



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Eugene District Office

P.O. Box 10226

Eugene, OR 97440-2226

In Reply Refer To:

1792A

EA-02-24

Blackberry Hole

September 10, 2002

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 a commercial thinning project in the Fall Creek and Hills Creek drainages located in Section 23, T. 18 S., R. 1 W., 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 September 11, 2002. The EA will also be available on the internet at <http://www.edo.or.blm.gov/nepa>. The public comment period will end on October 11, 2002. 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 October 11, 2002. If you have any questions concerning this proposal, please feel free to call Don Wilbur at 683-6994.

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

**BLACKBERRY HOLE
Timber Sale**

**McKenzie Resource Area
BLM Eugene District**

ENVIRONMENTAL ASSESSMENT

Environmental Assessment No. OR 090 -EA-02-24

September 2002

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BLACKBERRY HOLE TIMBER SALE

Bureau of Land Management

McKenzie Resource Area

Environmental Assessment No. OR 090-EA-02-24

1.0 PURPOSE AND NEED FOR ACTION

The Bureau of Land Management (BLM) proposes to implement a commercial thinning project in the Little Fall Creek and Hills Creek watersheds. The proposed action is within the Matrix and Riparian Reserves (RR) land use allocations. The area of analysis for the purposes of this environmental document is 660 acres of BLM lands located in T. 18 S., R. 1 W., Section 23. This area is approximately 15 miles east of Eugene, and 3 miles north of Fall Creek Reservoir.

The underlying need for this action is based on a review of timber stand exams that indicates the current stand conditions would benefit from a commercial thinning. Currently, this stand shows an excessive stocking density that causes reduced stand vigor and tree growth. Harvest treatments would reduce density, which would increase vigor, growth rates, wind firmness, and root structure. This stand shows a lack of snags and down logs. Additional benefits, specific to Riparian Reserves, would be the recruitment of diverse large diameter conifer and hardwood species typically present in natural systems.

The purpose of this action is to help implement objectives on Riparian Reserve lands and the Aquatic Conservation Strategy (ACS) objectives. These objectives, which are described in the Northwest Forest Plan, strive to restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands. The Eugene District ROD/RMP (USDI 1995, p.24) states that BLM should “apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy Objectives.” *The Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (April 1994) states “Active silvicultural programs will be necessary to restore large conifers in Riparian Reserves. Appropriate practices may include . . . thinning densely-stocked young stands to encourage development of large conifers . . .” (B-31). The creation of snags and down logs would also be part of the purpose of this action.

The purpose of this action is also to help implement objectives on Matrix lands as described in the Eugene District ROD/RMP (USDI 1995, Appendix E, p. 200). Silvicultural practices that would apply on Matrix areas are: 1) harvest anticipated mortality of small trees as the stand develops, 2) increase proportion of merchantable volume in the stand, 3) maintenance of good crown ratios and stable wind-firm trees, 4) accelerate development of trees that can later provide large-diameter snags and down logs, 5) produce larger more valuable logs, 6) manage species composition and, 7) promote development of desired under-story vegetation. Another purpose of this action in the Matrix is to create snags and down logs.

Objectives of this action would:

- Thin an estimated 456 acres of 40 - 45 year-old timber in T. 18 S., R. 1 W., Sec. 23 in both Matrix and Riparian Reserves.
- Construct a minimum amount of temporary roads to harvest the timber.
- Decommission newly constructed spur roads in the harvest area.
- Create 2 - 5 snags and 2 - 5 down logs per acre in both Matrix and Riparian Reserves.

The Blackberry Hole analysis area is split between two 5th field watersheds: The Little Fall Creek and Hills Creek Watershed Analysis Areas. The proposed projects would occur within Matrix Lands and Riparian Reserve Lands as designated in the Record of Decision for the Northwest Forest Plan Environmental Impact Statement (SEIS/ROD) pp. 7. The Hills Creek Watershed Analysis Area totals 36,000 acres with 10 percent BLM land, and 90 percent private land. The Little Fall Creek Watershed Analysis Area totals 37,400 acres with 6 percent BLM land, 16 percent USFS land, and 78 percent private land.

1.1 Conformance

This Environmental Assessment (EA) is tiered to the *Record of Decision (ROD) 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 (RMP)*, June 1995 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. Actions described in this EA are in conformance with the Aquatic Conservation Strategy (ACS) Objectives listed on page B-11 of the Northwest Forest Plan (NFP), and in **Appendix D** of this Environmental Assessment. The RMP makes land use allocations and allows for density management thinning in the Riparian Reserves LUA, and thinning in the General Forest Management LUA to acquire desired vegetative and structural characteristics

needed to attain ACS objectives. These documents are available for review at the Eugene District Office of the BLM, Eugene, Oregon.

The Analysis File contains additional information used by the interdisciplinary team (IDT) to analyze impacts and alternatives and is hereby incorporated by reference. The above referenced documents are available for review at the Eugene District Office of the BLM, Eugene, Oregon or on the internet at <http://www.or.blm.gov/nwfp.htm>.

1.2 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.

1.3 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 Environmental Assessment. The public was informed of the planned Environmental Assessment through letters to those on the Resource Area's mailing list, and to those receiving the *Eugene District Planning Update*.

1.4 Issues

The Interdisciplinary Team (ID Team) brought forward concerns related to resources that had the potential of being affected by the proposed actions. All resource concerns were mitigated through the implementation of "Design Features" in **Appendix A**, and the application of Best Management Practices listed in the Eugene District ROD/RMP (Appendix C), so that none of the concerns were elevated to issues. The Critical Elements of the Human Environment were considered and are analyzed in the Environmental Consequences Section 4.0.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes alternatives identified by the interdisciplinary team, alternatives eliminated from detailed study, and comparison of alternatives. Design features associated with these alternatives can be found in the appendices: **Appendix A** for Project Design Features, **Appendix B** for Harvest Area Details and Road Construction and Closure Summary, **Appendix C** for maps of proposed harvest areas, and **Appendix D** for Analysis of Alternatives by ACS Objectives.

2.1 Alternative I – No Action

- 2.1.1 Timber Harvest Activity in the Matrix** – No timber harvest would occur within the analysis area at this time. Meeting the District’s decadal Potential Sale Quantity (PSQ) volume commitment would have to be accomplished from other areas.
- 2.1.2 Density Management Within Riparian Reserves** – No density management activities would occur within the analysis area at this time.
- 2.1.3 Roads** – Under this alternative, no temporary road construction, decommissioning of old existing roads, or improvements to the existing road system would occur.

2.2 Alternative II – Proposed Action

- 2.2.1 Timber Harvest Activity in the Matrix** – This alternative consists of two Commercial thinning areas of approximately 412 acres of Douglas-fir dominated uplands. The treatment would reduce the number of trees from approximately 200 - 215 trees per acre to 75 - 85 trees per acre with an average spacing of 25 feet. Trees selected for harvest would be the suppressed, intermediate, and some co-dominant conifer trees. Each species, including Douglas-fir, Western hemlock, Western red cedar, and grand fir shall have equal preference providing that selected trees are well formed and do not have evidence of damage or disease.

Thinning would be accomplished with a combination of both cable and ground-based systems. Ground-based harvest systems would be utilized on **206 acres** of Harvest Area 1 of the Proposed harvest areas. Cable harvest systems would be utilized on **206 acres** of harvest areas 1 and 2 of the proposed harvest areas (see **Appendix A** for Design Features that address various harvesting systems, and silvicultural prescription) see **Appendix B** for Harvest Area Details, Road Construction, and Closure Summary.

- 2.2.2 Density Management within Riparian Reserves**

Perennial and intermittent non-fish bearing streams retain the interim Riparian Reserve width of one site potential tree height (180 feet slope distance) on each side of the stream channels in Hills Creek and (200 feet slope distance) on each side of the stream channels in Little Fall Creek watershed.

Density Management in Riparian Reserves is shown on the maps in **Appendix C**. All designated density management areas will have a riparian buffer width (no cut buffer) of approximately 50 feet from the stream. There are no fish bearing streams.

This action recommends density management in 44 acres of **Riparian Reserve**. The stand age averages between 40-45. The marking prescription and thinning guidelines for the Riparian Reserve density management would be different from the treatment area located in the upland GFMA and Matrix. Riparian Reserve treatment would be a combination of thinning from below and spacing, and removing trees in the suppressed and intermediate canopy classes. This treatment would reduce the number of trees from approximately 200 - 215 trees per acre to 75 - 85 trees per acre with an average spacing of 25 feet. The best formed trees and larger trees would be reserved. Douglas-fir and western hemlock less than 20" DBH would be selected for removal. All hardwoods, yew, and cedar would be reserved.

The density management prescription in the **Riparian Reserve** areas is designed to provide greater diversity as well as develop larger trees for future coarse woody debris and snags. The riparian areas currently exhibit some diversity (Douglas-fir, Western hemlock, Western red cedar, grand fir, yew, alder, cottonwood and bigleaf maple). This prescription would change the species percentage that currently occupy the reserves. Preference for retention would be given to the larger cedar, bigleaf maple, grand fir, and then Douglas-fir and less preference to Western hemlock. Spacing guidelines would be used to expedite the growth of the remaining stand of trees. Growing larger trees at an accelerated pace would improve the potential for coarse woody debris and snag components. Removing more of the Western hemlock, which has a tendency to out compete other species, provides opportunities for shrubs and canopy layering to develop for the various wildlife species that occupy these niches.

Treatment would be accomplished with a combination of both cable and ground-based systems. All ground-based equipment operating within the Riparian Reserve areas would be restricted to operations at least 100 feet from any stream. Ground-based equipment would treat **22 acres** of the Riparian Reserve area designated for management. Cable yarding equipment would treat **22 acres** of the Riparian Reserve area designated for management.

Table 2.2.1 Summarizes Alternative II

Type Harvest	Land Use Allocation	Proposed Acres To Be Harvested	Volume (MBF)
Density Mgt.	Riparian Reserves	44	440
Thinning	Matrix	412	4120
	TOTAL	456	4560

2.2.3 Roads

Spurs “A” thru “K” and Road Number 18-1-23.3 extension would require 2.03 miles of temporary road construction that would be decommissioned upon completion of harvest activities. Existing tractor trails would be used for portions of spurs “F” and “C.” The existing log culvert on Spur “C” would be removed and replaced with a temporary crossing that would be removed during road decommissioning.

Road Number 18-1-23.3 and spur “L” would require 0.93 mile of improvement. This would consist of widening, grading, and establishing drainage. These roads would be blocked after use.

Table 2.2.3 - Summary of the miles of road construction, improvements, and decommissioning under Alternative II.

Harvest Area	Temporary New Road Construction (Miles)	Temporary Improvement on Existing Road (Miles)	Existing Road Decom. (Miles)	Total Road Decom. (Miles)
Harvest Area #1				
Spur A	0.1			0.1
Spur B	0.1			0.1
Spur C	0.3			0.3
Spur E	0.11			0.11
Spur F	0.35			0.35
Spur G	0.04			0.04
Spur H	0.09			0.09
Spur J	0.1			0.1
Spur K	0.06			0.06
Spur L		0.13	0.13	0.13
Road # 18-1-23.3	0.28	0.8	0.8	1.08
Harvest Area #2				
Spur I	0.37			0.37
TOTALS	1.9	0.93	0.93	2.83

Decom. – Decommission: Roads to be blocked and treated as necessary to restore infiltration and hasten vegetative recovery after completion of timber sale contract. Roads would be closed and not require future maintenance.

2.2.4 Snag and Down Log Creation

Snags and down logs would be created in harvest areas and adjacent Riparian Reserves, which are not suitable for red tree voles. These activities would occur two or more years after harvest activities. Two to five snags would be created by chain-saw topping, girdling, or blasting. Two to five down logs would be created by felling live trees with a chain saw. Number of snags and down logs created would depend on levels of post-harvest wind-throw. Live trees selected for snag and down log creation would vary in size and tree species.

2.3 Alternative III

2.3.1 Timber Harvest Activity in the Matrix – This action recommends a commercial thinning in approximately 406 acres of Matrix uplands and no Density management in the Riparian Reserve. Silvicultural treatment would remain the same as the proposed action. Cable yarding would be **200 acres**, and ground-based yarding would be **206 acres**.

The **Riparian Reserve** left untreated would continue to grow at a slower pace with an upper canopy layer of dominant and co-dominant Douglas-fir and western hemlock trees. Inputs of coarse woody debris and snags would be smaller in diameter and less able to persist through time. The under-story shrub layer would continue to disappear with less sunlight available for growth.

Table 2.3.1 Summary of Alternative III

Type Harvest	Land Use Allocation	Proposed Acres To Be Harvested	Volume (MBF)
Density Mgt.	Riparian Reserves	0	0
Thinning	Matrix	406	4060
	TOTAL	406	4060

MBF - Thousand Board Feet

2.3.2 Roads – The proposed roads or road spurs for Alternative III would be the same as Alternative II, except Spur I would not be built because Harvest Area 2 would not be harvested.

Decommissioning of roads would be the same as in Harvest Area 1 of Alternative II.

Table 2.3.3 Summary of miles of road construction, improvements, and decommissioning under Alternative III.

Harvest Area	Temporary New Road Construction (Miles)	Temporary Improvement on Existing Road (Miles)	Existing Road Decom. (Miles)	Total Decom. (Miles)
Harvest Area #1 Spur A	0.1			0.1
Spur B	0.1			0.1
Spur C	0.3			0.3
Spur E	0.11			0.11
Spur F	0.35			0.35
Spur G	0.04			0.04
Spur H	0.09			0.09
Spur J	0.1			0.1
Spur K	0.06			0.06
Spur L		0.13	0.13	0.13
Road # 18-1-23.3	0.28	0.80	0.80	1.08
TOTALS	1.53	0.93	0.93	2.46

Decom. – Decommission: Roads to be blocked and treated as necessary to restore infiltration and hasten vegetative recovery after completion of timber sale contract. Roads would be closed and not require future maintenance.

2.3.4 – Snag and Down Log Creation – Snags and down logs would be created in harvest areas and adjacent Riparian Reserves, which are not suitable for red tree voles. These activities would occur two or more years after harvest activities. Two to five snags would be created by chain-saw topping, girdling, or blasting. Two to five down logs would be created by felling live trees with a chain saw. Numbers of snags and down logs created would depend on levels of post-harvest wind throw. Live trees selected for snag and down log creation would vary in size and tree species.

2.4 Alternatives Eliminated From Detailed Study

The ID Team also considered an alternative that would have no road construction. After a preliminary analysis, the ID Team decided to drop this alternative from consideration because it would not meet the proposed objectives.

2.5 Comparison of Alternatives

ELEMENTS	ALT. I NO ACTION	ALT. II PROPOSED ACTION	ALT. III NO RR THINNING
Density Management Acres (RR)	0	44	0
Thinning Harvest Acres (Matrix)	0	412	406
TOTAL ACRES HARVESTED	0	456	406
Miles of New Temporary Road Construction	0	1.90	1.53
Miles of Temporary Road Improvement on Existing Road	0	0.93	.93
Total Road Decommissioning (Miles)	0	2.83	2.46

3.0 AFFECTED ENVIRONMENTS

Introduction

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

3.1 Vegetation

The Project Area is closed canopy Douglas-fir forest with occasional Western hemlock, madrone, bigleaf maple, and Western red cedar. The stocking of the stand is inconsistent with dense areas of closed canopy forest and open areas of blackberry. Dominant understory vegetation consists of vine maple, Himalayan blackberry, and salal. There are a few openings with thin soils occupied by grasses, cherry, cascara, and ocean spray.

Special Status Plants – Vascular plant surveys were done in 1998 on contract and Survey and Manage and Special Status Species were included. *Sidalcea cuskiei* (Bureau Tracking, ONHP List 4) was found in Wetland 4, and *Cimicifuga elata* (Bureau Sensitive, State Candidate, ONHP List 1, Lane Co. T&E-A) in the northwest corner. Under the *Cimicifuga*

conservation strategy, this population is non-selected. Non-selected populations are not managed as part of the conservation strategy and require no mitigation.

3.2 Threatened and Endangered Species

Northern Spotted Owl (Threatened) – Suitable nesting habitat for this species is mature forest (generally greater than 80 years old) with high canopy cover, an open understory, large down logs, and large snags. There is no suitable nesting habitat within the proposed project area. There is suitable nesting habitat within 0.25 mile of the northeast corner of the proposed project area.

Dispersal habitat for spotted owls is generally defined as stands ranging from 40 to 79 years of age. Juvenile spotted owls use dispersal habitat to roost and forage in as they disperse from their natal areas. Adults forage in dispersal habitat to support themselves and their young. There are 456 acres of dispersal habitat (412 acres of upland, 44 acres of Riparian Reserve) in areas proposed for harvest under Alternative 2, and 406 acres of upland habitat proposed for harvest under Alternative 3.

There are no spotted owl activity centers, Unmapped Late-Successional Reserves or designated Critical Habitat within 0.25 mile of the proposed harvest areas. One hundred eleven acres of the proposed project area (97 acres upland, 14 acres of Riparian Reserve) under Alternative 2 and 97 acres of proposed project area under Alternative 3 are within the 1.2 mile Provincial Home Range of a spotted owl activity center. The core associated with this Provincial Home Range is approximately 0.8 mile northwest of the proposed project area.

3.3 Survey and Manage

The ROD for the *Supplemental Environmental Impact Statement Amending the Survey and Manage, Protection Buffer, and Other Mitigating Measures Standards and Guidelines* was signed January 2001 and management of Survey and Manage species conforms to this and associated documents.

3.3.1 Mollusks – There are no known Survey and Manage mollusk sites within the project area. The proposed project area is in Lane County and below 2000 feet in elevation. This area does not provide suitable habitat for any current Survey and Manage mollusk species, so no mollusk surveys are required, no surveys were done for mollusks, and no Survey and Manage mollusks will be analyzed in this document.

3.3.2 Red Tree Vole (*Arborimus longicaudus*) – The red tree vole is a Category C mammal in the McKenzie Resource Area. The current survey protocol (Version 2.0; BLM Instruction Memorandum No. OR-2000-037) requires pre-disturbance surveys if the conifers of the

stand affected have an average diameter of 10-16 inches dbh and there are remnant conifers ≥ 21 inches dbh or greater than 120 years.

The proposed project comprises upland and Riparian Reserve stands that are approximately 40-45 years old. Stand exam data that was collected in September 2000, shows that the average stand dbh was 12 inches. The proposed project area was managed in the past, and it contains neither remnant conifers ≥ 21 " dbh nor remnant conifers greater than 120 years old. Stands that contained either remnant conifers or a more complex structure that could provide habitat for red tree voles were excluded from the proposed project area during the planning stages of this project.

Because the proposed thinning would occur in a stand comprised of relatively small trees without any remnant conifers, the stand does not meet the habitat criteria under the current protocol that would require surveys for this species. No surveys were conducted for red tree voles and the effects to this species will not be analyzed in this document.

3.3.3 Fungi, Lichen, Bryophytes, and Vascular Plants – Surveys for Survey and Manage bryophytes, fungi, and lichens were done in 1999. *Buxbaumia viridis* (moss) was found. At the time of the surveys, *Buxbaumia* was a Protection Buffer species, but has since been removed from S&M lists and is no longer a species requiring management or protection. As it was found on a large down log, which is needed to meet the down wood requirements, this log would not be removed and efforts would be made not to disturb it. *Usnea longissima* (lichen) was also found. At the time of the survey, it was a Component 4 species (conduct general regional surveys) but has since been removed from the list for Western Oregon. The site is within the buffer for Wetland 4 and would not be disturbed. No species on lists currently requiring management were found. All list A and C fungi, bryophyte, lichen, and vascular plant species currently requiring predisturbance surveys were included as part of protocol surveys.

3.4 SOILS

Historic logging practices have impacted site quality through compaction and displacement of surface soils. Existing compaction problems in the analysis area equate to about 2.5 percent of the project area.

Soils in the project area were originally mapped by SCS as part of the Lane County Soil Survey published in 1987. Soils are varied. Identified series include: Nekia, Klickitat, Peavine, Ritner, Willakenzie, and Cumley.

Peavine silty clay loam occurs on the broad ridges and moderately steep north facing side slopes, mainly in the north half of the section. The flat ground in the southeast corner is also Peavine. This soil is moderately deep and

productive (average 100 year site index for Douglas-fir is 155). Coarse content is lacking and permeability is moderately slow, making it very prone to compaction.

Nekia silty clay loam occurs on gradual slopes, generally less than 20 percent, in the southeast portion of the section. Field review found this soil to be more extensive in the center of the section than originally mapped. Nekia is moderately deep (35 inches average) and fairly productive. Average site index for Douglas-fir is 151. Like Peavine, coarse content is minimal and permeability is moderately slow, making it very prone to compaction. Harvest on Peavine and Nekia can be conducted with either cable or ground-based systems. Ground-based harvest would be subject to the full suite of BMPs that form the protection strategy for soils when using these systems; including soil moisture restrictions, designated skid trail layout, maximum use of existing skid trails, and tillage of heavily compacted primary travel ways after harvest.

Klickitat stony loam was mapped as the dominant soil in the section, but field review found it to be less extensive than indicated. Klickitat is typically 50 inches deep and productive, but has severe limitations due to the high coarse content. Pebbles, cobbles, and stones make up 30 percent of the surface soil, and stones can increase to greater than 50 percent with depth. Slopes are variable, from 3 to 50 percent. Klickitat is suitable for cable logging systems (rather than ground-based) to avoid compaction that cannot be ameliorated through tillage. The stone content also limits plantability.

Ritner cobbly silty clay loam occurs on lower side slopes within and adjacent to the Riparian Reserves on the south end of the section. This soil is moderately deep and moderately productive. Average site index for Douglas-fir is 131. Slopes range from 30 to 50 percent and are generally too steep for ground-based harvest; also, coarse content would make amelioration of compaction difficult.

Cumley silty clay loam occurs on gentle footslopes and low lying areas within the Riparian Reserves in the east side of the section. This soil is deep and productive, and is also important for water supply. Slow internal drainage creates a seasonal high water table that limits rooting to a depth of 2 to 3 feet from November to April, and makes these soils perennially too moist to permit ground-based harvest operations without substantial compaction occurring. Past operations on these soils have retarded infiltration and water storage. Cumley would not be impacted under this proposal, since no thinning is proposed within these Reserves.

All hydric soils (wetlands) have been withdrawn from harvest activities and would be protected according to ROD standards. All low productivity, shallow soils have also been withdrawn from harvest.

Recommendations to Maintain or Improve Soil Productivity:

Timber Harvesting: Ground-based operations are planned where suitable soils occur and slopes are generally less than 35 percent, approximately 40 percent of the project area. Ground-based yarding would be avoided on the Klickitat and Ritner soils due to difficulty in ameliorating compaction on these soil types. Ground-based harvesting would result in more area impacted by skid trails than cable systems (typically 10% as compared to 2%). However, as long as the required moisture restrictions are applied and skid trails are designated, the compaction resulting from this entry could be mitigated by tilling. Most importantly, maximizing the use of existing skid trails provides the opportunity to reduce the extent of residual compaction from what currently exists.

Road Construction: District guidance is to apply “Best Management Practices” in order to minimize the percent of the land base permanently converted to roads and landings. Planned temporary road construction, followed by tillage with an excavator, would result in a net decrease of compacted road surface in the project area. Tillage restores infiltration and hastens vegetative recovery. All of the longer roads (23.3, Spurs C, F, J, and L) utilize existing old haul routes where topsoil and porosity have been previously lost. Spur L is surfaced with pit-run rock and portions of Spurs C and F are located on Klickitat soils. Therefore, tillage of these sections will not be possible. Most new shorter spurs (A, E, D, G, H, and half of B) have been located on tillable soils. Spurs D and E and the upper segment of F are on ridges where residual compaction is extensive. Some of the existing old skid trails located in portions proposed for cable harvest on this entry would also be tilled to further reduce the extent of residual compaction from what currently exists.

3.5 Hydrology and Water Quality

Streams on the north side of the major ridge in the project area are tributaries of Hills Creek and streams south of this ridge are tributaries of Little Fall Creek. Locations and brief descriptions of the streams, wetlands, and springs in the project area are found in the Analysis File. No problems with water quality (temperature, turbidity, or chemical contamination) have been identified at this time.

The harvest areas vary from 1300 to 1900 feet in elevation and are in the rain dominated zone, rarely impacted by rain-on-snow events. The Little Fall/Hills Creek Watershed Analysis indicated a low potential in these watersheds for a change in peak flows greater than a 2-year event to rain-on-snow effects since these lands are at lower elevations and not prone to accumulation of a snow pack.

Field reconnaissance indicates that skid roads constructed during the past harvest of the area in the 1940s resulted in areas of soil compaction. Wetlands 2, 5, and 6 developed in compacted soils where drainage of surface water was inhibited. These features are only a few hundred square feet in size. Wetland 3 was probably enlarged due to compaction from equipment on sensitive soils.

Wetlands 1 and 4 are believed to be naturally occurring and not enlarged by human activity.

An existing headwall was discovered along Road No. 18-1-22. This headwall is in an area that has been unstable a long time, indicated by pistol-butted and jack-strawed trees on a very steep concave slope. Currently no water quality impairment has occurred at this site because there is no stream associated with it. Further downslope from this headwall, there are other slopes adjacent to Stream 3 and its tributaries that have failed and contributed sediment and woody debris to those channels in the last decade. Sideslopes adjacent to some of those streams are between 80-100 percent.

On an old skid road in the southeast part of the analysis area, an existing log culvert has already failed where Spur C is tentatively planned to cross Stream 16. This site currently presents no water quality concerns since the shallow fill has revegetated, and the stream has already created a channel through that material.

3.6 Fisheries

Six species of fish reside in the Little Fall Creek drainage: dace, red-side shiners, sculpin, cutthroat trout, steelhead/rainbow trout, and chinook salmon. Relatively few salmonids are found below the confluence with stream number 16. Salmonid species were almost exclusively found in portions of Little Fall Creek above the project area. Roughly 14 percent of all salmonids and 12 percent of spring chinook salmon found in a recent stream survey (MFWWC, 2002) were downstream of the project area and, therefore, 86 percent and 88 percent upstream of the project area, respectively. In the year 2000, ODFW stocked 30,000 juvenile summer steelhead trout and 239 spring chinook salmon adults.

Three streams draining section 23 (numbers 14, 16, and 22) are not fish-bearing within the project area. Streams 14 and 22 are known to be nonfish-bearing from the headwaters to their confluence with Little Fall Creek. Closest distance to known fish and listed species habitat and occurrence is approximately 1.5 stream miles for streams 14 and 22. Stream surveys conducted for Weyerhaeuser Company in 2001 (ODF, pers. comm., 2002) and BLM in 2002 found no evidence of fish presence in stream number 16. An unconfirmed ODF fish presence survey from 1995 found a single unidentified fish at approximately the boundary between sections 24 and 25. Taking this lone report into consideration, the closest distance to known fish occurrence is approximately 0.6 mile downstream from the project area and distance to known listed species habitat and occurrence is about 1.3 stream miles.

Fish species found in the Hills Creek catchment were analyzed as part of the Starks Creek Environmental Assessment (BLM, 2002) which reported the presence of cutthroat trout, rainbow/steelhead trout, dace, shiners, and sculpin. ODFW mistakenly placed adult spring chinook salmon in Hills Creek in July of

2000. Subsequent surveys have not yielded evidence of spring chinook salmon spawning or reproduction. In lieu of evidence of the establishment of a viable fishery it is assumed that spring chinook salmon do not naturally migrate into Hills Creek from the Middle Fork Willamette River.

The two streams draining section 23, numbers 6 and 7, to Hills Creek are non fish-bearing over their entire extent. Closest distance to known fish occurrence is about 1.2 stream miles and distance to listed fish species habitat and occurrence is approximately 7 stream miles.

4.0 ENVIRONMENTAL CONSEQUENCES – Environmental Effects Common To All Alternatives

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, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, Minority populations, and low-income populations.

4.2 Wetlands – Since no ground disturbing activities would occur in meadows and wetlands, the hydrology in these sensitive areas would be maintained in the current condition, and the intent of ACS Objective 7 would be met.

4.3 Threatened and Endangered Species – Northern Spotted Owls

No Action Alternative: No dispersal habitat would be degraded. The stand composition and structural diversity of the stands within the proposed project area would continue on the trajectories they are currently on. Short term this habitat would remain functional dispersal habitat, available to both foraging and dispersing owls. Trees would not increase in size as quickly as they would under the action alternatives, and no snags or down logs would be created. Because of this, long term the habitat within the proposed project area would be of lower quality than it would be under the action alternatives.

Action Alternatives: A total of 456 acres of dispersal habitat would be degraded under Alternative 2. Approximately 120 acres of this habitat would be within a spotted owl Provincial Home Range. A total of 406 acres of dispersal habitat would be degraded under Alternative 3. Approximately 105 acres of this habitat would be within the Provincial Home Range.

Immediately post harvest this habitat would still function as dispersal habitat. The quality of this habitat would decrease because the canopy closure would be reduced and the number and quality of down logs would be reduced by harvest activities. This could temporarily impair the ability of owls to forage successfully within the proposed project area. If the ability to forage successfully is compromised, it could limit the owls' ability to reproduce within this Home Range for an estimated 10-15 years.

Long-term habitat within the project area would slightly improve in quality as a result of the proposed thinning. Canopy closure would be expected to return to current levels in 10-15 years. Trees in the thinned areas would increase in size more rapidly than in unthinned areas. Over time, the snags and down logs created would begin to decay, providing important habitat components for foraging owls. Larger trees in the project area, together with created snags and down logs, would result in improved dispersal habitat for spotted owls.

Special Status Plants – Plant sites would be protected within the reserve of Wetland 4 and incidentally within the Riparian Reserve of Streams 3 and 4.

4.4 Cultural Resources – No Cultural sites have been identified. The analysis file contains the cultural report.

4.5 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.

4.6 Environmental Justice – To comply with Executive Order 12898 of February 11, 1994, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, the Bureau of Land Management, Eugene District, will ensure that the public, including minority communities and low income communities, have adequate access to public information relating to human health or environmental planning, regulations, and enforcement as required by law.

The District has not identified any environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low income populations, and Native American tribes in this analysis.

4.7 Invasive and Non-Native Species – The main weed species in this area are blackberries, false brome, and Scotch broom. They out compete many native plants, reducing species diversity. As blackberries and Scotch broom do best in sun, thinning would leave enough of an overstory to shade the ground and suppress weeds. Some increase of weeds may occur in disturbed ground along skid trails and roads. False brome spreads along roads and skid trails. Once established, it spreads easily, even into closed canopy forest. Blackberries are long-lived perennials that may survive for many years in the understory. When this stand is cut for final harvest, blackberries and false brome would be serious competitors for planted tree seedlings.

The density and extent of the blackberries and false brome make treatment difficult. They (and Scotch broom) also occur on private land in adjacent sections, making re-infestation likely. False brome and blackberry are dominant understory plants in parts of the project area.

As vehicles are a major vector for the spread of weeds, all logging, rock crushing, and transportation equipment would be cleaned prior to entering or leaving the site. This would prevent the introduction of new weeds onto BLM lands and reduce the spread of false brome and Scotch broom onto other BLM and neighboring lands.

4.8 Solid Or Hazardous Materials – There are no hazardous material issues in the proposed project area.

During operations described in the proposal, spill containment kits would be available at the site in the event of any diesel, hydraulic fluid, or other petroleum product release into soil and/or water. Notification, removal, transport, and disposal would be accomplished in accordance with U.S. Environmental Protection Agency and Oregon Department of Environmental Quality laws and regulations.

4.9 Hydrology and Water Quality – Under all alternatives existing water quality would be protected. No changes in water turbidity or stream flow is anticipated with the use and maintenance of the permanent roads in the project area. The permanent road system has adequate aggregate surfacing and is on a regular maintenance schedule. Additional cross drains would be installed along Road No. 18-1-22 to divert ditch-line runoff onto stable side slopes during the winter months. Likewise, use of a 50-foot no-harvest zone adjacent to streams would prevent sedimentation from soil disturbance during harvest activities. Areas identified with slope stability concerns within the Riparian Reserves have been withdrawn from further consideration for thinning in order to maintain water quality and reduce the risk of triggering landslides.

The over-steepened head-wall identified along the outside edge of Road No. 18-1-22 would not be treated at this time, but would be monitored during annual road maintenance and repaired then if necessary.

Proposed new temporary roads would be predominately in an upland location, with Spur C an exception with one temporary stream crossing. At that location, summer stream flow is minimal, and detectable sediment additions into the stream are not anticipated. Use of straw bales just downstream from the culvert installation site would contain any loose soil in the construction area that, at the most, would amount to not more than about one cubic yard. Following removal of the temporary culvert, the stream banks at that location would be contoured to blend in with the channel both upstream and downstream from the culvert site. Exposed soils would then be mulched and seeded with native species. Therefore, long term sedimentation is not expected.

There would be no detectable increase in stream temperatures as a result of implementation of any of the alternatives. In preliminary research results conducted by Samuel Chen (USFS - PNW Research Station - Density Management and Riparian Buffer Studies of Western Oregon, June 2002) there

was no increase in temperature in streams where a 50-75 ft. variable no-cut buffer was implemented adjacent to a thinning area. All action alternatives would have a no-cut buffer of a minimum of 50 feet.

4.10 Fisheries

Action Alternatives – No impacts to fish species in the Hills Creek or Little Fall Creek catchments are expected as a result of implementing either action alternative. No negative impacts to spring chinook salmon, critical habitat, or essential fish habitat would result from either action. Distance from project area to nearest potential resident fish habitat is over one-half mile downstream along stream systems possessing flow patterns and large woody material in sufficient numbers and sizes to stop sediment from being carried to fish-bearing waters. Distances to known spring chinook salmon usage ranges from about 1.3 to 7 miles downstream from any actions and, for the same reasons as for resident fish, no sediment is expected to be transported out of the project area to listed species habitat.

The replacement of an existing log culvert with a temporary crossing on Stream 16 would not affect downstream fish usage or habitat. The portion of Stream 16 below the crossing site possesses 3 log jams and a series of flood plain features as well as stream reaches that flow beneath dense mats of vegetation or completely sub-surficially. Usage of washed river gravels to fill around the temporary crossing would minimize the potential input of fine sediment into the stream system. At the completion of activities, the removal of the temporary crossing could leave a small volume of gravels within Stream 16, the streambed material size fraction currently lacking in all streams in the project area.

Reduction of canopy coverage outside of a minimum 50-foot “no-touch” zone along each stream would result in no measurable change in stream temperature. Adequate shade provided from remaining trees within and outside the riparian area, undergrowth vegetation, and topographic position are expected to result in no effect to stream temperatures or to listed and resident fish species. Enhanced riparian tree growth would result in the future introduction of fewer but larger trees along or in the stream channels.

No Action – No impacts to resident or listed fish species, critical habitat, or essential fish habitat would be expected. The physical and biological characteristics of the streams in the project area retard the movement of sediment. The amount of large woody material in the streams is stable and not expected to change as a result of routine stream flow events. Sediment would continue to be retained in channel or in surrounding wetlands or flood plains. Future introduction of large woody material would be in greater numbers of smaller trees with the underlying effect of stabilizing streambanks over shorter durations of time or until more trees are introduced to the streams.

5.0 LIST OF AGENCIES AND PERSONS CONSULTED

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

John Bianco	Leroy Pruitt
Oregon DEQ	Roseburg Forest Products Co.
Jim Goodpasture	Sierra Club - Many Rivers Group
Pam Hewitt	Swanson Group, Inc.
Charles & Reida Kimmel	Craig Tupper
Lane County Land Management	Jan Wroncy
Carol Logan, Kalapooya Sacred Circle Alliance	American Lands Alliance
Oregon Department of Fish & Wildlife	Kris and John Ward
Oregon Department of Forestry	Sondra Zemansky
Oregon Natural Resources Council	Robert P Davison
The Pacific Rivers Council	Tom Stave, U of O Library
John Poynter	John Muir Project
Weyerhaeuser Company	James Johnston

A letter was sent to the adjacent landowners on March 22, 2002 that identified specific areas being considered, project issues, and time lines for providing input. A summary was sent to those receiving the “Eugene BLM Planning and Project Focus,” Spring 2002 (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 in April 2002. No comments were received.

6.0 LIST OF PREPARERS

THE INTERDISCIPLINARY TEAM

NAME	TITLE	RESOURCE/ DISCIPLINE
Rudy Wiedenbeck	Soil Scientist	Soils
Roger Wilson	Forester	Logging Systems
Paula Larson	Wildlife Biologist	Wildlife
Michael Southard	Archaeologist	Cultural Resources
Jill Williams	Forester	Silviculture
Cheshire Mayrsohn	Botanist	Botany
Glen Gard	Natural Resource Protection Specialist	Hazardous Materials Coordinator
Mark D'Aversa	Fisheries Biologist	Fisheries
Mike Sabin	Engineering	Roads/Transportation
Kris Ward	Hydrologist	Water Resources
Don Wilbur	Natural Resource Protection Specialist	Team Lead/Writer

DESIGN FEATURES COMMON TO ALL ACTION ALTERNATIVES

A. Design Features for Harvesting in the Matrix

1. Commercial Thinning prescription guidelines would be the same for all portions of the units located in the **General Forest Management Area, Matrix**. Stands would be treated with a combination of thinning from below and spacing, removing trees in the suppressed and intermediate canopy classes.
 - a. Stand would be “thinned from below” leaving the best formed and larger trees as leave trees which are marked for retention. Leave trees would be dominates or co-dominates within the stand and have good crown development.
 - b. All coniferous species shall be selected as trees to be retained. Each species, including Douglas-fir, western hemlock, western red cedar, and grand fir shall have equal preference, providing that selected trees are well formed and do not have evidence of damage or disease.
 - c. Spacing of marked trees shall be approximately 25 by 25 feet, while retaining an average of approximately 70 - 80 trees per acre, leaving an average basal area/acre of approximately 110 - 120. Three bigleaf maple 10" or greater per acre and all cottonwoods shall be marked for retention, but will not count towards basal area. The project area may have minor amounts of Pacific yew; this species shall not be marked and is reserved by contract.
 - d. Spacing of marked leave trees is unpredictable due to the variability of this natural stand. A priority should be given to leave trees based on spacing, tree quality (form and lack of defect), trees per acre, and basal area.
2. 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.
3. Ground-based yarding operations can **only** occur where designated (**see Appendix C for map**). Use of all of the following requirements for ground-based yarding systems would keep soil impacts/compaction within RMP standards:
 - Restrict yarding to seasonally dry periods when soil moisture content provides the most resistance to compaction, typically between 25 to 35%, as approved by the Authorized Officer in consultation with the Soil Scientist. This is usually July 1st through October 15th.

- Preplan (map) and designate (flag) all skid trails to occupy less than 10% of the harvest area. Avoid placing trails on rocky soils.
 - 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 whenever possible, unless they are located on rocky soils.
 - Till all compacted skid trails and temporary native surface roads with an excavator to a depth of 24 inches, when soil moisture is appropriate (between 25 to 35%), as approved by the Authorized Officer in consultation with the Soil Scientist. 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 possibly brush piles to prevent OHV entry until final blockage and tilling.
4. Other methods of ground-based cutting (feller buncher, harvester processor, cut-to-length systems) may be used if approved by the Authorized Officer in consultation with the Soil Scientist.
 - Restrict yarding to seasonally dry periods when soil moisture content provides the most resistance to compaction, typically between 25 to 35 %, as approved by the Authorized Officer in consultation with the Soil Scientist. This is usually July 1st through October 15th.
 - Limit movement off of primary trails to a single pass. Direct the operator to cross the unit as efficiently as possible in order to minimize the length of primary trails, and to limit the number of passes over the same area to one time when operating off of these.
 - Harvester processors would be kept moving on top of slash whenever possible.
 5. Log lengths would be limited to 40 feet in order to protect residual trees during yarding.
 6. Yarding restriction during sap flow is April 1 through June 15.
 7. 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.
 8. There will be no harvest, road activities, snag creation, or down log creation within 0.10 mile of the northeast section corner of section 23 between March 1- July 15 because this area is within 0.25 mile of suitable spotted owl nesting habitat. This restriction may be waived by a wildlife biologist if it is determined that nesting spotted owls would not be disturbed by proposed activities.

9. Existing snags in the harvest areas were found to be far below the minimum RMP/ROD standards to meet the 40 percent primary cavity nesting birds criteria. Retain all existing snags that do not pose a safety hazard or an operational obstacle. Snags felled as danger trees would be retained on site as down logs.
10. Directional felling and yarding would be used for the protection of retention trees, snags, down logs, and reserve areas.
11. Retain all Class 3, 4, and 5 coarse woody debris (CWD) within the Harvest Areas on site. Minimize damage to coarse woody debris where possible. Place cable corridors on the landscape so as to minimize disturbance to CWD ≥ 30 " in diameter where possible. CWD that presents a hazard to logging operations may be relocated within the project area. Retain large trees, downed wood, and large stumps to provide inoculum and habitat for fungi, bryophytes, and lichens.
12. Retain all Pacific yew trees in the harvest areas. All hardwood species would be retained in proportion to their occurrence on the uplands. All hardwood species would be retained in Riparian Reserves.

B. Design Features For Density Management in Riparian Reserves

1. The marking prescription and thinning guidelines for the Riparian Reserve Density Management would be different from the harvest areas located in the upland, Matrix. Riparian Reserve treatment would be a combination of thin from below and spacing, removing trees in the suppressed and intermediate canopy classes. However, the reserve tree preference changes as well as Basal area retained.
 - a. Stand would be managed leaving the best formed and larger trees as leave trees.
 - b. Remove Douglas-fir and Western hemlock ≤ 20 " DBH. Reserve all hardwoods, yew and cedar.
 - c. Spacing shall be approximately 25 by 25 feet using hardwoods as well as conifers for spacing, while retaining an average of approximately 70 - 80 trees per acre, yielding an average basal area/acre of approximately 105-115.
 - d. Spacing of trees is unpredictable due to the variability of this natural stand. A priority would be given to leave trees based on large size, both hardwood and conifer, dominance of the tree to that particular site, and tree species
2. There would be no ground-based equipment within 100' of all streams and no landings would be used or constructed in the Riparian Reserves.

3. Perennial and intermittent non-fish bearing streams retain the interim Riparian Reserve width of one site potential tree height (180 feet slope distance) on each side of the stream channels in Hills Creek and (200 feet slope distance) on each side of the stream channels in Little Fall Creek watershed. Density Management in Riparian Reserves is shown on the maps in **Appendix C**. All designated density management areas will have a riparian buffer width (no cut buffer) of approximately 50 feet from the stream. There are no fish bearing streams.

C. Design Features For Road Construction, Road Improvements, and Road Decommissioning

1. All road construction and logging equipment will be washed prior to arrival at the designated sites to remove seeds and plant parts to prevent the import and spread of noxious weeds.

The equipment will also be washed at a designated wash area prior to leaving the area for seasonal shut downs and at the completion of harvest and road closure activities. The wash area would be prepared to prevent runoff of wash water into streams or ditches.

2. New construction: Harvest operations conducted from native surface roads would be limited to the dry season (generally between June 1 and October 15, subject to soil moisture conditions). Timing of work on roads without stream crossings is subject to soil moisture conditions. Straw bales will be used to minimize sediment transport from the excavation area at the one stream crossing on Spur C to down stream locations. Water bars, drainage dips and/or lead off ditches may be required to create an erosion resistant condition on roads used for harvesting during seasonal shut down periods.
3. Road Closures: In channel work is to be conducted during low flow periods (July 1 to October 15) prior to fall rains. Straw bales will be used to minimize sediment transport at the temporary culvert site on Spur C. At this site, recontour the channel side slopes and seed or plant exposed soils with native plant species in conjunction with erosion control blankets or mulch.

Common material would be disposed of along the closed road at a distance at least 50 feet from the stream and tilled into the road prism where appropriate.

Where subgrade conditions warrant, till the compacted road surface. 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 road(s) and reduce erosion, place slash, logging debris, and pull small diameter trees and brush from the adjacent forest floor onto the road surface. This addition of woody material should be conducted along as much of the length of the road as possible.

Construct earthen barricades with brush or slash additions to adequately limit off-highway vehicle traffic.

4. Road improvements: Install additional cross drains to divert ditchline water from Road No. 18-1-22 onto stable side slopes.

D. Design Features For Fuels Treatment

All landing, piles, and burnable fuel concentrations along project roads and spurs will be covered during the summer months and burned in the late fall (normally November and December) when fire season has ended and soil and duff moisture is high, but before conditions become too wet to insure adequate fuel consumption. The treatment of burnable fuel concentrations will be limited to within 25 feet of the road or spur edge.

APPENDIX B

HARVEST AREA DETAILS FOR ALTERNATIVE II - Proposed Action

Harvest Area	Land Use Allocation	Volume/Acre (MBF)	Total Volume (MBF)	Treatment Type	Harvest System & Acres	Timber Age
1	Matrix	10	4060	Comm. Thin.	Cable - 200 Grnd. Base - 206	40 - 45
1	RR	10	420	Density Mgt.	Cable - 20 Grnd. Base - 22	40 - 45
2	Matrix	10	60	Comm. Thin.	Cable - 6	40 - 45
2	RR	10	20	Density Mgt.	Cable - 2	40 - 45

Matrix= land use allocation Grnd. Base = Ground Base Logging
 RR = Riparian Reserve Comm. Thin.= Commercial Thinning

ROAD CONSTRUCTION AND CLOSURE SUMMARY FOR ALTERNATIVE II - Proposed Action

Harvest Area #	Road No.	Temp. Road Construction (Miles)	Temporary Road Improvement on Existing Road (Miles)	Road Decom. (Miles)	Log Culverts Removed	Temp. Culverts Installed & Removed
1	Spur A	0.1		0.1		
	Spur B	0.1		0.1		
	Spur C	0.3		0.3	1	1
	Spur E	0.11		0.11		
	Spur F	0.35		0.35		
	Spur G	0.04		0.04		
	Spur H	0.09		0.09		
	Spur J	0.1		0.1		
	Spur K	0.06		0.06		
	Spur L			0.13	0.13	
	Rd. # 18-1-23.3	0.28	0.80	0.80		
2	Spur I	0.37		0.37		
	Total	1.90	0.93	2.83	1	1

**HARVEST AREA DETAILS FOR
ALTERNATIVE III**

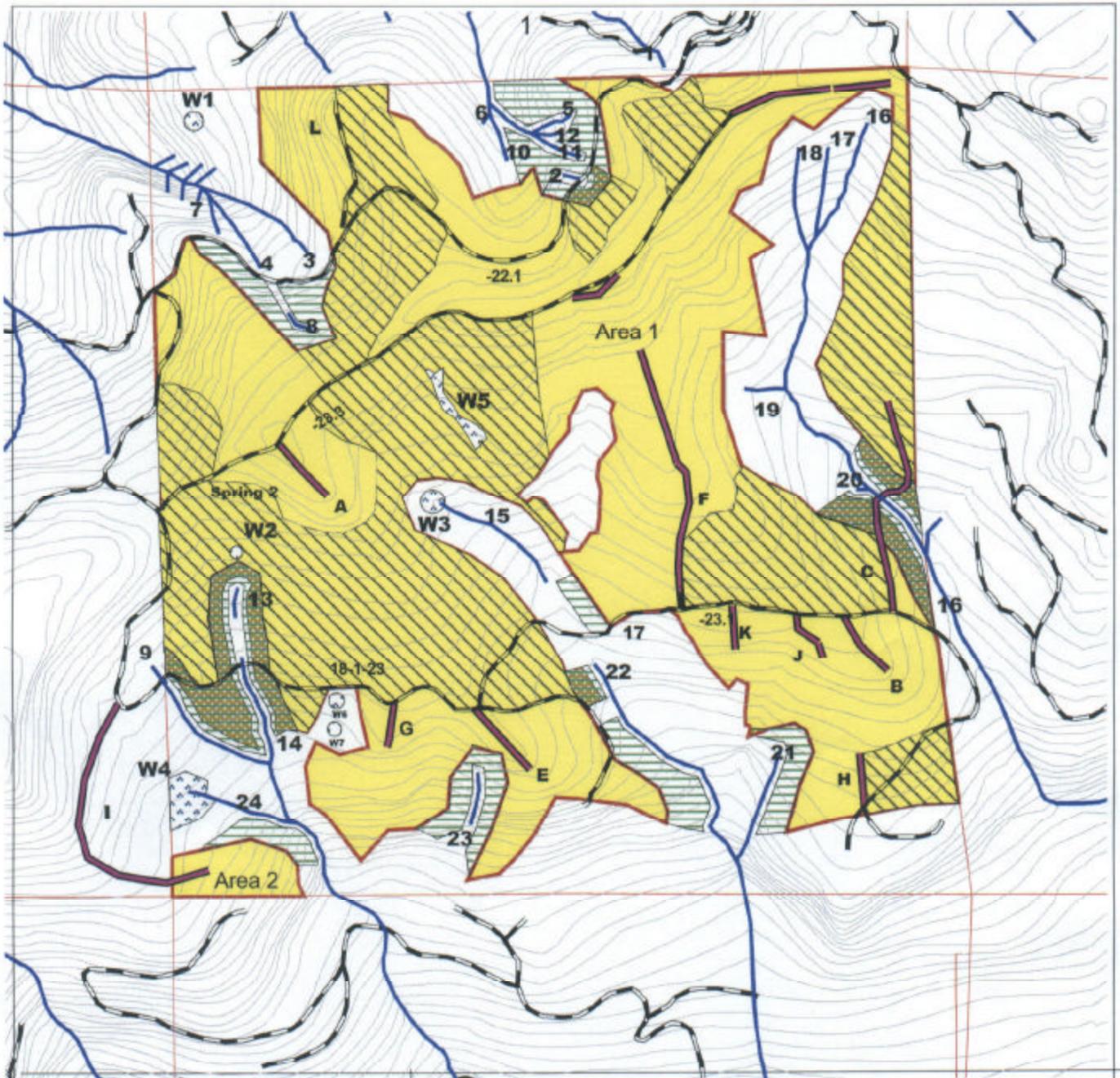
Harvest Area	Land Use Allocation	Volume/Acre (MBF)	Total Volume (MBF)	Treatment Type	Harvest System & Acres	Timber Age
1	Matrix	10	4060	Comm. Thin.	Cable - 200 Grnd. Base - 206	40 - 45

Matrix = land use allocation Grnd. Base= Ground Base
RR = riparian reserve Comm. Thin.= Commercial Thinning

**ROAD CONSTRUCTION AND CLOSURE
SUMMARY FOR ALTERNATIVE III**

Harvest Area #	Road No.	Temp. Road Construction (Miles)	Temporary Road Improvement on Existing Road (Miles)	Road Decom. (Miles)	Log Culverts Removed	Temp. Culverts Installed & Removed
1	Spur A	0.1		0.1		
	Spur B	0.1		0.1		
	Spur C	0.3		0.3	1	1
	Spur E	0.11		0.11		
	Spur F	0.35		0.35		
	Spur G	0.04		0.04		
	Spur H	0.09		0.09		
	Spur J	0.1		0.1		
	Spur K	0.06		0.06		
	Spur L		0.13	0.13		
	Rd. # 18-1-23.3	0.28	0.80	1.08		
	Total	1.53	0.93	2.46	1	1

**MAPS AND LOCATION OF ROAD CONSTRUCTION AND HARVESTING ON
ALL ACTION ALTERNATIVES**

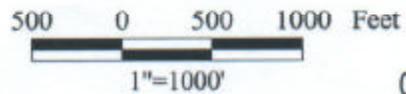


ACRES: Riparian Reserve
 Area 1 - 406 Thinning
 Area 2 - 6
 Total - 412 44 acres

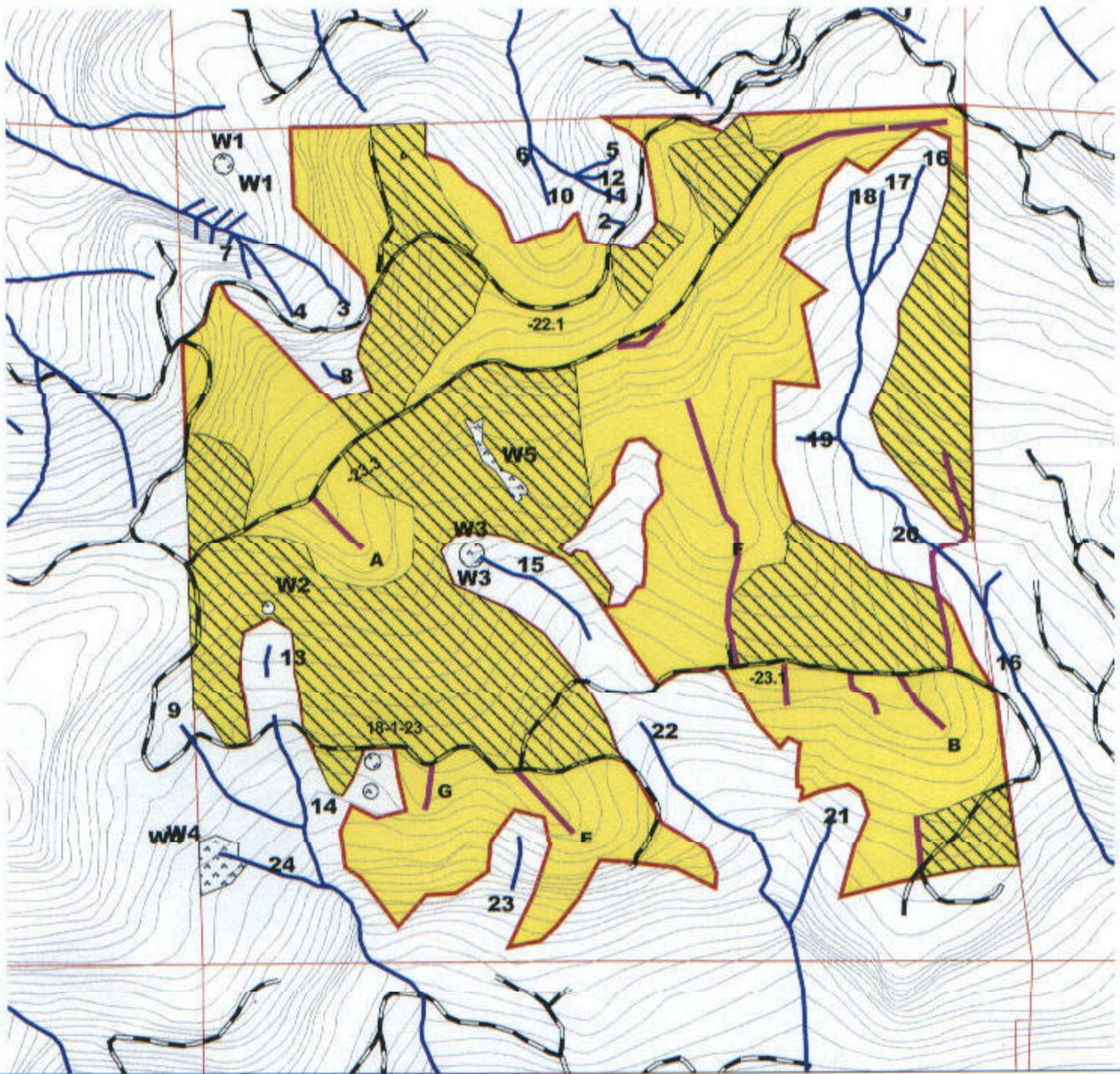
BLACKBERRY HOLE PROPOSED ACTION T.18S, R.01 W. Sec 23 ALTERNATIVE II



- Stream
- Roads
- Spurs
- 20' Contour interval
- Wetlands
- Riparian Density Management
- Riparian Groundbased
- Groundbase
- Harvest Area
- Section lines



08/21/02



ACRES:
Area 1 - 406

Total - 406

BLACKBERRY HOLE

T.18S., R01W., Sec.23

ALTERNATIVE III

-  Stream
-  Roads
-  Spurs
-  20' Contour interval
-  Wetlands
-  Ground Based
-  HARVEST AREA

500 0 500 1000 Feet



8/21/02

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, up slope 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.

ACSO	For Each Numbered ACSO, Alternative I, No Action Alternative, Would:
1	Fish species, populations, and communities would be <u>maintained</u> . No change from existing circumstance is expected since fish are not present in the project area and impacts to downstream habitat would not occur.
2	Connectivity within and between watersheds would be <u>maintained</u> at current levels. Aquatic connectivity would be maintained. No change from existing circumstance is expected since no change to known habitat would occur.
3	Existing stream banks and bottom configurations would be <u>maintained</u> in the current condition.
4	No water quality concerns were identified during field review of the project area and the existing condition would be <u>maintained</u> .
5	The sediment regime would be <u>maintained</u> since no in-channel work or harvesting on unstable slopes would be conducted. Sediment input, storage, and transport in streams would be the result of natural processes.
6	In-stream flows would be <u>maintained</u> .
7	Existing meadows and wetlands would be <u>maintained</u> .
8	Species composition and structural diversity of riparian plant communities would be <u>maintained</u> at current levels in the short term. Long-term the composition and structure of these communities would continue on the trajectories that they are on currently.
9	Habitat for riparian-dependent species would be <u>maintained</u> at current levels in the short-term. Long-term this habitat would continue on the trajectory that it is on currently.

ACSO	For Each Numbered ACSO, Alternative II Proposed Action Would:
1	Fish species, populations, and communities would be <u>maintained</u> . No change from existing circumstance is expected since fish are not present in the project area and impacts to downstream habitat would not occur.
2	The spatial and temporal connectivity between watersheds would be <u>maintained</u> . The connectivity within the watershed would be improved slightly by the excavation of fill material at the stream crossing. Aquatic connectivity would be maintained. No change from existing circumstance is expected since no change to known habitat would occur.
3	One temporary stream crossing would be constructed and removed following harvest activities. Excavation of fill material at that shallow crossing would <u>restore</u> the channel banks and bottom.
4	Use and maintenance of the existing permanent roads in the project area would <u>maintain</u> water quality. A small amount of sediment (about one cubic yard) adjacent to the temporary culvert on Spur C would not result in detectable water quality impairment during the first fall rains. Mulching and seeding exposed soils at that site would result in long-term <u>maintenance</u> of water quality.
5	Natural in-stream sediment movement at the old log culvert site on Spur C would be <u>restored</u> by removing the remnant fill material that currently exists there.
6	No increase in peak flow/base flow or adverse effects to either Hills Creek or Little Fall Creek are predicted from harvest of these units or road work. Commercial thinning operations in this rain-dominated zone should have very little impact of storm runoff to streams, especially since riparian buffers would be left in-place. Implementation of this alternative would <u>maintain</u> the timing, magnitude, and duration of stream flows in the project area.
7	Existing meadows and wetlands would be <u>maintained</u> .
8	Species composition and structural diversity of riparian plant communities would be <u>maintained</u> . No timber harvest would occur within 50 feet of streams, so riparian habitat components would not be directly affected by harvest activities. Timber harvest in the upland portion of the Riparian Reserves could result in changes to the microclimate conditions at the edges of Riparian Reserves; however, this would result in no substantive changes to riparian vegetation or other components of riparian habitat.
9	Habitat for riparian-dependent species would be <u>maintained</u> . No timber harvest would occur within 50 feet of streams, so riparian habitat components would not be directly affected by harvest activities. Habitat within the upland portions of the Riparian Reserves would be improved for many species by the creation of snag and down logs.

ACSO	For Each Numbered ACSO, Alternative III Would:
1	Fish species, populations, and communities would be <u>maintained</u> . No change from existing circumstance is expected since fish are not present in the project area and impacts to downstream habitat would not occur.
2	Connectivity within and between watersheds would be <u>maintained</u> at current levels. Aquatic connectivity would be maintained. No change from existing circumstance is expected since no change to known habitat would occur.
3	One temporary stream crossing would be constructed and removed following harvest activities. Excavation of fill material at that shallow crossing would <u>restore</u> the channel banks and bottom.
4	Use and maintenance of the existing permanent roads in the project area would <u>maintain</u> water quality. A small amount of sediment (about one cubic yard) adjacent to the temporary culvert on “Spur C” would not result in detectable water quality impairment during the first fall rains. Mulching and seeding exposed soils at that site would result in long-term <u>maintenance</u> of water quality.
5	Natural in-stream sediment movement at the old log culvert site on Spur C would be <u>restored</u> by removing the remnant fill material that currently exists there.
6	No increase in peak flow/base flow or adverse effects to either Hills Creek or Little Fall Creek are predicted from harvest of these units or road work. Commercial thinning operations in this rain-dominated zone should have very little impact of storm runoff to streams, especially since riparian buffers would be left in-place. Implementation of this alternative would <u>maintain</u> the timing, magnitude, and duration of stream flows in the project area.
7	Existing meadows and wetlands would be <u>maintained</u> .
8	Species composition and structural diversity of riparian plant communities would be <u>maintained</u> at current levels in the short-term. Long-term the composition and structure of these communities would continue on the trajectories that they are on currently.
9	Habitat for riparian-dependent species would be <u>maintained</u> at current levels in the short-term. Long-term this habitat would continue on the trajectory that it is on currently.

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

**Finding of No Significant Impact
for
Blackberry Hole Timber Sale**

Determination:

On the basis of the information contained in the Environmental Assessment, (OR-090-EA-02-24) and all other information available to me, it is my determination that implementation of the proposed action or alternative will not have significant environmental impacts not already addressed in the *Record of Decision (ROD) 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 (ROD) for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001. Environmental Assessment OR 090-EA-02-24 is in conformance with the above documents and does not, in and of itself, constitute a major federal action having significant effect on the human environment. Therefore, a new environmental impact statement (EIS) or supplement to the existing EIS is unnecessary and will not be prepared.

Field Manager, McKenzie Resource Area

Date