

# **North Berry Creek Unilateral Right-of-Way and Road Construction Permit**

Bureau of Land Management  
Roseburg District Office  
South River Field Office  
EA # OR-105-08-01

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# CHAPTER ONE

## 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 (EA).

### I. Background

On April 30, 2007, Swanson Group, LLC submitted an O&C Logging Road Right-of-Way Permit Application for a right-of-way for the removal of forest products across lands administered by the Bureau of Land Management (BLM). The application requests permission to construct a temporary road to access the western portion (~ 1/3) of an adjoining 75-acre parcel of privately-owned timberland, and to use BLM-controlled roads for timber hauling.

### II. The Proposed Action

Swanson Group, LLC proposes construction of an extension to BLM Road No. 29-7-7.0 in Section 7, T. 29 S., R. 7 W. The road extension, approximately 675 feet in length, would be temporary and unsurfaced, and located primarily on a ridge top location. Approximately 440 feet of construction would be located on BLM-managed lands, as the proposed road route crosses back and forth at three locations along the property line between BLM lands and the Delores P. Loftin Trust lands that are to be logged.

This action would be authorized under an O&C Right-of-Way Permit. BLM timber cut in association with the road construction would be purchased by Swanson Group, LLC through a negotiated timber sale. BLM-controlled roads to be used for timber hauling would include Road Nos. 29-7-7.0, 29-7-18.2 and 29-8-1.0.

This EA will consider the environmental consequences of the no action and proposed action alternatives in order to provide sufficient evidence and analysis for determining whether there would be impacts exceeding those considered in the Roseburg District *Proposed Resource Management Plan/Environmental Impact Statement* (PRMP/EIS (USDI, BLM 1994)) that would require preparation of a Supplemental Environmental Impact Statement (SEIS). In addition to the PRMP/EIS, this analysis is tiered to and incorporates by reference the assumptions and analysis of consequences provided by:

- 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 and USDI 1994a); and
- The *2007 Final Supplement to the 2004 Supplemental Environmental Impact Statement EIS to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (USDA and USDI 2007).

Implementation of the proposed action would conform to all pertinent requirements of the Roseburg District *Record of Decision and Resource Management Plan* (ROD/RMP), which incorporates as management direction 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 and USDI 1994b).

Management direction of the ROD/RMP was further amended by the *Record of Decision to Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (USDI 2007).

### **III. Objectives of the Proposed Action**

Pursuant to ROD/RMP management direction (p. 69), the objective of the proposed action is to “. . . make BLM-administered lands available for needed rights-of-way . . .”

### **IV. Decision Factors**

Factors to be considered when selecting among alternatives would include:

- The degree to which the objective described would be achieved;
- The nature and intensity of environmental impacts that would result from implementing the alternatives and the nature and effectiveness of measures to mitigate impacts to resources including, but not limited to wildlife, wildlife habitat, and soil productivity;
- Compliance with applicable management direction from the ROD/RMP; and
- Compliance with applicable laws including but not limited to: the Endangered Species Act, the Clean Water Act, and the Federal Land Policy and Management Act.

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## **CHAPTER TWO**

### **DESCRIPTION OF THE ALTERNATIVES**

This chapter describes the basic features of the alternatives being analyzed. Because the analysis is in response to a proposal from Swanson Group, LLC, the discussion of alternatives is appropriately limited to alternatives of No Action and the Proposed Action, as submitted to the BLM by the action proponent.

#### **I. Alternative One – No Action**

Under this alternative, the BLM would not authorize the construction of an extension to BLM Road No. 29-7-7.0. Swanson Group, LLC would need to pursue other means of access for harvest that could include downhill yarding or construction of a midslope road that would switch back across the steep slope on which the western portion of the private timber parcel is located.

#### **II. Alternative Two – Proposed Action**

Under this alternative, as described on page 1, the BLM would authorize construction of the proposed temporary road across BLM-managed lands in Section 7, T. 29 S., R. 7 W. Road construction would be restricted to the dry season, typically from mid-May to mid-October. Upon completion of logging, projected by Swanson Group, LLC to occur between June and October of 2008, the road would be decommissioned and blocked to further vehicular use. Decommissioning would consist of ripping the road bed, constructing waterbars, and seeding and mulching to revegetate the roadbed and reduce the risk of erosion.

Swanson Group, LLC would also be authorized to use BLM Road Nos. 29-7-7.0, 29-7-18.2, and 29-8-1.0. As described in Chapter Three, Road No. 29-8-12.0, a part of the proposed haul route under the control of Roseburg Resources Company, passes through unsurveyed suitable marbled murrelet habitat in the northeast corner of Section 13, T. 29 S., R. 8 W. within 65 yards of an occupied murrelet site. In order to reduce the risk for potential disturbance to nesting murrelets, timber hauling would be subject to Daily Operating Restrictions from April 1 until August 5, consisting of a prohibition on timber hauling until two hours after sunrise and cessation of hauling two hours before sunset.

#### **III. Resources That Would Be Unaffected by Either of the Alternatives**

The following resources or critical elements of the human environment would not be affected under either alternative because they are absent from the project areas: Areas of Critical Environmental Concern (ACEC); prime or unique farmlands; floodplains; wilderness; waste, solid or hazardous; and Wild and Scenic Rivers.

The proposed action is consistent with Executive Order 12898 which addresses Environmental Justice in minority and low-income populations. The BLM has not identified any potential impacts to low-income or minority populations, either internally or through the public involvement process.

No Native American religious concerns were identified by the team or through correspondence with local tribal governments.

As discussed on page 9, cultural resources would not be affected as none are present in the project area. No measurable increase or decrease in the introduction or rate of spread of noxious weeds is anticipated, as discussed on pages 9 and 10.

There are no energy transmission or transport facilities and/or rights-of-way in the immediate project area. No energy generating facilities or commercially developable energy resources are present. As a consequence, no adverse effect on energy resources would be anticipated.



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## CHAPTER THREE

### AFFECTED ENVIRONMENT

This chapter summarizes the specific resources that are present or potentially present, and which could be affected by the proposed action.

#### I. Timber/Vegetation

Forest conditions on BLM-managed lands over which the proposed road would pass are primarily characterized by a 15-year-old plantation, dominated by Douglas-fir with little or no understory development. A small wedge of land excluded from the adjoining BLM harvest unit contains some trees that may be of merchantable size, a minimum eight inches diameter breast height, which would require cutting for the right-of-way. Table 2-1 provides an approximate summary of trees at least four inches diameter breast height.

**Table 2-1 Tally of trees greater than four inches diameter breast height**

| Diameter at Breast Height | Species     |                 |
|---------------------------|-------------|-----------------|
|                           | Douglas-fir | Pacific madrone |
| 4-8 inches                | 6           | 2               |
| 8 inches                  | 3           | 4               |
| 10 inches                 | 3           | 0               |
| 12 inches                 | 1           | 0               |

#### II. Wildlife

Twenty-four Special Status wildlife species are documented or suspected in the South River Resource Area. These consist of two Federally-threatened species and 22 Bureau Sensitive species. The 22 Bureau Sensitive species are eliminated from discussion, as documented in Appendix B, because the proposed project area is outside of the species range, habitat is not present, or the species and their habitats are not expected in the area. The remaining two species that could be affected by the proposed action are discussed below.

As described by Forsman et al (1984), Thomas et al. (1990), Hershey (1995) and Forsman and Giese (1997), in the Klamath Province suitable nesting, roosting, and foraging habitat for the Federally-threatened **northern spotted owl** is typically characterized by:

- Late-successional forests with large conifers having large diameter limbs, crown deformities, broken tops, or cavities that provide nest sites;
- Moderate to high canopy closure (60-80 percent closure); and
- Multi-layered and multi-species canopy with large overstory trees.

A spotted owl home range (daily activity area) in the Klamath Province is represented by a 1.3-mile radius circle centered on an owl activity center which is an area of concentrated activity of either a pair of spotted owls or a territorial single owl.

The site of the proposed road construction in Section 7, T. 29 S., R. 7 W. is located on the outer edge of a single occupied spotted owl home range, but is not located within suitable habitat or any Critical Habitat Unit designated for the survival and recovery of the spotted owl (Federal Register 1992).

The Federally-threatened **marbled murrelet** is a small seabird that occurs “. . . during the breeding season in near-shore waters along the north Pacific coastline from Bristol Bay in Alaska to central California.” (Lank et al. 2003) It typically nests in single platform trees generally within 20 miles and older forest stands generally within 50 miles of the coast. Unlike most auks, murrelets nest solitarily on mossy platforms of large branches (Lank et al. 2003).

Suitable habitat may include contiguous forested areas that contain potential nesting structure characterized by large trees greater than 18 inches diameter at breast height, multistoried canopies with moderate closure, sufficient limb size ( $\geq 15$  cm diameter) and substrate (moss, duff, etc.) to support nest cups, flight accessibility, and protective cover from ambient conditions and potential avian predators (Manley 1999, Burger 2002 and Nelson and Wilson 2002).

An occupied marbled murrelet site is located approximately 0.75 miles southwest of the site of the proposed road construction. The site of the proposed road construction itself is not located within suitable nesting habitat or any Critical Habitat Unit designated for the survival and recovery of the marbled murrelet (Federal Register 1996).

Road No. 29-8-12.0, a part of the proposed haul route, passes through unsurveyed suitable murrelet habitat in the northeast corner of Section 13, T. 29 S., R. 8 W. within 65 yards of the occupied murrelet site.

### **III. Fish and Aquatic Resources**

There are no fish bearing streams within the project area. The only stream crossings along the route are intermittent in nature and located about 0.5 mile above the nearest fish bearing streams flowing into Ben Irving Reservoir. There are no fish-bearing streams crossed by either the existing BLM roads or by the ridge top location for the proposed road.

The Bureau Sensitive Umpqua chub and Oregon Coast coho salmon, also proposed for listing under the Endangered Species Act as a Federally-threatened species, are present in Olalla Creek, downstream from Ben Irving Reservoir which is a barrier to upstream migration.

Essential Fish Habitat, established by the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (Federal Register 2002), is designated for fish species of commercial importance. Streams and habitat that are currently or were historically accessible to chinook and coho salmon are designated Essential Fish Habitat. The proposed project area is in excess of two stream miles above Ben Irving Dam which marks the upper limits of Essential Fish Habitat. None of the streams along the proposed haul route are considered Essential Fish Habitat.

## **IV. Water Resources**

The Olalla Creek-Lookingglass Creek fifth-field watershed has a Mediterranean type of climate. Winters are cool and wet, while summers are hot and dry. The majority of precipitation is in the form of rain, concentrated between November and March. The volume of stream flow closely parallels the precipitation pattern, with peak stream flows occurring from November to March, and low stream flows occurring from July to October.

### **A. Peak Flows and Roads**

The proposed road construction would take place in the Lower Olalla Creek seventh-field drainage. Existing roads that would be utilized by Swanson Group, LLC for timber hauling are located in the Tenmile Creek seventh-field drainage.

Roads can increase the drainage density of a watershed, acting as a preferential pathway for surface water runoff. This can decrease the volume of overland flow that infiltrates into the ground water or soil water storage. Increased drainage density also increases the rate at which runoff leaves a basin, resulting in higher peak flows in times of snow melt or rainfall and reduced stream flows in late summer. Jones (2000) found a 13 to 36 percent increase in peak flows (with greater than one-year return period) related to the density of midslope roads in seven of eight small basins studied. The magnitude of peak flow enhancement also depends on whether or not road segments drain directly into stream channels. Roads not connected to stream channels, or those with drainage that efficiently directs surface flow to the forest floor where it can infiltrate, would have a negligible effect on flow magnitude and timing.

Roads may modify storm peaks by reducing infiltration on compacted surfaces, allowing rapid surface runoff, or by intercepting subsurface flow and surface runoff, and channeling it directly into streams (Ziemer 1981). Peak flows have been shown to increase substantially when roads occupy more than 12 percent of the watershed (Watershed Professionals Network 1999, IV-15). It is likely that midslope forest roads have marginally increased the magnitude of peak flows by intercepting subsurface flow and surface runoff, extending the drainage network, and channeling water into streams. Roads occupy less than three percent of the land area within the watershed, however, and it is unlikely peak flows are being measurably affected by current road densities.

### **B. Water Quality**

Water quality standards are determined for each waterbody by the Oregon Department of Environmental Quality (ODEQ). Water bodies that do not meet water quality standards are placed on the 303(d) list as Water Quality Limited.

Studies by Reid (1981), and Reid and Dunne (1984) have shown that forest roads can be a major contributor of fine sediment to streams. Excess fine sediment can reduce water quality for domestic use and can cause detrimental change to the stream and its inhabitants (Castro and Reckendorf 1995).

Roads may directly alter streams by increasing erosion and sedimentation, which in turn may result in altered stream channel morphology. Roads may also alter the natural drainage characteristics of channels and subsequently change the runoff characteristics of watersheds (Furniss, et al. 1991). Runoff can erode non-vegetated road beds.

Roads can serve as a link between sediment source areas and streams, and often account for most of the sediment problems in a watershed. Water, sediment, and chemical runoff generated from the road prism can enter the natural stream channel network when the road is hydrologically connected to the stream channel. Some ways in which roads are connected to stream channels are: at stream crossings; where discharge is sufficiently high to create a gully in the inboard ditch; and where road fillslopes encroach on streams.

There are three intermittent stream crossings on the existing road proposed for use under this right-of-way agreement. These crossings are stable and show no evidence of road surface erosion entering the stream channels.

There are no streams within the Olalla Creek-Lookingglass Creek fifth-field watershed identified on the 303 (d) list by ODEQ (2003) as impaired by excess sedimentation.

### **C. Water Rights**

There is one registered surface water right for domestic use, Permit No. S 29081, located within one mile of the site of the proposed road construction. The point source is not connected with any stream, so any effects on water source would be unlikely, and water rights will not be discussed further in this assessment.

## **V. Soils**

Soils within the proposed road right-of-way are clay loams and loams, with moderate to high amounts of gravels and cobbles (15-60 percent rock fragments by volume) in the subsoil below 24 inches in depth. The soils are deep (40-60 inches) and well drained over hard conglomerate bedrock (Johnson et al. 2004, Wells, et al. 2000).

The proposed road would follow a gentle ridge, with the route situated either on or within 40 feet of the ridgeline. The ridge line descends on a gentle gradient (5 to 20 percent) and gentle to moderate convex side slopes of 20 to 60 percent at the edge of the proposed right-of-way.

BLM-managed land along the proposed route was harvested around 1991. Field investigation and an analysis of historical aerial photos (1967, 1978, 1983, 1989, 1999 and 2004) showed no evidence of slope stability problems in the proposed route.

## **VI. Botany**

Appendix C identifies 70 Special Status botanical species documented or suspected on the Roseburg District, consisting of 32 vascular plants, 6 bryophytes, 7 lichens and 25 fungi. Based on commonly accepted species range and presence of suitable habitat and/or hosts, 50 of these species might be expected in the North Berry Creek Project Area.

### *Vascular plants, bryophytes and lichens*

Kincaid's lupine (*Lupinus sulfureus* ssp. *Kincaidii*) is listed under the Endangered Species Act as a Federally-threatened species. It is an herbaceous perennial that is native to the prairies of the Willamette Valley and southwestern Washington. It has been located at several sites in Douglas County, Oregon along roads and forest edges. Species vigor appears to be correlated with canopy openness (Menke, C.A. and T. Kaye 2003).

As documented in Appendix C, surveys were conducted and no Special Status vascular plants, bryophytes or lichens were found. No effect to any of these species would be expected, and they will not be discussed further in this assessment.

### *Fungi*

All 25 Bureau Sensitive fungi species with the potential to occur in the project area are associated with mixed conifer forest. Important habitat components include: dead, down wood; standing dead trees; live old-growth trees; a variety of underbrush species; a broad range of microhabitats; and for many, a well-distributed network of late-seral forest with moist and shaded conditions (USDA and USDI 2007 p. 191).

Four of these species, consisting of *Dermocybe humboldtensis*, *Phaeocollybia californica*, *P. olivacea*, and *Ramaria spinulasa* var. *diminutiva* have been documented in the South River Resource Area. None of the sites are located in proximity to the site of the proposed road construction.

Most Bureau Sensitive fungi are highly isolated in their occurrence, producing short-lived, ephemeral sporocarps or fruiting structures that are seasonal in occurrence and annually variable (USDA and USDI 2007 p. 191). Richardson (1970) estimated that sampling every two weeks would fail to detect about 50 percent of macrofungal species fruiting in a given season. O'Dell et al. (1999) reported that less than ten percent of species were detected in each of two consecutive years at any one of eight study sites. Since surveys are not practical, there may be unknown sites that could be lost as a result of the proposed road construction. Such a loss, if one were to occur, would not be considered likely to contribute to a need to list any species under the Endangered Species Act as the area that would be subject to disturbance would only be about one-quarter of an acre of early-seral forest.

## **VII. Cultural and Historical Resources**

The site of the proposed road construction was inventoried in 1987 for the North Berry Creek timber sale. No cultural resources were found. Consequently, the proposed action would have no effect on cultural or historical resources and they will not be discussed further in this assessment.

## **VIII. Noxious Weeds and Invasive Non-Native Plants**

A comprehensive roadside weed inventory has been completed in the project area. Himalayan blackberry (*Rubus discolor*), and Scotch broom (*Cytisus scoparius*) are the most common noxious weeds.

Actions taken to contain, control, and eradicate existing infestations of noxious weeds are undertaken through implementation of the *Roseburg District Integrated Weed Control Plan and Environmental Assessment* (USDI, BLM 1995). Activities include inventorying weed infestations, assessing risk for spread, and applying control measures in areas where management activities are planned. Control measures may include releasing biological agents, mowing, hand-pulling, and the use of approved herbicides. Noxious weed treatments would be undertaken independent of and regardless of whether or not the proposed road construction and timber hauling is authorized.

Management practices that would be implemented in conjunction with the proposed road construction would be focused on preventing the introduction of new infestations or the spread of existing ones. Prevention measures would include:

- steam cleaning or pressure washing of heavy equipment used in logging and road construction to remove soils and other materials that could transport weed seed or root fragments, and
- using native seed when mulching and seeding.

As a consequence there would be negligible changes in noxious weed populations under either alternative, and no further discussion of noxious weeds is necessary in this assessment.

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## **CHAPTER FOUR**

### **ENVIRONMENTAL CONSEQUENCES**

This chapter discusses specific resource values that may be affected, the nature of the short-term and long-term effects, including those that are direct, indirect, and cumulative, that may result from implementation of the proposed action. An alternative of “no action” is analyzed in comparison to determine if there would be any effects of the proposed action that would exceed the scope of those considered and addressed by the Roseburg District PRMP/EIS. The discussion is organized by the individual resources. It addresses the interaction between the effects of the proposed action with the current environment, describing effects that might be expected, how they might occur, and the incremental effects that could result. This discussion does not address minor effects, focusing instead on those that could actually result in cumulative effects.

The Council on Environmental Quality (CEQ) provided guidance on June 24, 2005, as to the extent to which agencies of the Federal government are required to analyze the environmental effects of past actions when describing the cumulative environmental effect of a proposed action in accordance with Section 102 of the National Environmental Policy Act (NEPA). CEQ noted the “[e]nvironmental analysis required under NEPA is forward-looking,” and “[r]eview of past actions is only required to the extent that this review informs agency decision making regarding the proposed action.” This is because a description of the current state of the environment inherently includes effects of past actions. Guidance further states that “[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions.”

The cumulative effects of BLM management programs in western Oregon have been described and analyzed in the PRMP/EIS and FSEIS, which are incorporated herein by reference.

#### **I. Timber/Vegetation**

##### **A. Alternative One – No Action**

Under this alternative the BLM would not authorize construction of an extension to BLM Road No. 29-7-7.0 or the use of BLM-controlled roads for timber hauling. There would be no effect to existing stand conditions on BLM-managed lands bordering the private timber parcel. In order to log the western third of the Loftin Trust lands, Swanson Group, LLC would either need to build mid-slope road across the steep face of the slope or downhill yard to an existing road at the base of the hill.

##### **B. Alternative Two – The Proposed Action**

Under this alternative, the BLM would authorize construction of an extension to BLM Road No. 29-7-7.0 that would cross approximately 440 feet of forest land managed by the BLM.

Clearing the road prism would involve the removal of trees and vegetation from approximately one-third of an acre of land under BLM management. In addition to the approximate number of trees described in Table 2-1 on page 5, a few dozen Douglas-fir saplings and Pacific madrone stump sprouts would also be cut.

In the Olalla Creek-Lookingglass Creek fifth-field watershed, the BLM manages an estimated 8,768 acres of early-seral forest (USDI 1998, p. 24). The clearing of one-third of an acre for construction of the road extension would not measurably change this figure.

Upon completion of the use of the road, the road bed would be ripped and allowed to revegetate so that there would be no reduction in the forest land base.

## **II. Wildlife**

### **A. Alternative One – No Action**

Absent the authorization to construct an extension of BLM Road No. 29-7-7.0, there would be no modification of existing habitat conditions on forest lands under BLM management in the area.

Absent timber hauling over BLM-controlled roads, there would be no potential for disturbance to murrelets in the occupied stand.

### **B. Alternative Two – The Proposed Action**

The proposed road construction on BLM-managed lands would occur on the outer edge of one occupied **northern spotted owl** home range but would not result in the removal of any suitable nesting, roosting and foraging habitat. Use of the existing roads for hauling would not remove or modify any suitable spotted owl habitat. Consequently, there would be no effects associated with habitat modification.

The location of the proposed road is more than one mile from any activity center in this home range, and greater than 1,000 feet in distance from any unsurveyed suitable habitat. These distances are well in excess of the 65-yard disruption threshold for heavy equipment operation, so it is not anticipated that the proposed construction would have any potential for disruption or disturbance.

The likelihood of spotted owls being disturbed by timber hauling along existing roads is also considered negligible because the roads already receive baseline disturbance from other vehicular traffic. Consequently, any spotted owls in unsurveyed suitable habitat within applicable disturbance threshold distances would likely be acclimated to noise disturbance resulting from hauling activities.

Construction of the proposed road would not affect **marbled murrelets** due to habitat modification because no suitable nesting habitat would be removed on BLM-managed lands as a result of this action.



The likelihood of disturbance to murrelets in association with road construction would be negligible because the site of the proposed construction is greater than 1,000 feet from any potential nesting habitat, a distance well in excess of the 100-yard disruption threshold for heavy equipment operation.

In the northeast corner of Section 13, Road No. 28-7-12.0 crosses unsurveyed suitable habitat that is within 65 yards of the known occupied murrelet stand. As this is within the 100-yard disruption threshold, there is a potential for disturbance caused by noise from log hauling.

Noise associated with log hauling could disturb nesting murrelets and negatively affect productivity. Although little information is available concerning vulnerability of murrelets to disturbance effects, research on a variety of other bird species suggests such effects are possible (Henson and Grant 1991, Rodgers and Smith 1995). Studies have shown that disturbance can affect productivity by: nest abandonment; egg and hatchling mortality due to exposure and predation; longer periods of incubation; premature fledging or nest evacuation; depressed feeding rates of adults and offspring; reduced body mass or slower growth of nestlings; and avoidance of otherwise suitable habitat.

Research on murrelets has demonstrated that in the first days after eggs hatch, adult murrelets tend to concentrate their nest visits during the twilight hours and the hours just before sunrise. Nestlings are left unattended for most of the diurnal period, however, adults do increase diurnal visits to the nest as the chicks develop (Ralph et al. 1995). In order to minimize the potential that adult murrelets would be disturbed when visiting the nest to feed offspring, a Daily Operational Restriction would be applied to log hauling activities consisting of a prohibition on log hauling until two hours after sunrise, and cessation of hauling two hours before sunset from April 1 to August 5.

### **III. Fish and Aquatic Resources**

#### **A. Alternative One – No Action**

Absent an authorization for road construction, there would be no effects to fish, aquatic habitat, or Essential Fish Habitat. There would be no additional road use with the potential to increase sediment input into streams at stream crossings. Crossings on intermittent streams on private lands along the proposed route are stable and show no evidence of road surface erosion entering the stream channels, and would likely add no more than negligible amounts of sediment to the stream network.

#### **B. Alternative Two – The Proposed Action**

Effects from the proposed project would come from the potential for sediment entering streams and affecting fish and aquatic habitat downstream. New road construction on the ridge top location would not have an effect because, absent a connection between the road and a stream, there is no mechanism for sediment to enter streams. Consequently, there would be no potential for affecting fish either directly or indirectly.

The existing BLM road network that would be used is primarily on side-slopes and ridges without any stream crossings. Where stream crossings exist on privately controlled roads along the proposed haul route there is little potential for sediment delivery to streams. Crossings on intermittent streams generally have low slope and flat approaches. This limits the concentration of road derived sediment in ditches. Cross drains located above stream crossings reroute ditch runoff onto the forest floor where it quickly infiltrates and deposits sediment prior to entering stream channels.

There would be no effect on Essential Fish Habitat because:

- As discussed on page 6, the proposed project area is in excess of two miles above the limits of Essential Fish Habitat.
- There would be no effect to water quality and/or quantity resulting from the proposed road construction and timber hauling. As previously noted, there are three stream crossings along the route; however, none has the potential for sediment delivery to fish-bearing streams (Water Resources, p. 16).
- Road construction would take place entirely on ridges. Any effect to substrate as a result of sediment would be limited to intermittent stream crossings and would have no effect on fish bearing reaches downstream (Fish and Aquatic Resources, p. 13).
- As the site of the proposed road extension is outside of Riparian Reserves, on ridges far from streams, there would be no effect to large woody debris or its source areas, nor would road use have any effect (Fish and Aquatic Resources, p. 6).
- Intermittent stream channels on private timber lands along the existing road system are stable and have riparian vegetation sufficient to prevent erosion caused by high stream flow. There would be no measurable increase in stream flow that could affect channel geometry (Water Resources, p. 8).
- There would be no effect to fish passage as the new road construction would not require any stream crossings.
- There would be no alteration of existing riparian vegetation and stream substrate conditions. Consequently, aquatic invertebrate populations that provide prey for fish would be unaffected.

#### **IV. Water Resources**

##### **A. Alternative One – No Action**

Absent road construction, there would be no removal of vegetation and no changes to the water resource over time. Effects of current road densities and road drainage would on sediment and flow routing would continue to affect the watershed.

**B. Alternative Two – The Proposed Action**

The proposed road construction would be situated along a ridge top, on stable slopes with no connections to any streams, and would increase road density within the Lower Olalla Creek seventh-field drainage by less than a one-tenth of one percent.

As the ridge, and hence the location of the proposed road, are not hydrologically connected to the stream network there would be no potential to increase sediment delivery to stream channels. The increase in road density in the project area would not be sufficient to create a measurable increase in peak flows associated with roads (Watershed Professionals Network 1999, IV-15).

The existing roads that would be authorized for use by Swanson Group, LLC are paved or aggregate-surfaced roads with adequate drainage, and their use would not increase the likelihood of sedimentation to stream channels or increased peak flows.

No cumulative effects to the water resources would be anticipated, as effects would not be hydrologically connected to the stream network.

**V. Soils**

**A. Alternative One – No Action**

Absent the issuance of a unilateral permit to construct an extension of Road No. 29-7-7.0 across BLM-managed land, there would be no soil compaction, displacement, erosion or loss of organic matter typically associated with road construction.

**B. Alternative Two – The Proposed Action**

Construction of the proposed extension to Road No. 29-7-7.0 would result in limited and localized soil displacement, compaction and loss of organic matter within the road right-of-way through exposure of bare soil within the cuts and fills.

To minimize the soil erosion potential, road construction would be limited to the dry season, between mid-May and mid-October. Following use and decommissioning of the road, the ripped road bed and any other exposed areas would be seeded and mulched.

No changes in slope stability would be expected from the road construction, since the ridge and adjacent side slopes along the proposed route are stable.

Use of existing roads controlled by the BLM would have negligible effects on soil resources.

Resulting effects to the soil are expected to be within the scope and range of those effects considered and addressed in the PRMP/EIS (Chapter 4-12 to 16). No cumulative effects to the soils resource would be anticipated, as effects would remain confined to the immediate vicinity of the proposed road prism.

## **VI. Monitoring**

Monitoring the effects of the proposed action, if implemented, would be done in accordance with the ROD/RMP, Appendix I (pp. 84-86, 193, and 195-199). Specific resources to be monitored would include: Matrix; Water and Soils; Wildlife Habitat; Fish Habitat; and Special Status Species Habitat.

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## **CHAPTER FIVE**

### **LIST OF AGENCIES AND PERSONS CONTACTED AND PREPARERS**

Notice of the initiation of this project analysis was made in the Fall 2007 Roseburg BLM Project Planning Update. If a decision is made to implement the proposed action, a notice of decision will be published in *The News-Review*, Roseburg, Oregon.

#### **I. Persons Contacted:**

Adjacent Landowners  
Registered Downstream Water Users  
Cow Creek Band of Umpqua Tribe of Indians

#### **II. Agencies, Organizations, and Individuals to be notified of the completion of the EA:**

American Forest Resource Council  
Douglas Timber Operators, Robert Ragon, Executive Director  
National Marine Fisheries Service  
Pacific Northwest 4-Wheel Drive Association  
U.S. Fish and Wildlife Service  
Umpqua Valley Audubon Society  
Umpqua Watersheds, Inc.

#### **III. List of Preparers:**

|              |   |
|--------------|---|
| Paul Ausbeck | Environmental Coordinator and Writer/Editor |
| Isaac Barner | Archaeologist                               |
| Gary Basham  | Botanist and Area Noxious Weeds Specialist  |
| Nancy Duncan | Wildlife Biologist                          |
| Wardman Fong | Soil Scientist                              |
| Jill Ralston | Hydrologist                                 |
| Joe Ross     | Management Representative                   |
| Don Scheleen | Access Specialist                           |
| Cory Sipher  | Fisheries Biologist                         |

## REFERENCES AND LITERATURE CITED

- Burger, Alan E. 2002. Conservation assessment of marbled murrelets in British Columbia, a review of biology, populations, habitat associations and conservation. Pacific and Yukon Region, Canadian Wildlife Service. 168 pp.
- Castro, J. and F. Reckendorf. 1995. Effects of Sediment on the Aquatic Environment: Potential NRCS Actions to Improve Aquatic Habitat. Natural Resources Conservation Service. Oregon State University, Department of Geosciences, Corvallis, OR.
- Copley, D., D. Fraser, and J. C. Finlay. 1999. Purple martins, *Progne subis*: A British Columbian success story, Canadian Field Naturalist 113(2):226-229.
- Csuti, B., A. J. Kimerling, T. A. O'Neil, M.M. Shaughnessy, E.P. Gaines, and M. M.P. Huso. 1997. Distribution, habitat, and natural history. Atlas of Oregon wildlife, Oregon State University Press, Corvallis, Oregon., p. 352.
- Dowlan, S. 1996. The breeding status and distribution of Harlequin Ducks in Oregon: a summary of observations and survey efforts. Oregon Birds 22:42-47.
- Duncan, N., T. Burke, S. Dowlan, and P. Hohenlohe. 2003. Survey Protocol for Survey and Manage Terrestrial Mollusk Species From the Northwest Forest Plan. Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service. Portland, OR. 70 pp.
- Duncan, N. 2005. BLM Sensitive Species Mollusks - Species Accounts: *Prophysaon* new species (Klamath tail-dropper).
- Federal Register. 1992. Determination of critical habitat for the Northern Spotted Owl. (57):1796-1838. U.S. Fish and Wildlife Service. Portland, OR.
- Federal Register. 1996. Final designation of critical habitat for the marbled murrelet. 61:26256-26320. U.S. Fish and Wildlife Service. Portland, OR.
- Federal Register. 2002. Magnuson-Stevens Act Provisions; Essential Fish Habitat. 67(12):2343-2383.
- Forsman, E. D., E. C. Meslow, and H. M. Wight. 1984. Distribution and Biology of the Spotted Owl in Oregon. Wildlife Monographs 87. 64 pp.
- Forsman, E.D. and A.R. Giese. 1997. Nests of northern spotted owls on the Olympic Peninsula, Washington. Wilson Bulletin 109(1):28-41.
- Furniss, M. J., T. D. Roelofs, and C. S. Yee. 1991. Road construction and maintenance. American Fisheries Society Special Publication 19:297-323.
- Henson, P. and T.A. Grant. 1991. The effects of human disturbance on trumpeter swan breeding behavior. Wildlife Society Bulletin 19: 248-257.

- Hershey, K. 1995. Characteristics of forests at spotted owl nest sites in the Pacific Northwest. 85 pp. Masters Thesis. Oregon State University.
- Holland, D.C. 1994. The western pond turtle: habitat and history. Final report for the U. S. Department of Energy, Portland, OR, Project Number 92-068, DOE/BP-62137-1.
- Johnson, David R., John T. Haagen and Alan C. Terrell. 2004. Soil Survey of Douglas County Area, Oregon. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Jones, J. A. 2000. Hydrologic processes and peak discharge response to forest removal, regrowth, and roads in 10 small experimental basins, western Cascades, Oregon. Water Resources Research, Vol. 36, No. 9, pp 2621-2642, September 2000.
- Lank, David B., Nadine Parker, Elizabeth A. Krebs, and Laura McFarlane Tranquilla. 2003. Geographic distribution, habitat selection, and population dynamics with respect to nesting habitat characteristics, of marbled murrelets. Centre for Wildlife Ecology, Simon Fraser University, Burnaby, Canada. 66 pp.
- Manley, Irene A. 1999. Behavior and habitat selection of marbled murrelets nesting on the Sunshine Coast. Masters of Science Thesis. Department of Biological Sciences, Simon Fraser University, Burnaby, Canada. 163 pp.
- Marshall, D. B., M. W. Chilcote, and H. Weeks. 1996. Species at Risk: sensitive, threatened, and endangered vertebrates of Oregon. 2<sup>nd</sup> Edition. Oregon Department of Fish and Wildlife, Portland, OR.
- Menke, C.A. and T. Kaye. 2003. Population Monitoring and Survey for *Lupinus sulphureus* ssp. *kincaidii* on the BLM Roseburg District. 29 pp.
- Nelson, S. Kim, and Amanda K. Wilson. 2002. Marbled murrelet habitat characteristics on state lands in western Oregon. Corvallis, OR: Oregon Cooperative Fish and Wildlife Research Unit, OSU, Department of Fisheries and Wildlife. 151 pp.
- O'Dell, T. E., J. F. Ammirati, and E. G. Schreiner. 1999. Ectomycorrhizal Basidiomycete Diversity and Abundance on a Moisture Gradient in the *Tsuga heterophylla* Zone. Canadian Journal of Botany.
- Oregon Department of Environmental Quality. 2003. Oregon's final 2002 303(d) list, Portland OR. [<http://www.deq.state.or.us/wq/303dlist/303dpage.htm>].
- Ralph, C.J., G.L. Hunter Jr., M.G. Raphael, and J.F. Piatt, technical editors. 1995. Ecology and conservation of the marbled murrelet. General Technical report PSW-GTR-152. Pacific Southwest Research Station. U.S. Department of Agriculture, U.S. Forest Service. Albany, CA.
- Reid, L.M. 1981. Sediment production from Gravel-Surfaced Forest Roads, Clearwater Basin, Washington. Fisheries Research Institute. College of Fisheries, University of Washington. Seattle Washington. FRI-UW-8108.

Reid, L.M., and T. Dunne. 1984. Sediment Production from Forest Road Surfaces. *Water Resources Research* 20-11: pp 1753-1761.

Richardson, M. J. 1970. Studies on *Russula emetica* and other agarics in a Scots pine plantation. *British Mycological Society* 55:217-219.

Rodgers, J.A., Jr., and H.T. Smith. 1995. Set-back distances to protect nesting bird colonies from human disturbance in Florida. *Conservation Biology* 9(1):89-99.

Thomas, J. W., E. D. Forsman, J. B. Lint, E. C. Meslow, B. R. Noon, and J. Verner. 1990. A Conservation Strategy for the northern spotted owl. A report by the Interagency Scientific Committee to address the conservation of the northern spotted owl. USDA Forest Service and USDI Fish and Wildlife Service, Bureau of Land Management, and National Park Service. Portland, Oregon.

USDA, U.S. Forest Service and USDI, Bureau of Land Management (BLM). 1994a. 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.

USDA, U.S. Forest Service and USDI, BLM. 1994b. Record of Decision and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

USDA, U.S. Forest Service and USDI, BLM. 2007. Final Supplemental Environmental Impact Statement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measures Standards and Guidelines.

USDI, BLM. Roseburg District. 1995. Roseburg District Integrated Weed Control Plan and Environmental Assessment.

USDI, BLM. Roseburg District. 1998. Olalla-Lookingglass Watershed Analysis.

USDI, BLM. 2007. Record of Decision to Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl.

Watershed Professionals Network. 1999. Oregon Watershed Assessment Manual. Prepared for the Governor's Watershed Enhancement Board, Salem, OR.

Wells, R.E., A.S. Jayko, A.R. Niem, G. Black, T. Wiley, E. Baldwin, K.M. Molenaar, K.L. Wheeler, C.B. DuRoss and R.W. Givler. 2000. Geologic Map and Database of the Roseburg 30'x 60' Quadrangle, Douglas and Coos Counties, Oregon.

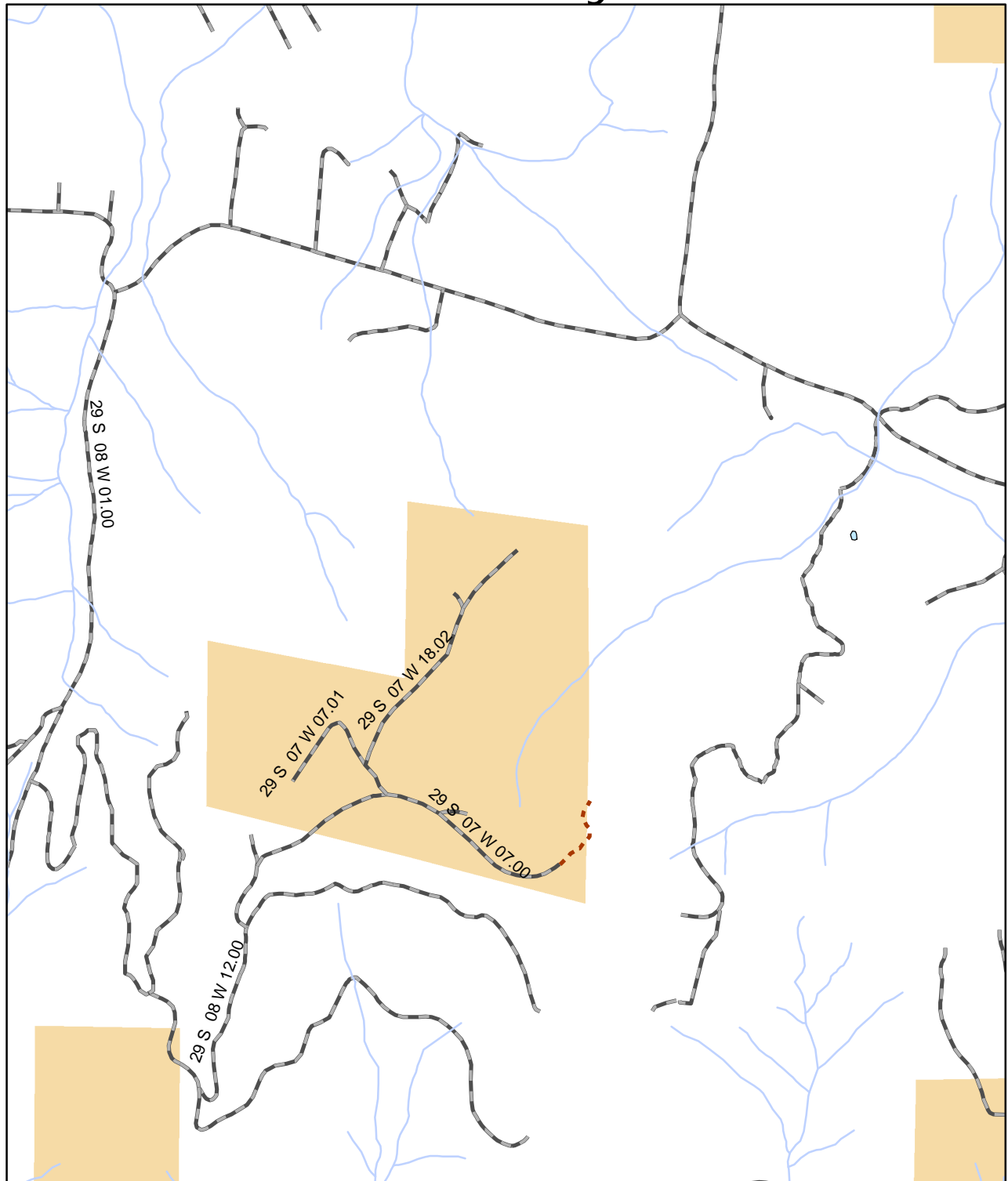
Wiggins, G. B. 1977. Larvae of the North American caddisfly genera (*Trichoptera*). University of Toronto Press. Toronto, Ontario, Canada. 401 pp.




Ziemer, R. R. 1981. Storm flow response of road building and partial cutting in small streams of Northern California, *Water Resources Research*, Vol. 17 (4):907-917.



T. 29 S. R. 7 W.

# North Berry



-  BLM Land
-  Other Land
-  New road construction



## APPENDIX B

### Preferred Habitat of Special Status Wildlife Species and Reason Elimination from Analysis

| Scientific Name                        | Common Name                 | Preferred Habitat   | Within Range | Habitat Present | Reason Eliminated From Analysis |
|--|-----------------------------|---|--------------|-----------------|---------------------------------|
| Bureau Sensitive – Oregon              |                             |   |              |                 |                                 |
| <i>Falco peregrinus anatum</i>         | American peregrine falcon   | Natural shelves, ledges, and potholes in rocky cliffs or outcrops in open or forested areas (Marshall et al. 1996)  | Y            | N               | No Habitat                      |
| <i>Haliaeetus leucocephalus</i>        | bald eagle                  | Nests in large conifers in mature to old-growth stands within 1-2 miles from major rivers, lakes and reservoirs (Marshall et al. 1996)  | Y            | N               | No Habitat                      |
| <i>Odocoileus virginianus leucurus</i> | Columbian white-tailed deer | Known breeding population restricted to Roseburg and vicinity, lowlands riparian in oak savannah, grasslands (Marshall et al. 1996)   | N            | N               | No Habitat                      |
| <i>Pristiloma arcticum crateris</i>    | Crater Lake tightcoil snail | Wet meadows and down woody debris in western Cascade Province above 2000 ft (Duncan et al. 2003)  | N            | N               | Out of Range                    |
| <i>Monadenia chaceana</i>              | Chace sideband snail        | Rocky areas and talus deposits, Klamath Province; Large downed woody material, Cascade Province (Duncan et al. 2003)  | Y            | N               | No Habitat                      |
| <i>Monadenia fidelis beryllica</i>     | Green sideband snail        | Deciduous trees and brush, western side of South River Resource Area. Associated with forest floor litter, in wet undisturbed low elevations riparian areas, seeps, and springs. (Duncan 2005)  | N            | N               | Out of Range                    |
| <i>Prophysaon sp. nov</i>              | Klamath tail-dropper        | Found in moist open areas associated with floodplains and spring margins in Ponderosa-Douglas fir forests. (Duncan 2005)  | N            | N               | Out of Range                    |
| <i>Melanerpes lewis</i>                | Lewis' woodpecker           | Riparian areas with large cottonwoods, logged or burned over ponderosa pine forests, or open oak or oak-conifer woodland. (Marshall et al. 1996)  | N            | N               | No Habitat                      |
| <i>Actinemys marmorata</i>             | Northwestern pond turtle    | Larger mountain and valley streams with deep pools, soils high in clay or silt fraction, south-southwest aspects and slope about 25% (range 0-60%, egg laying mostly June and July, incubation time average 70-80 days). (Holland 1994) | Y            | N               | No Habitat                      |
| <i>Helminthoglypt a hertleini</i>      | Oregon shoulderband snail   | Basalt talus, under rocks and woody debris in moist forests and shrubby riparian corridors. (Duncan et al. 2003)  | Y            | N               | No Habitat                      |
| <i>Podocetes gramineus affinis</i>     | Oregon vesper sparrow       | Open grassland areas. (Marshall et al. 1996)  | N            | N               | No Habitat                      |

| Scientific Name                     | Common Name                 | Preferred Habitat  | Within Range | Habitat Present | Reason Eliminated From Analysis |
|-------------------------------------|-----------------------------|--|--------------|-----------------|---------------------------------|
| <i>Progne subis</i>                 | Purple martin               | Along rivers, other water bodies, old burns in forest stands generally 80+ years, nest in abandoned woodpecker cavities, nest boxes. (Copley et al 1999; Marshall et al. 1996)   | Y            | N               | No Habitat                      |
| <i>Lanx subrotundata</i>            | Rotund lanx snail           | Aquatic snail, large river systems. (Duncan personal communication)  | Y            | N               | No Habitat                      |
| <i>Gonidea angulata</i>             | Western ridged mussel       | Large order streams and rivers   | Y            | N               | No Habitat                      |
| <i>Allomyia scotti</i>              | Scotts Appatanian caddisfly | Lives in small cold mountain streams, often at high elevation, turbulent waters, vertical rock faces in a thin layer of water. (Wiggins 1977)  | Y            | N               | No Habitat                      |
| <i>Corynorhinus townsendii</i>      | Townsend's big-eared bat    | Abandoned caves, bridges, or natural caves. Trees with hollows and other cavities. (Marshall et al 1996)   | Y            | N               | No Habitat                      |
| <i>Prophyaon vanattaie pardalis</i> | Spotted tail-dropper        | Leaf litter under bushes in mature conifer forests in the Coast Range and the east side of the Coast Range. (Duncan 2005)  | N            | N               | Out of Range                    |
| <i>Rana boylei</i>                  | Foothill yellow-legged frog | Deep slow moving water in larger streams. (Marshall et al. 1996)   | Y            | N               | No Habitat                      |
| <i>Myotis thysanodes</i>            | Fringed myotis              | Roost under loose bark of large diameter snags, colonies in caves, mines, buildings. (Marshall et al. 1996)  | Y            | N               | No Habitat                      |
| <i>Histrionicus histrionicus</i>    | Harlequin duck              | Clean fast flowing streams with abundance of riffles, rapids, gravel, cobble, and boulders. Nests in riparian zone and often hidden in rock cavities, on the ground, on logs, in hollow trees, snags, undercut stream banks, under woody debris. (Dowlan 1996; Marshall et al. 1996) | Y            | N               | No Habitat                      |
| <i>Antrozous pallidus pacificus</i> | Pacific pallid bat          | Associated with rocky dry areas near water. Known to occur in dry forests like ponderosa pine and oak forests. (Marshall et al. 1996)  | Y            | N               | No Habitat                      |
| <i>Elanus leucurus</i>              | White-tailed kite           | Open grassy areas, marshes, riparian woodlands, and meadows for foraging. Nests on trees or tall shrubs. (Csuti et al. 1997)   | Y            | N               | No Habitat                      |

## APPENDIX C

### Special Status Botanical Species Not Discussed in Detail

| Scientific Name                                   | Taxon          | Status             | Habitat Present | Survey Done |
|---|----------------|--------------------|-----------------|-------------|
| <i>Plagiobothrys hirtus</i>                       | Vascular Plant | Federal Endangered | No              | N/A         |
| <i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>   | Vascular Plant | Federal Threatened | Yes             | Yes         |
| <i>Adiantum jordanii</i>                          | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Arabis koehleri</i> var. <i>koehleri</i>       | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Asplenium septentrionale</i>                   | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Bensoniella oregana</i>                        | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Botrychium minganense</i>                      | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Calochortus coxii</i>                          | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Calochortus umpquaensis</i>                    | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Carex brevicaulis</i>                          | Vascular plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Carex comosa</i>                               | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Carex gynodynamis</i>                          | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Carex serratodens</i>                          | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Cicendia quadrangularis</i>                    | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Cimicifuga elata</i>                           | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Eschscholzia caespitosa</i>                    | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Eucephalis vialis</i>                          | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Horkelia congesta</i> ssp. <i>congesta</i>     | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Horkelia tridentata</i> ssp. <i>Tridentata</i> | Vascular plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Iliamna latibracteata</i>                      | Vascular Plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Kalmiopsis fragans</i>                         | Vascular Plant | Bureau Sensitive   | No              | N/A         |
| <i>Lathyrus holochlorus</i>                       | Vascular plant | Bureau Sensitive   | Yes             | Yes         |
| <i>Limnanthes gracilis</i> var. <i>gracilis</i>   | Vascular Plant | Bureau Sensitive   | No              | N/A         |

| Scientific Name                  | Taxon          | Status           | Habitat Present | Survey Done   |
|----------------------------------|----------------|------------------|-----------------|---------------|
| <i>Pellaea andromedaefolia</i>   | Vascular Plant | Bureau Sensitive | Yes             | Yes           |
| <i>Perideridia erythrorhiza</i>  | Vascular Plant | Bureau Sensitive | Yes             | Yes           |
| <i>Polystichum californicum</i>  | Vascular Plant | Bureau Sensitive | Yes             | Yes           |
| <i>Romanzoffia thompsonii</i>    | Vascular Plant | Bureau Sensitive | Yes             | Yes           |
| <i>Sisyrrinchium hitchcockii</i> | Vascular Plant | Bureau Sensitive | No              | N/A           |
| <i>Utricularia gibba</i>         | Vascular Plant | Bureau Sensitive | No              | N/A           |
| <i>Utricularia minor</i>         | Vascular Plant | Bureau Sensitive | No              | N/A           |
| <i>Wolffia borealis</i>          | Vascular Plant | Bureau Sensitive | No              | N/A           |
| <i>Wolffia columbiana</i>        | Vascular Plant | Bureau Sensitive | No              | N/A           |
| <i>Chiloscyphus gemmiparus</i>   | Bryophyte      | Bureau Sensitive | No              | N/A           |
| <i>Diplophyllum plicatum</i>     | Bryophyte      | Bureau Sensitive | No              | N/A           |
| <i>Schistostega pennata</i>      | Bryophyte      | Bureau Sensitive | Yes             | Yes           |
| <i>Tayloria serrata</i>          | Bryophyte      | Bureau Sensitive | Yes             | Yes           |
| <i>Tetraphis geniculata</i>      | Bryophyte      | Bureau Sensitive | Yes             | Yes           |
| <i>Tetraplodon mnioides</i>      | Bryophyte      | Bureau Sensitive | Yes             | Yes           |
| <i>Bryoria subcana</i>           | Lichen         | Bureau Sensitive | No              | N/A           |
| <i>Calicium adpersum</i>         | Lichen         | Bureau Sensitive | unknown         | Yes           |
| <i>Hypogymnia duplicata</i>      | Lichen         | Bureau Sensitive | Yes             | Yes           |
| <i>Leptogium cyanescens</i>      | Lichens        | Bureau Sensitive | Yes             | Yes           |
| <i>Lobaria linita</i>            | Lichen         | Bureau Sensitive | Yes             | Yes           |
| <i>Pannaria rubiginosa</i>       | Lichen         | Bureau Sensitive | Yes             | Yes           |
| <i>Pilophorus nigricaulis</i>    | Lichen         | Bureau Sensitive | No              | N/A           |
| <i>Arcangeliella camphorata</i>  | Fungi          | Bureau Sensitive | Yes             | Not practical |
| <i>Bridgeoporus nobilissimus</i> | Fungi          | Bureau Sensitive | No              | N/A           |
| <i>Cudonia monticola</i>         | Fungi          | Bureau Sensitive | Yes             | Not practical |
| <i>Dermocybe humboldtensis</i>   | Fungi          | Bureau Sensitive | Yes             | Not practical |
| <i>Gomphus kauffmanii</i>        | Fungi          | Bureau Sensitive | Yes             | Not practical |
| <i>Helvella crassitunicata</i>   | Fungi          | Bureau Sensitive | Yes             | Not practical |

| Scientific Name                          | Taxon | Status           | Habitat Present | Survey Done   |
|--|-------|------------------|-----------------|---------------|
| <i>Leucogaster citrinus</i>              | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Otidea smithii</i>                    | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia californica</i>         | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia dissiliens</i>          | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia gregaria</i>            | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia olivacea</i>            | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia oregonensis</i>         | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia pseudofestiva</i>       | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia scatesiae</i>           | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia sipei</i>               | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Phaeocollybia spadicea</i>            | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Pseudorhizina californica</i>         | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Ramaria amyloidea</i>                 | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Ramaria gelatiniaurantia</i>          | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Ramaria largentii</i>                 | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Ramaria spinulosa var. diminutiva</i> | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Rhizopogon chamalelontinus</i>        | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Rhizopogon exiguus</i>                | Fungi | Bureau Sensitive | Yes             | Not practical |
| <i>Sowerbyella rhenana</i>               | Fungi | Bureau Sensitive | Yes             | Not practical |

## Appendix D

### 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 action or alternative**, unless otherwise described in this EA.

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