The Badger One Regeneration Harvest

Environmental Assessment

OR 090-EA-99-06

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

EUGENE DISTRICT

1792A
Badger One
EA-99-06

ENVIRONMENTAL ASSESSMENT NO. OR090-99-06
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I. INTRODUCTION

This Environmental Assessment (EA) will address a proposed regeneration harvest within the Wildcat Watershed. The Wildcat Watershed is located in Lane County, northwest of the city of Eugene and contains the community of Walton. The watershed lies at the east-central headwaters of the Siuslaw River Basin within the Coast Range Province. The proposed project area is located in Section 35, Township 17 South, Range 7 West, Willamette Meridian, Lane County, Oregon, within the General Forest Management Area (GFMA) of the Matrix land use allocation (LUA) (see attached map of the proposed project area). The regeneration harvest would occur in the Matrix (GFMA) only.

The watershed contains approximately 34,902 acres of which the Bureau of Land Management (BLM) manages approximately 13,990 acres or about 40 percent. The pattern of the current landscape in the Wildcat Watershed is largely influenced by the checkerboard ownership pattern. Streams would be protected consistent with the Eugene District ROD and in accordance with the Aquatic Conservation Strategy. The proposed project would remove approximately 3.2 MMBF from approximately 87 acres of regeneration harvest.

A. MANAGEMENT OBJECTIVES AND GOALS FOR LAND WITHIN THE MATRIX (GFMA)

Matrix lands are those Federal lands outside of areas identified in the Record of Decision (ROD) for the FSEIS with special restrictions because of other resource values. The following are the primary goals and objectives of the Matrix (GFMA and Connectivity) land use allocation (*U.S. Bureau of Land Management, Record of Decision and Resource Management Plan, June 1995):*

- Produce a sustainable supply of timber and other forest commodities to provide jobs and to contribute to community stability.

- Provide connectivity (along with other allocations such as riparian reserves) between Late-Successional Reserves.

- Provide habitat for a variety of organisms associated with both late-successional and younger forests.

- Provide important ecological functions, such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components, such as down logs, snags, and large trees.

- Provide early-successional habitat.

B. PURPOSE AND NEED FOR ACTION

The purpose of the action within the Matrix (GFMA) is to provide forest product commodities to the public. This would require regeneration harvest of approximately 87 acres of an upland Douglas-fir stand approximately 63-68 years old. The need for the action in the Matrix (GFMA) is established in the "Eugene District Record of Decision and Resource Management Plan," June 1995 (RMP), which directs that regeneration harvest be conducted in the Matrix to provide forest product commodities and a sustainable supply of timber.

C CONFORMANCE

The proposed action and alternatives are in conformance with 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)* (Eugene District RMP) to which this document is tiered. These EISs are incorporated by reference.

Watershed analysis has been completed for the Wildcat Watershed. The proposed action would maintain or restore riparian conditions by protecting present structural features of the riparian currently present. This treatment is consistent with ACS Objectives (ROD pages B-11 to B-13).

On November 4, 1996, “Interim Guidance for Survey and Manage Component 2 Species: Red Tree Vole” was issued to implement component 2 of the Survey and Manage Standard and Guideline under the Northwest Forest Plan Record of Decision (BLM Instruction Memorandum No. OR-97-009). This memorandum contained both the management recommendations (interim guidance) and the survey protocol for the red tree vole. Instruction Memorandum No. OR-98-105 extended the interim guidance through FY99 or until superseded by revised direction. The Proposed Action and alternatives are in conformance with this guidance.

Plan maintenance documentation postponing surveys for 32 Component 2 and Protection Buffer species was recently completed (“Plan Maintenance Documentation, USDI Bureau of Land Management, To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species,” approved March 3, 1999). The Proposed Action and alternatives are in conformance with the direction provided in the Plan Maintenance Documentation. The implementation of the plan maintenance is provided for by BLM planning regulations (43 CFR 1610.5-4).

The effect of the plan maintenance action was analyzed in an environmental assessment, “To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species,” issued October 7, 1998 (“Schedule Change EA”). The analysis contained in the Schedule Change EA is incorporated into this document by reference. Both the Schedule Change EA and the Plan Maintenance Documentation are available for viewing at the Eugene BLM District Office or on the internet at http://www.or.blm.gov/nwfp.htm.

II. PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and Alternatives developed through the interdisciplinary team (ID Team) review process. The Proposed Action and Alternatives consider forest management activities including regeneration harvest; road construction; road improvement and road decommissioning; and site preparation and

tree planting in an approximately 87 acre forested area within the Matrix, General Forest Management Area (GFMA) land use allocation. No actions would occur within Riparian Reserves with all alternatives.

A. ALTERNATIVE 1 - PROPOSED ACTION

REGENERATION HARVEST

The Bureau of Land Management (BLM) proposes to regeneration harvest approximately 3.2 MMBF of timber from approximately 87 acres of forest within the Matrix (GFMA) land use allocation. No action would occur within Riparian Reserves. The project area is an upland predominantly Douglas-fir stand approximately 63-68 years old in T. 17 S., R. 07 W., Section 35, Willamette Meridian (W.M.) (see attached maps of the proposed treatment area). Yarding would be accomplished by cable or tractor. The Purchaser would have the option of using ground-based equipment (tractor) on slopes less than 35 percent. All yarding would be to designated or approved landings. (See design features 12-14 for additional cable and tractor yarding requirements.)

RESERVES

Riparian Reserves - The height of one site-potential tree in the Wildcat Watershed has been determined to be approximately 210 feet slope distance. Riparian Reserves (widths of 210 feet on either side of non-fish bearing streams, 420 feet on either side of fishbearing streams) would be managed in accordance with the standards and guidelines in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (ROD) (Appendix C, pp. 31-38) and the Eugene District RMP. No harvest would occur within the Riparian Reserve with the proposed action. Several unnamed non-fishbearing tributaries to Salt Creek are within or near the project area. Although Salt Creek, approximately ½ mile downstream from the project area, has cutthroat trout present and suitable habitat for coho salmon, and steelhead, it is currently blocked to migratory fish by a downstream culvert near its junction with Wildcat Creek. All streams would be protected consistent with the Eugene District RMP and in accordance with the Aquatic Conservation Strategy. No road construction would occur within Riparian Reserve. (See design feature 2 for Riparian Reserves specific to the project area.)

Survey and Manage Mollusk Reserves - The Survey and Manage Mollusk sites would receive reserves or buffers to reduce edge effects and disturbance to these species. The selection of which locations to protect with reserves would be guided by all expressed resource concerns. No disturbance would occur within the reserve areas. All tree felling would occur directionally away from these reserve areas and no yarding would occur through these reserve areas. Prescribed burning, site preparation, tree planting, or salvage logging would not occur in these reserve areas. These reserves are described in greater detail under wildlife within *Section IV, Affected Environment* of the EA on page 12-13. (See design feature 17.)

Survey and Manage and Protection Buffer Species -Botanical Reserves - Survey and Manage Botanical sites would receive reserves or buffers to reduce edge effects and disturbance to these species. No disturbance would occur within the sites reserved. All tree felling would occur directionally away from these reserve areas and no yarding would occur through these reserve areas. Prescribed burning, site preparation, tree planting, or salvage logging would not occur in these reserve areas. These reserves are described in greater detail by species under botanical resources within *Section IV, Affected Environment* of the EA on page 9-11. (See design feature 18)

GREEN TREE RETENTION, SNAGS, AND COARSE WOODY DEBRIS

Six to eight green trees per acre would be left throughout the regeneration harvest area as required by the Eugene District RMP. These green retention trees would be retained to provide legacy trees to be carried on into the next rotation and would eventually become snags or coarse woody debris (CWD). Additional green trees would be left to satisfy the needs of cavity nesters and the snag and down woody debris requirement. This action would retain a total of at least 10 green trees per acre to provide for future snags, down wood, and legacy trees. Coarse woody debris (CWD) would be provided for by retaining a minimum of 240 lineal feet of material greater than or equal to 20 inches in diameter of Decay Class I and II, and all down material of advanced decay (Decay Class 3, 4 or 5). (See design features 6-11)

SITE PREPARATION AND TREE PLANTING

Site-preparation and planting would occur within the treatment area upon completion of the proposed regeneration harvest (See design features 15 and 16.).

ROAD ACCESS

The regeneration harvest within the proposed action would require improvement of the existing Road Nos. 17-7-34 Segment B and 17-7-35 Segment A totaling approximately 6,865 feet (68.65 stations). The existing 17-7-35.1 road would remain dirt surfaced and would be maintained by the purchaser if used for logging. Three spurs (Spur A, Spur B, and Spur C) totaling approximately 2,620 feet (26.2 stations) would be constructed with purchasers option to rock. Spurs A, B, and C would be decommissioned by removing the rock (if present) and subsoiling after completion of the regeneration harvest. All roads within the sections were evaluated within the context of a district wide transportation management plan to meet resource needs. See project design feature 5 for gated closure and barricading of roads accessing the project area. (See design features 3, 4 and 5.)

PROJECT DESIGN FEATURES OF THE PROPOSED ACTION

The following project design features would be implemented in conjunction with the proposed action. Project design features or operating procedures normally used to avoid or reduce environmental impacts have been developed by the interdisciplinary team.

Noxious Weeds and Non-natives

1. In order to slow the spread of noxious weeds, all yarding and road construction equipment including excavator would be cleaned prior to its arrival on Bureau of Land Management Land. In the unlikely event roadside seeding does occur, annual and perennial rye mixtures with strict guidelines on seed purity (no crop or noxious weed content) would be used.

Riparian Reserves

2. No action would occur within the Riparian Reserve. A no-treatment, one site tree buffer would be placed along the non-fishbearing Stream A that flows in the middle of the unit and a no-treatment, one site tree buffer would be placed along the eastern edge of the unit where it borders a small non-fishbearing stream on private land in section 36. Stream A has no expected potential fish habitat due to natural barriers or steep gradients downstream. Streams B and C have no expected potential fish habitat due their size and location high in the drainage. Although Salt Creek, approximately ½ mile downstream from the project area, has cutthroat trout present and suitable habitat for coho salmon, and steelhead, it is currently blocked to migratory fish by a downstream culvert near its junction with Wildcat Creek.

Roads

3. The existing rocked Road Nos. 17-7-34 Segment B and 17-7-35 Segment A would be improved to SN-16 width standards with resurfacing to allow for winter logging and prevent sedimentation concerns.

4. The current 17-7-35.1 road would remain dirt surfaced to be maintained by the purchaser if used for logging. Spurs A, B, and C would be new construction with purchasers option to rock. Spurs A, B, and C would be decommissioned by removal of the rock (if present) and subsoiling after completion of the regeneration harvest.

5. The 17-7-34 Segment B road would be gated at its junction with Highway 126 by Roseburg Forest Products and the 17-7-35 Segment A road would be barricaded near the east section line of section 35. This gate and barricade are needed to reduce disturbance to elk, reduce the movement of noxious weeds by vehicle traffic and to protect Badger Mountain radio tower and equipment from vandalism.

Green Tree Retention, Snags, and Coarse Woody Debris

6. Coarse woody debris (CWD) would be provided for by retaining a minimum of 240 lineal feet of material greater than or equal to 20 inches in diameter of Decay Class I and II. For the purpose of long term productivity and maintenance of biological diversity, retain all down material of advanced decay (Decay Class 3, 4 or 5) for CWD.

7. Six to eight green trees per acre of size and species typical of the stand would be retained to provide legacy trees to be carried on into the next rotation and would eventually become snags or CWD. A portion of the retention trees would be clustered around the rocky ridge west of stream A in consideration for bats and bryophytes which prefer those rocky areas.

8. Existing snags in the harvest area were found to be below the minimum RMP/ROD standards to meet the primary cavity nesting bird needs. Snags would need to be created to attain the RMP/ROD guidelines of meeting 40% primary cavity nester requirements. In this unit approximately 1.7 additional green trees per acres that are at least 15" D.B.H. would be retained. All existing snags not posing a safety hazard would be reserved in this unit. Where snags create a hazard, they would be cut and left on site for CWD.

9. All legacy (trees with old growth characteristics) trees 28" and greater, Pacific yew, Western redcedar, and hardwoods would be retained for tree diversity and as important hosts for diversity of bryophyte and lichen species as well as likely fungal associated diversity.

10. In summary, total retention trees for design feature numbers 7 , 8 and 9 above would provide at least 10 green leave trees per acre for future snags and legacy trees.

11. Plus trees 1674, 1675, 1676, 1677, and 1678 (genetically select trees) would be reserved. Tree numbers 1671,1672, 1673 would be cut due to needed road improvements and an existing power line right-of-way in the project area.

Yarding

12. Yarding would be done from newly constructed road grades, and improved existing road grades with cable or tractor equipment. All yarding would be to designated or approved landings. No yarding would occur within Riparian Reserves.

13. Cable yarding- One end suspension of logs would be required during cable yarding and intermediate supports would be required where necessary to attain the required suspension.

14. Tractor yarding- Tractor skid trails would be limited to slopes less than 35 percent. The tractor yarding would occur during periods of low soil moisture (generally less than 25% soil moisture). All tractor skid trails would be predesignated and approved by an authorized officer, and would occupy less than 10% of the tractor logged area. Skid trails used in the harvesting would be water barred and subsoiled with a self-drafting winged subsoiler to minimize soil disturbance and maintain long term soil productivity. No yarding would occur within Riparian Reserves on this sale.

Site Preparation and Tree Planting

15. Radio and microwave installations up-slope to the north of the project area are a resource that warrant consideration for fire protection measures. These measures would be in the form of fuel hazards reduction. Excavator piling with burning would be used on this unit on slopes less than 40%. Swamper burning would occur on slopes over 40% with the purchaser's option to handpile, cover, and burn. No piling would take place within any leave patches or other identified sensitive areas. Ten percent of the debris piles would be left unburned to provide wildlife habitat. The actual treatment methods required and areas treated would be determined after harvest. Fire hazard reduction and site prep would be accomplished in a manner that would minimize soil disturbance and minimize litter and course woody debris consumption.

16. Regeneration treatment areas would be planted with Douglas-fir and minor conifer species as available at a density of approximately 400 trees per acres. Stock type will be determined after harvest.

Survey and Manage Reserves - Mollusk

17. Survey and Manage reserves (approximately 0.5 - 0.8 acre in size) would be placed around the following mollusk locations: 2 designated locations of *Megomphix* hemphilli, 2 designated locations of *Prophysaon dubium*, and one location of *Prophysaon coeruleum*.

Survey and Manage and Protection Buffer Species Reserves - Botanical

18. Survey and Manage and Protection Buffer botanical reserves would be placed around the following species within the treatment area to reduce disturbance and edge effects. *Ulota meglospora* - 4 sites (1/4 -1/3 acre reserves); *Sarcosoma mexicana*- 1 site (1 acre reserve); *Otidea onotica- 1 site* (3.5 acre reserve); *Helvella compressa*- 2 sites (3/4 acre reserves).

B. ALTERNATIVE 2 (NO ACTION)

All timber harvest activities would be deferred, and no management activities described under the other alternatives would occur at this time. Future management actions for a variety of resource needs may be proposed within the project area at a later date.

C. ALTERNATIVE 3

This alternative would remove an estimated 1.3 MMBF from approximately 34 acres of regeneration harvest from an area that was commercial thinned from approximately 1984-1987. This alternative would require approximately 5,545 of road improvement to the 17-7-35 road (1,320 feet less than Alternative1) as shown on the EA map. Survey and Manage and Protection Buffer species requirements would vary by Alternative and

are addressed in the "Affected Environment section of the EA". All other project design features would be similar to those proposed for Alternative 1.

D. OTHER ALTERNATIVES CONSIDERED

Accessing the proposed treatment area with an extension of the existing 17-7-35.1 road below the unit across a non-fishbearing reach of stream (Stream A on project EA map) within Riparian Reserve was considered. This road would be used for logging part of the proposed 87 acres and would provide access for commercial thinning of forests to the south of the proposed treatment area at a later date.

III. ISSUES NOT ANALYZED

No site specific surveys were completed for any of the 32 Component 2 or Protection Buffer species listed in the Schedule Change EA. Individuals of *Sarcosoma mexicana and Otidea onotica* were found, incidental to other surveys, and appropriate management actions to protect these sites would be implemented under all alternatives. However, it is possible that additional individuals may reside in the project area. The issue of how the Proposed Action and alternatives would impact potential locations of these Component 2 or Protection Buffer species was not analyzed because impacts are not expected to exceed those anticipated in the Schedule Change EA.

IV. AFFECTED ENVIRONMENT

This section will describe key components of the affected environment. The plants and animals in the project area do not differ significantly from those discussed in the Eugene District Proposed Resource Management Plan/Environmental Impact Statement (RMP EIS, 1994) (Chapter 3).

The Wildcat Watershed lies at the east central headwaters of the Siuslaw River Basin. The Wildcat Watershed contains approximately 34,902 acres. The pattern of the current landscape in the Wildcat Watershed is largely influenced by the checkerboard ownership pattern. BLM manages approximately 13,990 acres or 40% of the watershed; Forest industry companies manage 41%; State of Oregon manages 14%; and other private owners manage 5%. *(Wildcat Watershed Analysis, 1999).*

Approximately 46 percent of the BLM managed lands within the watershed are designated as Matrix (GFMA). Approximately 42 percent of these matrix lands are designated as Riparian Reserve. *(Wildcat Watershed Analysis, 1999).*

VEGETATION

BLM administered lands within the watershed are comprised of the following approximate forested acres and percentages by vegetation class *(Based on Forest Operations Inventory (FOI) stand data 1998):*

◂ 0 year age class	138 acres	1.0%
◂ 10 year age class	1,007 acres	7.4%
◂ 20 year age class	989 acres	7.3%
◂ 30 year age class	1,439 acres	10.6%
◂ 40 year age class	570 acres	4.2%

◂ 50 year age class	1,398 acres	10.3%
◂ 60 year age class	6,493 acres	47.9%
◂ 70 year age class	96 acres	0.7%
◂ 80 year age class	21 acres	0.2%
◂ 100 year age class	34 acres	0.2%
◂ 150 year age class	115 acres	0.8%
◂ 180 year age class	116 acres	0.9%
◂ 200 year age class	1,149 acres	8.5%

Approximately 11 percent of the Federal (BLM) forested acres within the watershed are currently in a late-successional (≥80 years of age) condition of which 10 percent is located in LSR or Riparian Reserves *(Based on Forest Operations Inventory (FOI) stand data, 1998)*.

Stand Description

The proposed treatment area within the GFMA (approximately 87 acres) is comprised of a uniform second growth Douglas- fir stand approximately 63-68 years old . The west and northeast portions of the proposed project area were commercially thinned from approximately 1984 to 1987. The current overstory stand density is approximately 100-110 trees per acre (TPA). Tree species diversity is low with only occasional bigleaf maple, western redcedar, and golden chinquapin (generally overtopped) within the Douglas-fir stand. A few areas within the stand contain many small western hemlocks. Plant communities include: Western hemlock/salal-Cascade Oregon grape-sword fern at the higher elevation grading down into Western hemlock/ocean spray-hazelnut/salal-Oregon grape. There are occasional patches of twin flower with a rich herbaceous composition.

There are some large decaying logs important to bryophyte richness and moderate quantities of small woody debris. Very few tall snags but numerous large, short snags with char are present. There are some residual large Douglas-fir with fire scars present.

BOTANICAL RESOURCES

Special Status and Survey and Manage Plant Species

All vascular surveys were conducted and completed during the spring and summer of 1998. No federally listed threatened or endangered plant species were located within the project area of all alternatives. Included in the list of plants surveyed for were Survey and Manage Component 2 plant species. No sensitive vascular plant species were found. All botanical surveys have been completed.

Surveys for *Ulota megalospora*, a Protection Buffer moss species were conducted during the same time frame as the above surveys according to survey protocols established by the Eugene District Botany Work Group. Protocols were developed using information from Appendix J2 of the FSEIS and local expertise. *Ulota megalospora* was found in five locations within the survey area.

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One site of *Sarcosoma mexicana,* a Survey and Manage Component 3 and Protection Buffer fungus species and one site of *Otidea onotica*, a Protection Buffer forest floor fungal species were found incidental to other surveys. Northwest Forest Plan Standards and Guidelines for Protection Buffer species require surveys prior to ground-disturbing activities. However, consistent with the Plan Maintenance Documentation referenced

earlier, site specific surveys for *Sarcosoma mexicana and Otidea onotica* were not conducted in the proposed harvest units.

Helvella compressa, a Survey and Manage Component 1 and 3 forest floor fungi, was also found at two locations within the survey area incidental to other surveys.

The following is a summary of species found by alternative. Included is the proposed reserves for species sites to minimize soil disturbance and microclimate effects from each alternative.

Alternative 1- 9 sites - (8 sites within the treatment area and one site in Riparian Reserve):

- *Ulota meglospora*, a Protection Buffer moss found in four locations within the Proposed Action treatment area would receive the following reserves: Three sites near the treatment area boundaries would receive a **1/4 acre** reserve (57ft. radius). A fourth site located in the middle of the eastern lobe of the Proposed Action, Alternative 1 treatment area would receive approximately a **1/3 acre** reserve (70ft. radius area), and an additional 5th site would be protected by the Riparian Reserve.

- *Sarcosoma mexicana*, a Protection Buffer and Survey and Manage Component 3 fungi, was found at one location within the Proposed Action treatment area. Due to its proximity to a landing it would receive approximately a **1 acre** reserve area (approx. 118 ft. radius area).

- *Otidea onotica*, a Protection Buffer forest floor fungal species was found in one location within the Proposed Action treatment area. To maintain the needed habitat and associated micro-climate, the *Otidea* site would receive approximately a **3.5 acre** reserve area (approx. 220' radius area).

- *Helvella compressa*, a Survey and Manage Component 1 and 3 forest floor fungi, was found at two locations within the Proposed Action, treatment area. These two sites would each receive approximately **3/4 acre** reserve areas (approx.102' radius) to protect the site from immediate disturbance to the duff layer.

Alternative 3 - 6 sites (5 sites in the treatment area and one site in Riparian Reserve):

- *Ulota meglospora***,** a Protection Buffer moss found in two locations within the Alternative 3 treatment area would each receive **1/4 acre** reserve areas (57ft. radius) and an additional 3rd site would be protected by the Riparian Reserve.

- *Sarcosoma mexicana*, - Same as Alternative 1.

- *Otidea onotica* - Same as Alternative 1.

- *Helvella compressa*, a Survey and Manage Component 1 and 3 forest floor fungi, was found at one location within the Alternative 3 treatment area. This site would receive approximately a **3/4 acre** reserve area (approx.102' radius) to protect the site from immediate disturbance to the duff layer.

Noxious Weeds and Non-native Plant Species

An old skid-road through the upper section of the proposed project area has provided an inroad for non-native weeds from the main road system (17-7-34) including thistle, foxglove, tansy ragwort, and St. John's wort. These weeds are scattered in the project area along an extensive network of old skid roads. Only a few scattered Scot's broom plants are located along the main roadway within the project area. These were pulled to control the spread of this species. There is a large patch of Scot's broom close to the beginning of the 17-7-34 road where it leaves Highway 126. This patch was treated with an herbicide application by private land owners during the spring of 1998. A smaller patch of Scot's broom occurs on BLM land near the 17-7-34 road to the Badger Mountain radio tower along the north boundary of the project area. St. John's Wort occurs all along the main access roads to the project area with no signs of bio-control beetles.

SOILS

The predominant soils in the proposed treatment area are Klickitat soils. The Klickitat soil series consists of deep, reddish brown, loamy-skeletal soils. They are found on ridges and steep smooth or dissected slopes in mountainous topography at elevations of 500- 4,000 feet. The Klickitat soils are members of the loamy-skeletal, mixed, mesic family of *Typic Haplumbrepts.*

The proposed thinning treatment area is classified as suitable commercial forest for timber production. There are no acres withdrawn for non-suitability for timber production in the treatment area.

AQUATICS AND RIPARIAN RESOURCES / FISHERIES

A nonfishbearing upper tributary (Stream A on EA project map) of Salt Creek flowing through the east portion of the project area has a moderate gradient with rapids, riffles, and glides with moderate to high amounts of logs, woody debris, silt, sand, and bedrock. This same tributary enters Salt Creek farther downstream south to southwest of the proposed treatment area. This tributary contains falls with steep gradients at its lower reach making it impassible to fish. Small riparian headwater tributaries (Streams B and C on EA project map) lie to the south and west of the proposed project area. Streams B and C have no expected potential fish habitat due to their size and location high in the drainage. Salt Creek, approximately ½ mile downstream from the project area, has cutthroat trout present and suitable habitat for coho salmon, and steelhead, but it is currently blocked to migratory fish by a downstream culvert near its junction with Wildcat Creek. The elevation range within the project area is approximately 1400-1700 feet.

WILDLIFE

Threatened and Endangered Species

There are no activity centers for any terrestrial species listed or proposed under the Endangered Species Act within the project area. The treatment area is comprised of dispersal habitat for the northern spotted owl. The proposed treatment area is within the 1.5 mile provincial home range of two northern spotted owl activity centers.

Special Status Species

No sensitive amphibians were located during general wildlife surveys. No surveys specifically targeted for bats were conducted, however within the project area there were limited large snags that could provide refuge for bat species.

Survey-and-Manage Species

Field surveys for the red tree vole have not been conducted because the survey protocol has not been finalized. However, the Wildcat Watershed met the minimum red tree vole threshold habitat interim guidance requirements (potential habitat sufficient for dispersal), therefore no site specific surveys are needed (BLM-Instruction Memorandum No. OR-97-009). Instruction Memorandum No. OR-98-105 extended the interim guidance through FY99 or until superseded by revised direction.

Some Survey and Manage and Protection Buffer species may not have survey protocol or management recommendations completed. District Working Groups (wildlife specialists) have developed interim management guidelines utilizing Appendix J2 of the FSEIS and local expertise where needed to implement the survey and manage standard and guidelines.

Protocol surveys were conducted and completed for Strategy-2-Mollusk Species during the fall of 1997 and the spring of 1998. Three mollusk species (12 sites) were found within the survey area for all alternatives; *Megomphix hemphilli* (a land snail)- at 2 locations; *Prophysaon coeruleum* (a land slug) at 8 locations and *Prophysaon dubium* (a land slug)- at 2 locations.

Alternative 1- 12 sites - (10 sites within the treatment area of which 4 would be buffered; and two sites in reserve outside the treatment area):

- *Megomphix hemphilli*, a land snail, was found at two sites within the Alternative 1 treatment area. These two sites would receive a 0.8 acre reserve and a 0.4 acre reserve. (The Riparian Reserve would add additional acreage to the 0.4 acre reserve)

- *Prophysaon coeruleum*, a land slug, was found at seven sites within the Alternative 1 treatment area. One of these sites is located within a 0.5 acre botany Protection Buffer reserve for *Ulota megolaspora* within the treatment area. The remaining six sites within the treatment area would not receive reserves. An additional site was located within the Riparian Reserve adjacent to the Alternative 1 treatment area.

- *Prophysaon dubium* ,a land slug, was found at one site in the treatment area. This site would receive a 0.7 acre reserve. A second site was located in the reserve area adjacent to the Alternative 1 treatment area.

Alternative 3- 12 sites- (5 sites within the treatment area of which 3 would be buffered; and 7 sites in reserve outside the treatment area):

- *Megomphix hemphilli* - Same as Alternative 1.

- *Prophysaon coeruleum*, a land slug, was found at two sites within the Alternative 3 treatment area. These 2 sites would not receive reserves. The remaining 6 sites would be in reserves outside the treatment area (1 site in the Riparian Reserve and 5 sites in reserves outside the treatment area.).

- *Prophysaon dubium* - Same as Alternative 1.

Big game

Black-tailed deer and elk occur in the project area. The proposed project area is being used by deer and elk for forage, hiding cover and to a minor extent thermal cover. Adjacent clear-cuts would be used for foraging by both deer and elk. There is a lack of large standing or down trees that could provide denning sites for black bears. However, the project area and adjacent lands could be used by transitory or foraging bears known to exist in the area.

Neotropical migrants

Species preferring mid-successional coniferous stands and edge habitat such as the olive-sided flycatcher would be expected to occur in the project area.

Other Wildlife

There are no known raptor nests or heron rookeries in the project area or in close vicinity.

SNAGS / DOWN WOODY DEBRIS / FUELS

There are few natural snags observed overall, all in the later decay classes and little coarse woody debris present. There are some large decaying logs important to bryophyte richness and moderate quantities of small woody debris. Very few tall snags but numerous large, short snags with char are present. Radio and microwave installations to the north and up-slope from the project area are a resource that warrant consideration for fire protection measures. These measures would be in the form of fuel hazards reduction. The pre-harvest fuel loading in the proposed regeneration harvest is approximately 12-13 tons per acre.

CULTURAL RESOURCES

A cultural resource inventory of the proposed project area has not been completed. Past pre-project inventories in the lands administered by the Bureau of Land Management within the Coast Range Physiographic Province have not resulted in the discovery of historic properties, therefore no cultural resources are expected to be affected. The guidelines of the Memorandum of Understanding (MOU) between the Bureau of Land Management and the Oregon State Historic Preservation Officer (December 13, 1994) makes the conclusion "that the chances of finding important historic properties in the area are so minimal such that further cultural resource survey prior to project implementation does not justify the continued expenditure of federal funds in the effort". The MOU does set forth procedures covering post-project cultural resource surveys which would be implemented.

VISUAL RESOURCES

The project area is classified as Visual Resource Management Class IV, which allows for moderate levels of change to the characteristic landscape. Management activities may dominate the view and be the major focus of viewer attention. A regeneration harvest in this area would not exceed this level of change (Eugene District ROD/RMP, June 1995; pages 75-78).

RECREATION RESOURCES
The proposed project area is not within a Special Recreation Management Areas (SRMAs) and has no Rural Interface issues or Wild and Scenic River (WSR) issues.

V. DIRECT AND INDIRECT EFFECTS

A. UNAFFECTED RESOURCES

The following resources are either not present or would not be affected by the proposed action or any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, flood plains, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, and low income or minority populations.

CULTURAL RESOURCES - are not expected to be affected by the proposed action or any of the alternatives
.
RECREATION AND VISUAL RESOURCES - would not be affected by the proposed action or any of the alternatives. These resources will not be addressed further in the analysis.

AIR QUALITY - Burning activities, if required for site preparation, would be consistent with Oregon Smoke Management Regulations. The proposed burning would be of very short duration and would have no local short or long-term impacts on air quality beyond those discussed in the RMP EIS (Chapter 3, pp. 14-20) and (Chapter 4, pp. 10-14). All burning would meet the State Implementation Plan for smoke management and the National Ambient Air Quality Standards set forth in the Clean Air Act. This resource will not be addressed further in the analysis. The proposed project area is approximately 6 miles west of the Willamette Designated Area (DA).

B. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE 1- PROPOSED ACTION

VEGETATION
The proposed action (regeneration harvest) would remove most of the existing trees within the unit and would establish an early seral stage forest with occasional mature trees, snags, and coarse woody debris. Green retention trees, green trees left as “Survey and Manage” species reserves and reserved snags within the regeneration harvest unit would provide vegetative diversity and a legacy to be carried on into the next rotation. In the first decade following harvest, the area would be dominated by sprouting hardwoods, shrubs, forbs, and planted conifer saplings. Species diversity would be high in this stage. Conifers would develop slowly at first but gradually become dominant. During the 2nd decade the canopies of the planted conifers would close resulting in a dense conifer stand of primarily Douglas-fir. Species diversity would decrease during this time. As the stand ages (age 46-95 yrs.), the over story canopy would begin to open with an increase in forbs and shrubs. Species diversity would remain relatively low but would slowly increase.

The untreated Riparian Reserve would protect riparian, aquatic, fisheries and wetland associated resources described in the existing conditions. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated species would occur slowly through natural disturbances and forest succession over time. The development of late-successional forest structure and the associated source

of large trees for future large in-stream structure would occur slower without density management as the existing trees grow, compete for growing space, slow in diameter growth, reduce live crown ratios, and begin to self-thin naturally. A persistent closed canopy would slow the growth of any understory hemlock, and red cedar regeneration and slow the development of canopy layering. The herbs, shrubs, and non-vascular plants found in the Riparian Reserves would remain undisturbed.

BOTANICAL RESOURCES

The proposed action would have no effect upon federally listed threatened or endangered plants. Survey and Manage Component 1 and 3, and Protection Buffer species (9 sites) are known to occur within the treatment area and Riparian Reserve as described in *Section IV, Affected Environment* of the EA.

The proposed action would result in removal of much of the overstory with an associated change in microclimate for plants and fungi; increasing light and wind intensities and decreasing soil moisture and relative humidities. Road building and yarding would result in soil disturbance and would increase the likelihood of non-native and potentially noxious species entering and/or increasing in the unit. Ground disturbance from road construction and ground based (tractor) yarding usually temporarily sets back native herbaceous communities and impacts underground fungal resources negatively. Design features addressing road construction, cleaning of equipment, yarding methods, and site preparation methods along with reserves are incorporated within the proposed action and alternatives to lessen or alleviate these effects.

Little is known about the effects of harvest and regeneration on non-vascular plant components. The removal of overstory trees would have long term impacts on those species that form complex mychorizal or epiphytic relationships with overstory trees.

The proposed action, Alternative 1, would have the greatest potential effect of all the alternatives on Survey and Manage and Protection Buffer Species due to the greater area harvested and the greater number of Survey and Manage and Protection Buffer Species sites located within the treatment area (Alternative 1 contains 8 sites; Alternative 2 is the no-action alternative and Alternative 3 contains 5 sites). The reserves for the Survey and Manage and Protection Buffer Species within the treatment area would allow for a continuing legacy of these species in the Badger One stand with this alternative. See the paragraph “Reserves” on page 4-5 of the EA for reserve or buffer requirements for these species. These reserves are also described in greater detail under botanical resources within *Section IV, Affected Environment* of the EA (pages 10-11).

These Survey and Manage and Protection Buffer reserves along with the Riparian Reserves would ensure adequate protection under Alternatives 1 for individual Protection Buffer and Survey and Manage sites by; (1) maintaining a viable population at these sites by protecting known sites (with associated spore banks), (2) protecting habitat at known sites by maintaining the duff/litter layer in the case of terrestrial species and the substrate (tree trunk, branches etc.) for *Ulota*, and by providing some minimal microclimate buffering, (3) maintaining the current known range of the species and (4) allowing for a biological legacy to inoculate the new stand that will develop following regeneration harvest.

SOILS

The proposed action and associated management practices would not cause soil compaction capable of impairing overall stand growth, long term productivity or the hydrologic behavior of the treatment area. Sufficient litter, logging debris and down logs would be retained to maintain soil organic material, soil organisms

and nutrient levels. There are no slope stability concerns within the treatment area. Designating skid trails, restricting tractor yarding to dry seasons and gentler slopes (less than 35% slope), and subsoiling skid trails would keep overall productivity losses within the Eugene District ROD/RMP standard of 2 percent or less.

AQUATIC AND RIPARIAN RESOURCES / FISHERIES

There are currently no proposed or listed fish species in the project area. The Riparian Reserve would remain untreated to protect riparian, aquatic, downstream fisheries, and wetland associated resources.

Water Quality, In-Stream Structure and Stream Function

The untreated Riparian Reserve would protect streambanks, provide shade, and would contribute to maintaining current water quality, water temperature, and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for downstream fisheries within Salt Creek. The development of a source of large trees for future large in-stream structure would occur slower in some areas of the Riparian Reserve without density management as the existing trees grow, compete for growing space, slow in diameter growth, and begin to self-thin naturally.

Stream Flows

The proposed regeneration harvest would cause only a small increase in low flows since the residual trees within the reserves and treatment area would use the increase in available water.

Rain on Snow Events and Peak Flows

In general the rain on snow (ROS) zone is considered to be between 1150 feet and 4000 feet for the west coast. Carlson (1994) did a local analysis using local records for the lands in the eastern portion of the Eugene district. Carlson found the peak ROS zone to be from 2130 to 2810 feet in elevation. Below 1500 feet he found almost no impact from the ROS effect. The project area ranges in elevation from 1400 to 1700 feet in elevation. There is a chance that there could be an increase in flows from a ROS event during the time this stand is returning to hydrologic maturity, but it is not very likely. Peak stream flows are discussed further under Roads and Stream Sediment below.

Roads and Stream Sediment

There would be no new stream crossings, and no drainage network extensions due to new road construction and road improvement within Alternative 1. The regeneration harvest within the proposed action would require improvement of the existing Road Nos. 17-7-34 Segment B ,and 17-7-35 Segment A, totaling approximately 6,865 feet (1.3 miles); and the new construction of three spurs (Spur A, Spur B, and Spur C) totaling approximately 2,620 feet (0.5 miles) with purchasers option to rock. These spur roads would be decommissioned by removal of rock (if present) and subsoiling after the proposed regeneration harvest is completed. Gating and barricading of roads at the completion of harvest would decrease or limit use on approximately 9.8 miles of currently existing road. All proposed road construction and road improvements within the project area would have no potential to deliver flow or sediment to stream channels or impact aquatic resources in the short or long term due to their distance from the stream channels. There would be no increase in the drainage density from road construction therefore there would be no increase in peak flows due to roads. No short or long-term contribution of sediment would occur with the implementation of the proposed action and its project design features.

WILDLIFE

Consultation with the U.S. Fish and Wildlife Service was completed on October 23, 1998 with the submission of the Biological Opinion for 1999 habitat modification projects. According to Eugene District's Biological Assessment for habitat modifying projects for fiscal year 1999, this proposed project would "Affect, but is Not Likely to Adversely Affect" the northern spotted owl due to loss of dispersal habitat within the unit. After treatment, there would still be approximately 80% of federal lands remaining in a dispersal condition within that quarter township. This proposal would have a *"No Affect"* on the marbled murrelet and other federally listed/proposed terrestrial species.

The proposed regeneration harvest is within the provincial home radius of 2 known spotted owl site centers. Suitable spotted owl dispersal habitat within the area would be reduced although an adequate amount of this habitat would remain in the vicinity after harvest. Immediately after the proposed treatment, the value of hiding and thermal cover for deer and elk would be eliminated. However, forage would increase in the newly harvested unit and after approximately 10-15 years, this unit would provide escape cover for these species. As the stand matures, the quality of hiding, thermal and optimal cover would increase as the canopy closes and develops multiple layers.

Species preferring early successional coniferous stands and edge habitat such as the dark-eyed junco and tree swallow, would be expected to occupy this stand after treatment. As the stand matures, species more associated with later seral stages are expected to occupy this stand. Such species include the olive-sided flycatcher for mid seral stands and the hermit warbler in more mature forests.

Harvest activities and the temporary reduction in over story canopy cover and understory vegetation cover would be expected to cause a reduction in the numbers of mollusks locally by resulting changes in site micro-climate and available refuge habitat. The project design features incorporated into the proposed action would reduce these changes in refuge habitat and microclimate by providing non-treated reserves or buffers (Design feature 17) adjacent to the following: 2 designated locations of *Megomphix hemphilli*, 2 designated locations of *Prophysaon dubium*, and one location of *Prophysaon coeruleum*; and by providing for the retention of legacy trees, snags, hardwoods, and down woody material (Design features 6, 7, and 8). Recent surveys have begun to reveal that these mollusk species populations are more abundant within their range and resilient to changes in environmental conditions than previously thought. Populations have continued their presence after recent regeneration harvest and within young harvest plantations where extreme changes in habitat and abrupt changes in microclimate have occurred. The mollusk populations are expected to continue their presence in the long term within the project area with the occurrence of the proposed action and the incorporated design features.

SNAGS / DOWN WOODY DEBRIS / FUELS

Herbaceous, fungal, and bryophyte diversity would be maintained by retention of snags and existing down logs, within the treatment area. The increase in large down woody material in the regeneration harvest area, along with the retention of existing down logs and snags, would provide a number of ecosystem functions, including habitat for many species, moisture retention, nutrient retention and cycling. These effects would contribute to long term site productivity (Design features 6, 7 and 8). The non-harvested areas in Alternative 1 would have down wood affects similar to the no-action Alternative 2 except there may be some increased exposure to wind to residual trees along the edges of the harvest unit causing an increased potential for some windblow of trees in these areas. This would create additional down wood in these edge areas.

In the proposed regeneration harvest areas, the present fuel loading would initially increase from an approximate average of 12.9 tons per acre to a post harvest level of approximately 28.9 tons per acre. The increased fuel loading would be reduced in the regeneration harvest area by means of excavator piling/handpiling, covering, and burning to facilitate planting and reforestation.

SOCIAL-ECONOMIC

The regeneration harvest would provide immediate commodities to the public. The proposed action would support the Eugene District regeneration harvest and intermediate harvest commitment levels for Fiscal Year 1999 by harvesting approximately 3.2 MMBF. Timber would be supplied for the benefit of the economy and timber receipts would benefit the County and services provided to communities.

C. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE 2 (NO ACTION)

VEGETATION

The no action alternative would have no immediate direct effects to the existing forest vegetation and would allow continued stand development. By not regeneration harvesting the proposed project area within the Matrix (GFMA) land use allocation the present stands would continue to function and grow older. Due to their location within the Matrix (GFMA) land use allocation these units would likely be regeneration harvested at a later date.

The untreated forest within the Riparian Reserve, would develop slowly into mature and late-successional forest as described in Alternative 1.

BOTANICAL RESOURCES

The "No Action" Alternative 2 would have no direct effect on botanical resources. The no action alternative would allow for the continuation of a mid-seral forest condition within the upland matrix with its associated botanical species.

SOILS

The “No Action” Alternative would have no direct effect on soil resources.

AQUATIC AND RIPARIAN RESOURCES / FISHERIES

The untreated upland and Riparian Reserve would protect streambanks, provide shade, and would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for fisheries and to the protection of riparian and aquatic resources. This Alternative would have no risk of contributing sediment to the stream channels and would maintain current stream flow patterns (low and peak flows).

WILDLIFE

The “no action” alternative would not modify dispersal habitat for the northern spotted owl both in the upland Matrix and Riparian Reserve. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated benefits to late-successional dependent species would occur slowly

through natural disturbances and forest succession over time. Species preferring mid-successional coniferous forests and edge habitat such as the olive sided flycatcher, would be expected to continue to occupy the upland project area until the stand is regeneration harvested. As the Riparian Reserve stand matures, species more associated with later seral stages are expected to occupy this stand. Such species include the hermit warbler. There would be no effect to mollusk species with the "no action" alternative.

SNAGS / DOWN WOODY DEBRIS / FUELS

The contribution of down wood and the development of future large snags and down wood would be entirely dependent on natural disturbances and suppressed mortality that would occur slowly over time. Fuel loading would increase with the increase in down wood from smaller trees due to natural disturbances and suppressed mortality.

SOCIAL-ECONOMIC

Commodities provided to the public through regeneration harvest of the proposed project area would not occur. Timber to benefit the economy and timber receipts that would benefit the County would not be realized unless an alternative harvest area is provided. Alternative areas may have environmental effects that exceed those of this proposal.

D. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE 3

This alternative would remove an estimated 1.3 MMBF from approximately 34 acres of regeneration harvest from an area that was commercial thinned from approximately 1984-1987. This alternative would require approximately 5,545 of road improvement to the 17-7-35 road (1,320 feet less than Alternative1) as shown on the EA map. Survey and Manage and Protection Buffer species requirements would vary by Alternative and are addressed in the "Affected Environment section of the EA". All other project design features would be similar to those proposed for Alternative 1.

VEGETATION

The direct and indirect effects within the upland matrix area to be harvested would be similar to those forest and vegetation effects described in the Proposed Action, Alternative 1, except there would be approximately 53 less acres of regeneration harvest in the upland with this alternative affecting less forest and vegetation. The forest and vegetation in those areas of the upland Matrix not treated would develop similar to the No-action Alternative.

The Riparian Reserve forest and vegetation with this alternative would develop similar to Alternatives 1 and 2 (as described in Alternative 1).

BOTANICAL RESOURCES

The Alternative 3 action would have no effect upon federally listed threatened or endangered plants similar to Alternatives 1 and 2. Survey and Manage Component 1 and 3, and Protection Buffer species known to occur within the project area as described in *Section IV, Affected Environment* of the EA would be less impacted by this alternative than Alternative 1 due to the smaller area harvested and the smaller number of Survey and Manage and Protection Buffer Species sites located within the treatment area (Alternative 1 contains 8 sites; and Alternative 3 contains 5 sites in the treatment area). Alternative 3 would have similar but less impact overall than Alternative 1 to botanical resources currently present due to less area harvested in the upland Matrix. Alternative

3 would have similar effects to Alternatives 1 and 2 relative to botanical resources occurring in the Riparian Reserve.

SOILS

The Alternative 3 action and associated management practices would not cause soil compaction capable of impairing overall stand growth, long term productivity or the hydrologic behavior of the treatment area similar to Alternatives 1 and 2. Sufficient litter, logging debris and down logs would be retained to maintain soil organic material, soil organisms and nutrient levels. There are no slope stability concerns within the treatment area. Alternative 3 would have similar but less effects to the soil than Alternative 1 in the upland Matrix due to less acres harvested. Alternative 3 would have the same affect to soils within the Riparian Reserve as Alternative 1 and 2 since all alternatives have no treatments within the reserves.

AQUATIC AND RIPARIAN RESOURCES / FISHERIES

There are currently no proposed or listed fish species in the project area. The Riparian Reserve would remain untreated to protect riparian, aquatic, fisheries and wetland associated resources.

In-Stream Structure and Stream Function

The untreated Riparian Reserve would protect streambanks, provide shade, and would contribute to maintaining current water quality and conditions of riparian and aquatic functions similar to Alternatives 1 and 2.

Stream Flows

The Alternative 3 regeneration harvest would show only a small increase in low flows similar to Alternative 1 since the residual trees would use the increase in available water.

Rain on Snow Events and Peak Flows

As described in Alternative 1, there is a chance that there could be an increase in flows from a ROS event during the time this stand is returning to hydrologic maturity, but it is not very likely. In the event a rain on snow event did occur, the Alternative 3 regeneration harvest would have less of an effect on peak flows than the Alternative 1 regeneration harvest due to less acres treated. There would be no increases in the drainage density from road construction therefore there would be no increase in peak flows from roads similar to Alternative 1.

Roads and Stream Sediment

The direct and indirect effects due to roads with Alternative 3 would be very similar to Alternative 1 since both alternatives would use approximately the same road system and would require the same amount of road construction. Alternative 3 would have 1,320 feet less road improvement to the existing ridgetop17-7-35 road than Alternative 1. All proposed road construction and road improvements within the project area would have no potential to deliver flow or sediment to stream channels or impact aquatic resources in the short or long term. Alternative 3, like Alternatives 1 and 2, would not cause any short or long-term contribution of sediment to streams.

WILDLIFE

The direct and indirect effects with Alternative 3 would be similar to Alternative 1, except there would be less of a reduction of dispersal habitat. There would be a 34 acre reduction of dispersal habitat with Alternative 3. Consultation with the U.S. Fish and Wildlife Service was completed on October 23, 1998 with the submission of the Biological Opinion for 1999 habitat modification projects. According to Eugene District's Biological

Assessment for habitat modifying projects for fiscal year 1999, this proposed project would “Affect, but is Not Likely to Adversely Affect” the northern spotted owl due to loss of dispersal habitat within the unit. After treatment, there would still be approximately 80% of federal lands remaining in a dispersal condition within that quarter township. Alternative 3 would have a *"No Affect"* on the marbled murrelet and other federally listed/proposed terrestrial species.

The direct and indirect effects to mollusk with Alternative 3 would be similar to those described in the Proposed Action, Alternative 1. Both *Megomphix hemphilli* and *Prophysaon dubium* would be affected the same by both Alternatives 1 and 3. However, *Prophysaon coeruleum* would be potentially more impacted by Alternative 1 than Alternative 3 due to more un-buffered sites within Alternative 1. Alternative 2 would have no Survey and Manage mollusk sites affected due to its no-action proposal within the project area.

SNAGS / DOWN WOODY DEBRIS / FUELS

The harvest areas in Alternative 3 would have similar down wood and snag affects to the harvested areas described in Alternative 1. Herbaceous, fungal, and bryophyte diversity would be maintained by retention of snags and existing down logs, within the treatment area. The increase in large down woody material in the regeneration harvest area, along with the retention of existing down logs and snags, would provide a number of ecosystem functions, including habitat for many species, moisture retention, nutrient retention and cycling. These effects would contribute to long term site productivity. The non-harvested areas in Alternative 3 would have down wood affects similar to the no-action Alternative 2 except there may be some increased exposure to wind to residual trees along the edges of the harvest unit causing an increased potential for some windblow of trees in these areas. This would create additional down wood in these edge areas.

With the Alternative 3 regeneration harvest, the present fuel loading would initially increase from an approximate average of 12.9 tons per acre to a post harvest level of approximately 28.9 tons per acre. The increased fuel loading would be reduced in the regeneration harvest area by means of excavator piling/handpiling, covering, and burning to facilitate planting and reforestation. Alternative 3 would have less acres of harvest than Alternative one reducing the fuel-loading in those areas not harvested compared to Alternative 1.

SOCIAL-ECONOMIC

The Alternative 3 regeneration harvest would provide immediate commodities to the public. The Alternative 3 action would support the Eugene District regeneration harvest and intermediate harvest commitment levels for Fiscal Year 1999 by harvesting approximately 1.3 MMBF (1.9MMBF less than Alternative 1). Timber would be supplied for the benefit of the economy and timber receipts would benefit the County and services provided to communities.

VI. CUMULATIVE EFFECTS

A CUMULATIVE EFFECTS OF ALTERNATIVE 1- PROPOSED ACTION

This analysis incorporates the analysis of cumulative effects in the *USDA Forest Service and USDI Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, February 1994, (Chapter 3 & 4)* and in the *Eugene District Proposed RMP / EIS November, 1994 (Chapter 4).* These

documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives in this proposed action would have cumulative effects on resources beyond those effects analyzed in the above documents. The following section supplements those analyses, providing site-specific information and analysis particular to the alternatives considered here.

VEGETATION

The current vegetation pattern within the Wildcat Watershed has been described in the existing environment. The Wildcat watershed contains approximately 34,902 acres. Approximately 13,990 acres (40 percent) of the Wildcat Watershed is managed by the BLM. The pattern of the current landscape in the Wildcat watershed is largely influenced by the checkerboard ownership pattern.

The proposed Badger One timber sale would contribute to an increase in early seral habitat (approximately 87 acres) within the BLM Matrix land use allocation of the watershed, however, with the implementation of the Northwest Forest Plan, there would be an increase in mature and old forest habitat within the watershed over time as the LSR and Riparian Reserves mature and develop. Approximately 74 percent of the BLM ownership within the watershed is being managed toward a late-successional condition. Approximately 29 percent of the forests in the watershed are being managed toward a late-successional condition. *(Wildcat Watershed Analysis, 1999)*.

Within the Wildcat Watershed, BLM has developed several timber sales since the implementation of the Northwest Forest Plan. BLM sold the No-Bul timber sale (89 acres of regeneration harvest) in 1996. D-Line thinning (93 acres) was sold in 1997 and Bulmer Creek Thinning (93 acres) was sold in 1995. D-Line thinning is located within the Matrix LUA of both the Wolf Creek and Wildcat Creek Watersheds. The No-Bul timber sale and the Bulmer Creek Thinning were both located within the Matrix LUA of the Wildcat Watershed.

Future planned sales within the Wildcat Watershed in addition to this proposed action include the Nelson Way Timber Sale which includes approximately 146 acres of thinning and 160 acres of regeneration harvest within the Matrix (GFMA) land use allocation of lthe Watershed to be sold in FY 2000.

BOTANICAL RESOURCES

The Proposed Action, Alternative 1, would have no cumulative effect upon federally listed threatened or endangered plants. Survey and Manage Component 1 and 3, and Protection Buffer species are known to occur within the project area as described in *Section IV, Affected Environment* of the EA. The Survey and Manage and Protection Buffer reserve areas within the proposed action, together with the Riparian Reserves and LSR across the watershed would maintain and contribute to the long term continued presence and viability of these Survey and Manage and Protection Buffer species populations throughout the project area and watershed. These species would be managed in accordance with the District management strategy developed for these species over time incorporating adaptive management as more information becomes known for these species.

SOILS

The proposed action and associated management practices would not cumulatively impair overall stand growth, long term productivity, or impact aquatic resources.

AQUATIC AND RIPARIAN RESOURCES / FISHERIES

The proposed action would contribute to the cumulative process of riparian recovery within the Wildcat Creek Watershed over the long term by maintaining untreated Riparian Reserves adjacent to Salt Creek and its tributaries to protect streambanks, and to provide shade. This would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for fisheries and to the protection of riparian and aquatic associated resources.

WILDLIFE

Locally the proposed action would contribute to a reduction in northern spotted owl dispersal habitat. Within the context of the landscape, a network of Late-successional Reserves (LSRs) and Riparian Reserves have been designated to maintain and enhance late-successional forests habitat for late-successional forest-dependent species, including the northern spotted owl. With the implementation of the Northwest Forest Plan, there would be an increase in mature and old forest habitat within the watershed over time as stands within the LSRs and Riparian Reserves mature and develop. This network of LSRs and Riparian Reserves, would enhance dispersal and a sustainable and intermixing population of owls. (Refer to the vegetation section of the cumulative analysis for the percent of the watershed being managed toward a late-successional forest condition). No impacts are expected to occur to the marbled murrelet or its habitat as the proposed treatment area does not currently provide suitable murrelet habitat.

The Survey and Manage mollusk reserve areas within the proposed action , together with the Riparian Reserves and LSR across the watershed would maintain and contribute to the long term continued presence and viability of these mollusk species populations throughout the project area and watershed. These species would be managed in accordance with the District management strategy developed for these species over time incorporating adaptive management as more information becomes known for these species.

SNAGS/ DOWN WOODY MATERIAL/ FUELS

The proposed action would contribute to the maintenance of snag and down wood habitat levels within the watershed over the long term (Design features 6 ,7 and 8). The maintenance of large down woody material within the watershed (LSRs and Riparian Reserves), along with the retention of existing down logs and snags, would provide a number of ecosystem functions, including habitat for many species, moisture retention, nutrient retention and cycling. These effects would contribute to the cumulative long term productivity of the watershed.

SOCIAL-ECONOMIC

This proposed action would have a cumulative impact of providing more commodities (i.e. lumber) to the public over time while maintaining a sustainable supply of timber through time. Timber to benefit the economy and timber receipts that would benefit the County would increase.

B. CUMULATIVE EFFECTS OF ALTERNATIVE NO. 2 - NO ACTION

VEGETATION

The no action alternative would have no immediate direct cumulative effects to the existing forest vegetation and would allow continued stand development. By not regeneration harvesting the proposed project area within

the Matrix (GFMA) land use allocation the present stands would continue to function and grow older. Due to their location within the Matrix land use allocation these units would likely be regeneration harvested at a later date. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated species would occur slowly through natural disturbances and forest succession over time.

BOTANICAL RESOURCES

The No-action, Alternative 2 would have no cumulative effect upon federally listed threatened or endangered plants. Survey and Manage Component 1 and 3 species and Protection Buffer species are known to occur within the project area as described in *Section IV, Affected Environment* of the EA. The No-action, Alternative 2, together with the Riparian Reserves and LSR across the watershed would maintain and contribute to the long term continued presence and viability of these Survey and Manage and Protection Buffer species throughout the project area and watershed. These species would be managed in accordance with the District management strategy developed for these species over time incorporating adaptive management as more information becomes known for these species.

SOILS

The “No Action” Alternative would have no cumulative impacts to soils affecting overall stand growth, long term productivity, or aquatic resources.

AQUATIC AND RIPARIAN RESOURCES / FISHERIES

The “No-Action”, Alternative 2, would contribute to the cumulative process of riparian recovery within the Wildcat Creek Watershed over the long term by maintaining untreated Riparian Reserves adjacent to Salt Creek and its tributaries to protect streambanks, provide shade. This would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for fisheries and to the protection of riparian and aquatic associated resources.

WILDLIFE

The “No Action” Alternative 2 would not modify dispersal habitat for the northern spotted owl both in the upland Matrix and Riparian Reserve. The forested area would continue to contribute cumulatively to dispersal habitat within the watershed and across the landscape until such a time as it receives a regeneration harvest within the Matrix LUA. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated benefits to late-successional dependent species would occur slowly through natural disturbances and forest succession over time contributing to a cumulative increase in late-successional forest habitat and connectivity of late-successional forest habitat across the watershed. Wildlife species associated with the current habitat conditions would persist under the present stand conditions but would see changes dependent upon future stand characteristics, disturbances, and type of management over time as described in the direct and indirect affects.

Species preferring mid-successional coniferous forests and edge habitat such as the olive sided flycatcher, would be expected to continue to occupy the upland project area until the stand is regeneration harvested. As the Riparian Reserve stand matures, species more associated with later seral stages are expected to occupy this stand. Such species include the hermit warbler. The mollusk populations are expected to continue their presence in the long term within the project area and watershed with the “no action” alternative.

SNAGS/ DOWN WOODY MATERIAL/ FUELS

The contribution of down wood and the development of future large snags and down wood would be entirely dependent on natural disturbances (i.e. wind) and suppressed mortality that would occur slowly over time. LSR and Riparian Reserves would contribute to cumulative increase in snags, down wood and fuel loading across the landscape as the forest within these reserves age and move through succession.

SOCIAL-ECONOMIC

The "No Action" Alternative 2, would have a cumulative effect of providing less commodities (i.e. lumber) to the public over time. Vigor and growth of the stand through time would be reduced. This would result in an decrease of commodities over time. Timber to benefit the economy and timber receipts that would benefit the County would decrease.

C. CUMULATIVE EFFECTS OF ALTERNATIVE 3

The cumulative effects of Alternative 3 would be similar to those cumulative effects described in the Proposed Action, Alternative 1, except Alternative 3 would provide a smaller treatment area (53 acres less regeneration harvested acres) with a corresponding decrease in the commodities (i.e. lumber) provided to the public compared to Alternative 1. Timber to benefit the economy and timber receipts that would benefit the County would be less than those provided by Alternative 1.

VII EFFECTS ON AQUATIC CONSERVATION STRATEGY (ACS) OBJECTIVES

PROJECT AREA

The proposed regeneration harvest project, Badger One, occurs in the upland General Forest Management Area (GFMA) of the Matrix land use allocation in the Wildcat Watershed. Watershed analysis has been completed for the Wildcat Watershed. The Wildcat Watershed is not a key watershed. The proposed action and alternatives would maintain and restore riparian conditions by protecting present structural features of the riparian currently present.

There are currently no proposed or listed fish species nor fishbearing tributaries within the immediate project area. An upper tributary of Salt Creek flowing through the east portion of the project area (protected by untreated Riparian Reserves) has a moderate gradient with rapids, riffles, and glides with moderate to high amounts of logs, woody debris, silt, sand, and bedrock. This upper tributary contains falls with steep gradients at its lower reach making it impassible to fish. This same tributary enters Salt Creek approximately ½ mile further downstream south to southwest of the proposed treatment area. Although Salt Creek has cutthroat trout present and suitable habitat for coho, it is currently blocked to migratory fish by a downstream culvert near its junction with Wildcat Creek. Coho within the Coastal Coho Ecologically Significant Unit (ESU), currently listed as threatened, are found in Wildcat Creek over a mile downstream from the project area.

The proposed treatment area is approximately 87 acres. No action would occur within Riparian Reserve. The project area is comprised of a uniform second growth Douglas-fir stand approximately 63-68 years old . The west and northeast portions of the proposed project area were commercially thinned from approximately 1984 to 1987.

The current over story stand density is approximately 100-110 trees per acre (TPA). Tree species diversity is low with only occasional bigleaf maple, western redcedar, and chinquapin oak (generally overtopped) within the Douglas-fir stand. A few areas within the stand contain many small western hemlocks.

The untreated Riparian Reserve would protect streambanks, provide shade, and would contribute to maintaining current water quality, water temperature, and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for downstream fisheries within Salt Creek and the water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.

ACS OBJECTIVE 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.

All alternatives addressed in this EA would contribute to the cumulative process of riparian recovery within the Wildcat Creek Watershed over the long term by maintaining untreated Riparian Reserves to the non fish-bearing, upper headwater tributaries of Salt Creek approximately 210 feet each side of the stream.

There are currently no proposed or listed fish species in the immediate project area. An upper tributary of Salt Creek flowing through the east portion of the project area (protected by untreated Riparian Reserves) has a moderate gradient with rapids, riffles, and glides with moderate to high amounts of logs, woody debris, silt, sand, and bedrock. This upper tributary contains falls with steep gradients at its lower reach making it impassible to fish. This same tributary enters Salt Creek approximately ½ mile farther downstream south to southwest of the proposed treatment area. Although Salt Creek has cutthroat trout present and suitable habitat for coho, it is currently blocked to migratory fish by a downstream culvert near its junction with Wildcat Creek. Coho within the Coastal Coho Ecologically Significant Unit (ESU), currently listed as threatened, are found in Wildcat Creek over a mile downstream from the project area.

Although large conifer development would not be hastened, all alternatives meet this ACS objective by leaving all Riparian Reserves intact and fully buffered with no treatment. All alternatives would maintain or restore riparian conditions by protecting structural features of the riparian currently present. No actions, including road construction and harvesting would occur within these Riparian Reserves.

All harvesting is consistent with the management guidelines of the Eugene District RMP concerning riparian connectivity, the 15% retention requirement of late-successional forests within the watershed, and terrestrial habitat requirements. All the alternatives leave the forested stands within the riparian areas intact allowing the future development of mature and late-successional forest habitat over the long term within the Riparian Reserve. All the alternatives leave the current late-successional habitat (i.e. $\geq$ 80 years) within the Wildcat watershed intact. The development of late-successional habitat within the Riparian Reserves and Late-Successional Reserves within the watershed would maintain and restore the distribution, diversity and

complexity, of watershed and landscape-scale features and would contribute to long term cumulative recovery

ACS OBJECTIVE 2

Maintain
longitudinal, and drainage network connections include flood plains, wetlands, upslope areas, tributaries, and intact refugia. These network connections must provide chemically and
aquatic and riparian-dependent species.

All alternatives addressed in
buffered with no treatment. The established Riparian Reserves within the project area would maintain the current of connectivity within and between watersheds, although large conifer development within the Riparian Reserve
project area. There are no fisheries refugia within the Wildcat Watershed. None of the alternatives would

All new road construction proposed within the alternatives occurs in the upland outside of the Riparian Reserves, the current connectivity for aquatic or riparian dependent species. All new road construction would be
removal of rock (if present) and subsoiling after completion of the regeneration harvest.

Gating
miles of currently existing road.

Maintain and restore the physical integrity of the aquatic system, including shorelines, banks,

All
shorelines, banks, and bottom configurations by limiting all actions including harvesting and road construction the upland outside of the Riparian Reserves. Felling of trees in the upland would occur directionally away from the
Reserve would protect streambanks and upslope stability within the riparian and would maintain current shaded

There are no slope stability concerns within the upland treatment area. All alternatives and their associated practices would not cause soil compaction capable of impairing overall stand growth, long term productivity

would be no new stream crossings, and no drainage network extensions due to new road construction and road improvement within Alternatives 1 and 3. (Alternative 2 is the no-action alternative).

ACS OBJECTIVE 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.***

The untreated Riparian Reserve (approximately 210 feet each side of the upper non-fishbearing tributaries of Salt Creek) with all alternatives proposed would protect streambanks, provide shade, and would contribute to maintaining current water quality, water temperature, and conditions of riparian and aquatic functions in these streams. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for downstream fisheries within Salt Creek approximately ½ mile from the proposed project area and the water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. No short or long-term contribution of sediment would occur with the implementation of the proposed action or alternatives.

All proposed new road construction and road improvements would occur outside the Riparian Reserve and would have no potential to deliver flow or sediment to stream channels or impact aquatic resources in the short or long term. There would be no new stream crossings. There would be no increases in the drainage density from road construction, therefore there would be no increase in peak flows from roads.

ACS OBJECTIVE 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.***

All alternatives addressed in this EA meet this ACS objective by leaving all Riparian Reserves intact and fully buffered with no treatment. The untreated Riparian Reserve would protect streambanks and side-slopes, retaining vegetation and slope stability and the associated protection from stream sedimentation. No short or long-term contribution of sediment would occur with the implementation of the proposed action or alternatives.

All proposed road construction and road improvements are within the upland outside of the Riparian Reserve and have no hydrologic connection to the stream network. There would be no new stream crossings. All proposed new road construction and road improvements would occur outside the Riparian Reserve and would have no potential to deliver flow or sediment to stream channels or impact aquatic resources in the short or long-term. All surface flows and related sediment from existing and new constructed roads within the project area would be routed and infiltrated into the adjacent heavily vegetated side slope soils within the upland.

new road construction (Spurs A, B an C) would be purchasers option to rock and temporary. These spurs would
harvest.

There
management practices would not cause soil compaction capable of impairing overall stand growth, long term

the 17-7-35 Segment A road in the upland would be rocked to allow for winter logging and to further prevent

ACS OBJECTIVE 6

and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland
magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

All
The proposed regeneration harvest under Alternatives 1 and 3, would cause only a small increase in low flows
the residual trees within the reserves and treatment area would use the increase in available water. There would
of sediment would occur with the implementation of the proposed action or alternatives.

All
have no potential to deliver flow or sediment to stream channels or impact aquatic resources in the short or long-
There would be no new stream crossings. There would be no increases in the drainage density from road construction therefore there would be no increase in peak flows due to roads. All surface flows and related
from existing and new constructed roads within the project area would be routed and infiltrated into the adjacent heavily vegetated side slope soils within the upland.

project area ranges in elevation from 1400 to 1700 feet in elevation. An increase in flows related to a rain on snow (ROS) event within this elevation range of the Coast Range is not very likely.

Maintain and restore the timing, variability, and duration of floodplain inundation and water table

All streams adjacent to the treatment areas are small headwater streams lacking in flood plain development.
alternatives addressed in this EA meet this ACS objective by not altering existing patterns of floodplain inundation
and stream channel conditions downstream from the project area.

ACS OBJECTIVE 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 distributions of coarse woody debris sufficient to sustain physical complexity and stability.

All alternatives addressed in this EA meet this ACS objective by maintaining untreated Riparian Reserves, thus maintaining existing plant communities. Habitat for riparian related species would not be changed. Riparian vegetation would continue to maintain shading and bank stability. All the alternatives leave the forested stands within the riparian areas intact allowing the future development of mature and late-successional forest habitat over the long term. The development of this late-successional habitat would contribute to long term cumulative recovery of the riparian and aquatic conditions within the Wildcat Watershed.

ACS OBJECTIVE 9

Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

All alternatives addressed in this EA meet this ACS objective by retaining an untreated Riparian Reserve (approximately 210 feet each side of the upper non-fishbearing tributaries of Salt Creek), thus enhancing connectivity and habitat conservation for organisms that are dependent on the transition zone between upland and riparian areas. The tributaries adjacent to the treatment area lack suitable fish habitat and are not accessible to anadromous nor resident salmonids. The untreated Riparian Reserve should provide adequate protection to riparian dependent plants and animals. All alternatives would keep the existing Riparian Reserve intact to develop into mature and late-successional habitat in the long term improving travel and dispersal corridors for many terrestrial animals and plants, and contributing to a network of connectivity corridors among the Late-Successional Reserves within the watershed and between watersheds.

VIII. MITIGATION MEASURES

Surveys for the 32 species listed in the Schedule Change EA will begin if technical feasibility problems are solved. If it is determined by species experts that survey feasibility issues have been resolved throughout the suspected range of any of the 32 species, and if a letter of direction is received prior to issuance of a Decision Record, surveys and appropriate management actions would be implemented.

IX. CONSULTATION AND COORDINATION

A. PROJECT DEVELOPMENT

The proposed action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists:

BLM Soil Scientist
BLM Forest Ecologist
BLM Engineer
BLM Fuels Specialist
BLM Archaeologist
BLM Silviculturist
BLM Timber Manager
BLM T & E and Wildlife Biologist
BLM Fisheries Biologist
BLM ARD/GIS Specialist
BLM Botanist
BLM Recreation Planner - Visual Resources
BLM Planning and Environmental Coordination
BLM Hydrology

)

to the Endangered Species Act, formal consultation was completed with the Fish and Wildlife Service

and Wildlife Service
Eugene District's Biological
" *Affect, but is Not Likely to Adversely Affect"* Northern spotted owl due to loss of dispersal habitat within unit. After treatment, there would still be approximately 80% of federal lands remaining in a dispersal within that quarter township. This proposal would have a on the marbled murrelet and other

NATIONAL MARINE FISHERIES SERVICE (NMFS)

the Endangered Species Act, consultation will be conducted with the National Marine Fisheries Service the Proposed Action on coho salmon ( ) by applying the standards

which includes a non-jeopardy determination, has been received. The sale was designed to follow the guidance the Eugene District Resource Management Plan which incorporates the ACS objectives within the Northwest Plan, and to incorporate mitigation identified in the consultation on previous listed salmonids, as Because the United States retains the right to reject any and all bids for any reason, the mere of the sale does not make any irreversible or irretrievable commitment of resources which have the of foreclosing the formulation or implementation of any reasonable and prudent alternative measures. If reasonable and prudent alternative measures or terms and conditions are prescribed during which would require alteration in the terms of the sale contract, the agency retains the discretion

CONFEDERATED TRIBES

Bureau of Land Management, Coast Range Resource Area consulted with the Confederated Tribes of Coos, Lower

environmental analyses process for the Fiscal Year 1998 and 1999 proposed timber sale program. A letter was sent on September 24, 1997. No response was received.

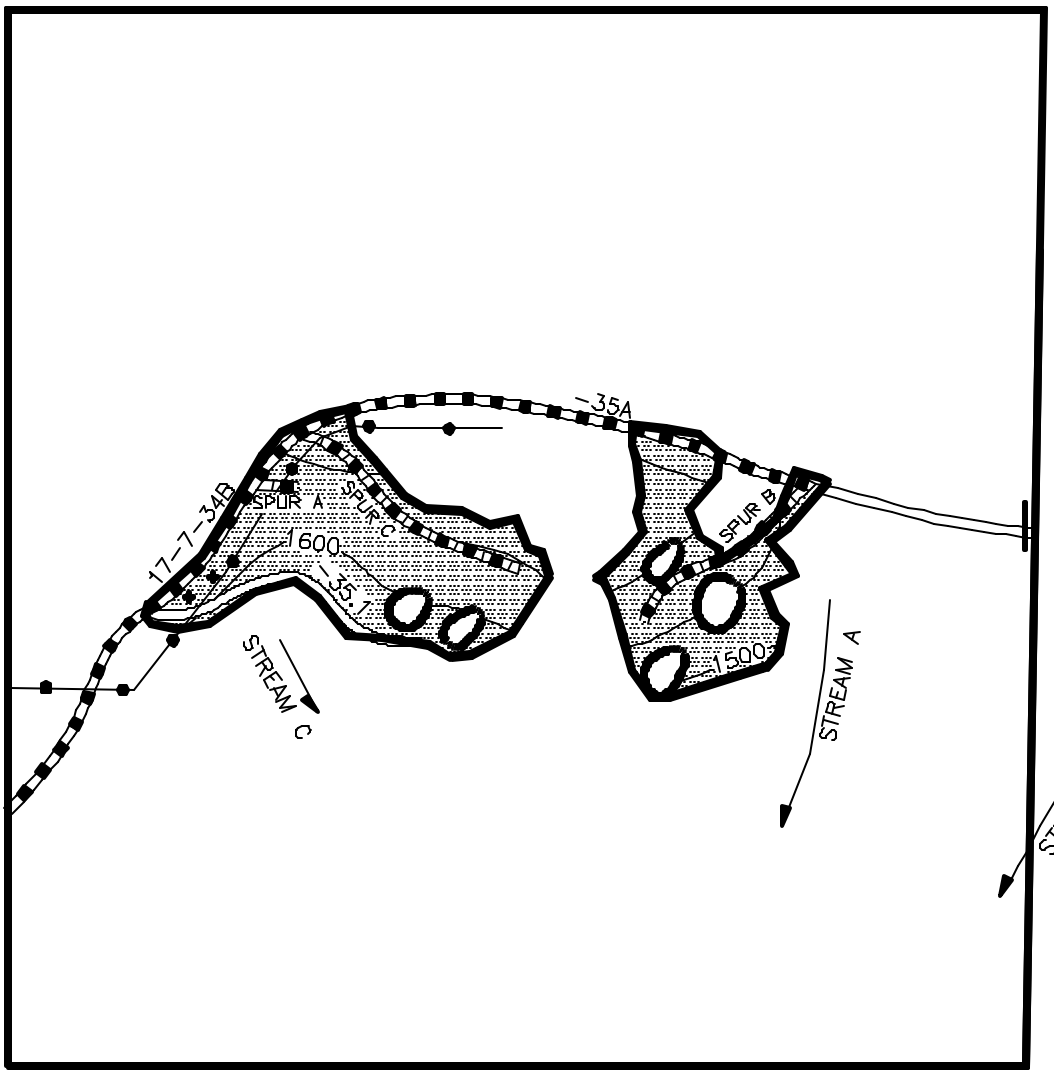
The Bureau of Land Management, Coast Range Resource Area also consulted with the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians on June 4, 1998 seeking cultural information as part of the Wildcat Watershed Analysis. A response was received on June 11, 1998 concerning cultural resources within the watershed.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BADGER ONE EA MAP

ALTERNATIVE 3

T. 17S. , R. 7W , SEC. 35 , WILL. MER., EUGENE DISTRICT



SCALE: 1" = 1,000 FT.

LEGEND

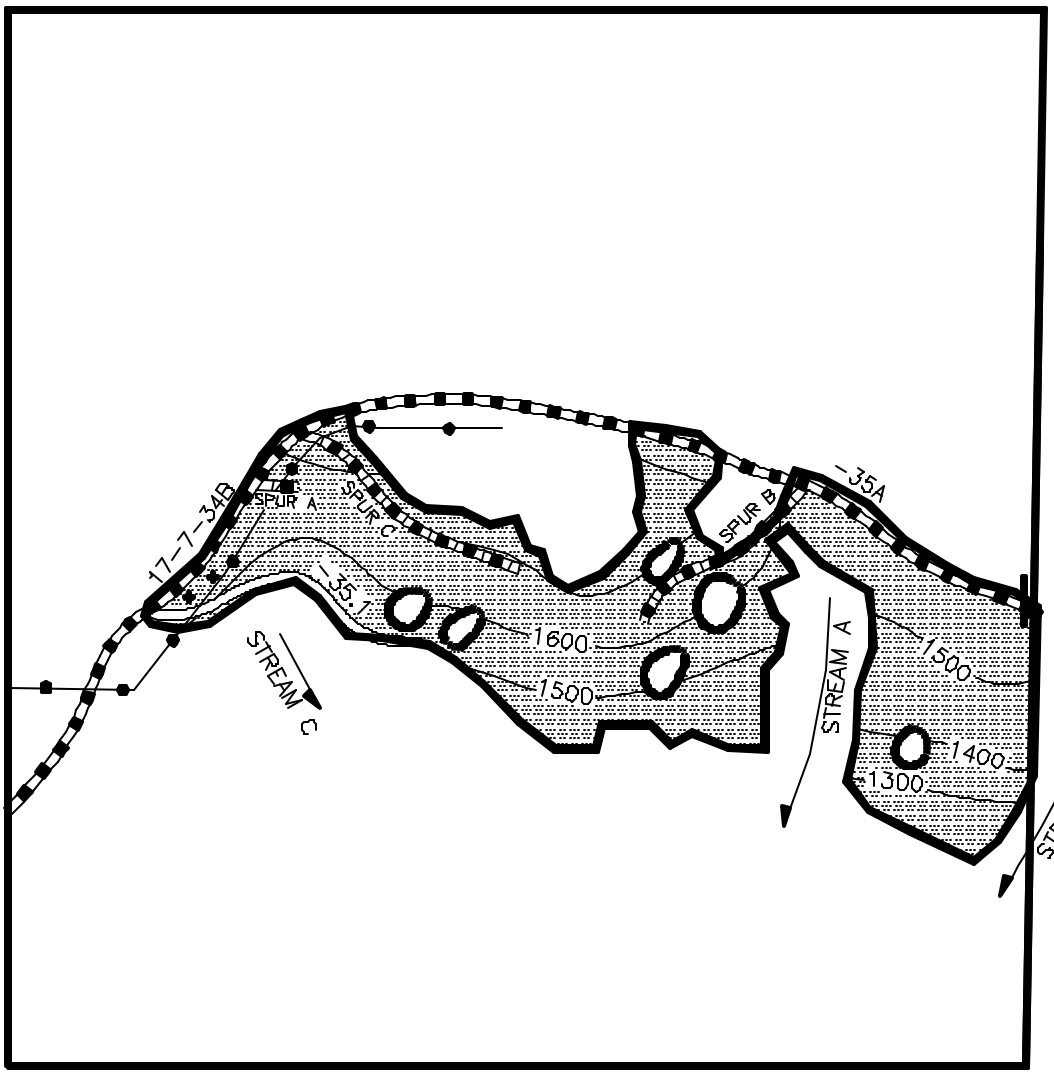
- TREATMENT AREA
- RESERVE AREA
- BARRICADE
- POWERLINE
- ROAD TO BE CONSTRUCTED
- ROAD TO BE IMPROVED
- EXISTING ROAD
- STREAMS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BADGER ONE EA MAP

PROPOSED ACTION

T. 17S. , R. 7W , SEC. 35 , WILL. MER., EUGENE DISTRICT



SCALE: 1" = 1,000 FT.

LEGEND

- TREATMENT AREA
- RESERVE AREA
- BARRICADE
- POWERLINE
- ROAD TO BE CONSTRUCTED
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- EXISTING ROAD
- STREAMS

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

Preliminary
Finding of No Significant Impact
for
Badger One Regeneration Harvest

Determination:

On the basis of the information contained in the Environmental Assessment, and all other information available to me, it is my determination that implementation of the proposed action or alternatives will not have significant environmental impacts beyond those 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) with which this EA is in conformance, and does not, in and of itself, constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.