

Flea Flicker
Fire Salvage

South River Field Office
Roseburg District
Bureau of Land Management

Environmental Assessment No. OR-105-04-06

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Table of Contents

Chapter 1

Purpose of and Need for Action

I.	Background.....	1
II.	Purpose.....	1
III.	Need for the Proposed Action.....	2

Chapter 2

Discussion of Alternatives

I.	Alternative One - No Action.....	4
II.	Alternative Two - Proposed Action	4
	Treatments.....	4
	Yarding/Hauling Operations.....	5
	Access	5
III.	Alternatives Considered but Eliminated From Detailed Study.....	5
A.	Regeneration Harvest of the Burned Areas	5
B.	Enlargement of Unit E with Additional Salvage	5
IV.	Resources that Would Remain Unaffected by Either Alternative	5

Chapter 3

The Affected Environment

I.	Public Safety	6
	Image 1 – Unit A Viewed from the Northeast.....	6
	Image 2 – Steep Slope in Unit C Directly Above Interstate Highway 5	7
II.	Timber/Vegetation	7
III.	Fish and Aquatic Habitat	8
A.	Aquatic Habitat Conditions.....	8
B.	Special Status Species.....	9
	1. Federally Threatened or Endangered	9
	2. Federal Candidate	9
	3. Bureau Sensitive	9
C.	Essential Fish Habitat	9
IV.	Water Quality/Resources	10
A.	Stream Flow	10
B.	Peak Flows	10
C.	Stream Temperatures	10
D.	Sediment	10
V.	Wildlife	11
A.	Special Status Species.....	11
	1. Threatened or Endangered	11
	2. Proposed or Candidate	12
	3. Bureau Sensitive	12
B.	SEIS Special Attention Species	13
VI.	Visual Resources.....	13
VII.	Cultural/Historical Resources	13

VIII.	Botanical Resources.....	14
IX.	Noxious Weeds	14

Chapter 4

Environmental Consequences

I.	Alternative One – No Action	16
A.	Public Safety	16
B.	Timber/Vegetation	16
	Image 3 Stand burned in 1987 Canyon Mountain fire that was not salvaged or reforested.....	18
C.	Fish and Aquatic Habitat	18
1.	Aquatic Habitat Conditions.....	18
2.	Special Status Species.....	19
3.	Essential Fish Habitat	19
II.	Alternative Two – Proposed Action	19
A.	Public Safety	19
B.	Timber/Vegetation	20
C.	Fish and Aquatic Habitat	20
1.	Aquatic Habitat Conditions.....	20
2.	Special Status Species.....	21
3.	Essential Fish Habitat	22
III.	Other Recently Implemented or Planned Federal Management Activities in the South Umpqua River Watershed and Middle Cow Creek Watershed.....	22
IV.	Monitoring	23

Chapter 5

	List of Agencies/Persons Contacted and Preparers	24
	References and Literature Cited.....	25

Appendix A - Salvage Marking Criteria and Guidelines

Appendix B - ODOT Communication Regarding Hazard Trees Along Interstate Highway 5

Appendix C – ODFW Aquatic Habitat Survey Results

Appendix D - Map of the Proposed Project Area

Appendix E - Critical Elements of the Human Environment

Chapter 1

PURPOSE AND NEED FOR ACTION

This chapter provides a brief description of the purpose and need for the proposed action being analyzed in this environmental assessment.

I. Background

In August of 2003, a series of fires were started alongside the southbound lanes of Interstate Highway 5 (I-5), south of the City of Canyonville, Oregon, by a malfunctioning vehicle which shot sparks into the dry vegetation along the freeway. The fires burned uphill through an Oregon Department of Transportation right-of-way onto lands administered by the Roseburg District, Bureau of Land Management (BLM). The Oregon Department of Transportation (ODOT) has expressed concerns to the BLM regarding the serious safety hazard that the dead and dying trees pose to southbound traffic on I-5.

II. Purpose

The South River Field Office of the Roseburg District, BLM proposes to prepare and offer for salvage harvest dead and dying timber, and other hazardous trees equivalent to an estimated 500,000 board feet or approximately 800 hundred cubic feet (CCF). The proposed salvage area encompasses approximately 30 acres in Sections 13, 14 and 23 of T. 31 S., R. 5 W., W.M.

The purposes for the proposed action are summarized as follows:

- Provide for public safety along I-5 by removing hazards posed by dead and dying trees.
- Maintain the health, diversity, and productivity of the public lands.
- Contribute to the timber harvest commitment for the South River Field Office by developing environmentally responsible commercial activities.
- Contribute toward the socioeconomic objects of the *Roseburg District Proposed Resource Management Plan/Environmental Impact Statement* (PRMP/EIS) by salvaging the economic value of the fire-killed timber

The lands comprising the project area are allocated to the General Forest Management Area (GFMA) land use allocation. The GFMA comprises a part of the Matrix designated in the *Roseburg District Record of Decision/Resource Management Plan* (USDI, BLM 19995a (ROD/RMP)). Management direction from the ROD/RMP (p. 33) specifies that most timber harvest and other silvicultural activities would be conducted in that portion of the Matrix with suitable forest lands.

This environmental assessment will serve to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). It will consider the short and long term environmental consequences of the proposed action and no action alternatives at the project level and sixth-field subwatershed level.

In the preparation of this analysis, recommendations from “Wildfire and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West” (Beschta et. al. 1995) and “The Biscuit Fire: Management Options for Forest Regeneration, Fire and Insect Risk Reduction and Timber Salvage” (Sessions et. al. 2003) were considered. Both of these reports addressed large-scale, landscape-level fire events. Recommendations would be incorporated into project design, where applicable, keeping in mind the small scale and unique safety issues involved in the proposed fire salvage.

III. Need for the Proposed Action

There is a need to mitigate safety concerns expressed by ODOT that are associated with the potential hazard of fire-killed and damaged trees falling onto the highway. (Lepschat Personal Communication 2003 Appendix B)

There is also a need to reduce the risk of bark beetle infestation and to pursue reforestation efforts, consistent with management objectives to maintain the health, diversity, and productivity of the public lands.

There is a need for the proposed salvage, in order to contribute to the Roseburg District’s declared objective for an annual allowable sale quantity (ASQ) of 45 million board feet (ROD/RMP, p. 8).

There is a need to meet management direction to “Provide for salvage harvest of timber killed or damaged by events such as wildfire, windstorms, insects, or disease consistent with management objectives for other resources.” (ROD/RMP, p. 60).

There is a need to recover the economic value before the timber decays. A stated objective of the PRMP/EIS (p. 2-41) is to “Plan and design forest management activities to produce a sustained yield of products to support local and regional economic activity. A diversity of forest products (timber and nontimber) will be offered to support large and small commercial operations and provide for personal use.”

Implementation of the proposed action would conform to management direction contained in the ROD/RMP, as amended by the *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (USDA, USDI 2001 p. 3).

The ROD/RMP incorporates the analysis contained in the *Roseburg District Proposed Resource Management Plan/Environmental Impact Statement* (USDI, BLM 1994 (PRMP/EIS)) which incorporates the analysis of environmental consequences contained in the *Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl* (USDA, USDI 1994a).

Management direction from the ROD/RMP incorporates the standards and guidelines of the *Record of Decision for Amendments (ROD) to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (USDA, USDI 1994b), otherwise known as the Northwest Forest Plan.

Chapter 2

DISCUSSION OF ALTERNATIVES

This chapter describes the basic features of the alternatives being analyzed in this environmental assessment

I. Alternative One – No Action

Under this alternative, trees located within the right-of-way determined by ODOT to constitute a safety hazard to traffic along I-5 would potentially be cut and removed. By nature of the terms of the right-of-way agreement (OR 01448), the BLM retains no discretion in this matter. The cut trees would be yarded downhill to the shoulder of the highway.

II. Alternative Two – Proposed Action

Under this alternative, hazard trees would be cut within the ODOT right-of-way. Additionally, dead and dying trees, and hazard trees would be cut in the areas burned within the General Forest Management Area. Trees considered to have a merchantable and recoverable value would be salvaged. Trees considered to pose a hazard but without a recoverable commercial value would be felled and retained on site as large woody debris.

Five Units have been delineated from which salvage and hazard tree removal would be implemented. They are: A – 20 acres; B – 1 acre; C – 4 acres; D – 1 acre; and E – 4 acres.

Treatments

In selecting the trees to be cut, factors to be considered would include: absence of live crown, percentage of crown scorch, percentage of cambial damage and height of bark charring. (Appendix A). All green trees predicted to survive within the burned areas would be reserved.

Riparian Reserves, 160-feet in width would be established on the intermittent streams in the project area. No trees would be salvaged from within these areas. Any trees within the Riparian Reserves identified as hazardous would be felled perpendicular to the slope, where possible, and remain on site.

Meeting management direction to provide snags sufficient to support species of cavity nesters at 40 percent of potential population levels (ROD/RMP, p. 34) would be accomplished in two manners. Dead and dying trees in Riparian Reserves, but outside of the highway right-of-way would be retained. It is also anticipated that many trees not meeting the criteria for salvage, at this point in time, will die in subsequent years and provide additional snags.

All existing Decay Class 3, 4 and 5 down woody debris would be reserved from salvage under contract provisions.

Yarding/ Hauling Operations

All yarding would be accomplished with a helicopter to reduce the potential for increased erosion on burned slopes, consistent with recommendations from the Beschta Report (p. 8) and the Sessions Report (p. 51). There would be no seasonal restriction on yarding. Service and log landings would be designated using existing turnouts, landings and junctions along BLM Road No. 31-5-15.0 where it passes through Sections 14 and 23.

Access

There would be no new road construction of either a temporary or permanent nature, consistent with recommendations from the Beschta Report (p. 9). Access would be provided by BLM Road Nos. 31-5-15.0, 32-5-17.0 and 32-5-20.0 which are either aggregate-surfaced or paved. Timber hauling would be restricted to the dry season, normally May 15 to October 15.

III. Alternatives Considered but Eliminated From Detailed Study

A. Regeneration Harvest of the Burned Areas

The total area burned on BLM administered lands is estimated to be 70 acres. Not all of these acres burned at a high intensity. Many pockets of green trees survived.

Since it was the intent of this project to only salvage dead and dying trees, or hazard trees, this alternative was eliminated from any further consideration because it would involve the harvest of green trees.

B. Enlargement of Unit E with Additional Salvage

There are approximately seven more acres above Unit E in the General Forest Management Area but outside the highway right-of-way

Salvage of additional trees from within this area was deemed uneconomical because of the small number and scattered nature of the trees that could be salvaged.

IV. Resources that Would Remain Unaffected by Either Alternative

The following resources would not be affected by either of the alternatives, because they are absent from the project area: Areas of Critical Environmental Concern (ACEC); prime or unique farmlands; floodplains; and Wild and Scenic Rivers. No Native American religious concerns, environmental justice issues, cultural resources, or solid or hazardous waste concerns were identified. No effect on the introduction or rate of spread of noxious weeds would be anticipated, as discussed in Chapter 3 of this document.

Chapter 3

AFFECTED ENVIRONMENT

This chapter summarizes the specific resources present or with the potential to be present within the project area, and that could be affected by the proposed action.

I. Public Safety

The areas that burned in August of 2003 are located above and adjacent to the southbound lanes of I-5. This highway is the major north/south route for travel and shipping on the West Coast, handling tens of thousands of motor vehicles daily. In 1999, ODOT projected average daily traffic at nearly 24,000 vehicles at a point approximately seven miles north of the fire area. The mountain slopes adjacent to the highway are steep, generally ranging from 60-80 percent.

Photograph 1 is a view of proposed Unit A, taken from the east side of Canyon Pass in September 2003, illustrating the steepness of the terrain adjacent to the highway. Since that time, there has been additional tree mortality as a result of the fire.

Image 1 – Units A, B and C Viewed from the Northeast





Image 2 – Steep Slope in Unit C Directly Above Interstate Highway 5

II. Timber/Vegetation

The fire-damaged stands are predominantly Douglas-fir with sugar pine, incense-cedar and grand fir comprising less than ten percent of the stems present. The larger, dominant trees were over 200 years old with the smaller understory trees approximately 100 years old.

Pacific madrone and canyon live oak are also present. These trees have begun re-sprouting from the base even though the above-ground portions of the trees were killed. Ground cover was completely burned off, but evergreen huckleberry, Oregon-grape, ocean spray, hazel, and poison oak have all begun to re-sprout.

The entire area in which the proposed salvage units are located was affected by the Canyon Mountain fire in 1987. The fire was lightning-caused with points of origin along the ridgetop. It was a low-intensity backing fire which under-burned the stands with little loss of overstory.

The 2003 fires began along the shoulder of the southbound lanes of I-5 and burned rapidly upslope resulting in a high-intensity fire which killed or severely damaged much of the dominant overstory. In Units A, D and E the fire was of a stand-replacement nature resulting in the death of many of the trees within the interior of the units. In Units B and C, fire intensity was much more variable resulting in the survival of many trees, interspersed with killed trees. To date there has been little evidence of any insect activity.

III. Fish and Aquatic Habitat

A. Aquatic Habitat Conditions

South Umpqua River 5th-Field Watershed

Canyon Creek flows alongside the northbound lanes of I-5, opposite the fire area, for several miles before joining the South Umpqua River near Canyonville, Oregon. Much of the stream was diverted into a concrete and rip-rap channel in association with the construction and maintenance of I-5.

Habitat surveys were conducted by the Oregon Department of Fish and Wildlife (ODFW) in 1995 (ODFW 1995 Appendix B). The availability of large woody debris (LWD) was found to be *poor*. The percentage of silt, sand and organics was rated *excellent*, and the percent of gravels was rated *good*. The number of stream pools was rated as *excellent*, but residual pool depth was found to be *poor*.

A visual inspection of conditions was conducted in November 2003. Across the highway from the fire area and immediately downstream, good fish habitat is present. Several deep pools were observed. Substrate is predominantly gravel and small cobble with little evidence of embedded sediment. There is very little LWD.

Middle Cow Creek 5th-Field Watershed

Fortune Branch is located in the Middle Cow Creek 5th-field watershed on the Medford District, BLM. The lower 3.6 miles of the proposed haul route for the fire salvage runs nearly parallel to Fortune Branch at a distance of 100 to 200 feet upslope of the creek. There is a single crossing over the main stream channel. The last 0.7 miles of the road is paved where it passes through rural, residential properties.

Habitat surveys were conducted by ODFW in 1996 (Appendix B). The availability of large woody debris (LWD) was found to be *poor*. The percentage of silt, sand and organics was rated *poor*, and the percent of gravels was rated *good*. The number of stream pools was rated as *good*, but residual pool depth was found to be *poor*.

A visual inspection was conducted in December 2003, along the portion of Fortune Branch that parallels the proposed haul route. The upper reaches have step-pool stream channel morphology with large substrate. There are few pieces of large wood in the main channel. Stream substrate is comprised of gravel and cobble with few fines. In the lower reaches of the stream, the channel has a pool/riffle composition with a wide, low gradient valley floodplain.

B. Special Status Species

Federally-Threatened or Endangered

The Oregon Coast coho salmon (*Oncorhynchus kisutch*) is listed as a threatened species under the Endangered Species Act (Federal Register 1998a, Vol. 63, No. 153). Coho salmon are present in Canyon Creek and Fortune Branch. Their distribution in Canyon Creek ends about one mile downstream from the proposed salvage units. In Fortune Branch, coho salmon are present from the mouth upstream and parallel to the haul route for about 2.0 miles.

Federal Candidate

The Oregon Coast steelhead trout (*O. mykiss*) is a candidate for threatened species listing. Its status is presently under review (Federal Register 1998b, Vol. 63, No. 53). Steelhead trout are found in both Canyon Creek and Fortune Branch. They inhabit Canyon Creek, across the highway from the project area, downstream and upstream. The distribution of steelhead trout in Fortune Branch extends for 1.5 miles above the limits for coho salmon.

Umpqua River cutthroat trout (*O. clarki clarki*) were previously listed as endangered (Federal Register 2000a, Vol. 65, No. 76) but later delisted when it was determined that they were not a distinct Evolutionary Significant Unit (ESU), but part of the Coastal cutthroat trout ESU. Jurisdiction was transferred from the National Marine Fisheries Service to the U.S. Fish and Wildlife Service in 1999 while its candidate status is under review (Federal Register 2000b, Vol. 65, No. 78). Cutthroat trout are believed to be present in the upper reaches of both Fortune Branch and Canyon Creek.

Bureau Sensitive Species

The Pacific lamprey (*Lampetra tridentata*) and the Umpqua chub (*Oregonichthys kalawatseti*) are both found on the Roseburg District. Pacific lamprey is an anadromous species that occupies the main rivers and lower reaches of main tributaries. The Umpqua chub is a freshwater species that would be restricted to the main-stem of the South Umpqua River. Neither species is considered likely in the project area.

C. Essential Fish Habitat

Essential Fish Habitat (EFH) is designated by the Magnuson-Stevens Fishery Conservation and Management Act of 1996 as habitat that is currently or was historically available to Oregon Coast coho and chinook salmon (*O. tshawytscha*) (Federal Register 2002 Vol. 67, No. 12). It is defined as “. . . those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The upper limit of coho EFH in Canyon Creek is approximately 0.4 miles downstream of the project area. In Fortune Branch, EFH for coho salmon is present in the lower 2.0 miles of the stream.

IV. Water Quality/Resources

A. Stream Flows

Precipitation in the project area occurs primarily as rain, though some may fall as snow. On average, 85 percent of the precipitation occurs between October and April. Summer months are characterized by extremely low base flows that generally result in headwater streams going dry.

B. Peak Flows

Potential increases in peak flows have been shown in association with timber harvest in the Transient Snow Zone (TSZ) (Harr and Coffin 1992). This may occur when snow accumulations in openings created by timber harvest are rapidly melted by warm rain-on-snow events. The Transient Snow Zone in southwestern Oregon has been identified as elevations above 3,000 feet (Greenberg and Welch 1998). The project area is located below the Transient Snow Zone and this potential effect would not be a concern.

Roads may also increase peak flows by extending the stream channel network, effectively concentrating run-off and delivering flow directly to the stream network (Beschta 1978, Wemple et al. 1996). No road construction would be undertaken under either alternative. As a consequence, no further discussion of potential enhancement of peak flows is necessary in this analysis.

C. Stream Temperature

Both Canyon Creek and Fortune Branch are included by the Oregon Department of Environmental Quality on their 303(d) list as water quality limited (ODEQ 2002). The listings are for exceeding temperature standards. As neither alternative would remove stream shading, and streams in the immediate project area are intermittent and dry in the summer months, there would be no potential for affecting stream temperatures and it will not be discussed further in this analysis.

D. Sediment

Though not listed by ODEQ, as discussed above, the ODFW found high percentages of sand, silt and organics in parts of Fortune Branch.

Roads can have impacts on sediment regimes (Furniss et al. 1991). Sediment may be generated by downcutting of ditch lines, and from erosion of unsurfaced road beds. Slope failures can also occur when road drainage is concentrated on unstable fill slopes.

The lower 0.7 miles of the haul route is surfaced with asphalt. The road grade is virtually flat and ditch lines are well vegetated with grass. No hydrologic connection exists between this section of the road and Fortune Branch.

The remainder of the haul route is surfaced with pit run or crushed aggregate in fair condition. The road crosses Fortune Branch at a single point via a concrete bridge. Some sections have compacted soil on the road prism that is associated with sloughing of the road cut rather than fracturing of the rock surface by motorized traffic.

Ditch lines are well vegetated over most of this portion of the haul route. There are some short sections of ditch line, generally less than 50 feet in length, where runoff could be diverted onto the road surface, but these are located along the uppermost portions of the road where it diverges from the adjacent stream.

Cross drains are properly functioning although some exhibit down-cutting. This appears to have occurred following installation and the slopes have since stabilized. Slopes below the outlets are well vegetated and adequate large wood is present to provide additional stability.

V. Wildlife

A. Special Status Species

1. Threatened and Endangered Species

These are species listed as threatened or endangered under the Endangered Species Act of 1973, as amended

The Federally-threatened marbled murrelet (*Brachyramphus marmoratum*), bald eagle (*Haliaeetus leucocephalus*), and northern spotted owl (*Strix occidentalis caurina*) are all documented on the Roseburg District.

The project area is located more than 50 miles inland and outside of the Marbled Murrelet Management Zone.

Annual surveys from 1977 to present (Isaacs and Anthony 2003) have not located nesting bald eagles within the South River Resource Area. Eagles typically nest within a mile of large bodies of water, such as lakes or river systems. Bald eagles would not be expected in the project areas because it several miles from large bodies of water and adjacent to a busy highway.

The median home range for northern spotted owls in the Klamath Province is 3,340 acres (USDI, BLM 1990). This is generally represented by a circle, 1.3-miles in radius, centered on a nest site or activity center. Approximately 4 acres of proposed Unit A falls within the extreme periphery of the Turkey Creek owl home range. Owl surveys conducted since 1983 have not documented any use of the area by owls, and it is considered highly unlikely because of the highway.

No effects on any Federally-threatened species would be anticipated so they will be discussed no further in this analysis.

2. Proposed or Candidate Species

These are species that are candidates for listing or proposed for listing under the Endangered Species Act. At present, there are no terrestrial species on the Roseburg District proposed for listing or designated as candidates.

3. Bureau Sensitive Species

Bureau Sensitive species are those which are eligible for Federal or state listing, or which have candidate status under BLM 6840 policy.

Three Bureau Sensitive species have been identified with the potential to occupy the project area or utilize the forest stands.

Purple martins (*Progne subis*)

This species has been documented approximately two miles northwest of the project area. Purple martins are secondary cavity nesters which typically inhabit snag patches in which woodpeckers have previously excavated cavities. Single snags or snags in a closed canopy are less likely to be used.

Although many snags were felled during fire suppression actions, ample snags for cavity nesters would still remain. Snags in Riparian Reserves on BLM lands outside of the highway right-of-way would be retained under either alternative. This would meet or exceed snag retention requirements of 1.2 snags per acre (PRMP/EIS, Chapter 4-43). In addition, some trees that would not meet the criteria for salvage would be expected to die and provide additional habitat for cavity nesters. Both alternatives would provide ample nesting habitat for the purple martin and as a consequence the species will be discussed no further in this analysis.

Oregon shoulderband snail (*Helminthoglypta hertleini*)

This snail has been identified on the Roseburg District. It is most frequently found inhabiting rocky areas such as talus deposits. It is snail generally found in areas with hardwood leaf litter, herbaceous cover, or coarse woody debris.

Areas in which the fire intensity was greatest are generally devoid of the habitat components described. Salvage, if conducted, would be limited to the removal of dead and dying trees. Existing wood in Decay Class 3, 4 and 5, some of which was the result of snag felling during fire suppression efforts would be reserved under contract provisions. It would also be expected that additional woody debris in the form of defective logs and tree tops would be generated by salvage operations. Neither of the alternatives would affect available habitat, or snails which may have survived the fires, and the Oregon shoulderband snail will receive no further discussion in this analysis.

Northern goshawk (*Accipiter gentilis*)

Goshawks have previously been observed, in 1999, approximately one mile north of the project area. Although they may forage in a variety of forest habitats, goshawks nest primarily in large conifers in closed-canopy stands. Because of the fragmented habitat conditions, it is considered unlikely that goshawks would be nesting in the project area. Foraging would be unaffected by either alternative. As a consequence, no further discussion of the goshawk is necessary.

B. SEIS Special Attention Species (Survey and Manage)

Special Attention species are designated for protection under the *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, and incorporated into the Roseburg District ROD/RMP.

Chace sideband (*Monadenia chaceana*): This snail is associated with rocky habitat or large woody debris. The project area has been surveyed and a *M. chaceana* shell was found in Unit A along the southern boundary. The snail was found under live trees. Retention of these green trees, vegetative cover, and down wood will protect *M. chaceana* habitat conditions at this site.

VI. Visual Resources

The area in which the proposed fire salvage is located is designated as Visual Resource Management (VRM) Class II. The ROD/RMP (pp. 52-53) directs that these lands are to be managed “. . .for low levels of change to the characteristic landscape. Management activities may be seen but should not attract the attention of the casual observer.” Timber harvest “. . . will employ single tree selection, uneven-aged harvest, retention of shelterwood overstory or group selection in seen areas.” (ROD/RMP, p. 53)

Fire has already altered the visual landscape. Salvage would not result in further changes because it would be limited to removal of individual trees or groups of trees killed in the fires, while retaining live trees and overstory canopy. This would be consistent with management direction described above. As a consequence, the effects on visual resources would be no different between alternatives and VRM will not be discussed further in this analysis.

VII. Cultural/Historical Resources

A review of catalogued sites did not identify any known historic or prehistoric sites located within any of the proposed units. Field inventories were conducted with no prehistoric or historic sites identified. One prehistoric site has been documented on a stream terrace along the West Fork Canyon Creek approximately two miles to the west.

Interstate 5 follows the same route as the historic Applegate Trail, an early pioneer wagon route. The construction of the highway has obliterated any evidence of the original wagon road in the vicinity of Canyon Pass.

Absent any known cultural or historical resources, there would be no effects and they will not be discussed further in this analysis.

VIII. Botanical Resources

The project area is within the range of Kincaid's lupine (*Lupinus sulphureus* ssp. *Kincaidii*), listed as a Federally-threatened species. The area was evaluated in a field visit conducted in December 2003, but suitable habitat for the lupine is not present.

A search of existing records for Special Status and Special Attention Species was conducted. No sites are documented within one mile of the project area.

The suitability of habitat and presence of other Special Status vascular plants could not be established. The salvage of dead trees would not be expected to have an effect, however. Helicopter yarding would result in very limited ground disturbance, and it would be expected that species adapted to fires would quickly re-establish themselves.

Most of the area burned at moderate to high intensities. Common species of shrubs and herbaceous plants have begun to re-sprout and are expected to naturally revegetate the burned areas over the next couple of years.

Lichens and bryophytes require living old-growth host trees. Retention of all trees expected to survive the fire event would provide continued habitat for these species. The removal of fire killed trees would have no affect on any species that remain in live trees in the fire area.

No surveys were conducted for non-vascular plants. The fires removed most of the organic horizons of the soil and large decayed wood that provide the growth substrate, so the burned areas would no longer be expected to provide suitable habitat.

The effects of the proposed action would not be discernible from an alternative of no action and botanical resources will not be discussed further in this analysis.

IX. Noxious Weeds

Noxious weeds are a problem throughout the United States. The BLM Oregon State Office reported that the acreage of infestation nationwide increased between 1985 and 1991 at the average rate of 14 percent per year. Exact figures on the extent of infestation on the Roseburg District are not available, but an assumed annual increase of 14 percent would represent at least 1,000 acres as described on page 7 of the *Roseburg District Integrated Weed Control Plan and Environmental Assessment* (USDI, BLM 1995b).

The Oregon Department of Agriculture (ODA) has developed a rating system for noxious weeds comparable to that in BLM Manual 9015 - Integrated Weed Management. The ODA Noxious Weed Rating System designates weeds as types “A,” “B,” and “T,” which are equivalent to types “A,” “B,” and “C” described in BLM Manual 9015 - Integrated Weed Management.

Type “A” weeds are of known economic importance which occur in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent.

Type “B” weeds are of economic importance which are regionally abundant, but of limited distribution in some counties. Where implementation of a fully-integrated statewide management plan is infeasible, biological control shall be the main approach.

Type “T” weeds are designated by the State Weed Board as target weed species on which the ODA will implement a statewide management plan.

Examples of noxious weeds with a possibility of occurring in the project areas may include but are not limited to:

“A” Noxious Weed

Wooly distaff thistle
 Diffuse knapweed
 Spotted knapweed

“B” Noxious Weeds

Scotch broom
 Canada thistle
 Bull thistle
 Rush skeletonweed

“T” Noxious Weeds

Wooly distaff thistle
 Spotted knapweed
 Rush skeletonweed

Disturbance to the site resulting from the fire has created circumstances that would be favorable to the establishment of noxious weed. Vectors of infestation beyond the ability of the BLM to control may include wind-borne or animal transported seeds.

As no road construction would be authorized under the proposed action and equipment washing would be stipulated, there is no identifiable vector by which the proposed salvage action would contribute to further weed infestations. As a consequence, noxious weeds will receive no further discussion in this analysis.

Chapter 4

ENVIRONMENTAL CONSEQUENCES

This chapter discusses how the specific resources identified in the previous chapter would or would not be affected in the short term and long term, by implementation of the alternatives contained in this analysis. The discussion also identifies potential impacts or consequences that would be expected.

I. Alternative 1 – No Action

While this alternative would remove hazard trees from within the ODOT right-of-way, it would not address the concerns that other dead and dying trees located above the right-of-way could reach the highway if they were to fall.

This alternative would not address concerns for potential insect infestation associated with the dead and dying trees associated with the fire areas, or safety concerns associated with future efforts to re-establish and manage healthy forest in the burned areas.

This alternative would not recover the economic value of fire-killed timber, contribute to attainment of the annual ASQ, or contribute to the socio-economic objectives of the PRMP/EIS.

A. Public Safety

While the removal of hazard trees within the ODOT right-of-way would partially mitigate concerns for trees falling onto the roadway, dead trees located above the right-of-way would continue to pose a hazard.

Given the steepness of the slopes adjacent to the highway, it would be likely that hazard trees located above the right-of-way would reach the roadway, when they fall. This would continue to pose a safety risk to the southbound lanes of the highway, resulting in potential accidents, traffic delays and the need for higher levels of maintenance and repair.

The removal of hazard trees from the right-of-way would be accomplished by felling and yarding the material downhill to the shoulder of the road which would also result in traffic delays. Downhill yarding would cause higher levels of slope disturbance with the potential for periodic slides arising from that disturbance.

B. Timber/Vegetation

Trees severely injured but not directly killed by fire may be weakened and predisposed to insect infestation. Infestation of fire-injured trees may occur up to 5 years after a fire. Infestation may subsequently result in mortality. Douglas-fir could be attacked by a

number of insects that would include the Douglas-fir beetle and flatheaded fir borer. Sugar pine would be attacked by mountain pine beetles.

Endemic populations of Douglas-fir beetle survive in weakened trees in root disease pockets that are present in the vicinity of the project area. These populations can quickly take advantage of fires or other incidents that result in creation of many weakened trees. Beetles typically attack the larger trees in a stand.

If the dead and dying trees are not removed, insect populations could build quickly in the stressed trees. This could result in the death of most or all of the stressed trees and other healthy and low-vigor trees in the burned areas. If beetle populations are large, all trees may be killed in pockets up to 2 acres in size. Douglas-fir beetles are strong fliers and 10-20 percent of the time will migrate and infest other stands at distances of 5 miles or more from where they hatched (Goheen 2001), resulting in mortality in those areas.

The value of the wood in the trees killed by the fire would deteriorate rapidly. A number of studies on the rate of deterioration of fire-killed conifers have been done (Kimmy and Furniss 1943, Kimmy 1955, Lowell et al. 1992, Hadfield and Magelssen 2000). Most of the dead trees are Douglas-fir which is relatively resistant to degrade and decay, but the studies indicate that Douglas-fir is still subject to substantial deterioration. Wood volume in dead Douglas-fir may deteriorate between 4 to 22 percent in the first year following a fire, and from 24 to 72 percent over the first five years, depending on the size and growth rates of the trees.

Reforestation of the burned areas and regular maintenance treatments that could include replanting and brushing would be hampered by the residual dead trees outside of the highway right-of-way. Over time, as the dead trees decay, branches and tops may fall out of the trees, or the trees themselves may fall over, posing a safety hazard to individuals engaged in stand management activities.

In 1987, the Canyon Mountain fire burned private and BLM-managed forest lands in proximity to the proposed project area. Some burned stands were not salvaged nor subject to intensive reforestation efforts. In these areas, brush and hardwood species quickly re-occupied the sites under the fire killed trees resulting in an inability to regenerate conifers on the sites (See Figure 3).

The response of brush and hardwoods to the most recent fire is expected to be similar in nature. Hardwood and shrub species have already begun to resprout. The competition from these trees and shrubs would threaten the survival and growth of planted trees without follow-up maintenance treatments. Without artificial regeneration, the restoration of mature conifer forests may be delayed 50 to 100 years (Sessions, p. 38).



Image 3 Stand burned in 1987 Canyon Mountain fire that was not salvaged or reforested

C. Fish and Aquatic Habitat

1. Aquatic Habitat Conditions

There would be no affect on the recruitment of LWD into Canyon Creek. While hazard trees felled in the Riparian Reserves located within the ODOT right-of-way would be felled, they would be retained on site. These trees are on the opposite side of the highway, though, so there would be no means by which they would migrate into Canyon Creek.

Absent any salvage from BLM lands above the highway right-of-way, there would be no timber hauling down the Fortune Branch road and no potential for sediments associated with road use. Small increases in sediment delivery via intermittent streams located within the burned areas would be possible as a result of erosion from the burned slopes.

Mobilization and delivery of sediment would be limited to a single wet season as the re-establishment of herbaceous cover in the year following the fires will serve to filter out any future sediment before they would be transported into live streams. The porous and rocky nature of soils on the slopes would also serve precipitate sediments in overland flow and remove many of them before they reach any stream channels. As a consequence, the amounts of transported

sediment would not be measurable. These sediments would remain localized and would not be transported a sufficient distance to substrates in Canyon Creek.

2. Special Status Species

The only potential affect to listed species would be associated with sediment. As described above, small and localized amounts of sediment that may occur would not be sufficient to affect any spawning and rearing habitat in Canyon Creek.

3. Essential Fish Habitat

Potential effects to EFH would be solely associated with sediment. As previously noted, sediments would not be considered a problem because of the minute levels anticipated, the localized nature of the effects, and the short duration in which they would occur.

II. Alternative Two – Proposed Action

This alternative would fully mitigate the concerns expressed by ODOT because, in addition to the hazard trees within the right-of-way, it would remove dead and dying trees located above the highway which would otherwise pose a continued risk.

This alternative would greatly reduce the potential for outbreaks of insect infestation and eliminate safety concerns associated with future efforts to re-establish and manage healthy forest in the burned areas.

This alternative would recover the economic value of approximately 500 MBF of fire-killed timber, thereby contributing to both the attainment of the annual ASQ and the socio-economic objectives of the PRMP/EIS.

A. Public Safety

Removal of the dead and dying trees on BLM lands above the highway right-of-way would greatly reduce or remove the risk that one or more of the trees would fall and slide to the highway. This would minimize the safety risk to the southbound lanes of the highway.

The removal of hazard trees from the right-of-way, and dead and dying trees above the right-of-way would be accomplished by helicopter yarding which would minimize slope disturbance and the potential for periodic slides, as well downstream sedimentation.

B. Timber Vegetation

Beschta et al. (1995) recommends allowing natural recovery and not taking actions which impede natural recovery of disturbed systems. The report also recommends that active reseeded and replanting should be conducted only under limited conditions. This alternative would preserve the ability for some level of natural regeneration because all live trees would be retained and natural regeneration of hardwoods is already occurring.

No reseeded would be undertaken. While regeneration of conifers would be encouraged, planting would be necessary to ensure reforestation in the absence of a cone crop. Conifer planting would also hasten recovery because natural regeneration would become more difficult once competing vegetation becomes established. The probability of successful reforestation is greatest when competition is low.

Removal of the dead trees would reduce the potential for insect infestation, particularly if accomplished prior to late-spring and the emergence of the next generation and beetles and wood borers. While individual trees might still be attacked, the likelihood of wide-scale infestation and loss of healthy trees would be minimal.

The value of the wood in the dead trees would be largely recovered. Based on the studies described above, it would be expected that volume loss would be limited to somewhere on the order of 10-20 percent.

Reforestation and subsequent maintenance of the burned areas would be facilitated by the removal of overhead hazards posed by dead trees and aid in achieving the objectives to manage the General Forest Management area for high levels of sustained wood production.

C. Fish and Aquatic Habitat

1. Aquatic Habitat Conditions

Under some conditions, road use may contribute sediment to streams. Mechanisms for sediment movement might include surface runoff, soil movement, and other erosional processes (Furniss et al. 1991). Indirect effects may include increased sediment delivery and modification of substrate and habitat.

As previously noted, log hauling would be restricted to the dry season, typically beginning in mid-May. Hauling in the dry season would minimize the potential for rain washing dust and debris from the road surfaces that has been loosened by hauling activities. Any material loosened by hauling would remain on the road surface or ditch line, rather than being transported into live streams.

Subject to determination by the contract administrator and prior to log hauling, sediment-control devices such as silt fences and hay bales, may be placed in ditch

lines and at cross drain outlets to trap sediment locally and prevent migration into any streams. Energy dissipaters, such as rip-rap, would also be placed at the outlets of cross-drain culverts, where needed, to prevent slope down-cutting and to precipitate any water-borne sediments from ditch flow. Water bars would also be installed to direct water off of the road prism and further disconnect the road drainage from stream systems.

No sediment from the Fortune Branch road would reach the stream. Slopes separating Fortune Branch from the road are generally moderate and well-vegetated with ground cover comprised of ferns and small shrubs with alder and willow along stream banks. Ground vegetation would be sufficient to prevent overland transport of sediment from the road network to the stream.

Timber salvage would have no affect to aquatic habitat in the intermittent streams within or adjacent to the proposed units. Riparian Reserves of 160 feet on each side of these streams would be established. Theses would provide large woody debris, shade, slope stability, and other riparian functions for intermittent stream channels (FEMAT 1993). The employment of helicopter yarding would also reduce potential slope disturbance, reduce potential erosion, limiting the potential for sediment generation.

There would be no loss of LWD or large organic debris (LOD) to the stream channel, thereby having no effect to aquatic habitat. Interstate 5 separates the proposed units from Canyon Creek. Because of this, the removal of fire killed trees represents no loss to LWD recruitment to that stream channel. There are no means by which any trees that fall may reach the far side of the highway. In addition, the intermittent stream channels pass through large steel grates and under I-5 which eliminates any possibility of LOD passing down to Canyon Creek.

2. Special Status Species

Suspended sediment can directly affect juvenile salmonids. Elevated turbidity can alter dispersal, foraging, and respiratory function (Waters 1995) possibly resulting in reductions in growth and survival rates. It can also affect fish by infiltrating gravel interstices, preventing or reducing water flow to fish eggs, and physically covering eggs and embryos causing mortality. It also reduces the quality of spawning habitat, and can reduce available rearing area in depositional pools (Waters 1995).

For the reason described above, there would be no discernible means by which water turbidity, and spawning and rearing habitat would be affected. As a consequence, no effects to Oregon Coast coho salmon and steelhead trout, and Coastal cutthroat trout would be expected.

3. Essential Fish Habitat

Essential Fish Habitat for coho salmon would be unaffected by the proposed action. As described above, the application of project design features for salvage operations and timber hauling would eliminate the potential for sediment to reach EFH in Canyon Creek and Fortune Branch, so that there would be no effect.

III. Other Recently Implemented or Planned Federal Management Activities in the South Umpqua River Watershed and Middle Cow Creek Watershed

Timber Management

Commercial Thinning/Density Management

In the past three years, five commercial thinning and/or density management projects have been authorized in the watershed. These projects represent 422 acres out of approximately 9,150 acres, or 4.6 percent of the mid-seral stands (30-80 years old) in the watershed. Thinning may reduce the suitability of these stands for foraging and dispersal for the Federally-threatened northern spotted owl for a period of 10-15 years.

The Hurricane Ruby Commercial Thinning (CT) timber sale treated 34 acres of General Forest Management Area in the Coffee Creek 6th-field subwatershed and was completed in 2002. There were no entries into Riparian Reserves, and no permanent road construction associated with the project. Approximately 0.2 miles of permanent road was renovated.

Bigfoot Density Management (DM) is located in the Saint John Creek 6th-field subwatershed. This project will be implemented in 2004 or 2005. It will treat 68 acres allocated as Connectivity/Diversity Block and 13 acres allocated as Riparian Reserves. There is no permanent road construction associated with the project. Approximately 0.66 miles of permanent road will be improved and approximately 0.75 miles of natural surface roads decommissioned and blocked to traffic.

The Bland Days and Wasted Days CT timber sales are located in the Days Creek 6th-field subwatershed. These two projects will treat 166 acres allocated as of General Forest Management Area and Connectivity/Diversity Block, and 23 acres allocated as Riparian Reserves. There is no permanent road construction associated with either project. Renovation and improvements will be made to approximately 6.3 miles of permanent roads.

Slimewater Creek DM was located in the Shively Creek 6th-field subwatershed. This project, completed in the summer of 2003, treated 118 acres allocated as Late-Successional Reserve. There was no permanent road construction. Approximately two miles of natural surface roads were decommissioned and blocked upon project completion.

Regeneration Harvest

Analyses for regeneration harvest in the watershed are being conducted, involving four proposed sales (Major Glasco, Screen Pass, Myrtle Morgan and Hi-Yo Silver) totaling approximately 640 acres, representing 3.8 percent of the 16,784 acres allocated to the Matrix. The proposed harvest would remove approximately two percent of 32,663 acres of suitable nesting, roosting and foraging habitat for the Federally-threatened northern spotted owl that is available in the watershed.

In association with these projects, approximately 3.5 miles of new permanent construction is proposed in conjunction with 31 miles of road renovation and 7.5 miles of decommissioning. The net reduction in miles of BLM-administered roads, if all decommissioning were implemented, would represent less than 0.4 percent of the total miles of road in the watershed.

Restoration Projects

In the past two years, projects implemented in the watershed to improve aquatic habitat and water quality, and to restore access to aquatic habitat have included approximately three miles, renovation of approximately 9.5 miles of road, and replacement of two stream crossing culverts. The replacement of the culverts restored accessibility to approximately three miles of habitat for anadromous fish and 11 miles of habitat for resident fish.

An additional three culvert replacement projects are planned for implementation in the next one to two years. These projects on St. John Creek and East Fork Shively Creek would restore access to four to five miles of habitat for anadromous and resident fish.

The Medford District, BLM is presently studying the replacement of some stream-crossing culverts on Fortune Branch to address water quality concerns.

IV. Monitoring

Monitoring would be done in accordance with the ROD/RMP, Appendix I (pp. 84-85, 190-191, 193, 195-199). Specific Resources to be monitored would include: Riparian Reserves; Matrix; ; Water and Soils; Wildlife Habitat; Fish Habitat; and Special Status and SEIS Special Attention Species Habitat.

Chapter 5

LIST OF AGENCIES/PERSONS CONTACTED AND PREPARERS

This project was included in the Roseburg BLM Project Planning Update (Winter 2003). If a decision is made to implement the preferred alternative, notice of decision would be published in *The News-Review*, Roseburg, Oregon.

I. Agencies & Persons Contacted:

Oregon Department of Forestry
Oregon Department of Transportation
State Historic Preservation Office

II. The following agencies, organizations, and individuals would be notified of the completion of the EA:

Douglas Timber Operators, Bob Ragon - Executive Director
NOAA Fisheries
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Department of Forestry
Oregon Natural Resources Council
Umpqua Watersheds, Inc.
U.S. Fish and Wildlife Service
Ronald S. Yockim, Attorney-at-Law

III. List of Preparers:

Jay Besson	Project Leader/EA Writer
Paul Ausbeck	NEPA Coordinator
Bill Adams	Fuels Management
Gary Basham	Botany
Kevin Carson	Silviculture
Dennis Hutchison	Soils
Helmut Kreidler	Engineering
Chris Langdon	Wildlife
Don Scheleen	Archaeology
Corey Sipher	Fisheries
Larry Standley	Hydrology
John Royce	Management Representative

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APPENDIX A

Salvage Marking Criteria and Guidelines

Guidelines for Selecting Fire Injured Trees that are Likely to be Infested by Insects in Southwest Oregon Forests

***Caveat:** This system is based on experience and information from the literature. It is intended for use in selecting Southwest Oregon conifer trees injured by fire that have a high probability of being subsequently infested by insects. It will not accurately identify all such trees in every case. No system or technique will. Probability that fire-injured trees will be infested varies with a number of factors that can be very different with different fires. These include such things as tree ages, site quality, time of year of fire, fire intensity, weather conditions in the years after a fire, and whether or not insect populations are high in stands adjacent to those involved in a fire.*

This system depends primarily on examining two factors: crown scorch and circumference of the bole at the root collar or on the lower stem that has suffered cambium damage. Percent crown scorch is a measure of the proportion of foliage that has been killed by the fire relative to the entire amount of foliage that was present before the burn (scorched foliage should be obvious to the naked eye as yellowish brown or red needles). Cambium damage involves death of some of the cambium. Extent of cambium damage is not necessarily indicated by the portion of the stem with blackened bark. The person examining trees for cambium damage needs to look for such things as areas where the bark has been completely destroyed exposing cambium that is now dead, charred bark with heavy resin flow coming through it, bark that has become separated from the wood below, etc. To do a good job, the investigator will also need to actually sample trees by chopping through blackened bark in several strategic locations on a representative sample of trees and examining the condition of the cambium beneath. Accuracy will improve with the amount of sampling done and with experience.

Fire injured trees that the Southwest Oregon Forest Insect and Disease Service Center would identify as having a high probability of insect infestation within the 4 years following a fire include by species:

Ponderosa Pine

% Crown Scorch		% Circumference with Cambium Damaged		Other Factors
More than 70	and	0 to any		
More than 50	and	More than 25		
0 to any	and	More than 50	especially. if	Evidence of consumption of more than 4” deep duff/bark mound around tree if fire burned between April and July (will usually apply to older trees). or Evidence of consumption of large stump or log within 18” of the base of the tree.

Sugar Pine

% Crown Scorch		% Circumference with Cambium Damaged
More than 65	and	0 to any
More than 40	and	More than 25
0 to any	and	More than 50

Lodgepole Pine

% Crown Scorch		% Circumference with Cambium Damaged
More than 70	and	0 to any
More than 40	and	More than 25
0 to any	and	More than 40

Western White Pine

% Crown Scorch		% Circumference with Cambium Damaged
More than 60	and	0 to any
More than 40	and	More than 25
0 to any	and	More than 40

Douglas-fir

% Crown Scorch		% Circumference with Cambium Damaged		Height of Charred, Spongy Bark
More than 70	and	0 to any	and	0 to any
More than 40	and	More than 40	and	Less than 5'
More than 40	and	More than 30	and	5' or more

White Fir

% Crown Scorch		% Circumference with Cambium Damaged
More than 40	and	0 to any
Less than 40	and	More than 25

Guidelines for Detecting Fire Injured Trees Already Infested by Insects in Southwest Oregon Forests

The crowns of trees successfully infested by insects often do not change color until some time after infestation. When examining stands at various times after a fire, several indicators may help an investigator to determine if a tree with a still-green or partially green crown has already been infested. These include:

Pitch tubes- These are globules of pitch produced by a host tree at the site of a bark beetle entry point. They are usually observed on pine species. Presence of small pitch tubes 3/4 inch or less in diameter well distributed up and down the stem of a pine may indicate successful attack by mountain or western pine beetles. These beetles frequently kill trees. Large pitch tubes 3/4 inches or greater in diameter concentrated around the base of a pine

(in the bottom 6 feet or less and not extending further up the bole) indicates attack by red turpentine beetles. These beetles rarely kill pines by themselves. Pitch tubes may not be produced at all on extremely weak pines irrespective of whether or not bark beetles have successfully infested them.

Pitch streaming- Substantial amounts of fresh pitch running down the bole of a tree in streams may indicate attack by mountain pine beetle on pines, especially on western white and sugar pines, or attack by Douglas-fir beetle on Douglas-fir. Pitch streamers are frequently fairly high up on the stem or just below the crown. They often glisten in the sunlight when viewed from certain angles.

Boring dust- Concentrations of reddish colored boring dust in bark crevices and on spider webs on the lower trunk of the tree are associated with beetles boring in the inner bark up and down the stem. This kind of boring dust is frequently associated with successful infestation by pine bark beetles, Douglas-fir beetles, or flatheaded woodborers on Douglas-firs or true firs. On pines, boring dust often gets mixed in with the pitch in pitch tubes imparting a reddish or purplish color. Trees with pitch tubes of this color usually have been successfully infested.

Concentrations of whitish boring dust are associated with insects boring into the wood of a tree. Very fine white dust around the base of a tree probably indicates attack by ambrosia beetles. There are a number of different species with different host ranges, but true firs, Douglas-firs, and pines all can be attacked by one or several. In our area, they are especially common on white fir. Occurrence of ambrosia beetle attacks on a tree usually indicates that the particular tree is already dead or dying. Course white frass on the bark of a tree may indicate attack by flatheaded or roundheaded woodborers. These insects usually infest trees that are extremely weak or that are already dead or dying.

Woodpecker activity on the stem- Woodpeckers frequently shave outer bark or excavate through bark to feed on bark beetles or woodborers in the bark/wood interface or in the wood of an infested tree. Woodpeckers are very good at detecting presence of insects before tree crowns change color. Ponderosa pine trees with the outer bark shaved off by woodpeckers are probably infested by western pine beetles. Pines with excavation all the way through the bark are probably infested by mountain pine beetles or woodborers. Douglas-firs with excavations through the bark may be infested by Douglas-fir beetles, flatheaded fir borers, or other flatheaded or roundheaded borers. White firs with substantial amounts of bark removed by woodpeckers are probably infested by fir engraver beetles or woodborers.

Insect galleries under the bark- Trees successfully infested by bark beetles and/or woodborers exhibit distinctive gallery patterns under the bark caused by the boring activities of adult and larval insects. Trees with well-defined galleries, particularly if there is associated blue stain or brown stain in the wood, are dead or dying even if they still have green crowns. Types of galleries associated with tree mortality include:

- a) Sinuous galleries under the bark of ponderosa pine made by western pine beetles.

- b) Long vertical galleries with horizontal larval galleries on pines made by mountain pine beetles.
- c) Tuning fork or multi-branching galleries coming from a central nuptial chamber on pines made by pine engravers.
- d) Long vertical galleries with alternating groups of horizontal larval galleries on Douglas-fir made by Douglas-fir beetle.
- e) Horizontal, gull-winged shaped galleries with larval galleries running up and down vertically on true firs made by fir engravers.
- f) Broad to very broad meandering galleries packed with frass under bark of a variety of tree species made by flatheaded and roundheaded woodborers. These insects also often bore directly into the wood where flatheaded borers make oval entrance holes and roundheaded borers make round ones.

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APPENDIX B

ODOT Communication Regarding Hazard Trees Along Interstate Highway 5



Oregon

Theodore R. Kulongoski, Governor

BUREAU OF LAND MANAGEMENT
ROSEBURG DISTRICT

2003 DEC 11 AM 10:00

Department of Transportation

Office of Maintenance
800 Airport Road SE
Salem, OR 97301-4798
(503) 986-3000
FAX (503) 986-3032

FILE CODE:

December 8, 2003

BLM South River Field Manager
777 NW Garden Valley Road
Roseburg, OR 97470

Thank you for including ODOT in your fire salvage planning process. On November 26th, Darren Neavoll and I met with Jay Besson and Chris McAlear at your Roseburg field office. We visited the site of the Canyon Mountain fire along Interstate 5 to look at fire damage within ODOT's right of way on BLM and on the adjoining BLM and State properties. I observed many trees that were killed by this fire in the summer of 2003. I am concerned that if these fire-damaged trees are left some of them will most likely become a hazard to the motoring public. I am hoping that the BLM, in conjunction with ODOT, can find a way to alleviate this hazard as soon as possible by removing fire-killed and excessively fire-damaged trees in this area to prevent them from falling and sliding onto the roadway. Within ODOT's right of way on BLM lands, we would request that all fire killed and excessively fire-damaged trees that could be a hazard to the public be cut and removed. We also understand that all green trees determined to survive will be retained on site. We would also like to work in conjunction with your salvage process to remove hazard trees on State lands adjacent to the freeway. Please keep us informed of your progress and feel free to contact me if you have any further questions or concerns.

Sincerely,

Dan Lepschat
ODOT Forester



APPENDIX C

ODFW Aquatic Habitat Survey Results

Canyon Creek

<i>Reach</i>	<i>LWD pieces (no. per 100 m)</i>	<i>LWD volume (m³/100m)</i>	<i>Percent fines</i>	<i>Percent gravel</i>	<i>Percent pool area</i>	<i>Residual pool depth (m)</i>
1	1.1	0.8	0	34	56	0.5
2	0.8	0.6	2	27	56	0.4
3	0.5	0.1	1	33	43	0.3
4	0.8	0.1	0	44	37	0.3
5	0.6	0.4	0	71	33	0.3
Avg.	0.8	0.4	1	42	45.0	0.4

Fortune Branch

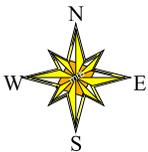
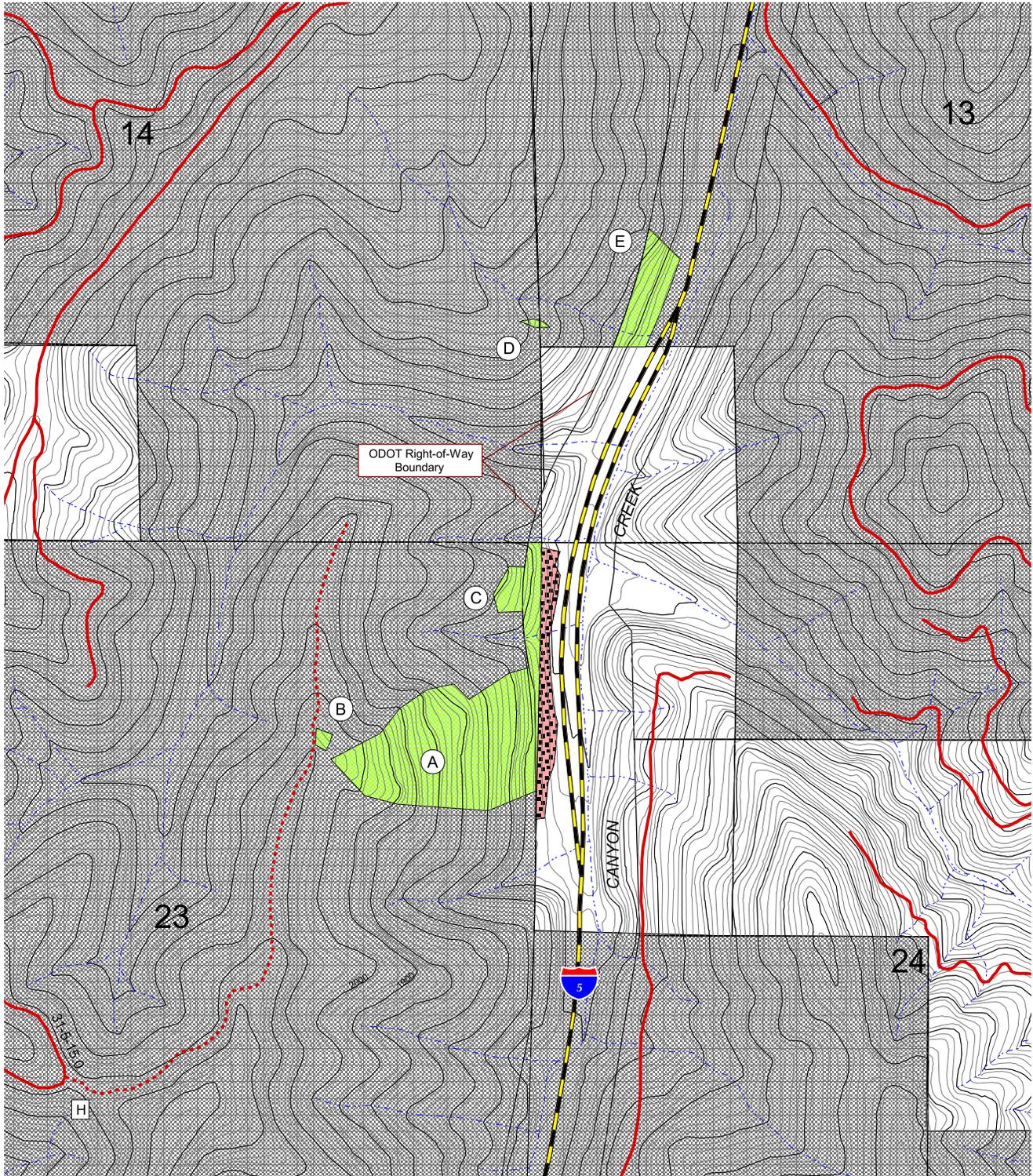
<i>Reach</i>	<i>LWD pieces (no. per 100 m)</i>	<i>LWD volume (m³/100m)</i>	<i>Percent fines</i>	<i>Percent gravel</i>	<i>Percent pool area</i>	<i>Residual pool depth (m)</i>
1	5.4	7	16	68	46	0.5
2	10.5	20.5	23	44	25	0.5
Avg.	8.0	13.8	20	56	35.3	0.5

APPENDIX D

Map of the Proposed Project Area

FLEA FLICKER

Proposed Fire Salvage



T31S, R5W
Willamette Meridian, Douglas Co., OR.

1000 0 1000 Feet

1"=1000'

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this data for individual or aggregate use with other data. Original data was compiled from various sources. This information may be updated without notification.



-  Possible Helispot
-  Interstate Freeway
-  Existing Road
-  4x4 Access Road
-  100' Contour
-  20' Contour
-  Stream

-  BLM Fire Salvage Harvest Area
-  State Fire Salvage Harvest Area
-  BLM (O&C) Land
-  Non-BLM Land

APPENDIX E

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order.

These resources or values are either **not present** or **would not be affected by the proposed actions or alternative**, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

ELEMENT	NOT PRESENT	NOT AFFECTED	IN TEXT
Air Quality		X	
Areas of Critical Environmental Concern	X		
Cultural Resources	X		
Environmental Justice		X	
Farm Lands (prime or unique)	X		
Floodplains	X		
Invasive, Non-native Species		X	X
Native American Religious Concerns	X		
Threatened or Endangered Wildlife Species		X	X
Threatened or Endangered Plant Species	X		
Wastes, Hazardous or Solid	X		
Water Quality, Drinking/Ground		X	X
Wetlands/Riparian Zones		X	
Wild & Scenic Rivers	X		
Wilderness	X		
Visual Resource Management		X	X