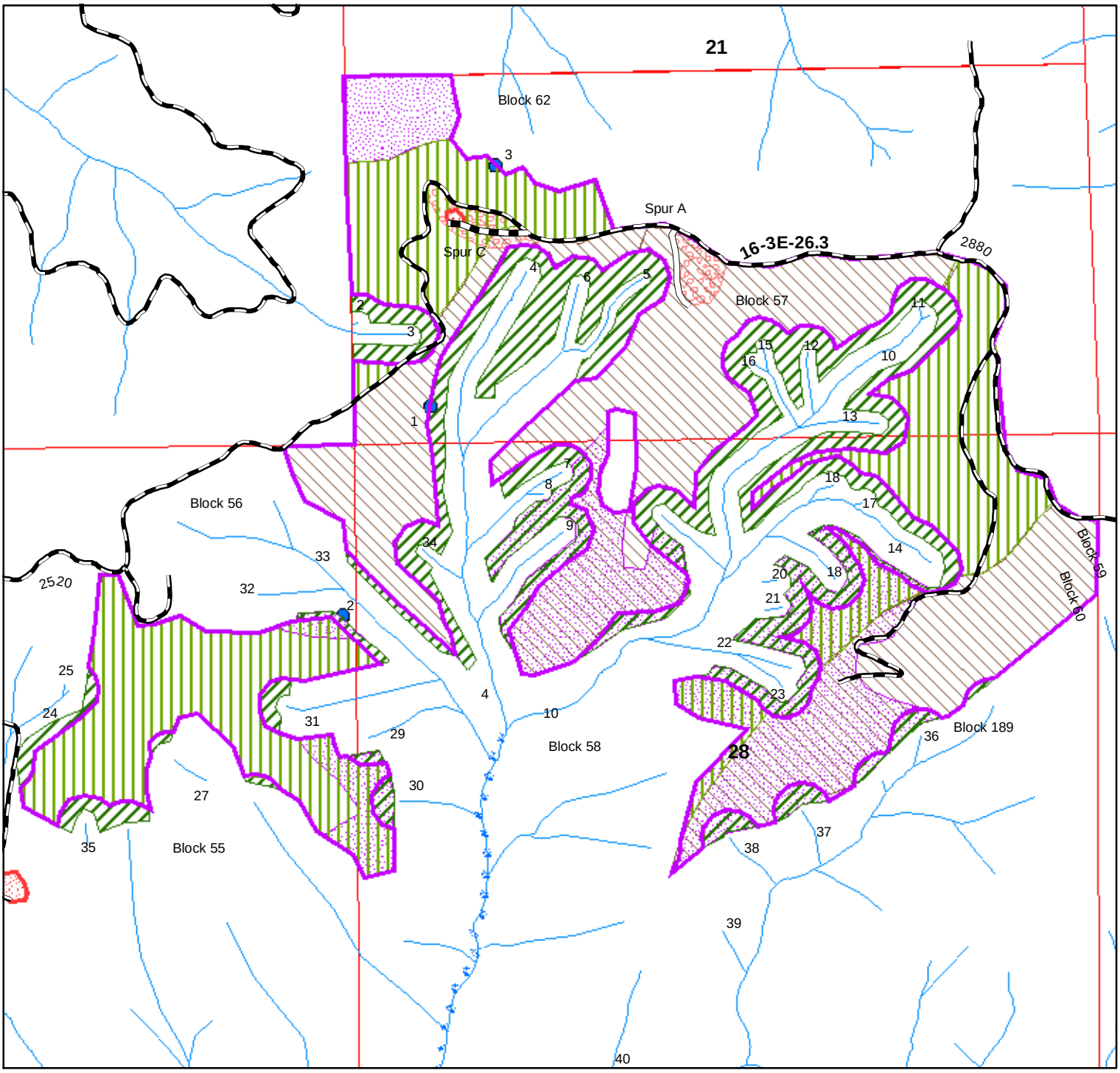
Thin = 282 ac
DM = 83 ac

Tractor Log = 6 ac
Cable Log = 270 ac
Helo Log = 89 ac

0 500 1,000 2,000 3,000 Feet

N

3/26/04



Bear Creek (AMA)
Alternative No. 2H
T.16S.,R.03E., Secs 21,28,29
MMLD - Regen Blocks and Thin with Rip Res Thin, with Helo in NW

*Logging system is the same as Alt. No. 1

Legend

- Rocked_Road
- Roads
- new_spur_Alt2H
- Helo_Landing_Area_Alt2H
- full_buffer_project_bndry_Alt2
- Alt2H_Thin
- Alt2_Regen_harvest
- Potential_Rip_Thin_Alt2
- Groundbased_logging
- Helo_Log_Alt2H
- Fishbearing Stream
- Seep
- Streams
- Property Lines

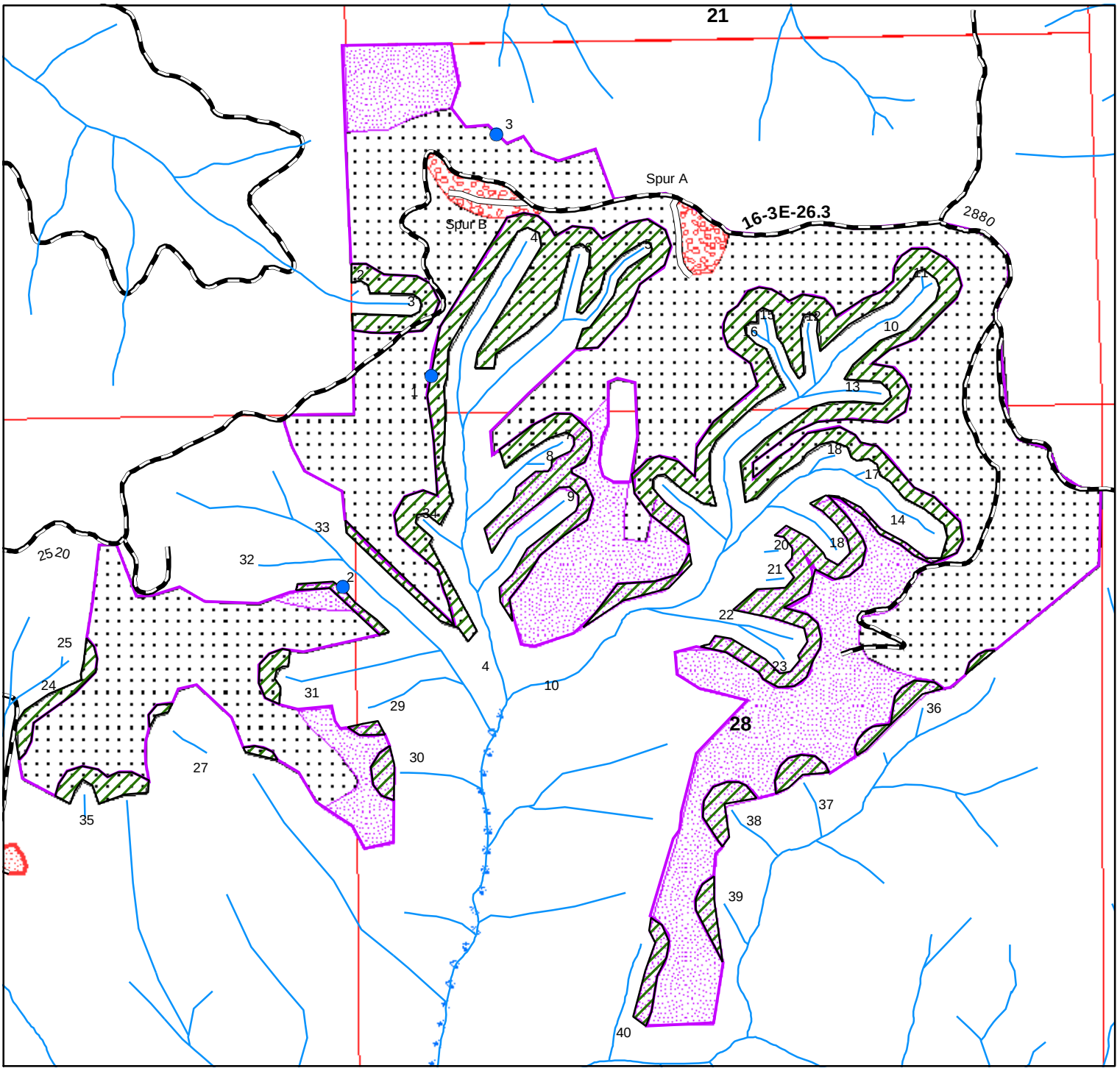
0 500 1,000 2,000 3,000 Feet

Unit Acres:
Upland = 282 ac
Riparian = 83 ac

Thin = 137 ac
Regen = 145 ac
DM = 83 ac

Tractor Log = 6 ac
Cable Log = 270 ac
Helo Log = 89 ac

N



Legend

- Seep
- Streams
- Roads
- new_spur
- Potential_Rip_Thin
- full_buffer_project_bndry
- Groundbased_logging
- Helo_Log_Alt3
- Helo_Landing_Area
- Cable_Yard_Alt3
- Fishbearing Stream
- Property Lines

Bear Creek (AMA)
Alternative No. 3
T.16S.,R.03E., Secs 21,28,29
Matrix Thin with Rip. Res Thin

0 500 1,000 2,000 3,000 Feet

Unit Acres:
Upland = 294 ac
Riparian= 86 ac

Thin = 294 ac
DM = 86 ac

Tractor Log = 6 ac
Cable Log = 270 ac
Helo Log = 104 ac

3/29/04

N

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE

Finding of No Significant Impact
for
Bear Creek Timber Sale
Environmental Assessment No. 090 EA 04-04

Determination:

On the basis of the information contained in the Environmental Assessment, and all other information available to me, it is my determination that implementation of the proposed action or alternatives will not have significant environmental impacts not already addressed in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (April 1994) and the Eugene District Record of Decision and Resource Management Plan (June 1995), as amended by the Record of Decision for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001, the Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines (March 2004), and the Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (March 2004), with which this EA is in conformance, and does not, in and of itself, constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.

_____ _____

Field Manager, Upper Willamette Resource Area Date