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BUREAU OF LAND MANAGEMENT

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IN REPLY REFER TO:

1792A

EA-01-17

Cedar Flats

Analysis Area

July 17, 2001

Concerned Citizen,

The McKenzie Resource Area of the Eugene District Bureau of Land Management has completed the Environmental Assessment (EA) and Finding of No Significant (FONSI) for the Cedar Flats Analysis Area located in Section 9, T. 18 S., R. 1 W., Section 31, T. 17 S., R. 1 W. and Section 1, T. 18 S., R. 2 W., Will. Mer. This proposal was analyzed in EA No. OR090-98-3 in 1998. A new EA and FONSI have now been prepared.

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 July 18, 2001. The EA will also be available on the internet at <http://www.edo.or.blm.gov/nepa>. The public comment period will end on August 17, 2001. 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 August 17, 2001. If you have any questions concerning this proposal, please feel free to call Jill Williams at 683-6164.

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
McKenzie Resource Area

Enclosure

CEDAR FLATS ANALYSIS AREA

McKenzie Resource Area

BLM Eugene District

ENVIRONMENTAL ASSESSMENT

Environmental Assessment No. OR 090-EA-01-17

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1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

In January of 1998 the Cedar Flats Analysis Area Environmental Assessment (EA), OR 090-98-3, was released for public review. A Decision Record was not signed due to the anticipated changes to the Survey & Manage.

The Bureau of Land Management (BLM) proposes to implement forest management activities in the Lower McKenzie Watershed and the Hills Creek Watershed Analysis Area. The proposed projects would occur within Matrix Lands and Riparian Reserves as designated in the Record of Decision for the Northwest Forest Plan Environmental Impact Statement (SEIS/ROD) pp. 7. The area of analysis for purposes of this environmental document is 319 acres of BLM lands in T. 18 S., R. 1 W., Sec. 9, T. 17 S., R. 1 W., Sec. 31 and T. 18 S., R. 2 W., Sec. 1. The proposed harvest area is located approximately 6 miles east of Springfield, Oregon. Maps of the harvest areas are in Appendix D.

The Proposed Project area is located within two different watersheds, the Lower McKenzie and Little Fall Creek/Hills Creek. The Lower McKenzie watershed has approximately 100,000 acres of which the BLM manages approximately 11,000 acres or 11 per cent. In the Lower McKenzie watershed there are an estimated 3,173 acres of 46 to 80-year old stands on BLM lands. The Little Fall Creek/Hills Creek Watershed has approximately 52,235 acres of which BLM manages approximately 5,748 acres or approximately 11 percent. In the Little Fall Creek/Hills Creek Watershed there are approximately 3,726 acres of 31-80 year old stands on BLM lands. The BLM inventory records indicate the stands being considered for commercial thinning are predominantly 45-60 years old.

Timber harvesting would occur on land allocated as "Matrix" and "Riparian Reserves" in the Northwest Forest Plan and the 1995 Eugene District Resource Management Plan (RMP). Matrix lands are those Federal lands outside areas identified in the Record of Decision (ROD) for the FSEIS with special restrictions because of other resource values. Riparian Reserves are designated area that include the Riparian Area and upland area within a designated distance from the stream. Portions of the Matrix are available for timber production and other silvicultural activities as long as the Standards and Guidelines included in the ROD are followed (U.S. Bureau of Land Management and U.S. Forest Service 1994, pp 7, 10, C-39).

1.2 Purpose and Need

The proposed harvest and road activities are located in: T. 18 S. R. 1 W. Sec. 9, T. 17 S. R. 1 W. Sec. 31 and T. 18 S. R. 2 W. Sec. 1, of the Willamette Meridian.

The purpose of this action is to:

- Harvest merchantable timber to help meet the Eugene District Probable Sale Quantity (PSQ).
- Increase the productivity and health of General Forest Management Area (GFMA) lands by thinning overstocked stands.
- Improve the Riparian Reserves stand complexity, develop late seral characteristics and large woody debris for recruitment into the stream channel.
- Construct temporary roads for timber harvest and improve roads for future management activities.
- Decommission existing roads that are contributing sediment to streams.
- Reduce resource damage by redirecting off road vehicle use.

The need for harvest action is established in the Eugene District Record of Decision and Resource Management Plan, which directs that timber be harvested from Matrix lands to provide a sustainable supply of timber. The need for Riparian Reserve treatment, road improvement action, and road decommissioning actions are established in the Eugene District Record of Decision and Resource Management Plan which directs the Aquatic Conservation Strategy Objectives be met.

1.3 Conformance

The proposed action and alternatives are in conformance with 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 (ROD)*, and the *Eugene District Record of Decision and Resource Management Plan, June 1995 (Eugene District ROD/RMP)* as amended by the *Record of Decision (ROD) for Amendment to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001*. The analysis contained in these EIS's are incorporated into this document by reference.

The above referenced documents are available for review at the Eugene District Office or on the internet at <http://www.or.blm.gov/nwfp.htm>.

The Analysis File contains additional information used by the interdisciplinary team (IDT) to analyze impacts and alternatives and is hereby incorporated by reference.

1.4 Monitoring

Monitoring guidelines are established in the 1995 RMP/ROD, Appendix D, and the 1994 Northwest Forest Plan Standards and Guidelines, pp. E-1 to E-10.

1.5 Scoping

The scoping process identified both agency and public concerns relating to the proposed projects, and defined the issues and alternatives that would be examined in detail in the EA. The public was informed of the planned EA through letters to those on the Resource Area's mailing list, and to those receiving the *Eugene District Planning Update*.

Maps of the Proposed Action were sent to the Confederated Tribes of the Grand Ronde and Confederated Tribes of Siletz in December 1997; no comments were received. One public scoping meeting was held on May 20, 1997. A field trip was also conducted for interested parties on July 17, 1997. There were 16 comment letters or phone conversations from the public that identified issues or concerns. Landowner issues included: Ground water supply, road stability, Off Highway Vehicle use and trails, road decommissioning, increased public use of the area and slope stability. In addition, a letter was sent December 1, 2000, to citizens living near the proposed harvest areas. There were 3 comment letters or phone conversations from the public that identified issues or concerns.

A copy of the scoping mailing list, and the public identified issues are in the Analysis File.

1.6 Issues

Scoping by the IDT and public input identified the following issues:

1. What are the impacts of harvesting and road management activities to terrestrial Threatened & Endangered species, Northern Spotted Owl?
2. What are the effects of harvesting and road management activities on erosion and sediment delivery to water bodies, Threatened & Endangered fish, resident fish and soil productivity?
3. What are the effects of harvesting and road management on water supply downslope from BLM lands in Harvest Areas #3-6?
4. How will harvesting and road management activities affect slope stability in Harvest Areas #3-6?

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes alternatives identified by the IDT, alternatives eliminated from detailed study, and comparison of alternatives. Design features associated with these alternatives and detailed information can be found in the **Appendices: Appendix A** for Project Design Features, **Appendix B** for Harvest Area Details, **Appendix C** for Road Construction and Closure Summary, and **Appendix D** for maps of proposed harvest areas. Detailed information can be found in the Cedar Flats Analysis Area file.

2.1 Alternative I - Proposed Action

2.1.1 Forest Management

Upland: This alternative consists of five thinning harvest areas (244 acres). The harvest prescription would reduce the number of conifer trees per acre from approximately 127-228 to 77-94, with an average tree spacing after harvest of 21 feet. Trees selected for harvest would be the suppressed, intermediate and some co-dominant conifer trees.

Riparian: The current condition in the Riparian Reserves in harvest area No. 7 is an overstocked mixture of conifer and hardwoods similar to or the same as the upland conditions. Tree growth and differentiation in these stands has slowed considerably. Approximately 22 acres of Riparian Reserves would be thinned (See **Appendix D** Harvest Area 7 only). The purpose of thinning is to reduce stand density and competition allowing for improved growth in the remaining trees. The improved tree growth, both vertical and horizontal would result in accelerated development of late seral characteristics and large woody debris for recruitment in the active stream channels. Canopy openings created during the thinning operation would result in more light penetrating to the forest floor. This increased light would encourage growth of more diverse ground cover and brush species.

The portions of the Riparian Reserves to be thinned would have the following prescription: reserve trees greater than 16 inches DBH with an average tree spacing of approximately 21 feet. The thinning prescription would reduce the number of trees per acre from approximately 208 to 77. The no treatment buffer in Harvest Area 7 only would utilize natural topographic slope break (the first slope break above the flood plain ranging from 50 to 100 feet).

All other perennial nonfish-bearing and intermittent streams retain the interim Riparian Reserve width of one site potential tree height (200 feet slope distance) on each side of the stream channel. All fish-bearing streams retain the interim Riparian Reserve width of two site potential tree heights on each side of the stream channel. Wetlands of less than one acre in size would be buffered to the extent of the riparian vegetation. Wetlands equal to or greater than one acre would receive a one site potential tree reserve buffer.

In Harvest Areas 3 through 6, logging would be accomplished by a combination of cable yarding

and/or ground-based equipment on slopes of 35 percent or less. In Harvest Area 7, slopes less than 35% would not be available for ground-based harvest systems due to the wide occurrence of slowly drained soils. Therefore, cable yarding would be required for the bulk of this Area. Specific cable yarding requirements are shown on maps, see **Appendix D**. Ground-based equipment would be confined to designated skid trails, which would subsequently be recovered by tillage. Ground-based yarding would be seasonally restricted to dry periods. In the cable yarded portion, one-end suspension of logs would be required.

Anticipated residual fuels would be treated by scattering and piling to minimize fire hazard. See **Appendix A** for design features.

Total harvest volume would be approximately 2,636 MBF (thousand board feet) / 5,665 CCF (hundred cubic feet).

TYPE HARVEST	LAND USE ALLOCATION	ACRES	Thinning Harvest Acres (Skyline)	Thinning Harvest Acres (Grnd)	Volume (MBF/CCF)
Thinning	GFMA/Matrix	244	158	86	2,314/4,990
Riparian Reserve Thinning	Riparian Reserve	22	22	0	322/675
		266	180	86	2,636/5,665

MBF - Thousand Board Feet
Grnd - Ground-based Yarding

CCF - Hundred Cubic Feet
Skyline - Cable Yarding

2.1.2 Roads

See **Appendix C** for summary of culvert work, road improvement, road construction, and road decommissioning; see **Appendix A** for Best Management Practices and Design Features for road construction, and decommissioning.

The road analysis was based upon:

- Future use of the selected road within the next 10 - 15 years
- Whether the proposed harvest Area would remain within 0.25 mile of an existing road, if the selected road was decommissioned.
- The potential risks of degrading water quality and soil stability if an action is taken on a selected road.
- Current condition of existing roads and the effects of that road to the resources.

Approximately 0.81 mile of new road construction would occur as a result of this project. Off Highway Vehicle traffic on Spur T would be eliminated by full decommission and blocking.

There are 0.39 mile of road to be renovated. This includes the placement of approximately 11 culverts. Most of these culverts are ditch relief culverts. Other activities associated with the road reconstruction include: cutting roadside vegetation, removing trees that have fallen across the road, reconditioning the roadbed (grading), and applying crushed aggregate.

As a part of the road relocation in Harvest Area 7, 0.41 mile of road would be fully decommissioned (Spur T). An additional 1.35 miles of road would be decommissioned as part of Harvest Areas 3-6 for a total of 1.76 miles of road to be decommissioned as a part of this project. There would be a net overall reduction of 0.56 mile of road in the project area.

Harvest conducted from native surface roads would be restricted to seasonally dry periods, typically July 1 to October 15. Therefore, Harvest Areas 3 to 6 would be harvested and hauled in the dry season only. Harvest Area 7, due to its rock surfaces is designed for all-weather haul. However, harvest within the ground-based portions would still be subject to moisture restrictions. Any adverse impacts to the roads would be protected using Best Management Practices.

	Miles Rock Road Construction	Miles Rock Road Renovation	Total Miles to Decommission
Project Total	0.81	0.39	1.76

2.2 Alternative II - No Action

2.2.1 Forest Management

No forest management would occur within the Cedar Flats Analysis Area at this time. There would be no increase in the productivity of upland Matrix lands and no reduction in density in the overstocked Riparian Reserve areas. Meeting the District's decadal PSQ volume commitment would be accomplished in other areas.

2.2.2 Roads

Under this alternative there would be no new construction of any roads, there would also be no improvement or renovation of existing roads. There would be no decrease in the miles of roads and some problem roads would be decommissioned at a later date.

2.3 Alternative III

2.3.1 Forest Management

Forest Management would remain the same as Proposed Action.

2.3.2 Roads

This alternative differs from the proposed in the road system planned for Sec. 9, T. 18 S., R. 1 W. All other areas would remain the same as the proposed action. The proposed road 18-1-9.2 would be shortened to 0.34 mile and would still be surfaced with gravel. Spur T, currently used by Off Highway Vehicles and intersecting 2 streams, which was planned to have the majority of its length fully decommissioned, would now have a 0.53 mile portion improved and surfaced with gravel. A ridgetop road of 0.21 mile would be constructed and surfaced where the relocation was planned. There would be no decommissioning in Sec. 9, T. 18 S., R. 1 W. under this alternative.

	Miles Rock Road Construction	Miles Rock Road Renovation	Total Miles to Decommission
Project Total	0.42	0.77	1.35

2.4 Alternatives Eliminated From Detailed Study

Harvest Areas 1 and 2 were dropped due to an abundance of *Ramalina thrausta*. The location of these sites removed the ability to renovate roads and thin the existing stand.

2.5 Comparison of Alternatives

ELEMENTS	ALTERNATIVE I PROPOSED ACTION	ALTERNATIVE II NO ACTION	ALTERNATIVE III
Thinning Harvest Acres	244	None	244
Riparian Thinning Harvest Acres	22	None	22
TOTAL ACRES HARVESTED	266	None	266
Net decrease in roads	0.56	None	1.35
Miles of Permanent road construction	.81	None	.42
Miles of rocked road improvement	.39	None	.77
Acres logged by ground-based equipment	158	None	158
Acres logged by cable	86	None	86

3.0 AFFECTED ENVIRONMENTS

This section describes key components of the existing environment. The plants and animals do not differ significantly from those discussed in Chapter 3 RMP, 1994.

3.1 Vegetation

The project areas are dominated by second growth Douglas-fir and Western hemlock ranging in age between 45-60 years. These mid-aged stands have a forest structure classified as “stem exclusion.” Stem exclusion is characterized by high numbers of trees per acre with little or no understory. Early logging practices left large non-merchantable logs scattered throughout the site. These old logs are now functioning as advanced decay structure for wildlife.

Associated conifer species are Western red cedar, incense cedar, grand fir, and Pacific yew. The common hardwoods are red alder, bigleaf maple, black cottonwood, Pacific dogwood, Pacific madrone, chinquapin, bitter cherry and willow. Shrubs in the region may include associations of vine maple, rhododendron, California hazel, ocean spray, red huckleberry, and poison oak. Frequently occurring vascular plants include salal, swordfern, vanilla leaf, Oregon grape, whipplevine, oxalis and redwood violet.

The riparian area is also a second growth stand approximately 45-60 years, composed primarily of Douglas-fir and red alder. Cedar Creek has an alder dominated riparian zone within 50-100 feet of the stream along the majority of its length in the project area. Previous management (timber harvest) and lack of management (vegetation control) actions have allowed alder to continue to dominate portions of the riparian habitat

3.2 Federally Threatened and Endangered Wildlife

Bald Eagle (Threatened)

No habitat for eagles exists within or near the action area. No known individuals or perch, nest or roost sites would be affected by the project. This species will not be analyzed in this document.

Northern Spotted Owl (Threatened)

Two known owl site centers exist approximately one mile from the project area. The proposed harvest areas may be used for roosting and foraging. Occasional surveys have been conducted in the nearby sites and portions of the project area since 1990. No owl detections were recorded within the action area.

The proposed harvest areas are defined as dispersal habitat with an overall low amount of snags and down logs. Scattered older trees exist but probably not to the degree or orientation necessary to provide suitable nesting habitat.

No suitable nesting habitat exists within the proposed harvest areas and none would be modified by the proposed action.

The action area is not within federally designated critical habitat. The nearest Critical Habitat Unit is OR-18, 15 miles to the east.

3.3 Survey and Manage

The ROD for the SEIS amending the Survey and Manage, protection buffer, and other mitigating measures standards and guidelines was signed Jan 2001.

3.3.1. Wildlife

Red Tree Vole (Category C)

Surveys were conducted in 2000 consistent with the current survey protocol. No Red Tree Vole sites were found.

3.3.2 Mollusks

The project area is considered habitat for the Survey and Manage mollusk *Megomphix hemphilli* (Oregon megomphix). Surveys were conducted as directed in the current survey protocol (version 2.0) and detected 52 sites within or potentially affected by the proposed harvest areas. Sites are defined as locations with a detection of at least one individual and would be managed consistent with direction in the current management recommendations (version 2.0). See Appendix A for a list of sites and design features for management. Habitat Areas for each site would average ≥ 0.25 acre for each site. No harvest or associated activities would occur within the habitat areas and all habitat and shading would be conserved, consistent with current management recommendations.

3.3.3 Botany

Component A and C Species requires predisturbance surveys: all A and C fungi, bryophyte and lichen species currently requiring predisturbance surveys were included as part of protocol surveys. Four species of lichens (*Leptogium burnetiae* var. *hirsutum*, *Leptogium cyanescans*, *Ramalina thrausta* and *Plastimatia lacunosa*) would be added to the list of species requiring predisturbance surveys starting in 2003. Any known sites located would be mitigated according to management recommendations for that species.

Approximately 47 sites of *Ramalina thrausta* were found in Harvest Areas 1, 2 and 7. Units 1 and 2 were dropped from analysis. In Unit 7, these sites would be managed as known sites with a one site tree (180') reserve area. No C bryophytes, lichens or fungi were found.

Component B Species - manage all known sites, no predisturbance surveys required.

An incidental find of *Helvella elastica*, component B fungi, occurred in a riparian reserve area of Harvest Area 7. This site would be managed as a known site with a ≥ 0.25 acre reserve area.

3.4 Soils

Soils contained within harvest areas are the Bellpine series, the Cumley series, the Peavine series and the Klickitat series. Occurrence and site specific features of these soils are as follows:

Bellpine soils are moderately deep (30 to 40 inches), well drained and moderately productive. They occur throughout Harvest Areas 3, 4, 5, and 6 on slopes ranging from 2 to 50%. The surface layer is a silty clay loam, the subsoil is silty clay and clay. Little surface rock is present. Permeability is slow. These soils are very susceptible to compaction when wet.

Cumley soils are the predominant series in Harvest Area 7 (70% of the area). They are deep (40 to 60 inches) and productive. The surface soil is a silty clay loam and the subsoil is heavy clay. Coarse content in the soil profile is less than 15%. The soils are moderately well drained, with slow drainage and permeability in the subsoil as evidenced by mottles at greater than 24 inch depth. Topography is benchy with slopes ranging from 2 to 50%. Cumley soils are inappropriate for ground-based harvest systems because they are usually moist and are dry between depths of 4 to 12 inches for less than 45 consecutive days during the summer months.

Peavine soils are moderately deep (30 to 40 inches), well drained and productive. They occur in the western portion of Harvest Area 7, south of Spur T (15 % of the area) on slopes ranging from 3 and 40%. The surface layer is a silty clay loam and the subsoil is silty clay. Rock content is typically less than 20% and little surface rock is present. Permeability is moderately slow due to the heavy textures and absence of coarse fragments.

Klickitat soils occur on the main ridge at the top of Harvest Area 7 (20% of the area). Klickitat soils are deep (average depth 47 inches) and moderately productive. The surface layer is a stony loam, the subsoil a very cobbly clay loam. These are skeletal soils, with 35% of the soil volume consisting of stones, cobbles, and in some areas boulders.

Some productivity impairments currently exist within stands proposed for treatment. 1979 aerial photos of Harvest Area 7 show an extensive network of ground based skid trails on the readily compacted Cumley soils. Given the slow drainage characteristics of this soil, the more heavily traveled segments experienced compaction that still persists. Vegetative recovery and vigor are decreased within these areas. Many old native surface skid trails off 79th Street (Harvest Areas 3, 4, 5, and 6) have been kept open, reinforced and extended by active private Off Highway Vehicles. The result is severe compaction, rutting, and active erosion within timbered stands with the corresponding loss of soil/site productivity on those acres.

3.4.1 Timber Productivity Capability Classification (TPCC)

All wetland/hydric soils (Panther and Dupee series) located within the analysis area were reserved from all activities and buffered according to Standards set forth in the ROD, pp. B-16 and 17.

Approximately 10 to 15 acres in the west half of Harvest Area 4 are classified as RM/RS-R. This area has moisture restrictions for reforestation due to localized patches with moderate amounts of surface rock. No other fragile sites or low productivity soils inappropriate for harvest were found to occur within the analysis area.

3.4.2 Mass Wasting Potential

Based on reconnaissance level field investigations, the entire proposed harvest area of Harvest Areas 3 - 6 are considered to have low potential for mass wasting. Most of Harvest Area 7 is considered to have low potential for mass wasting due to gentle slopes, even though a large, deep seated rotational landslide was identified in the vicinity of this harvest area. Areas on that landform with high potential for mass wasting (either from road construction or timber harvest) are not within the proposed project area.

Three stream crossings were identified on 79th Street that are undersized and eroding. There is also inadequate relief drainage between some of the stream crossings along the road. Considering there was a roadbed failure in 1996, this road is considered to have some potential for slope stability problems.

3.5 Hydrology

Harvest Areas 3 - 6 are located near Cedar Creek, a tributary of the McKenzie River just east of Springfield. Harvest Area 7 is located near another Cedar Creek, a tributary of Hills Creek, south of Jasper. Approximately twenty-five non-fish bearing streams, several wetlands and ponds are adjacent to the proposed harvest areas. These features are shown on the Hydrology Maps 1 - 3 located in the analysis file. Of the wetlands, five are less than one acre and three are greater than an acre. A “sedge marsh” was identified adjacent to Harvest Area 7 where there are poorly drained soils, some sedge plants and ash trees, but not enough wetland indicators to warrant wetland classification using US Army Corps of Engineers standards.

Identified beneficial uses of water in this area are: Aesthetics, Resident Fish and Aquatic Life, Salmonid Spawning and Rearing, Water Contact Recreation, Fishing, Water Supply, and Hydropower. According to records obtained from the Lane County Watermaster, there are three water right permits issued from domestic use near Harvest Areas 3 -5. One water right permit for irrigation was issued for a stream just northwest of Harvest Area 6. Three water right permits exist on Hills Creek, about a mile southeast of Harvest Area 7. Those permits are for irrigation, a pond, and a flume.

Groundwater is replenished by precipitation filtering through soil and geologic formations. This underground water generally moves slowly from the uplands to lowlands or valleys where it is discharged to surface water features such as creeks and wetlands, providing base flow. In the vicinity of the proposed harvest areas near 79th Street (Harvest Areas 3 - 6), there is public concern about groundwater supply downslope on private land. The potential harvest areas are

located on slopes considered to be stable and acting as the recharge area for the groundwater supply downslope. No detailed field investigation of the groundwater hydrology has been conducted on the deep-seated landslide deposits on BLM land downhill from Harvest Areas 3- 6.

3.5.1 Water Quality

Water Temperature: Portions of the McKenzie River are listed on the 1998 Department of Environmental Quality (D.E.Q.) Water Quality Limited List (303(d)). The river is listed for elevated summer temperatures (mouth to Leaburg Dam), or temperature modification in spring, summer, and fall from reservoir releases (Leaburg Dam to South Fork McKenzie River). No data was available for the stream system near Harvest Areas 3 - 6.

A portion of the Middle Fork Willamette River (mouth to Dexter Lake) is on the 1998 D.E.Q. Water Quality Limited List (303(d)) for elevated summer temperatures. Water temperature was measured on Hills Creek, about a mile southeast of Harvest Area 7. D.E.Q. temperature standards (64°F) were met during the summer of the year 2000. No data was available for any streams closer to Harvest Area 7.

Sediment/Turbidity: None of the streams either in the Lower McKenzie River or the Lower Middle Fork Willamette River 5th field watersheds are listed on the D.E.Q. 303(d) list for sedimentation. The lower McKenzie River, Middle Fork Willamette River, and Hills Creek were all listed on the D.E.Q. Waters of Concern List in 1996, but no data was collected at that time, or apparently since.

Chronic natural turbidity was observed in the Cedar Creek and North Hills Creek 6th field watersheds of the Middle Fork Willamette River. This turbidity is attributed to the local geology dominated by large, deep-seated landslides in volcanic ash flows and tuffs. The volcanic rock weathers to form a clay with high shrink/swell capacity that is highly plastic when saturated. The clay can remain suspended in water for days, giving the stream a 'milky' appearance. This was observed on the stream system draining from Harvest Area 7.

Chemical Contamination/Nutrients: Development of the McKenzie River Valley and commercial forestry practices in the rest of the watershed have increased the likelihood of pollutants entering the surface waters, particularly in the lower portion of the watershed, despite the overall high water quality of the McKenzie watershed. Sampling conducted by the D.E.Q. in 1998 indicated moderate levels of fecal coliform in the McKenzie River at Hendricks Bridge following periods of heavy precipitation, meaning field runoff directs fecal matter to the area's streams. High levels of fecal coliform, total phosphates, ammonia and nitrate nitrogen and biochemical oxygen demand impacted water quality at the confluence with the Mohawk River. No data is available for any of the tributaries to the McKenzie near Harvest areas 3 - 6. To date, none of the streams in the Lower McKenzie River watershed have been added to the D.E.Q. 303(d) list for this water quality parameter.

No water sampling information for chemicals was available for the Lower Middle Fork Willamette River, or its tributaries. Rural residential development and commercial forestry practices in this watershed may increase the likelihood of pollutants entering the surface waters.

3.6 Fisheries

Spring Chinook and Bull Trout are the Threatened and Endangered species known to occur in these watersheds.

3.6.1 Fish Distribution

Lower Middle Fork Willamette River Watershed (5th Field)

Approximately 20% of the entire Willamette spring Chinook population migrates to the Middle Fork Willamette Watershed. The portion of the Mainstem Middle Fork contained within this 5th Field watershed is utilized as a spawning and rearing area, as well as a migration corridor for those fish that continue to Dexter Dam where they are collected and transported to various upstream locations. The spring chinook salmon in this watershed are part of the Upper Willamette River Evolutionarily significant Unit (ESU), listed as a Threatened species by the National Marine Fisheries Service (NMFS). In addition, this watershed was included in the area designated by the NMFS as critical habitat for spring Chinook. Other species present in the Mainstem Middle Fork include winter and summer steelhead trout, rainbow trout, cutthroat trout, mountain whitefish, northern pike minnow, dace, shiner, largescale sucker, sculpin, and lamprey. The Lower Middle Fork Willamette River Watershed includes the Hills Creek Subwatershed.

Hills Creek Watershed (6th Field)

Spring Chinook have not been reported to naturally occur in the Hills Creek drainage (J. Ziller, ODFW, pers. comm. 2000). The gradient and size of this stream are probable reasons that spring Chinook are not present. Surveys completed during the fall of 2000 did not find any spring Chinook redds or juveniles. Fish species currently inhabiting the lower reaches of the Hills Creek 6th Field Watershed include, rainbow trout, cutthroat trout, mountain whitefish, northern pikeminnow, dace, shiner, largescale sucker, sculpin, and lamprey as well as introduced summer and winter steelhead. Steelhead trout are not native to the watershed and thus consultation is not required for this species or for bull trout, which are not believed to have inhabited this watershed currently or historically.

Harvest Area 7

There are no fish bearing streams adjacent to activities being proposed as part of the Cedar Flats Timber sale in this watershed (Harvest Area 7). It is approximately 1/4 of a mile downstream to the closest resident fish bearing (cutthroat trout) stream and 5 miles to occupied spring chinook habitat (mainstem Middle Fork Willamette River).

Lower McKenzie River Watershed (5th Field)

The basin is an important spawning/rearing area for anadromous spring chinook salmon. Approximately 16% of the spring chinook that pass Willamette Falls enter the McKenzie River Basin. The reaches of the main stem McKenzie contained within this 5th Field are used for spawning and rearing as well as a migration corridor for those spring chinook spawning further upstream. Besides the main stem McKenzie, there are 3 streams that are used by spring chinook: Gate, Marten and Deer Creeks. All of these tributaries are located upstream of the project. In addition there may be seasonal use of the lower reaches of many other tributary streams in this watershed by spring Chinook juveniles.

Spring chinook salmon and bull trout in the McKenzie Watershed are listed as Threatened species. Winter and summer steelhead are also present in this watershed although consultation is not required as they are outside of the Upper Willamette ESU. The watershed also supports resident populations of rainbow trout, cutthroat trout, mountain whitefish and numerous non-salmonids such as sculpins, dace, and shiners. The Lower McKenzie River Watershed includes the Cedar Creek Subwatershed.

Cedar Creek Watershed (6th Field)

Spring chinook have not been reported to naturally occur in the Cedar Creek drainage. The small size of this stream precludes use by adult spring chinook although juveniles may use the lower reaches on a seasonal basis. Fish species currently inhabiting the lower reaches of the Cedar Creek include, rainbow trout, cutthroat trout, mountain whitefish, northern pike minnow, dace, shiner, large-scale sucker, sculpin, and lamprey.

Harvest Area 3-6

Harvest Areas 3-6 do not have any fish bearing streams adjacent to proposed harvest or road reconstruction and decommissioning activities. These harvest areas are a minimum of 5 miles from occupied spring chinook habitat (mainstem McKenzie River).

3.6.2 Fish Habitat

Large woody material is sparse in Hills Creek, Cedar Creek and their tributaries. Most of the wood that historically entered the channel was removed during past stream clean-out operations. Low levels of large woody material has likely led to reduced habitat complexity and a reduction in the numbers of large pools and off channel habitat when compared to historical conditions. Width to depth ratios are also generally higher as a result of large wood. Timber harvest and other activities have degraded riparian areas in the watershed. Checkerboard ownership has resulted in a fragmented riparian system leading to a loss of connectivity and shade and wood recruitment.

Very little data exists on streambank conditions along the mainstem of Hills Creek or Cedar Creek and their tributaries. Spot data indicates that there are areas of stream bank instability, but that these areas do not appear to be widespread. Both Hills Creek

and Cedar Creek have development and agricultural uses in their lower reaches and are confined by roads parallel to the stream channel in many locations.

The floodplain and nearby uplands of both Hills Creek and Cedar Creek have been extensively modified from historic conditions. The changes include controlling the river channel, conversion of floodplain to agriculture and residential use, and timber harvesting on adjoining hills (private and Federal).

More detailed descriptions of habitat conditions can be found in the Cedar Flats Timber Sale Biological Assessment (2001).

4.0 ENVIRONMENTAL CONSEQUENCES

This Chapter incorporates the analysis of cumulative effects in the *USDA, Forest Service and the USDI, Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species With the Range of the Northern Spotted Owl*, February 1994, (Chapters 3 & 4), *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001, (Chapters 3 & 4) and the *Eugene District Proposed RMP/EIS*, November 1994 (Chapter 4). These documents analyze most cumulative effects of timber harvest and other related management activities. The following analysis includes cumulative effects that supplement those analyzed in the above documents, and provides site-specific information and analysis particular to the alternatives considered here. Aquatic Conservation Strategy Objectives are listed in **Appendix E**.

4.1 Alternative 1 - Proposed Action

4.1.1 Issue #1 - What are the impacts of harvesting and road management activities to terrestrial Threatened & Endangered species, Northern Spotted Owl?

Direct and Indirect Effects

The proposed harvest would degrade roughly 266 acres (244 in harvest areas and 22 in Riparian Reserves) of dispersal habitat which is not limiting in the area. Post-harvest canopy closure would be 40-60% and the harvest areas would still function as low quality dispersal-only habitat, with recovery to pre-harvest conditions expected in 10-20 years. No suitable nesting habitat would be modified by the proposed activities. No designated critical habitat would be affected by the action alternatives. Thinning treatments within harvest areas and riparian reserves would accelerate the development of suitable nesting habitat for spotted owls, mostly due to accelerated growth or differentiation of trees not harvested. Habitat within riparian reserves would be available through time for use by owls, with suitability for nesting expected in as little as 20 years.

Cumulative Effects

Approximately 4010 acres of dispersal and 600 acres of suitable habitat exist on federal lands within a 1/4 township radius (three sections or three miles) surrounding the proposed harvests. Modification of dispersal habitat would result in no cumulative effects because the harvest areas would degrade, and not remove, dispersal habitat which would recover in 10-20 years. Dispersal-only habitat is not limited in the area on federal lands.

Private lands within 1/4 township of the proposed harvests currently provide some dispersal and very little suitable habitats for spotted owls. It is likely that these habitats would continue to be removed by future actions on these lands.

The proposed alternative may affect, but is not likely to adversely affect the Northern Spotted Owl.

4.1.2 Issue #2 - What are the effects of harvesting and road management activities on erosion and sediment delivery to water bodies, Threatened & Endangered fish, resident fish and soil productivity?

Direct and Indirect Effects

Erosion and Sediment Delivery: Direct effects include the temporary addition of sediment to streams during the removal of the fill material at stream crossings, both on roads to be repaired and roads to be closed. The impacts to streams at these locations are expected to be short-term, as the first fall rains following the activity would move the sediment downstream. Replacement of the three stream crossings on 79th Street and the removal of fill in stream channels on other roads no longer needed would improve long term conditions and reduce the amount of sediment that could enter the adjacent streams (meets ACS Objectives 4, 5). By restricting equipment operation in stream channels and conducting the work during low flow periods (July 1 to October 15) prior to fall rains, the amount of sediment delivered to streams can be minimized. Sizing permanent crossings to accommodate a 100-year storm event would maintain the natural sediment regime and reduce the potential for plugging by debris (meets ACS Objective 5). Minor excavation to restore the natural stream channel configurations on roads to be closed and tilling those roads where subgrade conditions allow would minimize future sediment recruitment from the road prism (meets ACS Objectives 3, 5). Restoration of the stream banks and channel bottoms at those locations would eliminate existing artificial barriers to sediment transport as well as reducing the risk of future road/culvert failures in this area.

Indirect effects include impacts to the channels farther downstream as a result of movement of the sediment generated during fill removal at stream crossings. Again, this impact is expected to be short-term as the fall and winter storms would disperse the sediment through the system downstream. Sediment and bedload materials stored in the channel above undersized culverts may mobilize after pipe replacement and move downstream during high stream flow events. The placement of additional relief drainage features to improve existing roads would have no direct effects to channels, but would have the indirect effect of reducing the amount of sediment from these roads delivered to streams. Rock surfacing permanent roads (especially in an area with active Off Highway Vehicle use) would have the indirect effect of reducing potential sedimentation. Effective blocking of Spur T would be necessary to prohibit further Off Highway Vehicle use and redirect that use onto the newly constructed upland road system. An indirect effect of blocking this road with historical Off Highway Vehicle use may be that new midslope Off Highway Vehicle trails are pioneered nearby on the gently sloping lands adjacent to it. Mitigation measures to reduce this risk of new user-defined trails would include posting signs to explain restoration efforts and public contact work.

Resident and Threatened & Endangered Fish

Reduction of overall road density would help to improve the habitat of resident fish species by decreasing sedimentation (which negatively impacts redd survival) and decreasing surface runoff from roads. The probability of this project having an adverse effect on resident fish species and their habitat is low due to the incorporation of Best Management Practices and adherence to Forest Plan guidelines as described in the hydrology section above.

A very low probability of an adverse effect to spring chinook salmon or their habitat exists because the closest project activity is 2.5 miles from occupied habitat. The proposed decommissioning of existing roads would reduce road density as a result of this project. In addition, a mid-slope road would be relocated to a ridge top position thus decreasing its connectivity to the hydrologic condition. Restoration of Riparian Reserves through road closure efforts and management of Riparian Reserves would allow Riparian Reserves to more efficiently trap and store sediment as it moves down slope. Sediment levels in the McKenzie and Lower Middle Fork Willamette Watersheds are expected to move toward a level more suitable for high quality fish habitat in the future.

The proposed project would not affect stream shade or stream flow to an extent where stream water temperature in spring chinook habitat might be increased. Although this project has some thinning of the riparian reserves, a “no cut” buffer along the inner gorge would help to maintain shade-providing vegetation. In addition the riparian thinning is located approximately 5 miles above the Middle Fork Willamette River (occupied chinook habitat). Stream flows would not be affected. Stream temperature in the Lower Middle Fork Willamette River and the McKenzie River are expected to decrease over time as streamside vegetation within Riparian Reserves gradually recovers from past land management impacts. Historic stream temperatures would not likely be attained due to urban and rural development and upstream flow alterations from several dams.

Soil Productivity

Direct impacts to soils from commercial thinning activities would be in the form of soil compaction, and displacement of surface soil and organic material due to harvesting. Soil porosity is an essential component of site productivity. It is instrumental in water infiltration, water storage and gas exchange. Soils with good porosity create favorable conditions for root growth, water movement, nutrient uptake by roots, and mycorrhizal growth. Cable yarding systems typically result in 2% or less of the harvest area left in a compacted condition, a level within our District standards for achieving insignificant growth-loss effect. The residual effect of soil compaction within yarding corridors would remain on site for 10 to 35 years, depending upon the depth of compaction within individual yarding corridors.

As compared to cable harvesting, ground-based harvesting has the potential for greater reductions in soil porosity through the compaction of surface and subsurface soil by bulldozers and excavators. Direct effect of ground-based harvesting is that more area is impacted

(compacted) by skid trails (up to 10% vs. 2%). The compaction resulting from ground-based harvesting would be satisfactorily mitigated through the use of design features including soil moisture restrictions, designated skid trails, and tillage of compacted areas post harvest, thus achieving insignificant growth-loss from compaction.

Existing compacted roads/trails, some severely eroded due to active Off Highway Vehicle use, would be utilized for ground-based harvest then reclaimed by tillage and blocking. The direct and indirect effects would be the restoration of infiltration characteristics and promote vegetative recovery on these previously compacted, non-productive acres. Tillage would also lessen the connectivity between roads and the stream system. Realizing these positive effects would be dependent on effectively blocking the treated acres to future Off Highway Vehicle traffic.

Cumulative Effects

The Vida/McKenzie Watershed Analysis recommends the condition of natural surfaced roads in the vicinity of all harvest areas be evaluated with regard to erosion potential and that restoration efforts be considered under this timber sale action. The Proposed Action includes decommissioning several roads, stream channel restoration, improved drainage on existing permanent roads, and surfacing eroded permanent roads with crushed rock aggregate to reduce sediment runoff and improve water quality. Implementation of this proposal, combined with other ongoing and planned road renovation and restoration work in the Lower McKenzie and Hills Creek watersheds (both on BLM and private lands) would result in a reduction of road related sediment delivery to streams in the future. The proposed project would benefit Threatened & Endangered fish, resident fish and their habitat.

No short or long-term negative cumulative effects to soil productivity are anticipated as a result of implementing this alternative. Planned road construction and road decommissioning in the project area would result in a net decrease in the area converted to road surface under this alternative. Requiring lead-end suspension during cable yarding and the use of appropriate, soil moisture and slope restrictions during ground-based yarding operations should result in insignificant growth-loss effects.

4.1.3 Issue #3 - What are the effects of harvesting and road management on water supply downslope from BLM lands in Harvest Areas #3-6?

Direct and Indirect Effects

These harvest areas are at elevations where predominately rain events occur, and commercial thinning operations are not expected to impact the timing and magnitude of peak flows or have any impact on groundwater supply. Canopy removal could result in higher soil moisture levels due to the reduction of evapotranspiration until the canopy closes in 4 to 5 years. Since soils in the harvest area tend to be clay loams, rapid percolation of somewhat higher amounts of moisture reaching the soils would not be

anticipated because clay absorbs and holds water longer than coarse grained soils. The vegetation in the Riparian Reserves would also protect streams in the vicinity of the harvest areas from increased flows.

Road improvements (such as the addition of relief drainage and replacing stream crossings with properly sized culverts), and road closures (including tilling road beds to break up compacted soil surfaces) would reduce surface runoff entering the stream system from roads. Whereas improved drainage should reduce erosion, it is not expected to notably effect existing water right permits or groundwater wells on private land.

Cumulative Effects

Since no direct or indirect effects to private landowner water supply is anticipated, no cumulative effects are expected either. Existing stream flow quantities and subsurface groundwater conditions would be maintained.

4.1.4 Issue #4 - How will harvesting and road management activities affect slope stability in Harvest Areas #3-6?

Direct and Indirect Effects

Commercial timber harvesting is not expected to have any effect on slope stability, either within the proposed harvest areas, or to the lands downslope of those areas. The proposed harvest areas have a low risk for failure due to gentle slopes higher on the landscape, uphill from identified rotational landslide scarps. Lands with possible landslide risk were dropped from harvest proposals early in the process.

Road improvements and closures would have no impacts to the rotational landslides identified on BLM land in this area. Replacing stream crossings with appropriately sized culverts and adding relief drainage on the permanent section of 79th Street should have the indirect effect of improving the stability of the road in the future, by channeling surface runoff to stable sideslopes.

Cumulative Effects

No cumulative effects to the landforms on the BLM land are anticipated. Although road bed stability can oftentimes be hard to predict since subsurface drainage contributes to the risk of failures, the improvements planned on 79th Street constitute preventative maintenance and should reduce future risk of road related slides or road bed subsidence from inadequate surface water drainage.

4.2 Alternative II - No Action

4.2.1 Issue #1 - What are the impacts of harvesting and road management activities to terrestrial Threatened & Endangered species, Northern Spotted Owl?

Direct and Indirect and Cumulative Effects

Dispersal or suitable habitat would not be modified and there would be no direct, indirect or cumulative effects to spotted owls or their habitat due to disturbance or habitat modification. However, enhancement and acceleration of late successional characteristics (age or structure) in existing stands, that could provide suitable nesting habitat for owls (especially in Riparian Reserves), would not be realized under this alternative.

4.2.2 Issue #2 - What are the effects of harvesting and road management activities on erosion and sediment delivery to water bodies, Threatened & Endangered fish, resident fish and soil productivity?

Erosion and Sediment Delivery

Under this alternative, many of the Aquatic Conservation Strategy Objectives (#2, #3, #4, #5) may not be met because taking no action would not necessarily maintain the physical integrity of the aquatic system, water quality, or the sediment regime in the watersheds. In particular, long-term road-related sedimentation to streams would continue to occur and potentially escalate because of lack of maintenance. Existing stream crossings in need of repair would not be replaced or removed which could result in mass movement and short-term water quality degradation.

Direct sediment delivery to streams in Harvest Areas 4 and 7 from adjacent roads would continue and be expected to increase over time as continued Off Highway Vehicle use occurs. Sediment input to streams would be chronic and present short-term increases of fine sediments and turbidity during each high stream flow or rain event. Sediment accumulation above undersized or failing culverts along 79th Street would present a higher risk to stream channels because of potential catastrophic failure. Vast amounts of road fill and stored bedload material would be mobilized and transported through channels as culverts fail which could adversely alter stream configuration and bank vegetation.

Resident and Threatened & Endangered Fish Species

Under this alternative the net road mileage and road conditions in the project area would remain in their current condition. Road improvements and road decommissioning would not occur. Sedimentation and runoff have the potential to negatively affect bank stability, migration, spawning, and redd survival of both resident fish threatened species (spring chinook and bull trout).

Soil Productivity

In comparison with the Proposed Action, no additional soil compaction or soil displacement would be incurred, since no harvesting or road construction would be conducted. Soil porosity in the existing road segments targeted for decommissioning under the Proposed Action would not be rehabilitated through tillage. Impaired infiltration, water storage, and gas exchange would persist along these road segments with the corresponding lack of vegetative recovery.

Cumulative Effects

Opportunities to improve drainage on the existing roads, restore stream channels, and decommission roads no longer needed would be postponed to a later date. Detrimental effects from possible culvert failures and road introductions of sediment would be expected to continue and it is unknown what the cumulative ramifications may be.

Existing native surface roads would persist on the landscape in a compacted condition, constituting a loss of productive acres on these lands. Active erosion would continue on roads left accessible to Off Highway Vehicle use, leading to further productive losses of the soil resource.

4.2.3 Issue #3 - What are the effects of harvesting and road management on water supply downslope from BLM lands in Harvest Areas #3-6?

Direct and Indirect Effects

No commercial timber harvesting or road management (improvements or closures) would take place, and no direct or indirect effects would occur to the amount of surface water or ground water downslope from the project area.

Cumulative Effects

Implementing this alternative would result in no cumulative effects to the amount of surface water or groundwater downhill from the project area.

4.2.4 Issue #4 - How will harvesting and road management activities affect slope stability in Harvest Areas #3-6?

Direct and Indirect Effects

The indirect effect of this alternative is that three undersized, deteriorating stream crossings along 79th Street could further degrade and possibly fail into the stream channels. Without installation of additional relief culverts, this road could potentially have more problems with subsidence of the roadbed, as occurred in 1996.

As in the Proposed Action, lands with high to moderate risk of slope failure would not be impacted because no surface disturbance would occur in these areas.

Cumulative Effects

No cumulative effects to potentially unstable landforms identified adjacent to these harvest areas is anticipated. Without improvements and maintenance of 79th Street, risk of mass wasting, especially at stream crossings could escalate and not only impact downstream resources, but also privately owned property and access to that property. The opportunity to make those necessary road repairs would be delayed until another time.

4.3 Alternative III

4.3.1 Issue #1 - What are the impacts of harvesting and road management activities to terrestrial Threatened & Endangered species, Northern Spotted Owl?

Direct and Indirect Effects

Same as Proposed Action

Cumulative Effects

Same as Proposed Action

4.3.2 Issue #2 - What are the effects of harvesting and road management activities on erosion and sediment delivery to water bodies, Threatened & Endangered fish, resident fish and soil productivity?

Direct and Indirect Effects

Erosion and Sediment Delivery:

This alternative proposes the same harvest actions as the Proposed Alternative. The difference is Spur T would be upgraded rather than decommissioned, including replacing a stream crossing (sized to the 100-year storm event) and installing additional relief drainage. The direct effect of this improvement would be short-term sedimentation during culvert placement operations, but a long-term improvement to water quality and natural sediment transport (meets ACS Objectives #4 and #5). Surfacing this road with crushed aggregate would also greatly reduce the potential for road related sediment entering the stream from the long established pattern of Off Highway Vehicle use in this area.

The relocation of a mid-slope road to a ridge-top road would not occur, thus increasing the hydrologic connectivity of the road system when compared to the proposed action. Sedimentation due to the rocking of roads currently used by Off Highway Vehicles would improve current sediment inputs as compared to the current condition, but would not reduce them to the same extent as the proposed action.

Resident and Threatened & Endangered Fish Species

The increase in hydrologic connectivity as described above would increase sediment input and road related runoff, thus potentially impacting bank stability, migration, spawning, and redd survival of resident fish, spring chinook, and bull trout as compared to the proposed action.

Soil Productivity:

Due to the occurrence of poorly drained soils on Spur T, substantial subgrade reinforcement would occur, resulting in a commitment to permanent placement of this road. The indirect effect

of this subgrade reinforcement is that it may be difficult to till the road at a later date and recover soil productivity.

Cumulative Effects

The opportunity to relocate the permanent road system from a midslope location to ridgetop areas or locations where there is little or no stream influence would be postponed.

4.3.3 Issue #3 - What are the effects of harvesting and road management on water supply downslope from BLM lands in Harvest Areas #3-6?

Direct and Indirect Effects

Same as Proposed Action

Cumulative Effects

Same as Proposed Action

4.3.4 Issue #4 - How will harvesting and road management activities affect slope stability in Harvest Areas #3-6?

Direct and Indirect Effects

Same as Proposed Action

Cumulative Effects

Same as Proposed Action

4.4 Other Environmental Effects - Common To All Action Alternatives

4.4.1 Unaffected Resources

The following either are not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concerns, prime or unique farm lands, flood plains, Wilderness, hazardous materials, and wild and scenic rivers.

4.4.2 Wetlands

No wetlands or flood prone areas would be impacted within the proposed harvest area or by road management work. All acres within delineated wetlands and floodplains would be protected from surface disturbance by the establishment of interim Riparian Reserves and a no harvest zone.

4.4.3 Recreation

Proposed decommissioning of temporary roads would not affect future vehicle access opportunities into either watershed, because these areas are currently behind private locked gates. Off Highway Vehicle use is expected to continue throughout both watersheds. The action alternative would redirect some of the Off Highway Vehicle uses to decrease degradation to water resources. The proposed harvest areas are subject to the Visual Resource Management (VRM) Class IV management prescription under the 1995 Eugene District RMP. There are no Wilderness Areas, Roadless Areas, or Wild and Scenic Rivers in, or adjacent to, the analysis area.

4.4.4 Threatened and Endangered Species

Spring chinook

Consultation on the proposed action for spring chinook has been completed with the National Marine Fisheries Service (NMFS). The Level I Team concurred (April 19th) with the ESA determination for these activities of may affect, not likely to adversely affect (NLAA) spring chinook salmon or designated critical habitat. The Letter of Concurrence was received 6/8/2001.

Changes to the proposed action have occurred since the Letter of Concurrence was received. Due to the presence of survey and manage species, Harvest Areas 1 and 2 were dropped from the proposed action. The road work associated with these units will occur as part of the McKenzie TMR EA. The location of survey and manage species in Harvest Area 7 resulted in dropping the proposal to move road 18-2-15.1C to the ridgetop. Specific changes are as follows. 1) 0.81 mile of road would be constructed as compared to 1.15 miles originally consulted on. 2) 0.39 mile of road would be reconstructed as compared to 1.39 miles originally consulted on. 3) 1.76 miles would be decommissioned compared to 2.95 miles originally consulted on. 4) There would be a net decrease of 0.56 mile of road as compared to 1.8 miles originally consulted on. The changes to the proposed action would result in less impacts as described in the original BA and LOC, thus consultation was not reinitiated.

In addition to ESA requirements, the Magnuson-Stevens Act (1996) requires that the impact on essential fish habitat (EFH) be assessed for all new projects. The activities proposed as part of the Cedar Flats Timber Sale would have minimal impact on Essential Fish Habitat for spring chinook salmon (NLAA). Consultation for EFH occurred concurrently with ESA consultation (LOC 6/8/2001). NMFS determined that conservation measures included as part of the proposed action “are adequate to minimize the adverse impacts from this project to designated EFH for salmon.” No additional conservation measures were recommended.

Bull Trout

Bull trout consultation was completed during a previous iteration of the Cedar Flats Timber Sale

(1998). Only Harvest Areas 3-6 were required to undergo bull trout consultation as they are within the McKenzie Watershed. Harvest Area 7 is in the Hills Creek Watershed, which is outside of the consultation area for bull trout. The Letter of Concurrence (LOC) for bull trout from USFWS was received 9/8/98. Timber harvest acreage and prescriptions have not significantly changed between iterations. The changes in road work between the iterations of this project are believed to have a less or equal effect to bull trout as described in the original BA and LOC, thus the reinitiation of consultation for bull trout is not required by the USFWS (see the Biological Assessment for spring chinook for more detailed information regarding the differences and rationale of this decision.).

Oregon Chub

Due to the distance of these activities from Oregon Chub habitat, there would be no affect to Oregon Chub as a result of the proposed actions, therefore consultation is not required.

Northern Spotted Owl

The proposed action alternatives were consulted on programmatically in the *Programmatic Biological Assessment for Projects with the Potential to Disturb Northern Spotted Owls and/or Bald Eagles in the Willamette Province for FY 1998 and the Willamette Province FY 1998 Habitat Modification Biological Assessment for Effects to Northern Spotted Owls and Northern Bald Eagles* and conform to the guidance in these documents, including updates to current standards.

4.4.5 Cultural Resources

No cultural sites have been identified. The analysis file contains the cultural report.

4.4.6 American Indian Rights

No impacts on American Indian social, economic, or subsistence rights are anticipated. No impacts are anticipated on the American Indian Religious Freedom Act. Management action information was sent to the Confederated Tribes of the Grand Ronde, and Confederated Tribes of the Siletz.

4.4.7 Environmental Justice

The proposed project areas are not known to be used by, or disproportionately used by, minorities or low-income populations at a greater rate than the general population. This includes the relative geographic location and cultural, religious, employment, subsistence, or recreational activities that may bring minorities or low-income populations to these areas. BLM concludes that no disproportionately high, adverse human health or environmental effects would occur to minorities, or low-income populations from these actions.

4.4.8 Invasive and Non-Native Species

Scotch broom, a noxious weed, occurs along the roads all throughout this watershed. In this project area, it occurs in small amounts. Timber harvest does disturb the soil, creating a seed bed. As this project is a thinning, the remaining canopy would provide enough shade to limit the spread of scotch broom into the harvest area. Other invasive species, such as Himalayan blackberry also grow along the roads, but shade would limit their spread into the project area as well.

5.0 LIST OF AGENCIES AND PERSONS CONSULTED

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

John Bianco	Harold Schroeder
Oregon DEQ	Sierra Club - Many Rivers Group
Jim Goodpasture	Swanson Superior Forest Products Inc.
Pam Hewitt	Craig Tupper
Charles & Reida Kimmel	Governor's Forest Planning Team
Lane County Land Management	Jan Wroncy
Carol Logan, Kalapooya Sacred Circle Alliance	Ann Mathews
Oregon Dept of Fish & Wildlife	American Lands Alliance
Oregon Dept of Forestry	Kris and John Ward
Oregon Natural Resources Council	Sondra Zemansky
The Pacific Rivers Council	Robert P Davison
John Poynter	Tom Stave, U of O Library
Leroy Pruitt	John Muir Project
Roseburg Resources Co	James Johnston
Peter Saraceno	National Marine Fisheries Service
	US Fish & Wildlife Service

6.0 LIST OF PREPARERS

THE INTERDISCIPLINARY TEAM

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Michael Southard	Archaeologist	Cultural Resources
Beth Clarke	NRS Technician	
Fred Kallien	Forester	Silviculture
Cheshire Mayrsohn	Botanist	Botany
Dave Reed	Fuels Technician	Fuels/Air Quality
Glen Gard	Natural Resource Protection Specialist	Hazardous Materials Coordinator
Nikki Swanson	Fisheries Biologist	Fisheries
Dave Mattson	Engineering	Roads/Transportation
Kris Ward	Hydrologist	Water Resources

DESIGN FEATURES FOR THE PREFERRED ALTERNATIVE AND MONITORING

Design features include timber sale design, contract stipulations, and prescribed activities to be accomplished by the BLM or timber sale purchaser. The objective of design features is to maintain or enhance the quality, quantity, and productivity of the resources in the analysis area.

HARVEST ACTIONS

1. Commercial thinning would be conducted using a cable logging system. One-end suspension of logs would be required wherever topography permits to reduce the potential for erosion and run-off during yarding. Intermediate supports would be needed in Harvest Area 7 to accomplish this objective.
2. Ground based yarding operations can occur where slopes are less than 35 percent in all harvest areas except Harvest Area 7 where ground-based equipment is restricted due to wide occurrence of Cumley soils. Use of the following recommendations for ground based yarding systems would keep soil impacts within RMP standards:
 - Restrict yarding to seasonally dry periods when soil moisture levels are less than 25 percent (usually between July 1 and Oct. 15).
 - Preplan and designate all skid trails to occupy less than 10 percent of the harvest area, in order to avoid ground-based yarding where compaction cannot be mitigated (e.g. Bellpine w/cobbles, west half Harvest Area 4) and to ensure use of existing trails wherever possible. Require felling of trees to lead to the skid trails and maximize winching distances up to 100 feet and distances between trails up to 200 feet where feasible. Use existing skid roads wherever possible.
 - Other methods of ground based harvest (e.g. shovel logging, harvester processor, cut-to-length systems) where there are restrictions to a single pass over the ground when operating off of designated primary skid trails may be utilized, upon approval of resource area soil scientist. Moisture restrictions would also apply to ground based cutting systems.
 - Till all compacted skid trails and temporary native surface roads with a winged subsoiler or excavator during the same summer season as falling and yarding, when soil moisture conditions are 25 percent or less. If tillage cannot be accomplished the same operating season, all 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 possibly brush piles to prevent Off Highway Vehicle entry until final tillage and blocking.

3. Snags and large remnant trees would not be cut, except those in the temporary road construction right-of-way, and those posing a safety hazard.
4. Log lengths would be limited to 40 feet in order to protect residual trees during yarding.
5. Thin from below, cutting suppressed, intermediate, and some co-dominants. Residual tree spacing would be approximately 21 foot spacing, which would leave approximately 77-94 trees per acre. Trees larger than 24 inches DBH would be reserved, except for trees inside the thinning corridors.
6. Yarding restriction during sap flow is April 1 through June 15.
7. Fuels treatment would require piling of slash and burning during the wet fall/winter after sufficient rains have wet the forest floor. In addition, a recommended 25 foot slash pullback along road 18-2-1 and along the property line directly adjacent. Residual material that may be piled on landings along existing roads, or down material (except reserved coarse woody debris) that could be reached from existing roads, would be available for disposal as Special Forest Products such as firewood, fence posts, or poles.
8. Management activities would be altered, according to BLM policy and RMP Standards and Guidelines, if any cultural resources, Special Status Plants or Wildlife - including Threatened and Endangered, Survey and Manage or E-4 Special Provision Species - are found to be in or affected by harvest or associated activities.
9. 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 falcon, bald eagle, spotted owl, great grey owl, accipiter hawk, merlin, or other owl, hawk or raptor, and
 - within a 1/4 mile of bald eagle winter roost locations and suitable nesting habitat for spotted owls and bald eagles. Seasonal restrictions vary by species and anticipated impacts to the species should they occur in the area. These restrictions may be waived or extended by the Area Wildlife Biologist based on survey or other information.
10. 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 Harvest Areas 3 and 4 during the critical nest period for Northern spotted owls (March 1-July 15). These restrictions may be waived or extended by the Area Wildlife Biologist based on survey information regarding nesting activity.
11. Directional falling and yarding would be utilized to protect retention trees, snags, and reserve areas consistent with State safety practices. Snags would be retained where possible. If snags are felled

as danger trees, they would be retained on site as down woody debris.

12. Riparian Reserve thinning: Harvest Area 7 only (See attached Map Appendix D). The no treatment buffer would utilize natural topographic slope break (the first slope break above the flood plain ranging from 50 to 100 feet). The thinning prescription would reduce the number of trees per acre to 77.
13. For the purpose of long-term productivity and maintenance of biological diversity, all down woody debris of advance decay (class 3, 4, & 5) would be retained on site and disturbed as little as possible.

ROAD CONSTRUCTION

Road building would be limited to the dry season (generally between July 1 and October 15), as well as any harvest operations conducted from temporary native surface roads. Permanent roads would be surfaced with rock aggregate to reduce the potential for sediment delivery. An alternative road surfacing for temporary roads when needed, would be wood chips or some other biodegradable material.

ROAD IMPROVEMENTS

Place cross drain relief culverts immediately upgrade of stream crossings where necessary to prevent cut slope ditch sediment from entering streams. Replace existing stream crossing culverts that are (1) failing or otherwise depositing excess sediment into streams or, (2) are undersized and located in an area with moderate to high potential for slope failures. Use the theoretical 100-year storm event as design criteria for permanent stream crossing culverts. In channel work is to be conducted during low flow periods (July 1 to October 15) prior to fall rains. Design adequate streambank protection (i.e., riprap) where scouring could occur. Silt fences or straw bales should be used to minimize sediment transport from the excavation area to down stream locations.

ROAD DECOMMISSIONING

Road Closures: Remove all stream crossings and cross drain relief culverts from the site and recycle at an appropriate facility. In channel work is to be conducted during low flow periods (July 1 to October 15) prior to fall rains. At stream crossings, remove all fill material and recontour the channel side slopes and seed or plant exposed soils with native plant species in conjunction with erosion control blankets as needed. Establish drain dips at the cross drain removal locations. If closed roads are not to be tilled, construct drainage dips, water bars, lead-off ditches, etc. to direct surface water to the forest floor and otherwise leave the road in an erosion resistant condition. For the benefit of amphibians, when decommissioning Spur T: minimize disruption to existing wetland features (some within 10 feet of the existing road) and their hydrology.

Blocking: To limit or eliminate public Off Highway Vehicle traffic in treated stands and on closed

roads, the following combination of blocking techniques would be used: Before sale completion, purchaser required to scatter tops, root wads, brush, and/or other woody debris at edges of landing sites. All decommissioned roads would be blocked at points indicated on a Map (see Appendix D) using one or all of the following: construct a berm/trench/berm earthen mound, place massive boulders and root wads, pile large tangled concentration of brush in the road prism and may be reinforced by felling trees.

Mitigation measures to reduce risk of new user-defined trails would include posting signs to explain restoration efforts and public contact work.

SURVEY AND MANAGE SPECIES

Mollusks

A total of 52 *Megomphix hemphilli* sites were located through pre-project surveys. Key habitat features present include: big leaf maples and other hardwoods, sword fern, leaf litter and loose well drained soils, down woody debris and moist microclimates. All sites would receive Habitat Areas consistent with "Strategy 1" in the current Management Recommendations (version 2.0, 11/23/99). No habitat disturbance would occur within these areas, which would be ≥ 0.25 acres for each known site. Hardwoods (especially big leaf maples) would be retained throughout the harvests areas where possible.

Helvella elastica

No thinning would occur in the reserve containing *Helvella elastica* in Harvest Area 7 (see Riparian Reserve map in Appendix D). This site would be protected with a 0.25 acre reserve.

Ramalina Thrausta

No thinning would occur in the reserves containing *Ramalina Thrausta* in Harvest Area 7. These sites would be protected with a one site tree (180 ft) reserve.

APPENDIX B

HARVEST AREA DETAILS FOR THE PROPOSED ACTION

Harvest Area	Legal	Total Acres	Volume/Acre (MBF)	Total Volume (MBF)	Harvest system (acres) Cable/Ground base	Timber Age
3	18-02W-01	10	6	72	0/12	50
4	18-02W-01	29	6	174	25/4	50
5	18-02W-01	55	6	330	0/55	50
6	17-01W-31	12	1.6	19	0/12	50
7	18-01W-09	160	10.7	2041	160/0	50-60
Total		266		2,912	185/136	

*Land Use Allocation GFMA, (General Forest Management Area Land Use Allocation)

*Treatment Type -Commercial Thinning

ROAD CONSTRUCTION AND DECOMMISSION GLOSSARY

Renovation: return an existing road to its original condition. If a native surface road is now overgrown with brush, the brush is cut back; if a previously gravel road has lost the surfacing, the gravel is replaced to the original depth.

Improvement: bring an existing road to a higher standard than it originally was. Such as a native surface road getting a crushed rock surface or a gravel road being widened and paved.

Construction: create a road where there was no road previously. The standard of the road can be anything from a temporary native surface road to a paved road.

Decommission: Roads determined to have no future need are closed to vehicles on a long-term basis, but may be used again in the future. Prior to closure, the road is prepared in order to avoid future maintenance needs. All stream crossings and cross drain relief culverts are removed. At stream crossings, all fill material is removed and channel sideslopes are recontoured. Exposed soils are seeded or planted with native species for erosion control. Drain dips are constructed at the cross drain removal locations. If closed roads are not to be tilled, drainage dips, water bars or lead-off ditches, etc., are constructed to direct surface water to the forest floor and otherwise leave the road in an “erosion resistant” condition. The road would be closed with a device similar to an earthen barrier (tank trap) or equivalent. The road would not require future maintenance. Roads are removed from road inventories.

ROAD CONSTRUCTION AND CLOSURE SUMMARY FOR ALTERNATIVE I

The following Proposed Actions would be accomplished under timber sales covered by this EA.

Harvest Area #	Road No.	Miles Native surface Const.	Miles Rock Road Construction	Miles Native surface Road Renovation	Miles Rock Road Improv.	Total Culverts Replaced / or New Culverts / or Removed	Total Miles Decom.
4	Spur 4A		0.03				
4	18-2-1.1				0.16	2	
4	18-2-1					5	
5	Spur 5A						0.4
6	18-2-1+Off Highway Vehicle trails						0.95
7	Spur T				0.05		0.41
7	Spur U - 18-1-9.2		0.60			3	
7	Spur W		0.08				
7	Spur X		0.1		0.1	1	
7	Spur Z				0.08		
Totals		0	0.81	0	0.39	11	1.76

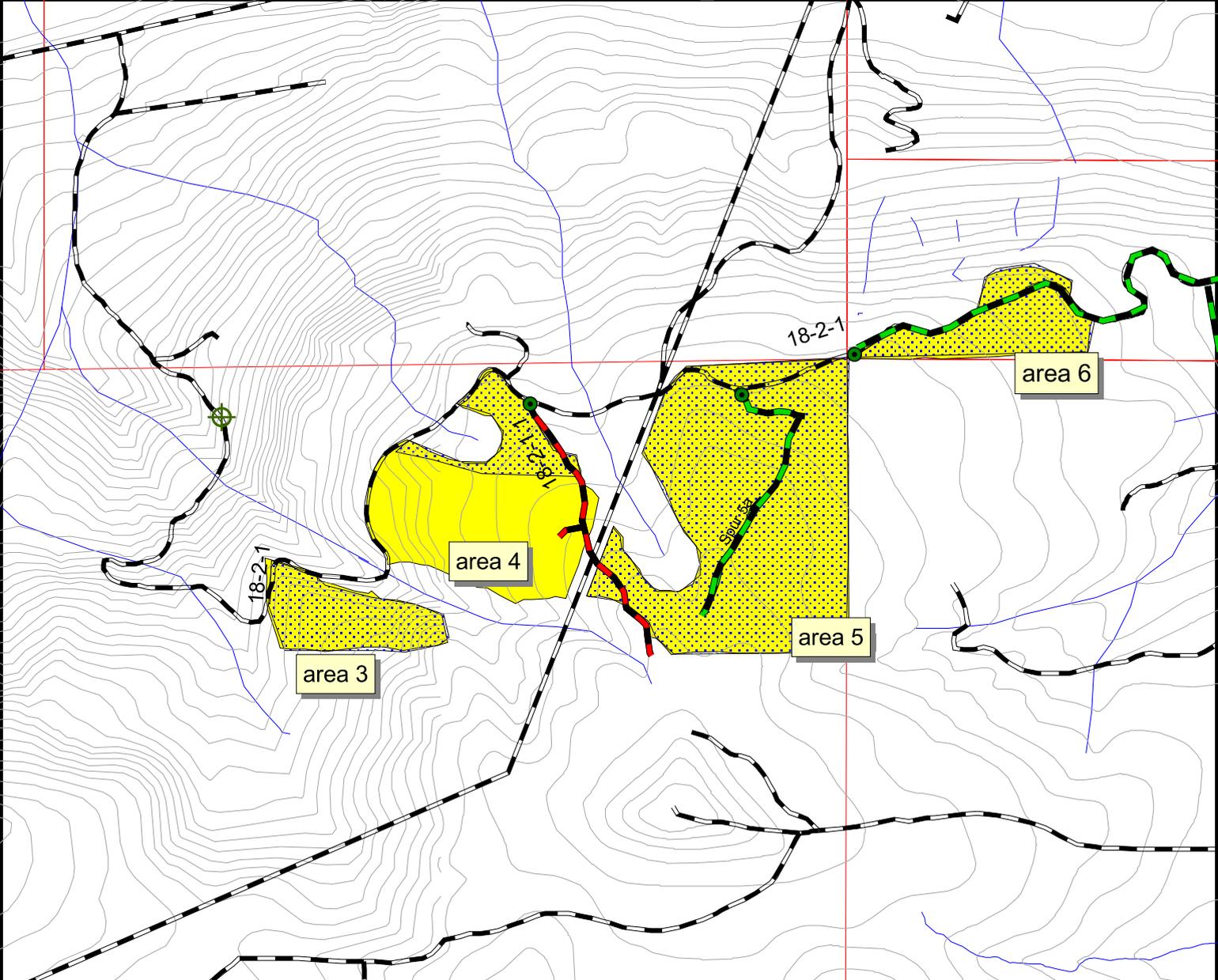
ROAD CONSTRUCTION AND CLOSURE SUMMARY FOR ALTERNATIVE III

Harvest Area #	Road No.	Miles Native surface Const.	Miles Rock Road Construction	Miles Native surface Road Renovation	Miles Rock Road Improve.	Total Culverts Replaced / or New Culverts / or Removed	Total Miles Decom.
4	Spur 4A		0.03				
4	18-2-1.1				0.16	2	
4	18-2-1					5	
5	Spur 5A						0.4
6	18-2-1+Off Highway Vehicle trails						0.95
7	Spur T				0.53		
7	Spur U - 18-1-9.2		0.34				
7	Spur V		0.05				
7	Spur W						
7	Spur Z				0.08		
Total		0	0.42	0	0.77	7	1.35

Only Harvest Area 7 is different under this alternative. There would be no road decommission in Sec 9. The decommissioning in the rest of the sale area would remain the same.

APPENDIX D

MAPS AND LOCATION OF ROAD CONSTRUCTION, AND HARVESTING ON ALTERNATIVE I



Area:
 unit 3 - 10 acres
 unit 4 - 29
 unit 5 - 55
 unit 6 - 12
 total 106 acres

ground base 86 acres

**2001 Harvest Area Map
 Proposed Action
 Cedar Flats
 Units #3,4,5,6 - Thin**

**T.18S., R.02W. Sec 01
 T.17S., R.01W. Sec 31**

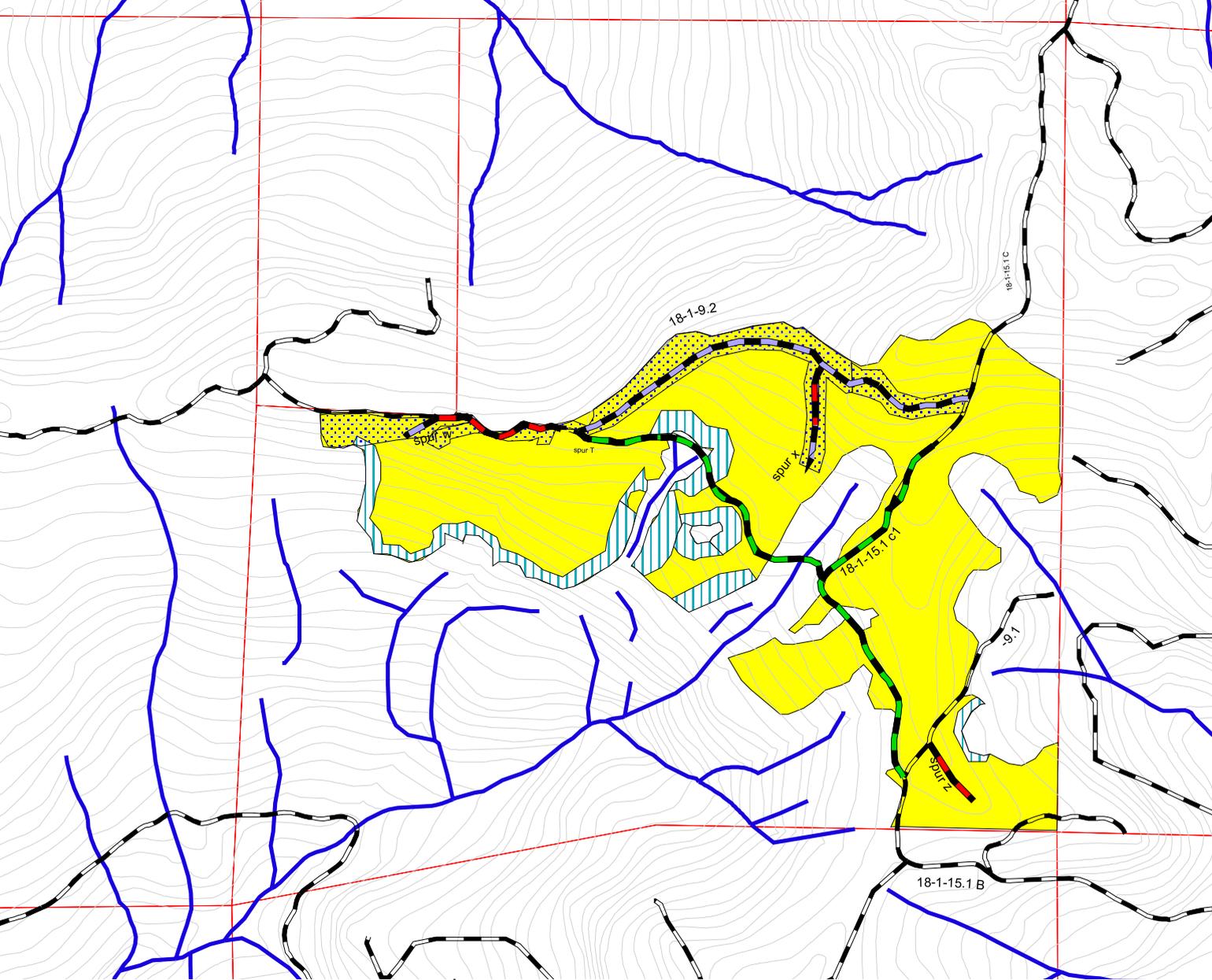
-  Block here
-  Existing Permanent Rocked
-  Existing/Full Decommission
-  Roads
-  20' contour intervals
-  40' contour intervals
-  Streams
-  Groundbase harvest
-  Harvest Area
-  Section lines



map scale 1"=1000'

07/09/2001





Area:
 unit 7 - 160 acres
 (includes approximately 22
 acres of Potential Riparian
 Reserve treatment)

**2001 Harvest Area Map
 Proposed Action
 Cedar Flats
 Unit #7 - Thin**

T.18S., R.01W. Sec 09

-  Existing Permanent Rocked
-  Existing/Full Decommission
-  New Permanent Rock
-  Roads
-  Streams
-  Groundbase
-  Riparian Reserve Thinning
-  20' Contour Intervals
-  Harvest Area
- Section lines

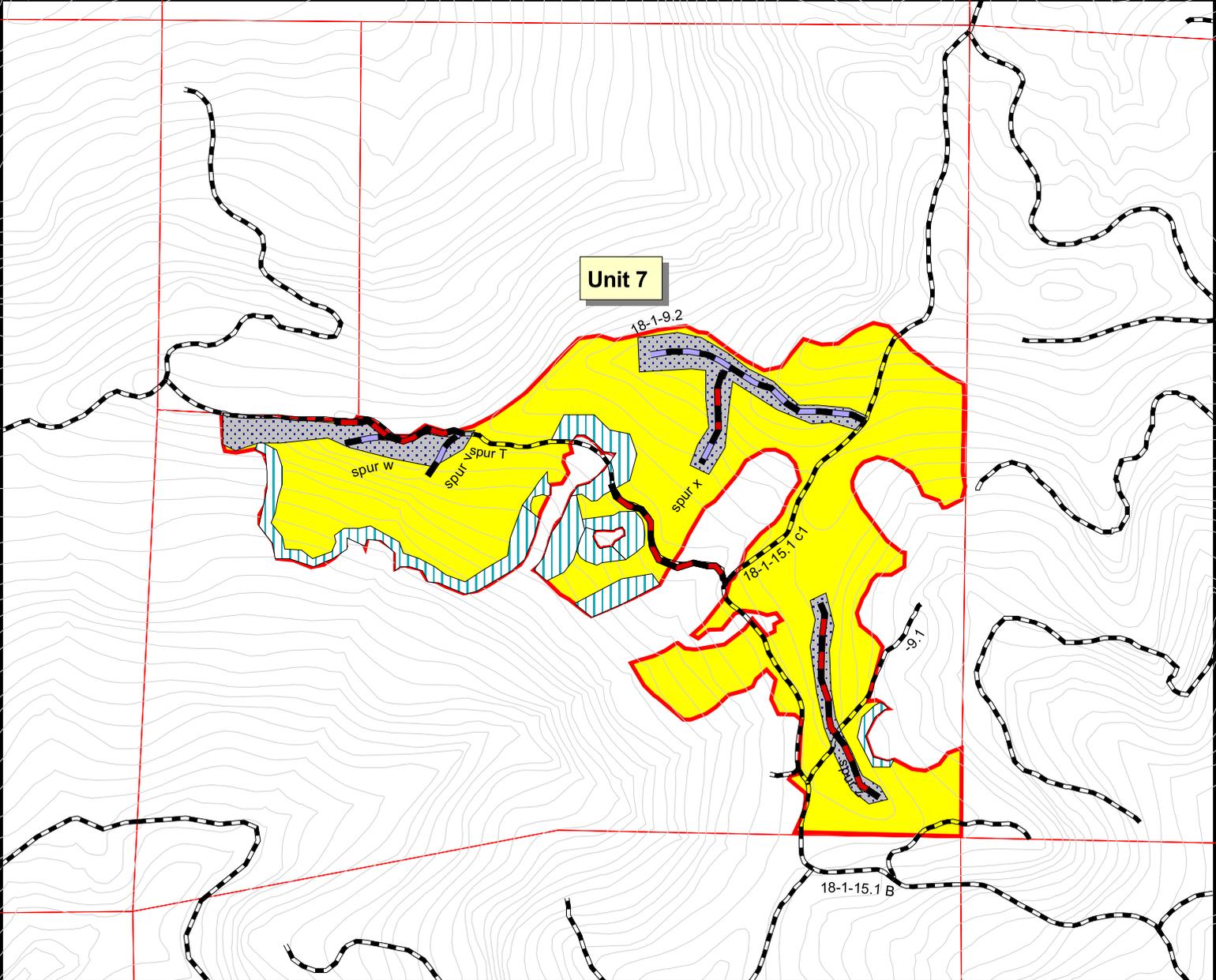
500 0 500 1000 Feet



map scale 1"=1000'

07/09/2001





Unit 7

Area:
unit 7 - 160 acres
(includes approximately 22 acres
of Riparian Reserve Treatment)

**2001 Harvest Area Map
Alternative III
Cedar Flats
Unit #7 - Thin**

-  Existing Permanent Rocked Spurlt.shp roads
-  Ground base
-  Riparian Reserve Thinning
-  20' Contour Intervals
-  Harvest Area
-  Section lines

T.18S., R.01W. Sec 09

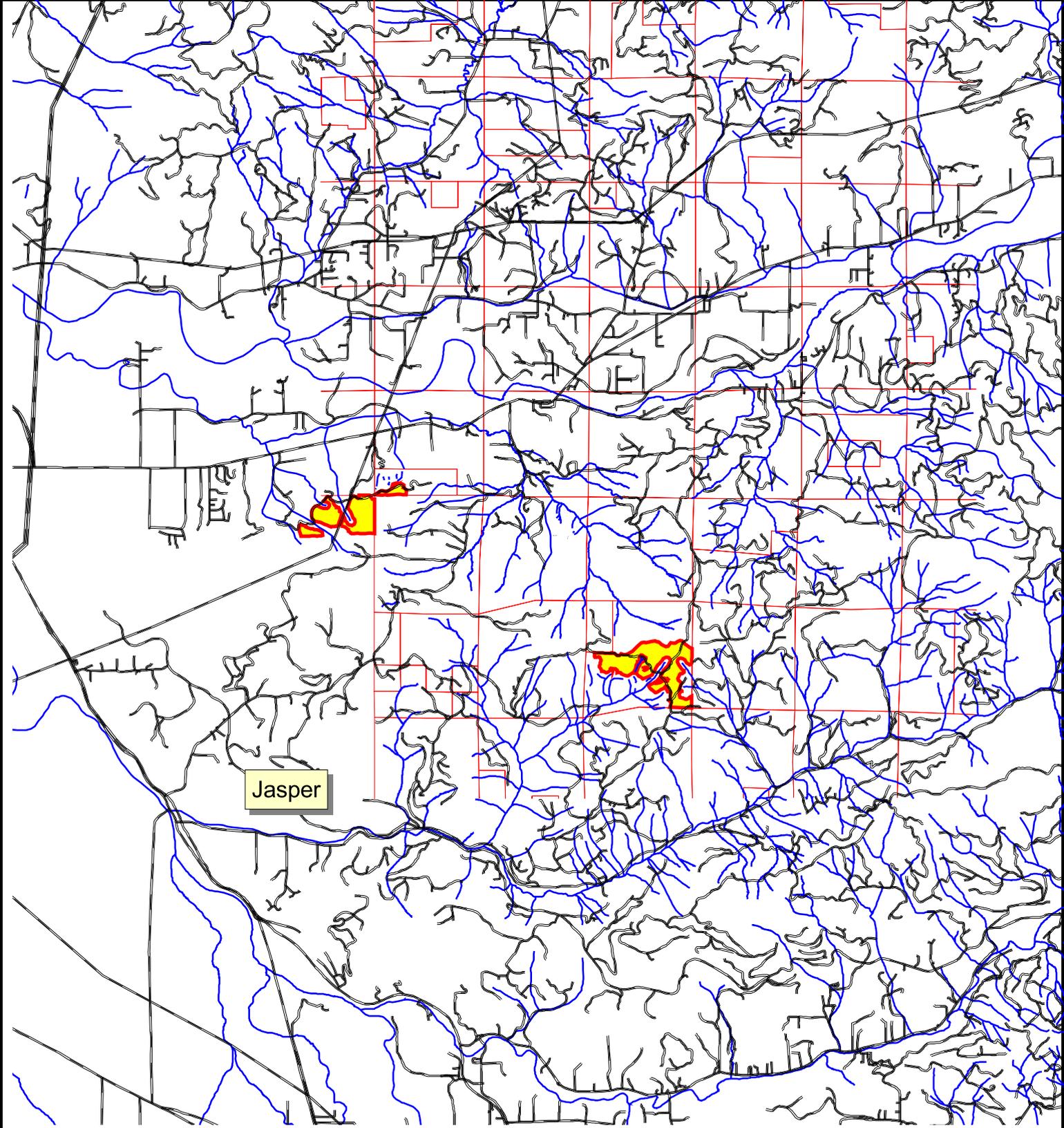
500 0 500 1000 Feet



map scale 1"=1000'

07/09/2001





Jasper

Vicinity Map
Proposed Cedar Flats Timber Sale
EA No. OR 090-EA-17

-  roads
-  Streams
-  Partial Harvest Area
-  Section lines

1 0 1 2 Miles



AQUATIC CONSERVATION STRATEGY OBJECTIVES

Forest Service and BLM-administered lands within the range of the Northern spotted owl will be managed to:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distribution of coarse woody debris sufficient to sustain physical complexity and stability.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

The Finding of No Significant Impact (FONSI) is not a decision document. Its purpose is to state that the actions proposed do not have a significant effect on the environment and that an EIS is not needed according to information contained in the EA and other available information. The unsigned FONSI is sent out with the EA to let you know that we feel that our actions do not warrant an EIS.

Finding of No Significant Impact

CEDAR FLATS TIMBER SALE NO. E-01-237

EA OR 090-01-17

The Interdisciplinary Team for the McKenzie Resource Area, Eugene District, Bureau of Land Management has completed an Environmental Assessment (EA) and analyzed a proposal to harvest Federal forest in the Cedar Flats Timber Sale harvest area. Cedar Flats is located approximately 6 miles east of Springfield, Oregon, in T. 18 S., R. 1 W., Sec 9, T. 17 S., R. 1 W., Sec. 31 and T. 18 S., R. 2 W., Sec. 1. The proposal is a commercial thinning and road work involving the removal of timber from the General Forest Management Area (Matrix) and density management within portions of the Riparian Reserves. Thinning of Riparian Reserves would be in compliance with the Standards and Guidelines of the Record of Decision (ROD) for the Forest Plan.

The design features of the Proposed Action are described in the attached Cedar Flats Environmental Assessment (OR 090-EA-01-17). The Proposed Action and Alternative to harvest timber from Matrix and Riparian Reserves in the Eugene District are in conformance with 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), the *Record of Decision for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, February 2001, and the *Eugene District Record of Decision and Resource Management Plan* (June 1995).

The anticipated environmental effects contained in this EA are based on research, professional judgement, and experience of the Interdisciplinary (ID) team and Eugene District Resources staff. No significant adverse impacts are expected to (1) Threatened or Endangered species, (2) Flood plains or Wetlands/Riparian areas, (3) Wilderness Values, (4) Areas of Critical Environmental Concern, (5) Cultural Resources, (6) Prime or unique Farmland, (7) Wild and Scenic Rivers, (8) Air Quality, (9) Native American Religious Concerns, (10) Hazardous or Solid Waste, or (11) Water Quality.

DETERMINATION

On the basis of information contained in the EA, and all other information available to me, it is my determination that the Alternatives analyzed do not constitute a major Federal action affecting the quality of the human environment. Therefore, a new EIS or supplement to the existing EIS is unnecessary and will not be prepared.

Approved by: _____ Date: _____
Field Manager, McKenzie Resource Area