

*Beatty Creek/Island Creek
Land Exchange
Environmental
Assessment*

**Bureau of Land Management
South River Field Office
Roseburg District**

EA# OR105-01-06

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1.0 Purpose of 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).

1.1 Introduction

The Roseburg District, BLM proposes a land exchange with Roseburg Resources Company (RRC). RRC would acquire up to 4 tracts of public domain lands totaling approximately 183 acres (hereinafter called selected lands or selected parcels) in exchange for approximately 764 acres of RRC lands (hereinafter called offered lands or offered parcels). Approximately 738 acres of the offered lands are adjacent to the BLM-managed Beatty Creek Area of Critical Environmental Concern and Research Natural Area (ACEC/RNA). The remainder of the offered lands border the BLM-managed Island Creek Day Use Recreation Site.

1.2 Background

During the week of April 12, 2000, RRC submitted a request, under a reciprocal right-of-way (R/W) agreement with the Roseburg District, BLM, to construct a road through a portion of the Beatty Creek ACEC/RNA. The proposed road would provide access to a landing for the planned helicopter logging of RRC lands adjacent to the ACEC/RNA, scheduled for later that year. In preliminary discussions with the BLM regarding alternatives to building a road through the ACEC/RNA, representatives of RRC expressed a willingness to consider a land exchange. Further discussions and a field review by the BLM and RRC yielded an exchange proposal. The BLM developed and submitted the proposal to RRC on July 6, 2000. An Agreement to Initiate a land exchange was signed by both parties on March 15, 2001, following approval by the BLM Washington Office of the Beatty Creek/Island Creek land exchange Feasibility Analysis.

Acquisition of the offered lands is consistent with direction contained in the Roseburg District *Proposed Resource Management Plan/Environmental Impact Statement* (PRMP/EIS) and *Record of Decision and Resource Management Plan* (ROD/RMP). The PRMP/EIS (Chapter 2-36) states that “Land acquisition will be pursued for the Beatty Creek Area of Critical Environmental Concern/Research Natural Area to block up ownership and improve management opportunities.” Management Actions/Direction, under Land Tenure Adjustments (ROD/RMP p. 68), provides guidance to “Make exchanges to enhance public resource values and/or improve land patterns and management capabilities of both private and BLM-administered land within the planning area by consolidating ownership and reducing the potential for land use conflict.” Expansion of the Beatty Creek ACEC/RNA is also recommended in the Cow Creek Watershed Analysis (USDI 1997 p. 34), “. . . to protect Port-Orford-cedar from being infected by *Phytophthora lateralis* and to protect Port-Orford-cedar in the Beatty

Creek RNA from being infected.” The ROD/RMP also identifies lands adjacent to the Island Creek Recreation Site as desirable for acquisition (p. 57).

All of the selected federal parcels are classified as “land tenure zone 3” lands, as identified and described in the ROD/RMP, Appendix C. Zone 3 lands are isolated from other BLM-managed lands, are considered uneconomical for BLM to manage, and have been identified as available for disposal through exchange or sale. Both the offered and selected lands meet the land tenure adjustment criteria listed in the ROD/RMP (Appendix B, p.123), which are “. . . used to evaluate opportunities for disposal or acquisition.”

This environmental assessment will 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 environmental consequences of the proposed action and no action alternatives, in the short and long term.

Beatty Creek ACEC/RNA

The objectives for the management of ACECs are: maintenance, protection, and/or restoration of relevant and important resource values. RNAs are to be managed for scientific study, research and education, and to provide a baseline against which human impacts on natural systems can be measured (ROD/RMP, pp. 50-51).

The Beatty Creek ACEC/RNA was originally designated to protect representative serpentine plant communities identified in the Oregon Natural Heritage Plan (Alverts 1989). These communities, which occur in both upland and riparian habitats, represent the important and relevant features for which the ACEC/RNA was designated. The ACEC/RNA currently consists of two parcels, each approximately 80 acres in size, that connect at one point and are surrounded by privately-owned timberland. This configuration limits the BLM’s ability to fully protect these values. The reciprocal R/W agreement between RRC and the BLM allows RRC to build roads across BLM-administered lands where necessary for management access to their lands. Although the management restrictions for Special Areas prohibit the BLM from building roads through an ACEC/RNA, the reciprocal R/W agreement held by RRC pre-dates the establishment of the Beatty Creek ACEC/RNA, conveying to RRC a legal and binding right to build a road to access their lands.

Island Creek Day Use Recreation Site

The Island Creek Day Use Recreation Site is designated for recreational gold panning and day use activities along the Cow Creek Back Country Byway. It is a site that has been a local favorite for many years. The site’s small size, its location between the roadway and the stream, and its confinement by the adjacent RRC property, prevents any expansion or further development. The recreation site currently consists of a restroom, parking area, and picnic area which provide a base for site expansion that would increase recreational opportunities.

The BLM manages few lands directly along Cow Creek, which limits the recreational opportunities that may be provided. The Back Country Byway encourages individuals to visit and recreate in this area, however, there are no private recreation sites and only 4 developed BLM recreation sites along the 45-mile route. Because of the location of the property lines around the Island Creek Day Use Recreation Site, many visitors believe they are using the BLM-managed lands when they are actually on lands owned by RRC. Acquisition of the offered lands adjacent to the site would improve access, and improve the BLM's recreation management opportunities at the site.

1.3 Purpose of the Action

The purpose of the proposed action is to acquire lands to consolidate ownership in order to improve the management of important and relevant features of the Beatty Creek ACEC/RNA, and to acquire lands that would allow for additional recreation opportunities at the Island Creek Day Use Recreation Site.

1.4 Need for Action

The BLM has a need to manage the Beatty Creek ACEC/RNAs for the maintenance and protection of its relevant and important resource values. Expansion of the existing Beatty Creek ACEC/RNA would improve the BLM's ability to maintain or protect the resource values for which the area was originally designated. These resource values include representative plant communities listed in the Oregon Natural Heritage Plan and special status plant species listed by the BLM.

The Roseburg District has a need to provide a range of developed recreation opportunities to meet projected public demand. There is a need to expand the Island Creek Day Use Recreation Site to meet anticipated increases in demand for day use activities such as picnicking, recreational gold panning, wildlife observation, and nature study.

1.5 Resource Values Considered but Eliminated from Detailed Analysis

BLM guidelines require consideration of a variety of resource values when analyzing an exchange proposal. This section of the EA identifies those resource values which were considered but eliminated from detailed analysis. The rationale for elimination is provided as cited below.

1.5.1 Critical Elements of the Human Environment

"Critical Elements of the Human Environment" are subject to requirements specified in statute, regulations, or executive order. The following "critical elements" are either not present or would not be affected by any of the alternatives: Air Quality, Cultural Resources (as related to federal parcels), Environmental Justice, Prime or Unique Farmlands, Floodplains, Native

American Religious Concerns, Hazardous or Solid Wastes, Wetlands, Wild and Scenic Rivers, Wilderness, and Visual Resource Management.

1.5.2 Resource Issues Eliminated From Further Consideration

Other resources requiring consideration (by BLM guidelines) include: existing or proposed wild horse and burro management areas, mineral resources, rangeland resources, and existing lands uses (rights-of-way, permits, leases, etc.). These were eliminated because they are either not present or would not be affected by any of the alternatives. In addition, there would be no adverse effect on energy resources because there are no known energy resources of a commercial nature, or existing/proposed pipelines or transmission lines in the project area.

1.6 Resource Concerns to be Considered and Analyzed

The following resource concerns have been identified for detailed analysis in this EA. Issue identification resulted from consultation with other local and federal agencies, interdisciplinary (ID) team review, and comments received in the public involvement process. Chapter 5 of this EA identifies public involvement procedures used to gather input for this exchange proposal.

1.6.1 Impacts to Special Status Species

- The proposed exchange may affect the quality and quantity of special status plant habitat.
- The proposed exchange may affect listed fish species and Essential Fish Habitat in the project area.
- The proposed exchange may affect special status wildlife and their habitat.

1.6.2 Impacts to SEIS Special Attention Species

- The proposed exchange may affect special attention (Survey and Manage) plant and wildlife species and associated habitat.

1.6.3 Impacts to Beatty Creek ACEC/RNA

- The proposed exchange may affect the relevant and important resource values that were the basis for the creation of the Beatty Creek ACEC/RNA.

1.6.4 Impacts to BLM Harvest Land Base (HLB)

- The proposed exchange may affect BLM's timber HLB and the associated allowable sale quantity (ASQ).

1.6.5 Impacts to Water Quality

- The proposed exchange may affect the water quality of perennial streams within the selected parcels.

1.6.6 Impacts to Recreational Opportunities

- The proposed exchange may affect the level of recreational opportunities present at the Island Creek Day Use Recreation Site.

2.0 Alternatives Including the Proposed Action

This chapter describes the “no action” and “proposed action” alternatives, and discusses alternatives considered but eliminated from detailed analysis, along with a rationale for their elimination.

Common to all parcels - Both Alternatives

This analysis assumes that RRC would proceed with timber harvest on their offered lands in the Beatty Creek drainage, in accordance with the Oregon Forest Practices Act, should the proposed land exchange not occur. RRC would construct approximately 400 feet of road across the northern portion of the Beatty Creek ACEC/RNA in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 25, T. 30 S., R. 6 W., in order to facilitate the harvest of timber from the offered lands. This road would be constructed under rights granted under an existing reciprocal right-of-way agreement, and would generally follow the route of an old jeep road that was blocked in the mid-1990s. The BLM would proceed with timber harvest on the selected parcels, at some future time, in accordance with the ROD/RMP. Although regeneration harvest of the selected BLM parcels is discussed as a consequence of the “no action” alternative, a separate EA would be required prior to the BLM implementing such an action.

Should the land exchange occur, it is assumed that RRC would proceed with timber harvest on the selected lands they acquire, and the BLM would manage the offered lands based on the proposed Land Use Allocations shown on Map 9 (Appendix 1). The potential consequences discussed in this EA are based upon BLM’s Land Use Allocations (LUA) of the selected parcels, and on BLM’s proposed LUA of the offered lands. All 4 of the selected parcels could be exchanged, although it is expected that a lesser number would be adequate to equalize values as required by BLM land exchange regulations.

Oregon Forest Practices Act - Riparian Management Area Requirements

Beatty Creek is located within the offered parcel. White Creek and Beatty Creek are located within two of the selected parcels, and are classified as medium streams, for the purpose of management under Riparian Management Area requirements contained in the Oregon Forest Practices Act. Tributary streams within the parcels are not classified and are not subject to Riparian Management Area requirements. The Oregon Forest Practices Act states “The desired future condition for streamside areas along fish use streams is to grow and retain vegetation so that, over time, average conditions across the landscape become similar to those of mature streamside stands” (ODF 1994). Limited timber harvest is allowed in Riparian Management Areas, but a 20-foot no-cut area must be maintained on both sides of a stream, as measured from the high water mark. In addition to the 20-foot no-cut area, a minimum of 140 square feet of conifer basal area must be retained within 70 feet, on each side, per 1000 feet of stream buffer length, and at least 30

conifer trees with a Diameter at Breast Height (DBH) of 8 inches or greater per 1000 feet of stream length, must be retained on each side. The conifer trees within the 20 foot no-cut area count toward fulfillment of these requirements. Photos 1-3 in Appendix 1 illustrate the approximate locations of Riparian Management Areas that would be required on the selected parcels under the Oregon Forest Practices Act.

ROD/RMP Riparian Reserve Requirements

Timber harvest on the selected BLM-managed land would be conducted in accordance with the management direction of the ROD/RMP, under the “no-action” alternative. Portions of the selected parcels include Matrix lands that are included in BLM’s HLB. Future harvest of these timber lands is assumed. Riparian Reserves would be designated along all intermittent and perennial streams. Riparian Reserve widths would be two “site-potential” tree heights on either side of fish-bearing streams. All other streams would have Riparian Reserves established, equal to one “site-potential” tree height in width. Photos 1-3 in Appendix 1 illustrate the approximate locations of Riparian Reserves that BLM would be established on the selected parcels.

2.1 No Action Alternative

Under an alternative of “no action”, the BLM and RRC would not proceed with the proposed land exchange. The existing pattern of land ownership and management would remain unchanged. The selected parcels would continue to be managed by the BLM in accordance with the Roseburg District ROD/RMP. RRC would retain ownership of the offered parcels, would build the proposed road across the ACEC/RNA, and would continue to manage those lands for timber production, in accordance with the Oregon Forest Practices Act.

2.2 The Proposed Action: Proceed with the Beatty Creek/Island Creek Land Exchange

The proposed alternative would consummate the Beatty Creek/Island Creek land exchange, which would consist of a direct land exchange between the BLM and RRC. The selected federal parcels and the offered private parcels are located entirely within Douglas County, Oregon, as shown on the vicinity maps (Appendix 1). Appendix 2 and Appendix 3 contain the legal descriptions of the offered parcels and selected parcels.

The timber and land values of the selected BLM-managed parcels are considered more than adequate to balance fair market value against the offered parcels. The BLM does not anticipate that all the selected parcels would be needed to conclude the proposed exchange.

The BLM would acquire approximately 764 acres of RRC lands which would become Public Domain lands. As shown on map 9 (Appendix 1), approximately 657 acres of the acquired lands would be designated as and added to the existing ACEC/RNA.

Approximately 65 acres in the E½NE¼, Section 30, T. 30 S., R. 6 W., W.M. would not be added to the ACEC/RNA. Approximately 17 acres would be allocated and managed as Riparian Reserves, with the remaining acres allocated and managed as Matrix lands in accordance with the ROD/RMP. Some of these lands could be added to the BLM HLB pending timber production capability classification. The two remaining parcels, totaling approximately 26 acres and located directly adjacent to the Island Creek Day Use Recreation Site would be incorporated into the site and managed for recreation.

As previously noted, RRC could acquire any combination of the selected parcels. This would depend upon the appraised values¹ of both the offered and selected parcels. Conveyance would be subject to valid existing rights of record. RRC would manage the acquired lands under the requirements of the Oregon Forest Practices Act. Harvest would be expected within 1 to 5 years.

2.3 Alternatives Considered But Eliminated From Detailed Analysis

2.3.1 Cash Purchase

Pursuing a cash purchase of the offered property through the Land and Water Conservation Fund or other funding was considered but eliminated from further consideration since RRC would not offer the lands for sale. RRC has cooperated with the BLM in developing a land exchange proposal in order to replace their timber volume in Beatty Creek with timber volume from selected BLM parcels.

2.3.2 Designation of All Offered Lands as ACEC/RNA

An alternative of designating all the offered lands adjacent to Beatty Creek as ACEC/RNA was considered but eliminated from detailed analysis for the following reasons:

- Based on property line locations, the offered lands include lands outside of the Beatty Creek drainage. Approximately 65 acres, in the E½NE¼, Section 30, T. 30 S., R. 6 W., W.M. are composed of a forest type other than the serpentine habitat and vegetative associations represented in the ACEC/RNA. These lands are not needed for management of the relevant and important resource values within the Beatty Creek drainage.
- The offered land includes two narrow strips between the railroad right-of-way and Cow Creek which do not satisfy the relevance and importance criteria necessary for inclusion in the ACEC/RNA.

¹ Either the BLM or RRC could equalize the exchange value with a cash payment not to exceed 25 percent of the value of the Federal lands to be conveyed in the exchange transaction.

3.0 Description of the Affected Environment

This chapter describes the existing BLM-managed Beatty Creek ACEC/RNA and the Island Creek Day Use Recreation Site, the offered parcels, and the selected parcels in relation to the specific resources that are present or potentially present, and which could be affected by the proposed action.

3.1 Vegetation/Timber

3.1.1 Beatty Creek ACEC/RNA

An old jeep road that transected Jeffrey pine savannah in the northern half of the ACEC/RNA was the only previous access to the tract. It was blocked in the mid-1990s, and there has been no vehicular access since. The ACEC/RNA contains unique plant associations that occur predominantly on serpentine soils. The dominant association is upland Jeffrey pine (*Pinus jeffreyi*) savannah. Other common tree species include incense-cedar (*Libocedrus decurrens*), Pacific madrone (*Arbutus menziesii*), and Douglas-fir (*Pseudotsuga menziesii*). Shrubs are scattered and consist primarily of buckbrush (*Ceanothus cuneatus*), western poison-oak (*Rhus diversiloba*) and oceanspray (*Holodiscus discolor*). Buckbrush occasionally grows in dense patches where openings occur in the savannah community. Ground cover consists of a variety of native grass and forb species.

Native plant communities within the ACEC/RNA and throughout the Beatty Creek drainage are considered to be in excellent condition. There are few noxious weeds and no serious infestations. Exotic species represent about 17 percent of the total number of species documented in the ACEC/RNA, but are a much smaller component in terms of abundance and distribution.

Riparian plant communities are narrow bands of mixed evergreen and deciduous forest along Beatty Creek (Zika 1987). Conifer species include Douglas-fir, incense-cedar, Port-Orford-cedar (*Chamaecyparis lawsoniana*), and Pacific yew (*Taxus brevifolia*). Common hardwood species consist of Oregon ash (*Fraxinus latifolia*), big leaf maple (*Acer macrophyllum*), California laurel (*Umbellularia californica*), and alder (*Alnus* sp.). Shrubs include western azalea (*Rhododendron occidentale*), oceanspray, and western poison-oak.

Port-Orford-cedar is at risk of infection across its entire range from the exotic pathogen *Phytophthora lateralis*. This disease was first reported in wild stands in 1952 in Coos County, Oregon (Zobel 1985). Port-Orford-cedar is a species that is often a component of riparian habitats. Healthy Port-Orford-cedar is common in the riparian habitats of the ACEC/RNA and the adjacent offered lands. This population is unique in that it is at the

eastern extent of the species' range in Oregon, and currently shows no sign of infection. Several Port-Orford-cedar genotypes have been identified in the greater Beatty Creek area that appear resistant to root disease, and which warrant further study (Casavan, personal records, 2001).

3.1.2 Island Creek Day Use Recreation Site

The recreation site, located between the Cow Creek access road and Cow Creek has been subject to repeated surface disturbance. A portion of the site is a non-vegetated gravel bar. The developed portion of the site, approximately 2 acres in size, includes a stand of trees that are predominantly Douglas-fir. Shrub and herbaceous cover is scattered and light. This area is heavily used, and typical of much of the Cow Creek shoreline and access road. Noxious weeds are common and numerous, including species such as Himalayan blackberry (*Rubus discolor*), Scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), yellow starthistle (*Centaurea solstitialis*), rush skeletonweed (*Chondrilla juncea*), and meadow knapweed (*Centaurea solstitialis*).

3.1.3 Offered Lands

The offered lands total approximately 764 acres, composed of all the lands RRC owns within the area drained by Beatty Creek, and some lands that drain into Crawford Creek. There have been no previous forest management activities in the portions of the offered parcels within Beatty Creek. Previous disturbance has been limited to the establishment of a patented homestead in a portion of the parcel.

Exotic species are a minor component of the plant communities. While limited presence of noxious weeds was noted, no severe infestations are documented outside of areas immediately adjacent to the Cow Creek access road.

The condition and composition of the plant communities on the offered lands in the area drained by Beatty Creek are comparable to those in the adjacent ACEC/RNA, as described in 3.1.1. The serpentine plant communities are composed almost entirely of Jeffrey pine savannah and some areas of riparian forest.

Serpentine soils cease near the end of Beatty Creek and the plant community transitions into a Douglas-fir forest community. Common associates include Pacific madrone, Jeffrey pine, canyon live oak (*Quercus chrysolepis*) and California laurel. The southwest portion supports an oak-madrone forest, with canyon live oak and Pacific madrone as the dominant tree species. Western poison-oak, hoary manzanita (*Arctostaphylos canescens*) and bristly manzanita (*Arctostaphylos columbiana*) are the most common shrub species. Non-forested marine conglomerate rock outcrops also occur in the lower portions of Beatty Creek and are dominated by grass and forb species.

Site productivity for timber production on serpentine soils is typically poor. These soils contain high concentrations of elements such as aluminum, nickel and magnesium,

which are toxic to many tree species. These soils also possess a poor water storage capacity and are limited in nutrients such as nitrogen, phosphorus, and potassium. The average timber volume per acre, for all species, is approximately 6 thousand board feet (mbf). The average DBH for all commercial species is 17 inches. Jeffrey pine volume averages approximately 3 mbf per acre. The Port-Orford-cedar on the offered lands appears healthy and free of root disease.

The narrow band of land between the Cow Creek access road and Cow Creek, including the Island Creek parcels, supports both shrub and forest habitat. Shrub habitat is dominated by Himalayan blackberry, Scotch broom, French broom, and species of willow (*Salix* sp.). Forest habitat is composed of Douglas-fir, ponderosa pine (*Pinus ponderosa*), Pacific madrone, big leaf maple, black cottonwood (*Populus trichocarpa*), and Oregon ash.

Many species of noxious weeds are well established along the Cow Creek access road and the Island Creek parcels. At least nine different species of noxious weeds have been documented (Table 1).

Table 1. Noxious Weeds Observed on Offered Parcels		
Scientific Name	Common Name	Status Category ¹
<i>Centaurea pratensis</i>	meadow knapweed	B
<i>Centaurea solstitialis</i>	yellow starthistle	B,T
<i>Chondrilla juncea</i>	rush skeletonweed	B,T
<i>Cirsium vulgare</i>	bull thistle	B
<i>Cytisus scoparius</i>	Scotch Broom	B
<i>Genista monspessulana</i>	French Broom	B
<i>Hypericum perforatum</i>	St John's wort	B
<i>Lythrum salicaria</i>	purple loosestrife	B
<i>Rubus discolor</i>	Himalayan blackberry	B
¹ Status Category: B = noxious weeds regionally abundant with limited distribution in some areas. T = target noxious weeds identified by the State Weed Board for priority control and for which the state will develop a statewide management plan.		

3.1.4 Selected lands

Common to all Selected parcels

All four of the selected parcels are Public Domain (PD) lands. These lands are classified as "land tenure zone 3", in Appendix C of the ROD/RMP (pp. 125-128). These are lands

which are isolated from other BLM-managed lands, considered uneconomical for the BLM to manage, and identified as available for disposal through exchange or sale. All of the selected parcels are Matrix lands as defined by the ROD/RMP, and are allocated as General Forest Management Area (GFMA) and Riparian Reserves.

Table 2 identifies the portion of each parcel that is included in BLM’s HLB, and acres withdrawn for existing roads, Riparian Reserves, and non-commercial forest lands as designated by the Timber Productivity Capability Classification.

TABLE 2 - BLM Harvest Land Base Acres in Selected Parcels ¹

Selected Parcel	Gross Acres	Withdrawals from the Harvest Land Base ¹			Harvest Land Base Acres (Matrix)
		Road Acres	Riparian Reserves	TPCC ² Non-Commercial	
Hinckel Creek	23	0	13		10
Dickinson Mtn.	80	3	17		60
White Cr. East	40	3	0	1	36
White Cr. West	40	2	24		14
TOTALS	183	8	54	1	120

¹ Acres used in this table are GIS acres, rounded to whole acres. Appendix 1, Photos 1-3, show locations of these areas.

² Timber Productivity Capability Classification.

3.1.4.1 Parcel 1 (Hinckel Creek)

This parcel is bisected by a segment of Beaty Creek (not to be confused with Beatty Creek in the offered lands). This creek flows north-south through the parcel, and is tributary to Hinckel Creek. The forest is mostly a western hemlock/salal/western sword fern plant association. The stand is at an elevation between 1,300 and 1,500 feet, and ranges in age from roughly 100-220 years of age. Douglas-fir predominates with lesser numbers of grand fir (*Abies grandis*), western hemlock (*Tsuga heterophylla*), incense-cedar and western redcedar (*Thuja plicata*). Across the entire parcel, the average DBH is 17 inches, with average merchantable volume of 42 mbf per acre. The western half of the parcel is 12-16 inch DBH, second-growth timber. The eastern half is late-successional forest with trees generally in the 28-52 inch DBH range, except for some scattered Douglas-fir that are older, and up to 64 inches DBH. Vine maple (*Acer circinatum*) is a common component of the riparian habitat through the middle of the parcel. A private forest road provides access to within 1/4 mile of the parcel. RRC manages the lands adjoining three sides of the parcel, with BLM-managed O&C lands on the east side.

3.1.4.2 Parcel 2 (Dickinson Mountain)

This parcel is located near a ridgetop, between 1,400 and 2,000 feet in elevation. Two intermittent streams, that are tributary to Elk Creek, originate in the parcel. There are several acres of meadow habitat dominated by pasture grasses along the southern

boundary. The remainder of the parcel is forested and typed as a Douglas-fir/Oregon-grape/western sword fern plant association. Vine maple and grand fir are common components in riparian areas. Approximately 20 acres of the parcel, on the southern end, is a 36-year-old second-growth stand of ponderosa pine and Douglas-fir that was previously tractor logged. The remainder of the parcel is forested by an unharvested stand dominated by Douglas-fir with scattered grand fir and Ponderosa pine and contains a variety of age classes. Tree diameters generally range from 8-40 inches, with some older, scattered Douglas-fir as large as 60 inches DBH. Merchantable timber volume for the entire parcel averages approximately 32 mbf per acre, with an average DBH of 19 inches. To the north, a surfaced BLM road provides access to within 1/4 mile of the parcel. A natural surface road continues into the parcel. Scotch broom (*Cytisus scoparius*), a noxious weed, is present along this road. The parcel is surrounded by lands owned and managed by several private forest land owners. RRC manages lands bordering the parcel along the south half of the west side.

3.1.4.3 Parcel 3 (White Creek East)

This parcel is a combination of two plant associations; Western hemlock/vine maple/salal, and Douglas-fir/dwarf Oregon-grape/western sword fern. Elevation ranges from 1,600 to 2,000 feet. Approximately 40 percent of the parcel consists of a plantation with 5-15 foot tall Douglas-fir, approximately 10 years old. The remainder of the parcel is a second-growth stand, approximately 25 years old, that is predominantly Douglas-fir with occasional grand fir, western hemlock, incense-cedar and western redcedar. The plantation has no merchantable volume except for a few, scattered trees that were retained for future snag recruitment. The merchantable volume of the second growth averages approximately 8 mbf per acre with an average DBH of 11 inches. Weyerhaeuser Co. timberlands surround the parcel. The BLM has management access on existing roads. Scotch broom is growing along the road where it runs into the parcel. No public access exists as the roads are controlled by Weyerhaeuser. Although this parcel is not adjacent to RRC lands, the parcel was identified as desirable because of its proximity to parcel 4.

3.1.4.4 Parcel 4 (White Creek West)

This parcel is a Western hemlock/vine maple/salal plant association. The stand is predominantly Douglas-fir with a mix of western hemlock, grand fir, incense-cedar and western redcedar. Elevation ranges from 1,300 to 1,600 feet. White Creek flows from south to north across the northeast 1/4 of the parcel. Half of the parcel is a second-growth stand approximately 60-years-old. The remainder is late-successional forest. Average DBH is 13 inches, and the merchantable timber volume averages approximately 29 mbf per acre. Scotch broom is present along the road through the parcel. The BLM has management access over the existing roads. No public access exists, as the roads are controlled by Weyerhaeuser Co. RRC manages lands that border this parcel at its southwest corner.

3.2 Botany

3.2.1 Special Status Species

Special status species are those: listed as threatened or endangered under the Endangered Species Act of 1973, as amended; candidates or species proposed for listing under the Act; or species designated as Bureau Sensitive or Bureau Assessment. Bureau Sensitive species are eligible for Federal or State listing or candidate status as designated under BLM 6840 policy. Bureau Assessment species are designated under Oregon/Washington BLM 6840 policy, are not presently eligible for listing or candidate status, but are of State concern and may require protection in the application of BLM management activities.

There are no plant species identified in any of the project area lands that are “listed”, “proposed” for listing, or “candidates” for listing under the Endangered Species Act.

The special status species present within the Beatty Creek ACEC/RNA, the Island Creek Day Use Recreation Site, or the offered or selected parcels will be discussed below specific to where the species are present or suspected to occur and could be affected by the proposed action. Where a species is not discussed, there is no anticipated effect to the species relative to that land parcel.

3.2.1.1 Beatty Creek ACEC/RNA

Special status species identified within the ACEC/RNA include the State Threatened/Bureau Sensitive wayside aster (*Eucephalus vialis*) and Bureau Sensitive pseudoleskeela moss (*Pseudoleskeela serpentinense*). There are three identified populations of pseudoleskeela moss, all occurring on serpentine rock outcrops. Wayside aster occurs along the edges of riparian forest and in the forested draws along Beatty Creek. This population of wayside aster is estimated to be one of the largest known.

3.2.1.2 Island Creek Day Use Recreation Site

There are no known special status species on the site.

3.2.1.3 Offered Lands

Four special status species are known to occur on the Beatty Creek offered parcel. The Bureau Sensitive wayside aster occurs along the edge of riparian forest and in forested side draws along Beatty Creek. Over 60 percent of the entire population is on the offered parcel and is contiguous with the population in the ACEC/RNA.

Three populations of the Bureau Sensitive pseudoleskeela moss have been identified on serpentine rock outcrops in the offered parcel. There are 2 sites located in Section 30, T. 30 S., R. 6 W., and one in Section 36, T. 30 S. R. 7 W. Spring phacelia (*Phacelia verna*), a Bureau Tracking species, and California sword fern (*Polysticum californicum*), a Bureau Assessment species, occur on marine conglomerate outcrops. Spring phacelia is

restricted to shallow moss cover over bedrock where there is very little grass and forb cover. California sword fern occurs on rock bluffs with little associated vegetation.

Crinite mariposa lily (*Calochortus coxii*), a Bureau Sensitive and State Endangered species, may be present on the offered parcel, based on the available habitat. Crinite mariposa lily is an endemic species restricted to serpentine soils in Douglas County, Oregon. This species has been documented in the Lower Cow Creek watershed, less than five miles from the offered parcel.

3.2.1.4 Selected Lands

No special status plants were documented during botanical surveys conducted on the selected parcels in June, 2000, and April, 2001.

3.2.2 SEIS Special Attention Species

These are species designated for protection under Survey and Manage standards and guidelines in the Northwest Forest Plan 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), and incorporated into the Roseburg District ROD/RMP.

Appendix 4, table 1 identifies SEIS species which do not require pre-disturbance surveys. Although the selected parcels contain habitat which could support some of these species, impacts would not exceed those described in Survey & Manage SEIS (USDA, USDI 2000), and these species will not be discussed further in this analysis.

3.2.2.1 Beatty Creek ACEC/RNA

Bryophyte, lichen and fungi surveys conducted in the ACEC/RNA located the Survey & Manage species listed in Table 3 (Wagner 1997, Stone 1997, Trappe 1999).

Table 3. Survey & Manage Species Located in the Beatty Creek ACEC/RNA.

Scientific Name	Common Name	Group	Status Category
<i>Panaria saubinettii</i>	panaria	lichen	F
<i>Clavariadelphus occidentalis</i>	club coral	fungi	B
<i>Galerina atkinsoniana</i>	galerina	fungi	B
<i>Helvella maculata</i>	fluted elfin saddle	fungi	B
<i>Neourmula pouchetii</i>	neourmula	fungi	B
<i>Ramaria abietina</i>	coral mushroom	fungi	B
<i>Rhizopogon flavofibrillosus</i>	false truffle	fungi	B

F: Uncommon or Concern for persistence unknown, status undetermined

B: Rare, pre-disturbance surveys not practical

Rhizopogon flavofibrillosus occurs in upland Jeffrey pine savannah along the ridge, and *Galerina atkinsoniana* occurs on lower slopes in Jeffrey pine savannah. *Helvella maculata*, *Neournula pouchetii* and *Ramaria abietina* occur in riparian forest, and *Panaria saubinettii* occurs in both upland Jeffrey pine savannah and riparian forest.

3.2.2.2 Island Creek Day Use Recreation Site

There are no known SEIS Special Attention plant species on the site.

3.2.2.3 Offered Lands

There are no SEIS Special Attention plant species currently known to occur on the offered parcels. No surveys have been conducted on the offered lands for survey and manage species. Surveys conducted on similar habitat within the adjacent ACEC/RNA have identified several Survey and Manage species (3.2.2.1). The potential exists for Survey and Manage species to exist on the offered parcels based on the similarity of habitat.

3.2.2.4 Selected Lands

Specklebelly lichen (*Pseudocyphellaria rainierensis*), a Category A (Rare, Pre-Disturbance Surveys Practical) Survey and Manage species, was identified as a species with a high potential for occurrence in the selected parcels. However, surveys on the Hinckel Creek, Dickinson Mtn. and White Creek West parcels did not locate the species. The White Creek East parcel does not contain any suitable habitat for specklebelly lichen.

Two fungi, *Craterellus tubaeformis* (Category D, Uncommon, Pre-Disturbance Surveys Not Practical or Not Necessary) and *Hydnum umbilicatum* (Category B) were located on both the Hinckel Creek and White Creek West parcels.

3.3 Wildlife

3.3.1 Special Status Species

The criteria for designation as special status are identical to those described above in 3.2.1.

Appendix 4, Table 2 identifies special status wildlife species known or suspected to exist on the Roseburg District. Some of these species are not expected in the project area, would not be affected by the proposed action, and will not be discussed further in this analysis.

There are no species currently “proposed” for listing, or “candidates” for listing under the Endangered Species Act documented or expected in the project area.

Four Federally-threatened or endangered species have been documented on the Roseburg District. These consist of the Federally-endangered Columbian white-tailed deer (*Odocoileus virginianus leucurus*), and the Federally-threatened marbled murrelet (*Brachyramphus marmoratum*), bald eagle (*Haliaeetus leucocephalus*), and northern spotted owl (*Strix occidentalis caurina*).

Marbled murrelet

The Beatty Creek ACEC/RNA, Island Creek Day Use Recreation Site, offered lands and selected lands are all located east of the 50-mile boundary of the marbled murrelet management zone. Murrelets are not expected to occupy any of these lands, or be affected. As a consequence, the species will receive no further discussion in this assessment.

Bald eagle

Annual surveys by the Oregon Cooperative Wildlife Research Unit have not located any nesting bald eagles within the South River Resource Area. While bald eagles have occasionally been observed in the Lower Cow Creek watershed, there is no evidence of occupancy. None of the selected lands are within 10 miles of large water bodies or rivers, and are 6 miles or further from the nearest known bald eagle roosting site. As a consequence, the bald eagle would not be affected and will not be discussed further in this assessment.

Columbian white-tailed deer

Historically, the deer ranged throughout the interior valleys of western Oregon and Washington, primarily inhabiting lower elevations in meadows, oak woodlands, and oak savannahs. The Beatty Creek ACEC/RNA, Island Creek Day Use Recreation Site and the offered parcels are located to the southwest of the accepted historic range of the species. As a consequence, the deer is not expected in these areas and will not be discussed further relative to these lands, but only to the selected lands which are located within historic habitat.

Northern spotted owl

Suitable nesting habitat for the northern spotted owl is generally characterized by stands with large conifer trees that have large diameter limbs, crown deformities, and large broken tops, limbs, or cavities which would provide nest sites (Forsman 1984, Hershey 1995, Forsman and Giese 1997). Forest stands that provide nesting, foraging and roosting components such as these are known as Habitat 1 (HB1). Stands with nesting owls are referred to as owl activity centers. Around these activity centers are provincial territories or master sites, which vary in radius dependent on the physiographic province. A provincial territory may include alternate nest sites that owls have occupied in proximity to the original nest site in which they were located.

Other habitat within a territory may be HB2, HB3 or HB4. HB2 provides foraging and roosting opportunities but lacks nesting components, and in combination with HB1 is described as suitable habitat. HB3 is forest habitat generally older than 40 years that provides for some foraging, roosting and dispersal, and which has the potential to develop with time into suitable habitat (Thomas et al. 1990, USDI 1992a, USDI 1994). HB 4 consists of forest and other habitat types (such as rock outcrops, grasslands, meadows) that lack the potential to evolve into suitable habitat because of their inherent nature.

Table 4 lists the acreage of suitable habitat within the provincial radius of a master site, available within the Beatty Creek ACEC/RNA, Island Creek Day Use Recreation Site, offered parcels, and the selected parcels. All of the suitable habitat in exchange parcels that is overlapped by provincial territories consists of HB2.

Table 4 Suitable Northern Spotted Owl Habitat (in acres) on the Project Lands

NSO Master Site	Provincial Radius	Selected Parcels				Offered Parcels		Beatty Creek ACEC/RNA	Σ (Sum)
		Dickinson Mountain	Hinkle Creek	White Creek East	White Creek West	Beatty Creek	Island Creek		
NF Calapooya (#2530)	1.2 miles	0	0	0	17	0	0	0	17
Rattlesnake Creek (#0300)	1.3miles	0	0	0	0	47	4	0	51
Island Creek (#0301)	1.3miles	0	0	0	0	4	4	0	8
Crawford Creek (#4016)	1.3miles	0	0	0	0	63	0	0	63

Analysis done using GIS, estimates rounded to whole acres

3.3.1.1 Beatty Creek ACEC/RNA

Threatened or Endangered

Northern spotted owl

There are no owl activity centers within the Beatty Creek ACEC/RNA. Approximately 75 acres lie within the 1.3-mile radius of two Klamath Province territories. The 160 acres that comprise the Beatty Creek ACEC/RNA is regarded as HB4. It is considered unlikely that the sparse and open Jeffrey pine stands have the potential to develop into suitable habitat. The existing stand conditions also make it unlikely that owls would use this area because they would be subjected to an increased risk of predation.

Bureau Sensitive

The Beatty Creek ACEC/RNA is within a 25-mile radius of previously identified populations of Del Norte salamanders (*Plethodon elongatus*) and thus considered within

the species' probable range. The salamander is a Bureau Sensitive species also designated as a Survey and Manage species. Del Norte salamanders inhabit rock-on-rock and talus sites where there is a forest canopy and moist microclimate, as one finds in riparian areas. This species is considered uncommon, as opposed to rare, and could be reasonably managed over the long term with only a portion of known sites managed (USDA, USDI 2000 p. 359). It has been designated in the amended Standards and Guidelines for Survey and Manage (p. 49) as one for which pre-disturbance surveys are no longer necessary in order to meet management objectives. Sites located prior to September 30, 1999, are to be protected and managed for the persistence of the species. No sites have been documented in the ACEC/RNA, no surveys are required, and the species will be discussed no further relative to the ACEC/RNA.

The Oregon shoulderband snail (*Helminthoglypta hertleini*) is another Bureau Sensitive species that was also designated as a Survey and Manage species. It is found in scattered occurrences across the South River Resource Area, but the nearest recorded site is 8 miles distant. This snail is most frequently found inhabiting rocky areas such as talus deposits. It may also be present in areas where permanent ground cover and/or moisture are available, which may include rock fissures or large woody debris. This species has been found foraging on hardwood leaf litter. The ACEC/RNA contains some potential habitat, but the suitability of serpentine based soil/rock for this species is unknown. Surveys have not been conducted because there are no management activities authorized in the ACEC/RNA which would constitute ground or habitat disturbance.

3.3.1.2 Island Creek Day Use Recreation Site

Threatened or Endangered

Northern spotted owl

Two 1.3-mile radius owl territories overlap the Island Creek Day Use Recreation Site. Owls may periodically use the area because of the presence of perennial water, but the site is HB4 and unlikely to develop into a suitable habitat because of its current usage.

Bureau Sensitive

The western pond turtle (*Clemmys marmorata*) is a Bureau sensitive species that inhabits the area along Cow Creek and has been observed in the day use area. Pond turtles typically inhabit quiet waters such as ponds and the back waters of small rivers, where nesting habitat and basking opportunities are available. Nest sites typically are excavated in dry soil with a high proportion of silt and/or clay, in areas vegetated with forbes and grasses. Turtles residing in rivers and streams usually overwinter in upland areas as far as 500 meters away (Reese 1996).

The Island Creek Day Use Recreation Site is also within the accepted range of the Del Norte salamander. As noted above (3.3.1.1), there are no requirements to survey for the species. There are no previously identified sites which require management attention, and as a consequence the species will not be discussed further.

3.3.1.3 Offered Lands

Threatened or Endangered

Northern spotted owl

Based on information from demographic studies in the Klamath province, the probability of northern spotted owls occupying the Beatty Creek portion of the offered parcels is considered very low, because habitat is primarily HB4 and identical to that found in the adjoining ACEC/RNA. The parcel does contain 97 acres of HB2 (Table 5), of which approximately 70 acres falls within one to three owl territories (Table 4).

There are approximately 4 acres of HB2 and 22 acres of HB4 adjacent to the Island Creek Day Use Recreation Site and Cow Creek, but use by owls is considered unlikely because of the surrounding HB4. Critical Habitat Unit CHU-OR-62 overlaps a portion of the lands. These lands contribute 4 acres of HB2 and 15 acres of HB4 to the CHU.

A stand of late-successional Douglas-fir, in the northeast corner of the offered parcel provides 65 acres of HB2. The utility of this HB2 is considered marginal, though, because of its isolation by HB4 from any larger blocks of suitable habitat. This makes it unlikely that owls would use the stand because of the heightened risk of predation when moving across the landscape.

Table 5 Habitat for Northern Spotted Owls (in acres) on the Offered Parcel

Parcel	HB1	HB2	HB3	HB4	∑ (Sum)
Beatty Creek	0	97	0	641	738
Island Creek	0	4	0	22	26
Total	0	101	0	663	764

GIS acres used in this analysis are approximate and were adjusted to match the legal description acres in Appendix 2 and 3.

Bureau Sensitive

The offered parcel is also within the accepted range of the Del Norte salamander. As noted above (3.3.1.1), there are no requirements to survey for the species. There are no previously identified sites which require management attention, and as a consequence the species will not be discussed further. As in the adjoining ACEC/RNA, habitat may be present for the Oregon shoulderband snail, though there are no documented occurrences.

The western pond turtle generally nests within 50 meters of the water body in which it resides. Turtles residing in rivers and streams usually overwinter in upland habitats within 500 meters (Reese 1996). Cow Creek provides calm water and ample cover, in the form of vegetation and boulders, that helps hatchlings avoid predation (Holland 1991, Reese 1996). One known nest site is located on the portion of the offered lands adjacent to the Island Creek Day Use Recreation Site and Cow Creek frontage, and it is likely that there are other nesting and overwintering sites in the parcel.

3.3.1.4 Selected Lands

Threatened or Endangered

Northern spotted owl

Within the four selected parcels there are currently 104 acres of suitable northern spotted owl habitat, of which 56 acres is HB1 and 48 acres is HB2. Specific habitat acres for each parcel are listed in Table 6. The parcels also contain 79 acres of HB3 that has the potential to become suitable habitat in 20-70 years. Approximately 17 acres of HB2 in the White Creek West parcel is within a 1.2-mile provincial territory radius (Table 4).

Table 6 Habitat for Northern Spotted Owls on the Selected Parcels (in acres).

Parcel	HB1	HB2	HB3	HB4	Σ
Dickinson Mountain	56	0	24	0	80
Hinkle Creek	0	23	0	0	23
White Creek East	0	0	40	0	40
White Creek West	0	25	15	0	40
Total	56	48	79	0	183

Analysis done using GIS, estimates rounded to whole acres

Columbian white-tailed deer

The selected parcels are located within the historic range of the Columbian white-tailed deer, but north of essential habitat identified by the U.S. Fish and Wildlife Service in its 1983 recovery plan (USDI 1983 p. 23). The parcels offer some open forage, but are likely more useful as thermal cover. The Roseburg population of Columbian white-tailed deer was proposed for de-listing on May 11, 1999 (Federal Register 64 FR 25263).

Bureau Sensitive

The Oregon Megomphix snail (*Megomphix hertleini*) is designated as a Bureau Sensitive species in Oregon, and also a Survey and Manage species. This snail appears to favor hardwoods and hardwood litter, and moist areas with sword fern and salal as occurs in the selected parcels. The amended Survey and Manage Standards and Guidelines (p. 49) do not require pre-disturbance surveys. There are no sites documented prior to September 30, 1999, requiring management protection. As a consequence, this species will not be discussed further in this analysis.

3.3.2 SEIS Special Attention Species

These are species designated for protection under Survey and Manage standards and guidelines as described above (3.2.2).

Appendix 4, Table 1 identifies SEIS Survey & Manage species which are considered uncommon, as opposed to rare, and for which pre-disturbance surveys are not considered necessary. In addition to the Del Norte salamander, Oregon Megomphix snail and

Oregon shoulderband snail discussed above as Bureau Sensitive species, two other species have a high potential for occupying forest stands on the Roseburg District. These are the red tree vole (*Arborimus longicaudus*) and great gray owl (*Strix nebulosa*).

The red tree vole is an arboreal rodent that primarily inhabits Douglas-fir where it nests and feeds, though it has been known to feed on needles of western hemlock, Sitka spruce and true firs. Closely grown and intermingled tree canopies also provide cover and a means for dispersal across the landscape. The species has been documented in stands from sea level to 5,000 feet. The red tree vole is typically associated with late-seral and old-growth forest, but has also been found in early and mid-seral forest stands.

Great gray owls may be found in a variety of habitat types that include: ponderosa pine, lodgepole pine, tamarack, Douglas-fir, grand fir, aspen, and other deciduous tree species. Nest groves are typically located near natural meadows or man-made forest openings, where the owls tend to forage, though males have also been known to forage in open forest stands with canopy closure ranging from 11 to 59 percent (Bull and Henjum 1990). The criteria for pre-disturbance surveys specify that the area be located above 3,000 feet in elevation and within 1,000 feet of natural meadows larger than 10-acres in size. These criteria are absent from all of the lands associated with the proposed exchange. As a consequence, great gray owls are not expected to occupy these areas, pre-disturbance surveys are not required, and no further discussion of the species is necessary in this assessment.

3.3.2.1 Beatty Creek ACEC/RNA

The red tree vole is known to occupy the main draws and riparian areas of Beatty Creek where Douglas-fir is present and the canopy is better developed. Occupancy in the Jeffrey pine savannah is unlikely because of the lack of suitable forage and the presence of open-canopy conditions that would afford little cover or dispersal opportunities.

3.3.2.2 Island Creek Day Use Recreation Site

Those portions of the recreation site having a better developed forest canopy of Douglas-fir and other conifers could provide habitat for red tree voles, though none have been documented on the site.

3.3.2.3 Offered Lands

As in the adjoining ACEC/RNA, red tree voles may be expected to occupy the main draws and riparian areas of Beatty Creek where Douglas-fir is present and the forest canopy is better developed. The forest stands adjacent to Cow Creek and the Island Creek Day Use Recreation Site may also provide usable habitat. Occupancy in the Jeffrey pine savannah is unlikely because of the lack of suitable forage and the presence of open-canopy conditions that would afford little cover or dispersal opportunities.

3.3.2.4 Selected Lands

The selected parcels all contain forest habitat which would support red tree voles in both the upland and riparian areas of each respective parcel.

3.4 Fish and Essential Fish Habitat

3.4.1 Special Status Species

The following species are present in the Umpqua River basin, and project watersheds, unless otherwise noted.

Threatened and Endangered

The Oregon Coast coho salmon (*Oncorhynchus kisutch*) Evolutionary Significant Unit (ESU) was listed by the National Marine Fisheries Service as a threatened species under the Endangered Species Act (Federal Register, Vol. 63, No. 53/Thursday, March 19, 1998/Rules and Regulations). Critical habitat has been designated for the coho salmon (Federal Register, Vol. 65, No. 32, February 16, 2000).

Proposed or Candidate

The Oregon Coast steelhead trout (*Oncorhynchus mykiss*) ESU is presently considered a candidate species under the Endangered Species Act (Federal Register, Vol. 63, No. 53/Thursday, March 19, 1998/Rules and Regulations).

Bureau Sensitive

The Oregon Coast cutthroat trout (*Oncorhynchus clarki*) ESU is under review by the U.S. Fish and Wildlife Service for candidate status. Populations below natural barriers are listed by the Oregon Department of Fish and Wildlife (ODFW) as Sensitive and by the BLM as Bureau Sensitive.

The Umpqua chub (*Oregonichthys kalawatseti*) is listed by the U.S. Fish and Wildlife Service as a Species of Concern, by the Oregon Department of Fish and Wildlife (ODFW) as Sensitive-Vulnerable and by the BLM as Bureau Sensitive. The Pacific lamprey (*Lamprreta tridenta*) is listed by ODFW as Sensitive-Vulnerable and by the BLM as Bureau Sensitive.

3.4.1.1 Beatty Creek ACEC/RNA

Resident cutthroat trout are present in Beatty Creek where it flows through the ACEC/RNA. There are no anadromous species in the ACEC/RNA. A waterfall on Beatty Creek, located approximately 500 feet above the confluence with Cow Creek and approximately ¼-mile below the point where Beatty Creek exits the ACEC/RNA, blocks upstream and downstream passage to all resident and anadromous species.

3.4.1.2 Island Creek Day Use Recreation Site

The Island Creek Day Use Recreation Site borders Cow Creek, which contains coho salmon, steelhead trout, cutthroat trout, Umpqua chub and Pacific lamprey.

3.4.1.3 Offered Lands

Coho salmon, steelhead trout, Pacific lamprey and cutthroat trout are present in the first 500 feet of Beatty Creek. These species and the Umpqua chub are present in the 0.9 miles of Cow Creek fronted by the offered parcels. The reach of Beatty Creek within the offered lands and above the waterfall supports resident cutthroat trout. Those portions of the offered lands drained by Crawford Creek are also located above a natural barrier to anadromy. This barrier is located approximately 1¼-miles above the confluence of Crawford Creek with Cow Creek, just downstream of the point where Crawford Creek exists the offered lands.

3.4.1.4 Selected Lands

3.4.1.4.1 Parcel 1 (Hinckel Creek)

Steelhead trout, coho salmon, Pacific lamprey and cutthroat trout are present in the reach of Beatty Creek that flows through the parcel.

3.4.1.4.2 Parcel 2 (Dickinson Mountain)

The two streams within the parcel are intermittent, and do not support any fish. Steelhead trout, coho salmon, Pacific lamprey, cutthroat trout, and Umpqua chub are present in Elk Creek which is approximately ¾-mile downstream of the parcel.

3.4.1.4.3 Parcel 3 (White Creek East)

There are no streams within the White Creek East parcel, and subsequently no fish reside in the parcel.

3.4.1.4.4 Parcel 4 (White Creek West)

The portion of White Creek that flows through this parcel supports populations of cutthroat trout, steelhead trout, coho salmon and Pacific lamprey.

3.4.2 Essential Fish Habitat

The designation of Essential Fish Habitat (EFH) for anadromous fish species of commercial value is required by the Magnuson-Stevens Act. Within the Roseburg District, EFH has been identified for chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon. This habitat consists of all streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon.

3.4.2.1 Beatty Creek ACEC/RNA

There is no EFH within the ACEC/RNA. As noted above (3.4.1.1) a waterfall on Beatty Creek, located approximately 500 feet above the confluence with Cow Creek and

approximately ¼-mile below the point where Beatty Creek exits the ACEC/RNA, blocks passage to all anadromous species.

3.4.2.2 Island Creek Day Use Recreation Site

The recreation site borders Cow Creek which is EFH.

3.4.2.3 Offered Lands

The first 500 feet of Beatty Creek, and the 0.9 miles of Cow Creek that front portions of the offered parcels are EFH.

3.4.2.4 Selected Lands

3.4.2.4.1 Parcel 1 (Hinckel Creek)

The reach of Beatty Creek that flows through the parcel supports coho salmon, and is considered EFH.

3.4.2.4.2 Parcel 2 (Dickinson Mountain)

There is no EFH within the parcel, as noted above (3.4.1.4.2). The nearest EFH is approximately ¾-mile downstream, where the two tributaries enter Elk Creek.

3.4.2.4.3 Parcel 3 (White Creek East)

There are no streams or EFH in this parcel. The nearest EFH is located northwest of the parcel approximately ⅓-mile overland in Calapooya Creek.

3.4.2.4.4 Parcel 4 (White Creek West)

The reach of White Creek that passes through the parcel supports coho salmon and is EFH.

3.5 Water Quality/Resources

The project lands are located in the Calapooya, Elk/Umpqua and Lower Cow Creek Watersheds, within the Umpqua Subbasin. The term “watershed” is used in reference to the 5th field hydrologic unit, typically 20-200 square miles in size. In portions of this report, the drainage scale is used for ease of description and refers to the smaller 7th field hydrologic unit, which varies from about 2-17 square miles for the affected drainages. The parcels proposed for exchange are located across seven drainages within the three watersheds (Table 7).

Table 7 - Location of Offered and Selected Lands by Drainage

Watershed (5 th field)	Drainage (7 th field)	Parcel
Lower Cow Creek	Salt Cow Creek	RRC offered
	Rattlesnake Frontal	
	Beatty Creek	
Calapooya Creek	Hinckel Creek	Hinckel selected
	Buzzard Roost	White Creek East selected
		White Creek West selected
Elk Creek/Umpqua River	Elkhead	Dickinson selected
	Milltown	Dickinson selected

3.5.1 Streamflow

The climate in the affected watersheds is characterized by cool, wet winters and warm, dry summers. The majority of precipitation occurs in the form of rain, though snow is likely in most years at higher elevations. The volume of stream flow closely parallels the precipitation pattern. Peak flows occur from November to March. Low stream flows occur from July to October, and small 1st and 2nd order streams go dry in most years.

3.5.2 Peak Flows

Portions of some of the offered and selected parcels are located within the transient snow zone (TSZ), which lies between 2,000 and 5,000 feet in elevation. Research indicates that normal peak flows may be increased by timber harvest in the TSZ (Harr and Coffin 1992). Harvest in the TSZ can create openings that allow greater accumulations of snow to occur. Warm rain-on-snow events can melt this snow pack quickly and create higher than normal flows. These increases in peak flows can degrade stream channel function by eroding stream banks and scouring stream beds with an associated increase in sediment and risk of mass wasting during storm events (USDI 1999 p. 5-3).

A model developed by the Washington State Department of Natural Resources and modified in the Oregon Watershed Assessment Manual (Watershed Professionals Network 1999 IV-11) was used to assess the current risk of increased peak flows from previous timber harvest. The model considers changes in peak flows of less than 10 percent unmeasurable. Model results indicate that the risk of peak flow enhancement in the affected drainages is low given the current levels of canopy closure. The same model was used to assess potential risk of increased peak flows under both alternatives, and predicted a low risk that measurable increases in peak flow would occur. Potential changes to peak flows are considered unlikely as a result of harvest, and will not be discussed further in this analysis.

Roads also have the potential to increase peak flows (Beschta 1978, Wemple et al. 1996). Mid-slope roads with cut-banks can potentially intercept subsurface water and divert it into the road drainage network, accelerating the delivery of water to streams and increasing the risk of and magnitude of peak flows. Road density varies from approximately 2.1 to 6.2 miles/square mile in the affected drainages, with similar proportions of mid-slope roads in each drainage. Although this analysis did not quantify potential peak flow increases by drainage, based on the research noted above, existing mid-slope roads in the affected drainages likely contribute to some level of increased peak flows. Whether these increases are large enough to be measurable (greater than 10 percent) is unknown, because there is little or no pre-road stream flow data available.

Under either alternative, the amount of road construction necessary for timber harvest would only slightly increase present road density, and with the application of BLM or OFPA road construction guidelines, no measurable increases in peak flows are anticipated. As a consequence, no road effects on peak flows are anticipated, and it will not be discussed further in this analysis.

3.5.3 Water Quality

The Oregon Department of Environmental Quality (ODEQ) has established water quality standards for each water body in the State. These standards are designed to protect the most sensitive beneficial user for each water body (Miner 1996 p. 1). These uses may include irrigation, recreation, municipal and industrial use, or use by fish and wildlife. Within the lands that could be affected by the alternatives in this assessment, the most sensitive beneficial use is as rearing and spawning habitat for resident and anadromous fish. Water bodies which do not meet these standards are placed on the ODEQ 303(d) list as Water Quality Limited.

The Island Creek Day Use Recreation Site and portions of the offered lands are adjacent to Cow Creek. This reach of Cow Creek does not meet ODEQ (1998) standards for water temperature, habitat modification and pH. No other streams within or adjacent to the selected or the offered lands are listed for not meeting water quality standards. Some streams in the affected watersheds, however, are listed for exceeding State temperature standards. Elevated stream temperatures are most often the result of the removal of trees that provide streamside shading and prevent direct solar heating of the stream (Moore and Miner 1997).

There is no current temperature data for other perennial streams within the offered or selected parcels. The riparian areas of Beatty Creek within the offered parcel and Beatty Creek within the Hinkle Creek selected parcel have not been disturbed by past timber harvest and are well shaded. A physical and biological stream survey conducted in Beatty Creek by the Oregon State Game Commission in 1973 listed average stream shade as 100 percent. The riparian area along White Creek within the White Creek West parcel has been affected by past harvest, but the current second-growth stand has reached an age that is likely providing maximum shade.

There are no streams currently listed by ODEQ as impaired by excess fine sediment in the affected watersheds, and there is no sediment data for the streams within the offered or selected parcels.

3.5.4 Water Rights

Two domestic surface water rights are registered within 1-mile downstream of the Dickinson Mountain parcel. The closest diversion point is approximately ½-mile downslope. With the establishment of Riparian Reserves under management direction contained in the ROD/RMP or Riparian Management Area requirements contained in the Oregon Forest Practices Act, it is not anticipated that the water quality of these surface rights would be affected. As a consequence, water rights will not be discussed further in this analysis.

4.0 Environmental Consequences

This chapter discusses how the specific resources 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 the potential impacts or consequences that would be expected. The “no action” alternative is analyzed as a comparison to the action alternative as a basis for determining if there are any effects beyond those analyzed in the Roseburg District PRMP/EIS.

4.1 Alternative 1-No Action

This alternative would not meet the need for action described in Chapter 1 (p. 3). The ability of the BLM to maintain or protect the relevant and important botanical resource values for which the ACEC/RNA was originally designated would be jeopardized by the construction of a road through these lands, under reciprocal rights held by RRC, and the harvest of timber on the adjacent RRC land.

This alternative would not meet the ROD/RMP objective of obtaining additional lands for providing of additional recreational opportunities at the Island Creek Day Use Recreational Site. The opportunity to consolidate ownership and reduce potential land use conflicts adjacent to the recreation site would be forgone.

4.1.1 Vegetation/Timber

4.1.1.1 Beatty Creek ACEC/RNA

The new road constructed by RRC would be a permanent, surfaced road that would approximately double the width of the original jeep road. The road would be primarily used by logging equipment and trucks, but would also provide a means by which the general public could gain vehicular access. The road would create an increased risk of the introduction of exotic species and noxious weeds into the ACEC/RNA. This would likely be unavoidable because of the presence of exotic species and noxious weeds, particularly yellow starthistle and rush skeletonweed, throughout the surrounding area through which the connecting roads pass. Infestation of the ACEC/RNA by noxious weeds would degrade the native serpentine plant communities that the ACEC/RNA was established to protect. In the short term (one season), infestation directly along the road and R/W would be expected. Over the next 1-5 years, it is anticipated that the entire ACEC/RNA would be at risk of infestation because of the rapid and aggressive manner in which noxious weeds spread.

Establishment of road access through the ACEC/RNA would also increase the risk of introduction of Port-Orford-cedar root disease, not currently present in the ACEC/RNA and Beatty Creek drainage. Port-Orford-cedar in the Doe Creek drainage, situated to the north and west of Beatty Creek, is extensively infected with the disease. Although timber

would be hauled out through Salt Creek, there are many existing jeep roads that would connect the haul route with the Doe Creek road system. Because the pathogen responsible for the disease is easily transported and spread by contaminated soil on vehicles, and by overland water flow, it could easily be spread into Beatty Creek.

The representative serpentine plant communities that constitute the relevant features for which the Beatty Creek ACEC/RNA was designated and established, and healthy Port-Orford-cedar stock, could be lost or degraded to the extent they no longer are valued. Should that occur, designation of the area as an ACEC/RNA could be rescinded in future BLM land use planning.

4.1.1.2 Island Creek Day Use Recreation Site

There would be no effect on current vegetation or timber resources located on the site.

4.1.1.3 Offered Lands

RRC would proceed with the planned helicopter logging of a large portion of the offered lands. This harvest would selectively remove trees that primarily constitute the larger diameter classes (Newton 2000). Timber felling and yarding would result in some ground disturbance. Logging residues would probably not be treated, but instead be left on site to decompose over time. Replanting following harvest would only be undertaken if the residual stocking is insufficient to meet the minimum requirements of the Oregon Forest Practices Act.

As discussed above (3.1.1 and 3.1.3), the existing condition of the serpentine plant communities in the area is considered excellent. These communities are very rare in the Umpqua Valley. Disruption of these plant communities and degradation of habitat conditions are considered likely as a result of road construction and timber harvest. Introduction of noxious weeds is considered likely, soil disturbance and habitat modification would result from logging, and increased access into the area would provide new vectors for possible introduction of Port-Orford-cedar root disease.

4.1.1.4 Selected Lands

The selected parcels would continue to be managed by the BLM. As previously stated, this analysis assumes that timber harvest will occur on the selected parcels under the “no action” alternative, subject to a further environmental assessment of the consequences. The parcels include lands designated as Matrix as well as areas designated as Riparian Reserve. Riparian Reserves would be established on intermittent draws and streams. Approximately 120 acres located outside of the Riparian Reserves would remain in the HLB and continue to be available for regeneration harvest in accordance with management direction contained in the ROD/RMP. As “land tenure zone 3” lands, the parcels would continue to be available for disposal by exchange or sale.

4.1.2 Botany

4.1.2.1 Special Status Species

4.1.2.1.1 Beatty Creek ACEC/RNA

Timber harvest on the adjacent offered lands would have no direct effect on the serpentine plant communities and population of wayside aster. This harvest would indirectly affect the aster by altering habitat conditions over approximately 60 percent of the land area that the species currently occupies. The population would also be put at risk from the introduction of noxious weeds which would occupy aster habitat and modify conditions such that aster populations would decline. As a result, it is expected that the population of wayside aster would become repressed and fragmented, and reproduction potential would be expected to decrease (Kaye et al. 1991).

Because the pseudoleskeela moss occupies exposed serpentine rock outcrops where there is little soil and few if any associated vascular plants, canopy reduction on adjacent offered lands is not anticipated to affect growing conditions, and the likelihood of noxious weeds becoming established and competing with the moss is considered remote.

4.1.2.1.2 Island Creek Day Use Recreational Site

No special status plant species have been identified on the site, so no consequences are anticipated.

4.1.2.1.3 Offered Lands

Timber harvest would modify habitat conditions for approximately 60 percent of the population of wayside aster in the Beatty Creek drainage. Harvest would reduce forest canopy resulting in harsher environmental conditions and would result in the direct mortality of portions of the population as a consequence of timber felling and yarding operations. Introduction of noxious weed species would displace the native aster and further modify habitat conditions. The overall population of aster would become repressed and fragmented, and reproduction potential would decrease.

Because the pseudoleskeela moss occupies exposed serpentine rock outcrops where there is little soil and few if any associated vascular plants, canopy reduction is not anticipated to affect growing conditions, and the likelihood of noxious weeds becoming established and competing with the moss is considered remote. Mortality would occur if falling or yarding operations disturbed rock outcrops and physically displaced moss cover.

The two other special status plant species known to occur on the offered lands, spring phacelia and California sword fern, occur on marine conglomerate outcrops located at the bottom of the drainage. These sites are separated from the Jeffrey pine and Douglas-fir forests that would be subject to logging. As a consequence, it is not anticipated that they would be affected.

As noted above (3.2.1.3), suitable habitat for Crinite mariposa lily may exist on the offered parcels. If present, the planned harvest would result in the destruction of individual plants and reduction in habitat suitability associated with soil disturbance, introduction of exotic species and noxious weeds, modification of the forest canopy, and encroachment of tree seedlings.

4.1.2.1.4 Selected Lands

No special status species have been identified on the selected parcels, so no consequences are anticipated.

4.1.2.2 SEIS Special Attention Species

4.1.2.2.1 Beatty Creek ACEC/RNA

There would be no effect on the species known to occupy the ACEC/RNA.

4.1.2.2.2 Island Creek Day Use Recreational Site

There would not be any effect on species that may occupy the recreation site, beyond any that currently exist as a consequence of recreational use by the public.

4.1.2.2.3 Offered Lands

Standards and guidelines for the protection of Survey and Manage species do not extend to private lands. Since habitat is like that on the adjacent ACEC/RNA, it is expected that the same species exist on the offered lands, and will be subject to habitat disturbance and modification. This could eliminate these species from the offered parcel.

4.1.2.2.4 Selected Lands

There would be no immediate effect on any Survey and Manage plant species. Existing habitat conditions would remain unchanged by other than natural successional processes or disturbance. Required surveys would be conducted for Survey and Manage species prior to any future management actions of a habitat disturbing nature, including timber harvest. If species are located and require protection, implementation of current management recommendations specific to the identified species would protect those sites and alleviate any persistence concerns.

4.1.3 Wildlife

4.1.3.1 Special Status Species

4.1.3.1.1 Beatty Creek ACEC/RNA

The construction of the proposed access road across the portion of the ACEC/RNA would follow the original jeep road that was closed in the 1990s. This previously disturbed area does not provide habitat, and the road construction would not impact any known special status or SEIS Special Attention wildlife species or habitat within the ACEC/RNA.

4.1.3.1.2 Island Creek Day Use Recreation Site

Wildlife species described in 3.3.1.2 relative to the Island Creek Day Use Recreation Site would not be affected. Current management direction would continue to apply, and effects to wildlife would remain consistent with present levels.

4.1.3.1.3 Offered Lands

Threatened or Endangered

Northern spotted owl

The harvest of these lands by RRC would remove approximately 100 acres of suitable roosting and foraging habitat (HB2), approximately 70 acres of which lie within the provincial radius of three overlapping owl territories (Table 5). This is not considered likely to affect spotted owls, however, because occupancy of the offered lands by northern spotted owls is considered unlikely. There is a low probability that owls would use the area for foraging or dispersal because the open nature of the stands would subject them to a heightened risk of predation.

Bureau Sensitive

The harvest of the offered lands along Cow Creek and adjacent to the Island Creek Day Use Recreation Site would vegetative cover that provides nesting and overwintering habitat currently used by western pond turtles. It would also reduce cover for hatchling turtles. The consequences would include decreased reproductive success and survival of adult turtles, and increased susceptibility of hatchlings to predation.

4.1.3.1.4 Selected Lands

Threatened or Endangered

Northern spotted owl

There would be no effect on the northern spotted owl. Current habitat on the parcels would remain available to owls until such a time in the future when the parcels are exchanged, sold or harvested under BLM management.

Columbian white-tailed deer

There would be no effect on the Columbian white-tailed deer. The utility of the habitat is marginal, and usage by the white-tailed deer probably infrequent. Existing habitat would be maintained until such time in the future when the parcels are exchanged, sold or harvested under BLM management.

4.1.3.2 SEIS Special Attention Species

4.1.3.2.1 Beatty Creek ACEC/RNA

The construction of the proposed access road by RRC would have no direct effect on any Special Attention wildlife species or habitat within the ACEC/RNA for reasons described above (4.1.3.1.1).

4.1.3.2.2 Island Creek Day Use Recreation Site

There would be no direct effect to any red tree voles that may occupy and utilize habitat located within the site. Harvest of adjacent lands could indirectly affect red tree voles by removing or modifying dispersal pathways to adjacent forest.

4.1.3.2.3 Offered Lands

The harvest of the offered lands by RRC would reduce the utility of the forest stands in riparian areas of Beatty Creek and adjacent to Cow Creek as habitat for the red tree vole, by removing nesting sites, forage and dispersal habitat.

4.1.3.2.4 Selected Lands

There would be no effect on red tree voles that may currently occupy the selected parcels. Existing habitat conditions would remain unchanged by other than natural successional processes or disturbance. Required surveys would be conducted for Survey and Manage species prior to any future management actions of a habitat disturbing nature, including timber harvest. If red tree voles are located, the implementation of current management recommendations would address any persistence concerns.

4.1.4 Fish and Essential Fish Habitat

4.1.4.1 Special Status Species

4.1.4.1.1 Beatty Creek ACEC/RNA

Resident Oregon Coast cutthroat trout are the only fish that inhabit Beatty Creek within the ACEC/RNA. The access road that RRC would build to facilitate harvest access in Section 30, T.30 S., R. 6 W., would not cross Beatty Creek. As a consequence, there would be no direct effect on cutthroat trout.

Cutthroat trout could be indirectly affected by timber harvest upstream along Beatty Creek. The FSEIS found that in order to effectively provide for the recruitment of large woody debris, an intact buffer of at least one site-potential tree height should be provided. The proposed harvest by RRC would remove trees within 70 feet of the stream which would reduce the availability of large wood for stream recruitment. The FSEIS also found that in order to provide 100 percent of the cumulative effectiveness of streamside shading, a minimum buffer width of 100 feet is necessary. Maintaining stream side vegetation within 70 feet would provide approximately 80 percent of the effective shading (VanSickle and Gregory 1990). Loss of stream shade would result in greater solar radiation resulting in an increase in water temperature upstream of the ACEC/RNA, which would be transmitted to waters of Beatty Creek within the ACEC/RNA.

4.1.4.1.2 Island Creek Day Use Recreation Site

There would be no effect on fish because the recreation site is upstream from the offered lands that would be harvested under the “no action” alternative.

4.1.4.1.3 Offered Lands

The effect on Oregon Coast cutthroat trout occupying Beatty Creek would be comparable to that discussed above (4.1.4.1.1). All species in the first 500 feet of Beatty Creek would be effected by the increase in stream temperature and decreased potential large woody debris. The effects in Cow Creek would be negligible because the area that would be harvested represents only 0.6 percent of the total acres in the Lower Cow Creek watershed. Also, the offered lands immediately adjacent to Cow Creek are largely unavailable for harvest because of their location within Riparian Management Areas, as designated by the Oregon Forest Practices Act.

4.1.4.1.4 Selected Lands

There would be no effects on listed fish species, Coho Salmon Critical Habitat, or EFH within or downstream of the selected parcels. As stated in Chapter 2, this analysis assumes the selected parcels would be harvested by the BLM in the “reasonably foreseeable future”, in accordance with the ROD/RMP. As discussed above (4.1.4.1.1), nearly 100 percent of riparian ecological functions and processes on streams occur within a 1-tree height buffer width. The fish bearing streams in the White Creek West and Hinckle Creek parcels would have Riparian Reserves based on two site potential tree heights. Intermittent streams within the selected parcels would have Riparian Reserves based on one site potential tree height. Regeneration harvest of the Matrix lands outside of these Riparian Reserves would have no measurable effects to water quality, as discussed in 4.1.5.1.4.

4.1.4.2 Essential Fish Habitat (EFH)

4.1.4.2.1 Beatty Creek ACEC/RNA

There is no EFH within the ACEC/RNA, so there would be no effect as a consequence of the continued management of the ACEC/RNA.

4.1.4.2.2 Island Creek Day Use Recreation Site

There would be no effect on EFH because the recreation site is upstream from the offered lands that would be harvested under the “no action” alternative.

4.1.4.2.3 Offered Lands

The effects to EFH would be the same as the effects to fish in the first 500 feet of Beatty Creek and Cow Creek discussed above in 4.1.4.1.3.

4.1.4.2.4 Selected Lands

The effects to EFH would be the same as the effects to fish in the White Creek West and Hinckle Creek parcels, discussed above in 4.1.4.1.4.

4.1.5 Water Quality/Resources

4.1.5.1 Water Quality

4.1.5.1.1 Beatty Creek ACEC/RNA

There would be no direct effects to stream temperature or sediment delivery associated with the construction of approximately 400 feet of road across the northern end of the ACEC/RNA. The route of the road would follow the old jeep road near a ridgetop. The road would not cross any streams and would be constructed under OFPA rules (OAR 629-625-0000) which are designed to minimize effects to water quality.

Indirect effects to water temperature of Beatty Creek in the ACEC/RNA would be expected as a consequence of approximately 580 acres of selective timber harvest on the offered lands. Expected stream temperature increases from harvest upstream along Beatty Creek would likely result in similar temperature increases downstream in the ACEC/RNA. There would be no anticipated increase in sediment delivery from upstream harvest operations because the Riparian Management Areas would filter overland flow, as described below (4.1.5.1.3).

4.1.5.1.2 Island Creek Day Use Recreation Site

There would be no effect on water quality other than that associated with the ongoing use of the site for recreation.

4.1.5.1.3 Offered Lands

Riparian Management Areas along Beatty Creek would be 70 feet on each side of the stream. It is anticipated, however, that some shade-providing trees within 70 feet of Beatty Creek would be removed. Timber harvest would occur along more than half of the total stream length (approximately 1.3 miles of Beatty Creek out of a total length of approximately 2.5 miles). Harvest of trees which provide streamside shade can contribute to an increase in stream temperature (Beschta et. al. 1987). Therefore, reduced shade along half of Beatty Creek's total length could lead to a measurable increase in stream temperature at the 7th field Drainage scale (in Beatty Creek). There would be no measurable effect on stream temperatures at the 5th field watershed scale in the Lower Cow Creek watershed because Beatty Creek drains an area that represents only about 2 percent of the entire watershed, and the area that would be harvested only about 0.6 percent.

The 20- foot no-cut stream buffer required by the OFPA should serve to protect stream bank stability along Beatty Creek. FEMAT (1993, p V-26) states that half a crown diameter, which is approximately 20 feet in this area, is about the limit to which root strength contributes to maintaining stream bank integrity. Therefore, stream banks along Beatty Creek would be protected during harvest operations. The no-cut area would provide an adequate filter strip and would prevent delivery of sediment to the stream.

The OFPA does not require Riparian Management Areas on intermittent stream channels. Timber harvest would occur along some intermittent streams that are tributary to Beatty Creek. However, the planned helicopter yarding would result in minimal ground disturbance and there would not likely be any measurable increase in sediment delivery to the drainage network.

The portion of the offered lands in the Salt Cow Creek and Rattlesnake Frontal Drainages are adjacent to Cow Creek. These lands are located on the north bank of the Creek. Their harvest would not affect stream shading or stream temperature in Cow Creek. Required Riparian Management Areas along Cow Creek would prevent increased sediment delivery from harvest operations.

4.1.5.1.4 Selected Lands

Common to All parcels

BLM's harvest of the 4 selected parcels would occur under the guidelines of the ROD/RMP. There are no streams located in the White Creek East parcel. In the White Creek West, Dickinson Mountain, and Hinkle Creek parcels, Riparian Reserves along intermittent and non-fish-bearing perennial streams would be 180 feet on each side. Along fish bearing streams Riparian Reserves would be 360 feet on each side. These widths exceed the 100-foot riparian buffers which according to FEMAT (1993, p. V-28) "have been reported to provide as much shade as undisturbed late successional/old-growth forests . . .". Therefore, harvest of the Matrix portions of the selected parcels would have no measurable effect on streamside shade or stream temperature.

No measurable increases in sediment delivery to streams would be anticipated. The extent and location of roads needed for harvest would be similar for both alternatives. Road renovation and road construction guidelines under the ROD/RMP (pp. 131-138) are designed to prevent erosion and increased sediment delivery to the drainage network. Additionally, Riparian Reserves would protect stream bank stability and would provide an adequate filter strip which would prevent delivery of sediment to the streams.

4.2 Alternative 2 - Proposed Action

Under this alternative, the proposed land exchange would be completed. The BLM would obtain the offered lands and RRC would obtain up to 3 of the 4 selected parcels.

This alternative would meet the need for action described in Chapter 1 (p. 3), because it would meet the ROD/RMP objective of blocking up ownership to improve management opportunities for the Beatty Creek ACEC/RNA. Ownership would be consolidated and potential for land use conflicts adjacent to the ACEC/RNA would be reduced.

Lands not allocated as Matrix and Riparian Reserves, or withdrawn for recreational development would be designated as ACEC/RNA and incorporated into the Beatty Creek ACEC/RNA. These lands would be managed according to the BLM's objectives for

Special Areas (ROD/RMP, p. 50). Under this designation, no timber harvest or road construction would occur. The operation of ground-based fire suppression equipment would be restricted to existing roads, and no other activities of a surface-disturbing nature would be authorized. Off Highway Vehicle use would be prohibited. A new management plan for the enlarged ACEC/RNA would more thoroughly characterize the site, identify specific objectives and management considerations, and devise a monitoring strategy. This would include considering the withdrawal of the entire ACEC/RNA from the mineral domain under the Public Land Laws and Mining Laws.

This alternative would also meet the ROD/RMP objective of consolidating ownership around the Island Creek Day Use Recreation Site which would improve management opportunities that could include improvements to existing facilities and development of additional recreational opportunities and uses. The 26 acres proposed for inclusion have been previously withdrawn from the mineral estate. Only recreational panning for minerals would be authorized, as is presently the case on the existing recreation site. RRC would retain access rights to a low water crossing in the NW¹/₄ NW¹/₄ of Section 36, T. 30 S., R. 7 W. RRC would be allowed use of the crossing to access company timberlands south of Cow Creek, by placement of a temporary bridge during the summer months. It is anticipated that this would not occur more often than once every 3-5 years, and that it would not affect the current or future recreation potential of the site.

The offered lands adjacent to the Island Creek Day Use Area would be managed for their recreational potential in conjunction with the existing site. Existing confusion by the public relative to the ownership boundaries would be remedied. Acquisition of the offered lands would allow the BLM to improve and realign access to the existing site, and eliminate unauthorized recreational uses presently occurring on the offered land.

4.2.1 Vegetation/Timber

4.2.1.1 Beatty Creek ACEC/RNA

Acquisition of the offered lands would eliminate RRC reciprocal rights to build any roads across the ACEC/RNA. There would be no disturbance to the serpentine plant communities or any other relevant and important values that led to the establishment of the ACEC/RNA, relative to road construction.

In the absence of any vehicular access and timber harvest, the potential for alteration to the unique plant communities, or infection of healthy Port-Orford-cedar would be greatly reduced. Disturbance and habitat modification are factors that favor the establishment of exotic species and noxious weeds. The risk of introducing Port-Orford-cedar root disease is primarily associated with the introduction of infected or contaminated soil on vehicles. This risk would be all but eliminated by preventing the construction of any additional vehicular access to the area. In the short term and long term, BLM's ability to protect the ACEC/RNA's relevant and important values would be maintained or enhanced.

4.2.1.2 Island Creek Day Use Recreation Site

There would be no effect on the current use and condition of timber and vegetation resources on the Island Creek Day Use Recreation Site, because the existing management objectives would continue to be implemented.

4.2.1.3 Offered Lands

The BLM would manage the offered lands in accordance with the ROD/RMP based on the designations shown in Photo 9 (Appendix 1). The approximate designation of acres are illustrated in Table 8.

TABLE 8 - BLM Planned Management of Offered Lands

Total Acres of Offered Parcels	Withdrawals from the Harvest Land Base			Matrix (Available for timber Harvest - HLB Acres)
	Withdrawn for Recreation Use (acres)	Riparian Reserves (acres)	ACEC/RNA (acres)	
764	26	33	657	48

Acres used are GIS acre estimates of the areas graphically displayed in Photo 9, Appendix 1.

Of the acquired acres, 657 acres would be added to the existing Beatty Creek ACEC/RNA and managed to meet BLM’s objectives for Special Areas (ROD/RMP, P. 50). The expansion would more than triple the amount of riparian habitat along Beatty Creek, and more than quadruple the existing upland habitat. The configuration of the ACEC/RNA would be blocked up so as to create boundaries that would improve the ability of the BLM to protect and manage, in the short and long term, special status species and the relevant and important values of the area in compliance with ROD/RMP management directives.

Approximately 26 acres of the offered lands, adjacent to the Island Creek Day Use Recreation Site, would be incorporated into the site and designated for recreation management. Management would be designed to maintain or improve visual qualities, improve site access, and increase user safety by trimming or removing hazardous trees. Ground disturbance would be minimized by the placement of signs or safety barriers, or by direct management of vegetation on the site.

Approximately 33 acres of the offered land would be allocated to Riparian Reserves. Among these are the two narrow strips of land that border Cow Creek, but which are separated from the remainder of the offered land by the Cow Creek access road and adjoining railroad right-of-way.

The remaining 48 acres of the offered lands are located in the E½ NE¼ of Section 30, T. 30 S., R. 6 W. These acres would be allocated to the Matrix and included in the harvest land base as available for timber harvest.

4.2.1.4 Selected Lands

Under RRC ownership, those selected parcels obtained in the exchange would be managed and harvested in accordance with the Oregon Forest Practices Act. If all 4 parcels were acquired, approximately 169 acres would be available for harvest by RRC. This is approximately 49 acres more than would be available for harvest by BLM in accordance with management direction in the ROD/RMP. The additional acres available to RRC for harvest are primarily due to less restrictive harvest regulations for Riparian Management Areas under the Oregon Forest Practices Act, compared to Riparian Reserve requirements of the ROD/RMP. A comparison of the differences in available harvest acres is illustrated in Table 9 and photos 1 - 3 (Appendix 1).

TABLE 9
Available Harvest Acres of Selected Parcels
Comparison of Oregon Forest Practices Act to BLM Harvest Land Base ¹

Selected Parcel	Gross Acres	Withdrawals under OFPA		Harvestable Acres Under OFPA	Acres Available for Harvest (BLM -HLB)
		Road Acres	Riparian Management Areas ²		
Hinckel Creek	23	0	2	21	10
Dickinson Mtn.	80	3	0	77	60
White Cr. East	40	3	0	37	36
White Cr. West	40	2	4	34	14
TOTALS	183	8	6	169	120

¹ Acres used in this table are GIS acres, rounded to whole acres.

² 70 foot width each side of stream (140 feet total width) used to estimate acres. Actual width can vary depending on Basal Area within 20 foot (each side) no-cut area.

Riparian Management Areas would be required along the fish bearing streams in the Hinckel Creek and White Creek West selected parcels. No Riparian Management Areas would be required along intermittent streams that may be present within any of the selected parcels. After timber harvest the parcels would be replanted to meet the minimum stocking requirements of the Oregon Forest Practices Act. It is unknown if RRC would broadcast burn the parcels following harvest, apply some alternative form of fuels treatment, or plant without any site preparation.

The BLM HLB would be reduced by approximately 120 acres if all of the selected parcels are needed for the exchange. This would be partially offset by the allocation of 48 acres of the offered lands to the Matrix, resulting in a potential reduction in the HLB of up to 72 acres. The actual reduction would depend on the combination of selected parcels exchanged to equalize the appraised values of the offered and selected lands.

4.2.2 Botany

4.2.2.1 Special Status Species

4.2.2.1.1 Beatty Creek ACEC/RNA

Populations of special status plants occurring in the existing Beatty Creek ACEC/RNA would continue to be managed for long-term persistence. The population of wayside aster in the ACEC/RNA would remain contiguous with populations on the offered parcels, and known populations of pseudoleskeela moss would remain unaffected. Current habitat conditions within the ACEC/RNA would be maintained for the long term. The risk of introduction of non-native species and noxious weeds associated with timber harvest, road construction and vehicular access would be minimized.

4.2.2.1.2 Island Creek Day Use Recreational Site

There are no special status species known to exist on the Island Creek Day Use Recreation Area. Consequently, no effects are anticipated.

4.2.2.1.3 Offered Lands

Over 60 percent of the population of wayside aster in the Beatty Creek drainage occurs on the offered lands. Allocation of the portion of the offered lands situated in this drainage to the ACEC/RNA would secure this population from potential disturbance. Designation of the lands as a part of the ACEC/RNA would include a prohibition on timber harvest, road construction, or other ground disturbance that would degrade habitat conditions for this species. The risk of introduction of non-native plants and noxious weeds that could supplant the existing vegetative community would be minimized. Under ACEC/RNA designation, the area would be managed for long term persistence of the population.

There would be no effect on populations of pseudoleskeela moss, spring phacelia and California sword fern occurring on the offered lands. These sites are within the area that would be designated for addition to the existing ACEC/RNA. The habitat for these species, as well as potential habitat for Crinite mariposa lily, would be managed for the long term. Designation as ACEC/RNA would protect the areas from disturbance associated with activities such as timber harvest and road construction, and would help to maintain the integrity of the native plant communities by minimizing the likelihood of introduction of non-native species or noxious weeds.

4.2.2.1.4 Selected Lands

Surveys located no special status plants on any of the selected parcels, so no consequences are anticipated.

4.2.2.2 SEIS Special Attention Species

4.2.2.2.1 Beatty Creek ACEC/RNA

Those Special Attention species known to occupy the ACEC/RNA (3.2.2.1) would not be affected. The management of habitat on the lands currently located in the ACEC/RNA would remain the same under this alternative.

4.2.2.2.2 Island Creek Day Use Recreational Site

There have been no Special Attention species identified on the Island Creek Day Use Recreation Site (3.2.2.2), so no consequences are anticipated.

4.2.2.2.3 Offered Lands

There have been no surveys to determine whether or not the offered lands are occupied by any Special Attention species (3.2.2.3). Any species that occupy lands designated for addition to the ACEC/RNA would be managed for their persistence, in keeping with management direction to maintain the area in its natural state.

4.2.2.2.4 Selected Lands

The harvest of the selected lands would alter or modify habitat for *Craterellus tubaeformis* and *Hydnum umbilaticum* on the Hinckel Creek and White Creek West parcels, and for any other botanical Survey and Manage species that occupy any of the selected parcels. The consequences would be the probable elimination of these species from these sites.

4.2.3 Wildlife

4.2.3.1 Special Status Species

4.2.3.1.1 Beatty Creek ACEC/RNA

There are no special status wildlife species that have been documented in the ACEC/RNA (3.3.1.1). Since management of this area would not change as a consequence of acquisition of additional lands, there would be no effect on any habitat identified as important to special status wildlife species.

4.2.3.1.2 Island Creek Day Use Recreation Site

There would be no change in the management of the Island Creek Day Use Recreation Site that would be inconsistent with current management. As a consequence, the effects of the proposed alternative on Special status wildlife species known to occupy the site, or species that periodically use habitat in the area (3.3.1.2) would remain effectively unchanged. Future management of the site would consider wildlife values and habitat in the promotion of recreational activities.

4.2.3.1.3 Offered Lands

Threatened or Endangered

Approximately 100 acres of suitable habitat HB2, 70 acres of which is located within the provincial territories of three owl master sites, would pass into Federal management by the BLM. Approximately 48 acres would be allocated as Matrix lands and maintained as habitat until such future time as these lands are planned for timber harvest. The remainder would be allocated as Riparian Reserves (17 acres), withdrawn for recreational use (4 acres), or designated as ACEC/RNA (32 acres) where they would be available as habitat for the long term.

Bureau Sensitive

Occupied western pond turtle habitat and additional potential habitat would be acquired. As none of these areas lie within the lands that would be allocated to the Matrix, their allocation to Riparian Reserves, withdrawal for recreation, or designation as ACEC/RNA would secure the habitat for turtles in the long term.

4.2.3.1.4 Selected Lands

Harvest of the 4 parcels, although all would not be necessary to consummate the exchange, would result in the removal of approximately 104 acres of suitable (HB2) northern spotted owl habitat as described in Table 6. Approximately 17 acres of the habitat is within the provincial radius of an owl territory. It is also anticipated that an additional 80 acres of habitat that presently functions as dispersal habitat (HB3) would likely be harvested before it matures into suitable habitat in 20-70 years. The BLM would receive a nearly equal amount of suitable habitat in exchange, so that overall, the availability of habitat locally and across the owl's range would remain substantively unchanged.

Riparian Management Area requirements of the Oregon Forest Practices Act would reduce riparian corridor widths on perennial streams, and afford no protection for intermittent streams. This would reduce the functionality of streams in the parcels as dispersal corridors to approximately 1,600 acres of other habitat within a mile of the selected parcels.

Harvest of the parcels could improved forage conditions for the Columbian white-tailed deer in the near term, as forest canopy is removed or opened up, allowing for the establishment and growth of forage species favored by the deer. While smaller in size than Riparian Reserves, Riparian Management Areas would still provide some foraging and dispersal habitat for the deer. Additionally, the watersheds in which the selected parcels are located contain abundant thermal cover and foraging habitat.

4.2.3.2 Effects Determination for Threatened or Endangered Species

Under the terms of the Endangered Species Act, the BLM must consider the effects of a proposed action on threatened or endangered species. If the BLM finds an action may

affect a listed species, informal or formal consultation must be initiated, depending on whether the determination was “not likely to adversely affect” or “likely to adversely affect” the listed species.

This land exchange could result in the net loss of up to 183 acres in federal ownership of thermal/hiding cover that may be used by the Columbian white-tailed deer. Because this closed-canopy, upland habitat is of a type less frequently utilized by the deer and because of the abundance of higher quality habitat in the watersheds containing the selected parcels, the BLM has made a determination that the proposed alternative would “not likely adversely affect” Columbian white-tailed deer.

There are 102 acres of suitable spotted owl habitat contained on the selected parcels, and 101 acres on the offered parcels. The land exchange could result in the net loss of one acre of suitable habitat in federal ownership. As a consequence, the BLM has made a determination that the proposed alternative would have a negligible effect on available habitat and was “not likely to adversely affect” the northern spotted owl.

4.2.3.3 SEIS Special Attention Species

4.2.3.3.1 Beatty Creek ACEC/RNA

There would be no impacts to wildlife habitat within the existing 160-acre Beatty Creek ACEC/RNA.

4.2.3.3.2 Island Creek Day Use Recreation Site

There would be no SEIS Special Attention species affected relative to the expansion of the Island Creek Day Use Recreation Area under the “action alternative”.

4.2.3.3.3 Offered Lands

Forest habitat capable of sustaining red tree voles would come under BLM management. The area designated to the ACEC/RNA would continue to be available for the long term. Habitat in the lands allocated to the Matrix would remain intact until such time as a future timber harvest is planned and implemented. If required at that future time, pre-disturbance surveys would be conducted and any tree vole sites that are located would be managed in accordance with the management recommendations in effect at the time.

4.2.3.3.4 Selected Lands

The harvest of the selected lands would diminish or eliminate their utility as red tree vole habitat.

4.2.4 Fish and Essential Fish Habitat

4.2.4.1 Special status Species

4.2.4.1.1 Beatty Creek ACEC/RNA

There would be no change in BLM's management of the ACEC/RNA. The reach of Beatty Creek within the ACEC/RNA would benefit from greater protection of large woody debris and stream shade in the upstream reaches.

4.2.4.1.2 Island Creek Day Use Recreation Site

The 26 acres that would be acquired adjacent to the existing recreation site would be managed consistent with the current designated use for recreation. There would otherwise be no change in management of the recreation site. Special status fish species would not be affected by BLM's continuing management of the area for day use recreation.

4.2.4.1.3 Offered Lands

All streams within the offered lands would be protected by the establishment of Riparian Reserves and managed in accordance with the objectives of the Aquatic Conservation Strategy in order to maintain and/or restore aquatic habitat conditions.

4.2.4.1.4 Selected Lands

Timber harvest on the White Creek East and Dickinson Mountain parcels would have no effect on special status fish species. There are no streams in the White Creek East parcel. As discussed above (4.2.5.1.4), harvest adjacent to intermittent streams in the Dickinson Mountain parcel would have no effect on stream temperature. Following OFPA guidelines, sediment delivery to streams from roads, and from harvest adjacent to intermittent streams, would be negligible, and any changes in sediment/turbidity conditions in Elk Creek, approximately $\frac{3}{4}$ -mile downstream, would be negligible.

Timber harvest along fish-bearing streams in the Hinckel Creek and White Creek West parcels would be conducted in accordance with Riparian Management Area requirements of the Oregon Forest Practices Act. Photographs 1-3 (Appendix 1) provide a comparison of the effects of this manner of harvest, as compared to the use of full Riparian Reserve widths required by the ROD/RMP.

The FSEIS found that in order to effectively provide for the recruitment of large woody debris, an intact buffer of at least one site-potential tree height should be provided. The proposed harvest by RRC would remove trees within 70 feet of the stream which would reduce the availability of large wood for stream recruitment. The FSEIS also found that in order to provide 100 percent of the cumulative effectiveness of streamside shading, a minimum buffer width of 100 feet is necessary. A 70-foot buffer width would only provide about 80 percent of the cumulative shading, as discussed above (4.1.4.1.1). Loss

of stream shade would result in a greater amount of solar radiation reaching the streams which would result in an increase in water temperature.

4.2.4.2 Effects Determination for Threatened or Endangered Species

Under the terms of the Endangered Species Act, the BLM must consider the effects of a proposed action on threatened or endangered species. If the action may affect a listed fish species, informal or formal consultation must be initiated with the National Marine Fisheries Service.

The proposed land exchange would result in a net gain in acres of land, acres of Riparian Reserve, intermittent stream, perennial stream, fish-bearing stream, anadromous stream, coho salmon Critical Habitat, and EFH under Federal ownership. The total acres of land that could be harvested would decrease. Timber harvest would occur under both the “no-action” and “action” alternatives. Completing the exchange would only change where listed fish species might be affected. On this basis, the BLM has made the determination that the proposed action is “not likely to adversely affect” coho salmon, steelhead trout, and designated Critical Habitat for the coho salmon.

4.2.4.3 Essential Fish Habitat

4.2.4.3.1 Beatty Creek ACEC/RNA

There is no Essential Fish Habitat in the existing 160-acre ACEC/RNA.

4.2.4.3.2 Island Creek Day Use Recreation Site

Management of the recreation site would not change. The existing condition of EFH within or downstream of the site would remain unaffected.

4.2.4.3.3 Offered Lands

Effects on EFH would be the same as the effects on the species discussed in section 4.2.4.1.3.

4.2.4.3.4 Selected Lands

Effects on EFH would be the same as the effects on the species discussed in section 4.2.4.1.4.

4.2.4.4 Effects Determination for Essential Fish Habitat

For the same reasons as described above (4.2.4.2), the BLM has made a determination that the proposed action would “not likely adversely affect” EFH.

4.2.5 Water Quality/Resources

4.2.5.1 Water Quality

4.2.5.1.1 Beatty Creek ACEC/RNA

There would be no direct or indirect effects to water quality in the existing ACEC/RNA. No roads would be constructed, and the ACEC/RNA would continue to be managed as before. In the absence of any canopy removal in Riparian Reserves, water temperatures would be maintained. Absent any ground disturbing activities that could result in erosion, there would be no increases in sediment above the normal background levels.

4.2.5.1.2 Island Creek Day Use Recreation Site

There would be no effects on water quality for the same reasons described above (4.2.5.1.1).

4.2.5.1.3 Offered Lands

Existing water quality would be maintained under this alternative. The offered lands designated for addition to the ACEC/RNA would not be subject to timber harvest or any other ground disturbing management actions. This would maintain existing streamside shade and prevent ground-disturbing activities. As a consequence, current water temperature and sediment regime would be maintained.

The 48 acres of the offered lands that would be designated Matrix would be subject to timber harvest under RMP guidelines. The perennial stream that flows through this area would have a Riparian Reserve width of 160 feet on each side. As discussed above (4.1.5.1.4), harvest of Matrix lands adjacent to the Riparian Reserve would have no measurable effect on streamside shade or stream temperature. Riparian Reserves would also protect stream bank stability and would provide an adequate filter strip which would prevent delivery of sediment to the streams.

4.2.5.1.4 Selected Lands

Common to all

Under this alternative, more area would be harvested from the selected parcels because Riparian Management Areas required by the OFPA are less extensive than Riparian Reserves required under the ROD/RMP. Table 2 shows harvestable acres for the selected parcels under both alternatives. Up to 49 acres of additional harvest could occur under this alternative. Appendix 1, Maps 1-3 show a comparison between the Riparian Reserves under the ROD/RMP and Riparian Management Areas under OFPA rules.

There are no streams located in the White Creek East parcel. Three intermittent stream reaches in the Dickinson Mountain and White Creek West parcels would not be buffered, which is consistent with the OFPA rules. However, these streams have little or no flow during the critical summer period when elevated stream temperatures are of concern.

The extent and location of roads needed for harvest would be similar for both alternatives. Road renovation and road construction guidelines under the OFPA (OAR 629-625-0000) are designed to prevent erosion and increased sediment delivery to the drainage network. Therefore, there should be no measurable increases in sediment delivery to streams from roads.

The 20-foot no-cut width of the Riparian Management Area required by the OFPA would protect stream bank stability and provide a filter strip along perennial streams. FEMAT (1993, p V-26) states that half a crown diameter, which is approximately 20 feet in this area, is about the limit to which root strength contributes to maintaining stream bank integrity. Intermittent streams would not have no-cut buffers. However, other harvest guidelines in the OFPA are designed to “. . . maintain the productivity of forest land, minimize soil and debris entering waters of the state, and protect wildlife and fish habitat” (OAR 629-630-0000 (3)). The rules also require site specific harvest methods that minimize soil deterioration and protect water quality (OAR 629-630-0100 (1)). These OFPA guidelines should protect intermittent stream channels and other wet areas from soil disturbance during harvest operations, and potential sediment delivery to drainage networks in the affected watersheds would be minimal.

Hinckle Creek and White Creek West Parcels

In the Hinckle Creek parcel, harvest would occur along approximately 25 percent of the lower, perennial reaches of Beaty Creek. In the White Creek West parcel, harvest would occur along approximately 12 percent of the lower, perennial reaches of White Creek. Some shade-providing trees could be removed from within the 70-foot Riparian Management Area but outside of the 20-foot no-cut area. Reduced shade could result in a small increase in stream temperature within these reaches. However, it is not likely that temperatures would exceed the state standards as most low order streams in the affected watersheds are generally cool. During the summer months when water temperature is of concern, water surface width of these reaches are about 6 feet and 3 feet, respectively. Shrubs and other lower vegetation directly adjacent to these streams provide a large portion of total shade. These streams also have fully shaded reaches downstream where water temperatures would cool, as more heat escapes than is added (Newton et al. 1996). As a consequence, the water temperature of White Creek at its confluence with Calapooya Creek, and Beaty Creek at its confluence with Hinckle Creek would be negligibly different and indiscernible at the 7th field drainage scale.

There is still some controversy over the cumulative effects of stream heating and the amount of cooling that can take place in shaded reaches (Poole et al. 2001). However, even without downstream cooling as noted above, only about 2 percent of the total miles of perennial stream in the White Creek Drainage, and only about 1 percent in the Hinckle Creek Drainage would be affected by harvesting these parcels. It is unlikely that a partial reduction of shade along these reaches would affect water temperature at the 7th field scale and water quality would not be affected at the 5th field, Calapooya Creek watershed scale.

4.3 Cumulative Effects

The anticipated cumulative effects to vegetation, wildlife, fisheries and water quality are consistent with those described in the PRMP/EIS because the environmental conditions and management action are similar to those assumptions addressed in the PRMP/EIS. There are no cumulative effects that would accrue from either alternative that are beyond the scope of those previously identified and addressed.

4.4 Monitoring

If the proposed alternative for the exchange of land is implemented, monitoring would be done in accordance with the ROD/RMP, p. 84 and Appendix I (pp. 196-201, and 205-206). Monitoring efforts would be conducted specific to the following resources: Wildlife Habitat; Fish Habitat; Special Status and SEIS Special Attention Species Habitat; Special Areas; and Recreation.

Chapter 5

LIST OF AGENCIES/PERSONS CONTACTED AND PREPARERS

This project was included in the Roseburg BLM Project Planning Update (Fall 2001). The notice of decision would be published in the Roseburg, Oregon, *News-Review* if the decision is made to implement the project.

A Notice of Exchange Proposal (NOEP) was published in the Roseburg, Oregon, *News-Review* on March 21, 2001 which initiated a 45-day public comment period. The NOEP and maps of the offered and selected parcels were mailed to all adjacent landowners and to other landowners within approximately 1-mile of the parcels.

I. Agencies & Persons Contacted:

Adjacent Landowners & Down-stream Water Users
Congressional Representatives, Federal and State
Cow Creek Band of Umpqua Indians
Coquille Indian Tribe
City of Sutherlin
City of Riddle
City of Oakland
Roseburg Resources Company
National Marine Fisheries Service
Oregon Department of Agriculture
Oregon Department of Fish and Wildlife
State Historic Preservation Office
Douglas County Board of Commissioners
Douglas County Natural Resources Conservation Service
Oregon Division of State Lands
Umpqua National Forest
Douglas County Planning Dept.
Umpqua Regional Council of Governments
Association of O&C Counties
Umpqua Community College, Library
Umpqua Watersheds, Inc.
Western Land Exchange Project
Cascadia Forest Alliance
Dr. Steve Jessup, Southern Oregon University, Biology Department
Oregon Natural Resources Council
Ronald S. Yockim, Attorney-at-Law
Headwaters
Steamboaters

Umpqua Fisherman's Association
The Nature Conservancy of Oregon
Umpqua Valley Audubon Society
The Wilderness Society
Defenders of Wildlife
Western Lands Group

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

Douglas Timber Operators
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Department of Forestry
Oregon Natural Resources Council
National Marine Fisheries Service
U.S. Fish and Wildlife Service
Umpqua Watersheds, Inc.
Ronald S. Yockim, Attorney-at-Law
The Western Land Exchange Project
Defenders of Wildlife
Francis Eatherington
Association of O&C Counties

III. List of Preparers:

Bill Adams	Project Coordinator & EA Writer
Paul Ausbeck	NEPA Coordinator
Russ Holmes	Botanist
Rex McGraw	Wildlife Biologist
Don Scheleen	Archaeology
Charley Wheeler	Fisheries Biologist
Larry Standley	Hydrologist
Dave Mathweg	Outdoor Recreation Planner
Kirk Casavan	BLM Port-Orford Cedar Coordinator
Diann Rasmussen	Realty Specialist
Julie Knurowski	South River Noxious Weed Coordinator
E. Dwight Fielder	Management Representative

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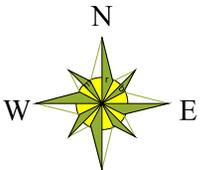
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Appendix 1
Vicinity Maps and Photographs

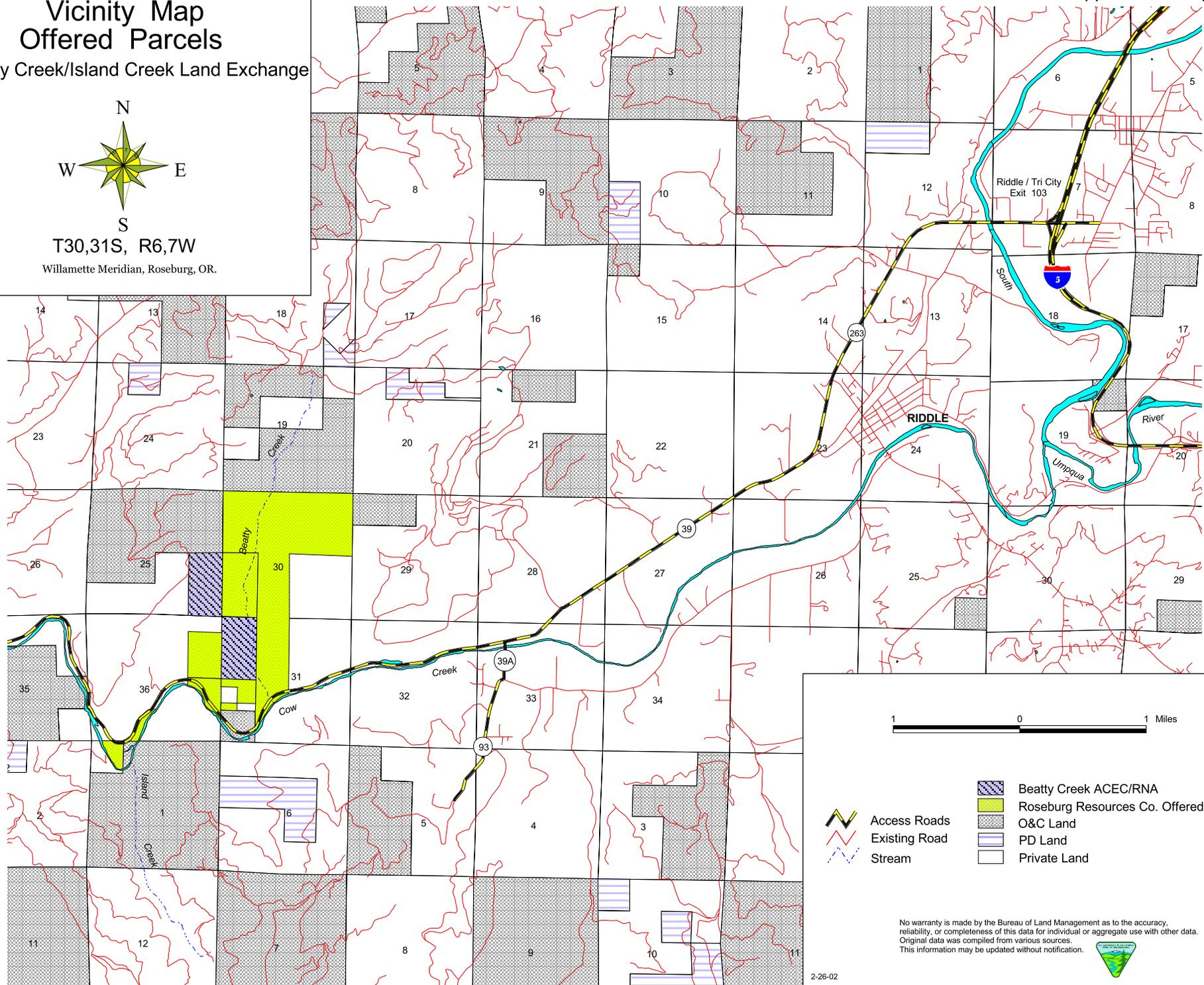
Vicinity Map Offered Parcels

Beatty Creek/Island Creek Land Exchange



N
W E
S

T30,31S, R6,7W
Willamette Meridian, Roseburg, OR.





1 0 1 Miles

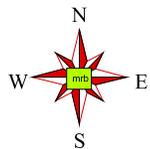
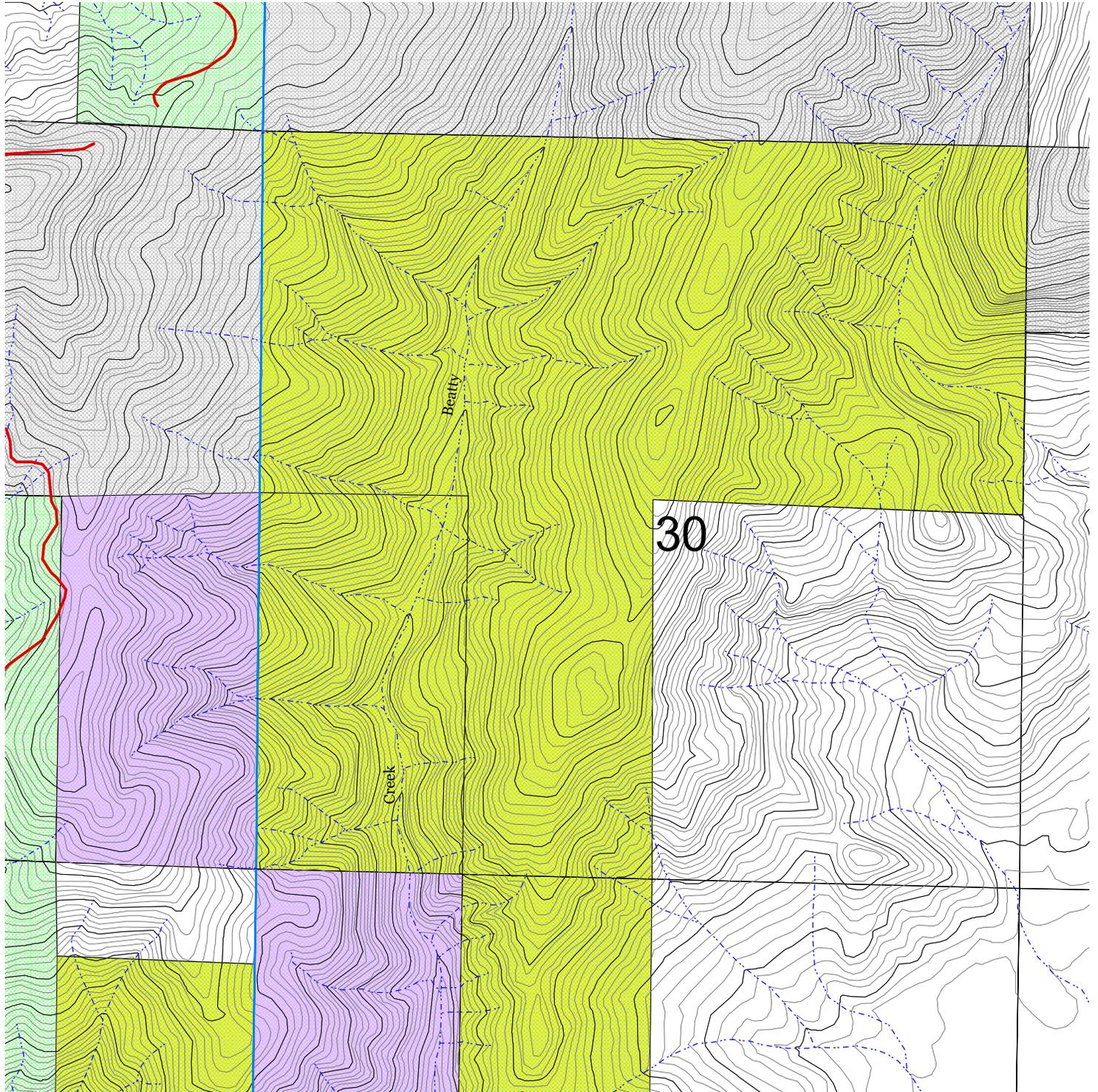
	Access Roads		Beatty Creek ACEC/RNA
	Existing Road		Roseburg Resources Co. Offered Parcels
	Stream		O&C Land
			PD Land
			Private Land

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.



2-26-02

OFFERED LANDS



T30,31S, R6,7W

Willamette Meridian, Roseburg OR., BLM

1000 0 1000 Feet

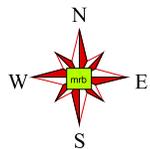
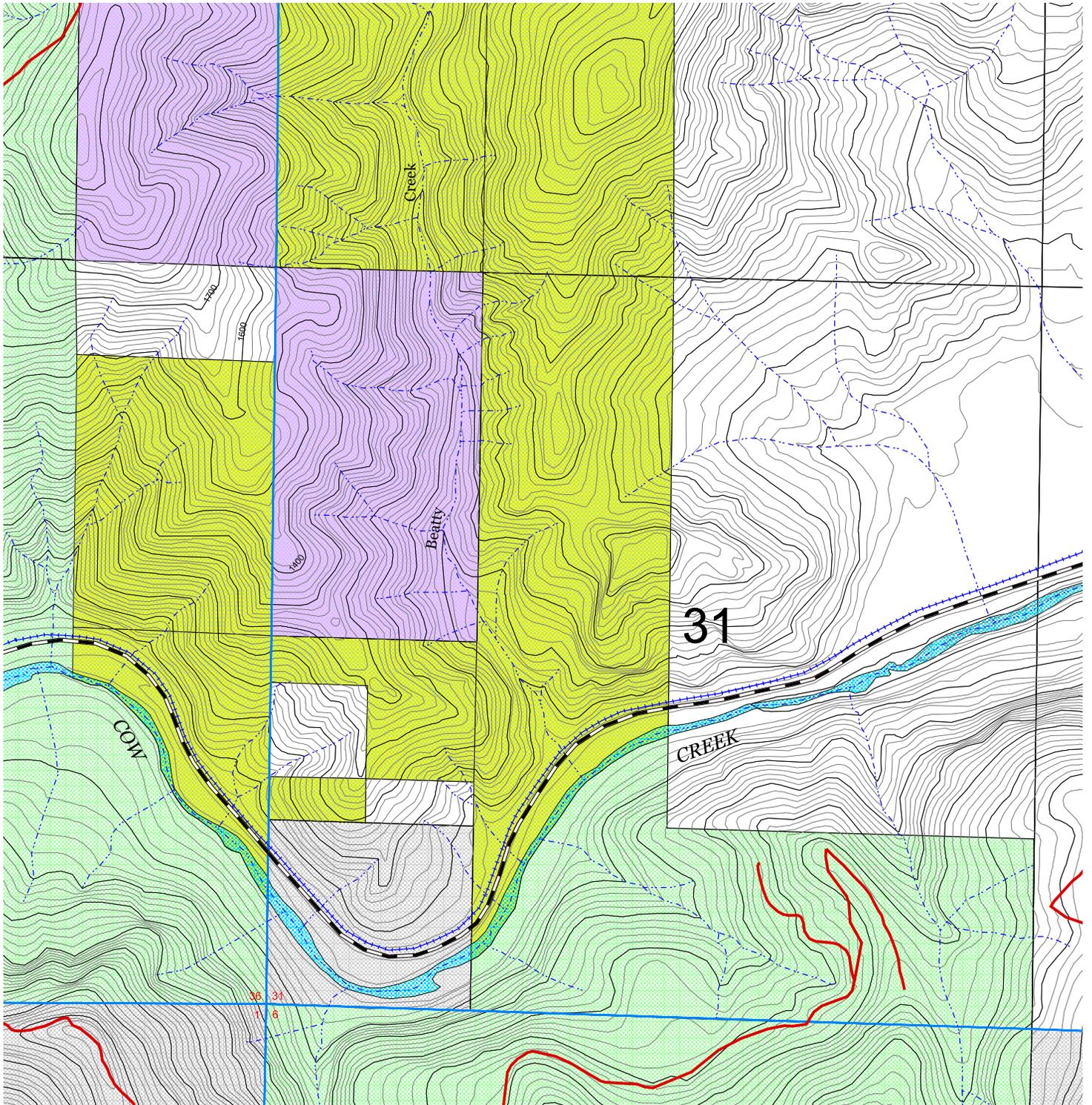
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this data for individual or aggregate use with other data. Original data was compiled from various sources. This information may be updated without notification.



- Existing Road
- 100' Contour
- 20' Contour
- Stream

- Beatty Creek ACEC/RNA
- Roseburg Resources Co. Land (RRCL)
- RRCL Offered Parcel
- O&C Land
- Private Land

OFFERED LANDS



T30,31S, R6,7W

Willamette Meridian, Roseburg OR., BLM

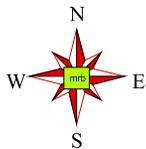
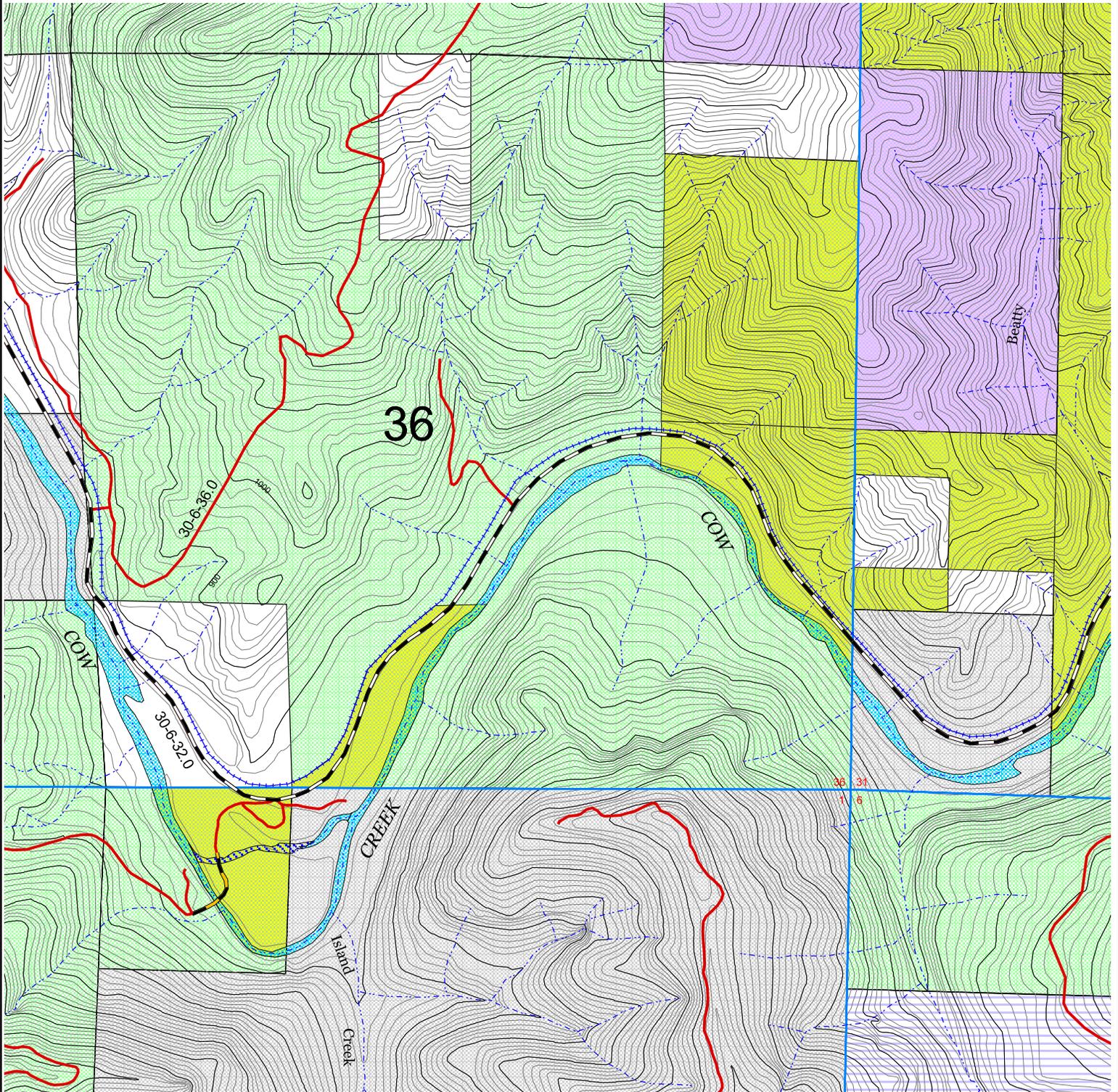


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this data for individual or aggregate use with other data. Original data was compiled from various sources. This information may be updated without notification.



- Railroad R/W
- Cow Creek Road
- Existing Road
- 100' Contour
- 20' Contour
- Stream
- Beatty Creek ACEC/RNA
- Roseburg Resources Co. Land(RRCL)
- RRCL Offered Parcel
- O&C Land
- Private Land

OFFERED LANDS



T30,31S, R6,7W

Willamette Meridian, Roseburg OR., BLM

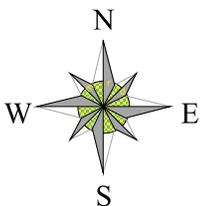
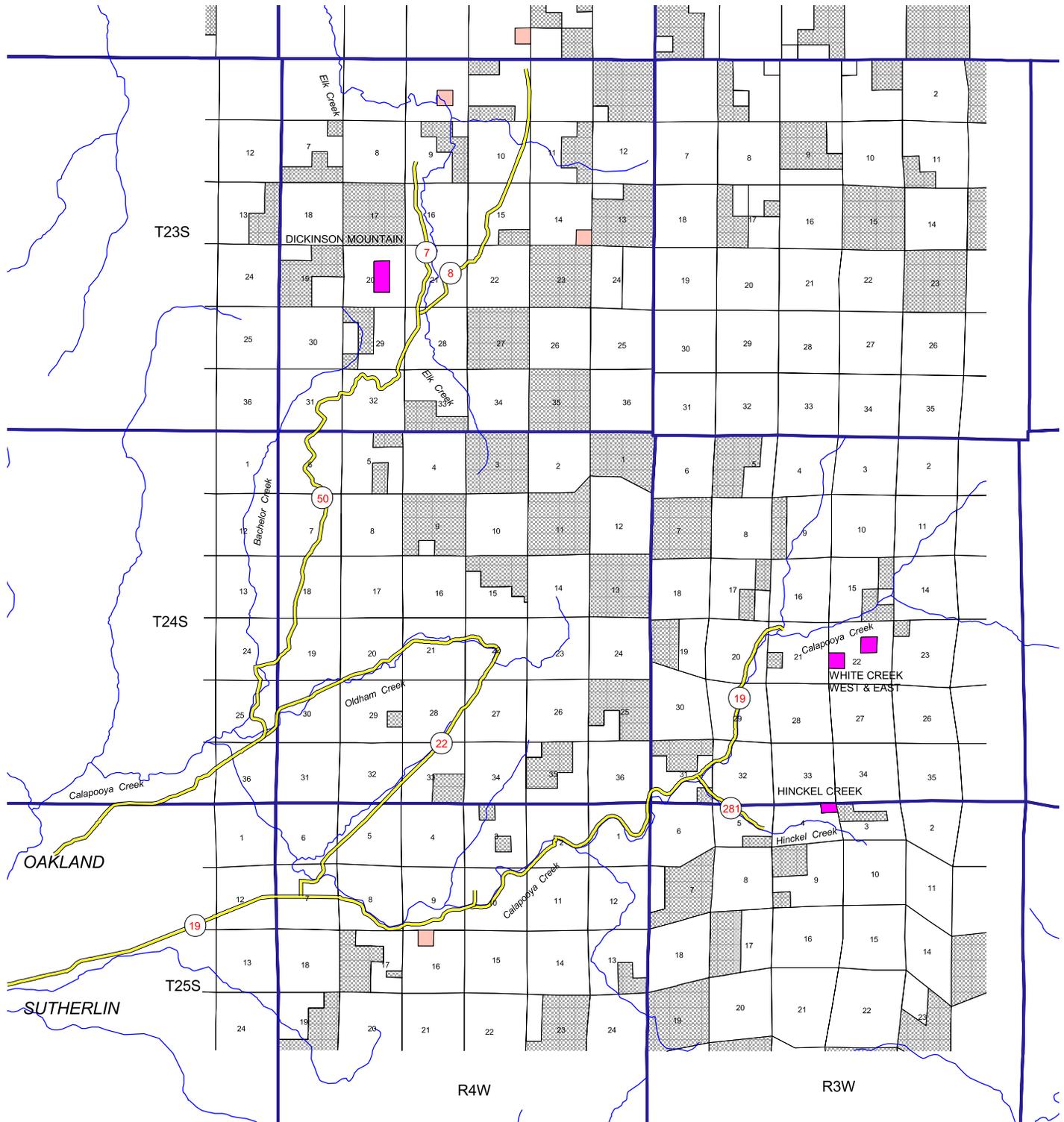


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- | | |
|--------------------|------------------------------------|
| Low Water Crossing | Intermittent Stream Flow |
| Railroad R/W | Beauty Creek ACEC/RNA |
| Cow Creek Road | Roseburg Resources Co. Land (RRCL) |
| Existing Road | RRCL Offered Parcel |
| 100' Contour | O&C Land |
| 20' Contour | PD Land |
| Stream | Private Land |

Vicinity Map - Selected Parcels



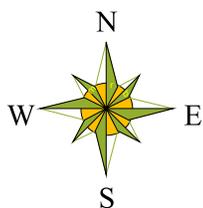
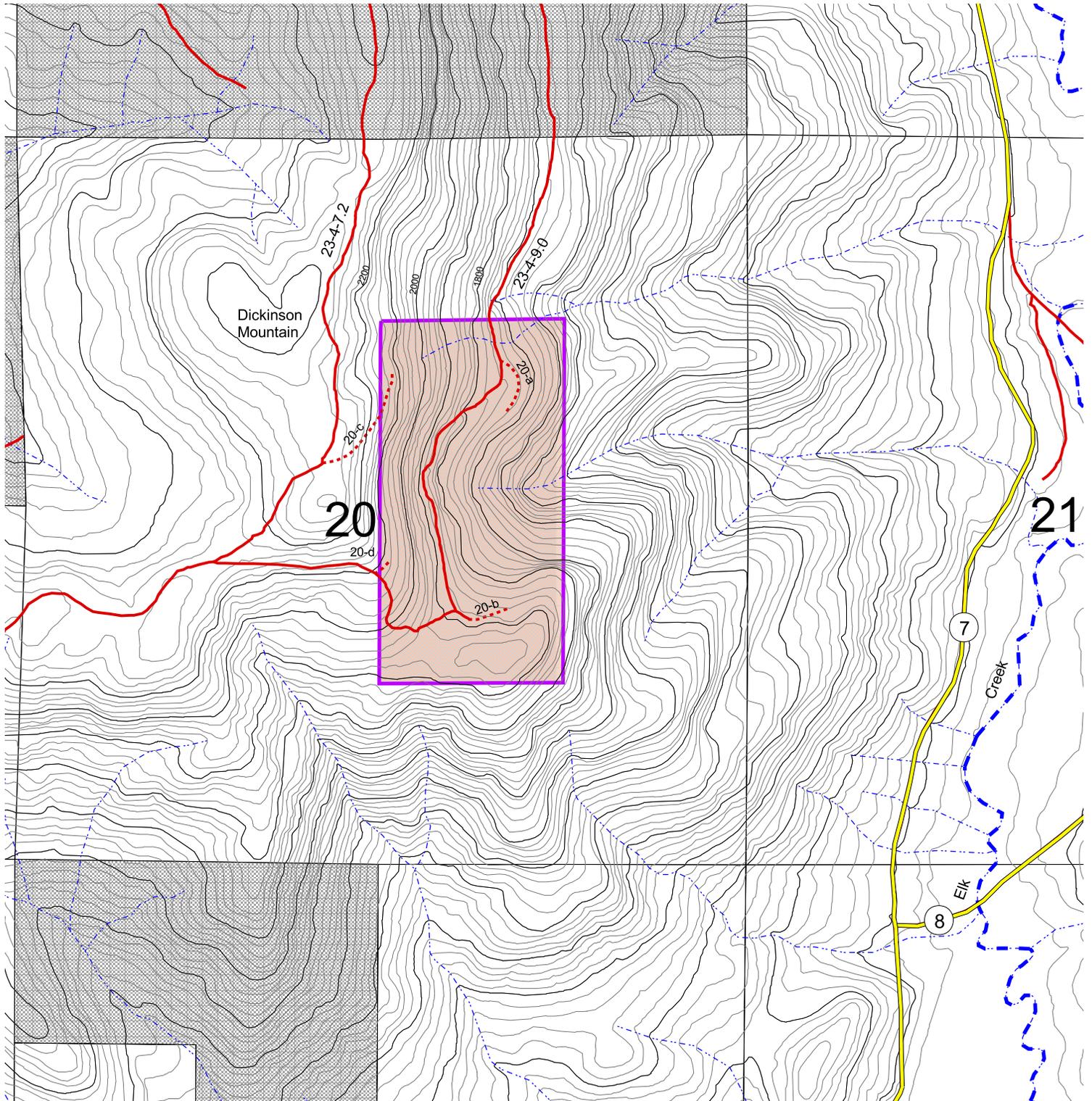
- County Highway
- Major Stream
- Selected PD Parcels For Exchange
- BLM (O&C) Land
- BLM (PD) Land
- Private Land

Willamette Meridian, Roseburg, OR.

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DICKINSON MOUNTAIN SELECTED PARCEL



1000 0 1000 Feet

T23S, R4W

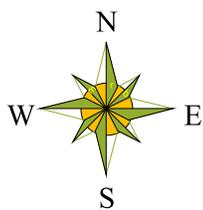
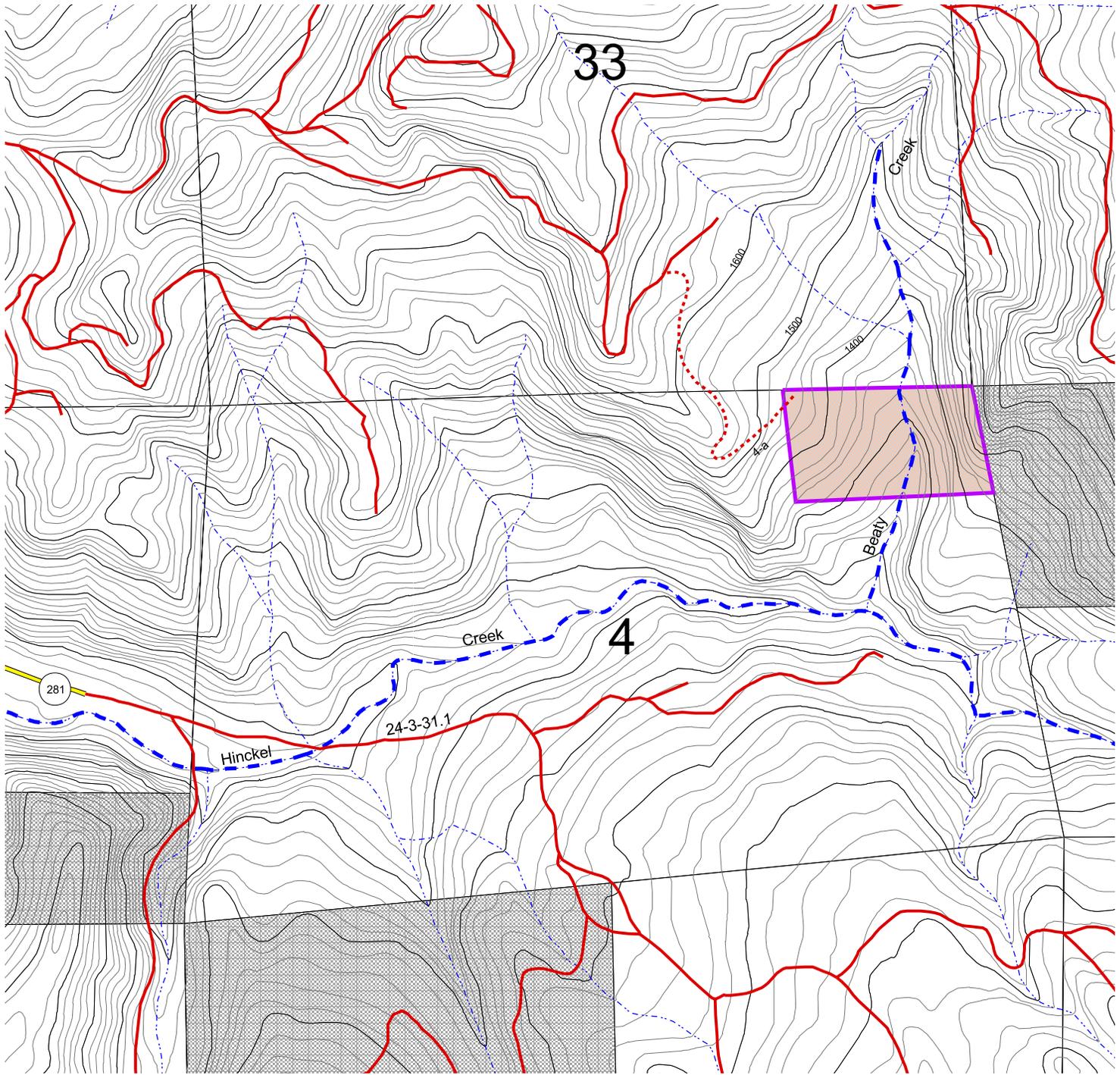
Willamette Meridian, Roseburg, OR.

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.



- Coho Salmon, Steelhead, and EFH Distribution
- Stream
- County Highway
- Proposed Management Access Road
- Existing Road
- Selected Exchange Area
- BLM (PD) Land
- BLM (O&C) Land
- Private Land
- 100' Contour
- 20' Contour

HINCKEL CREEK SELECTED PARCEL



T25S, R3W

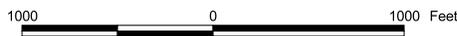
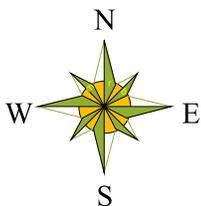
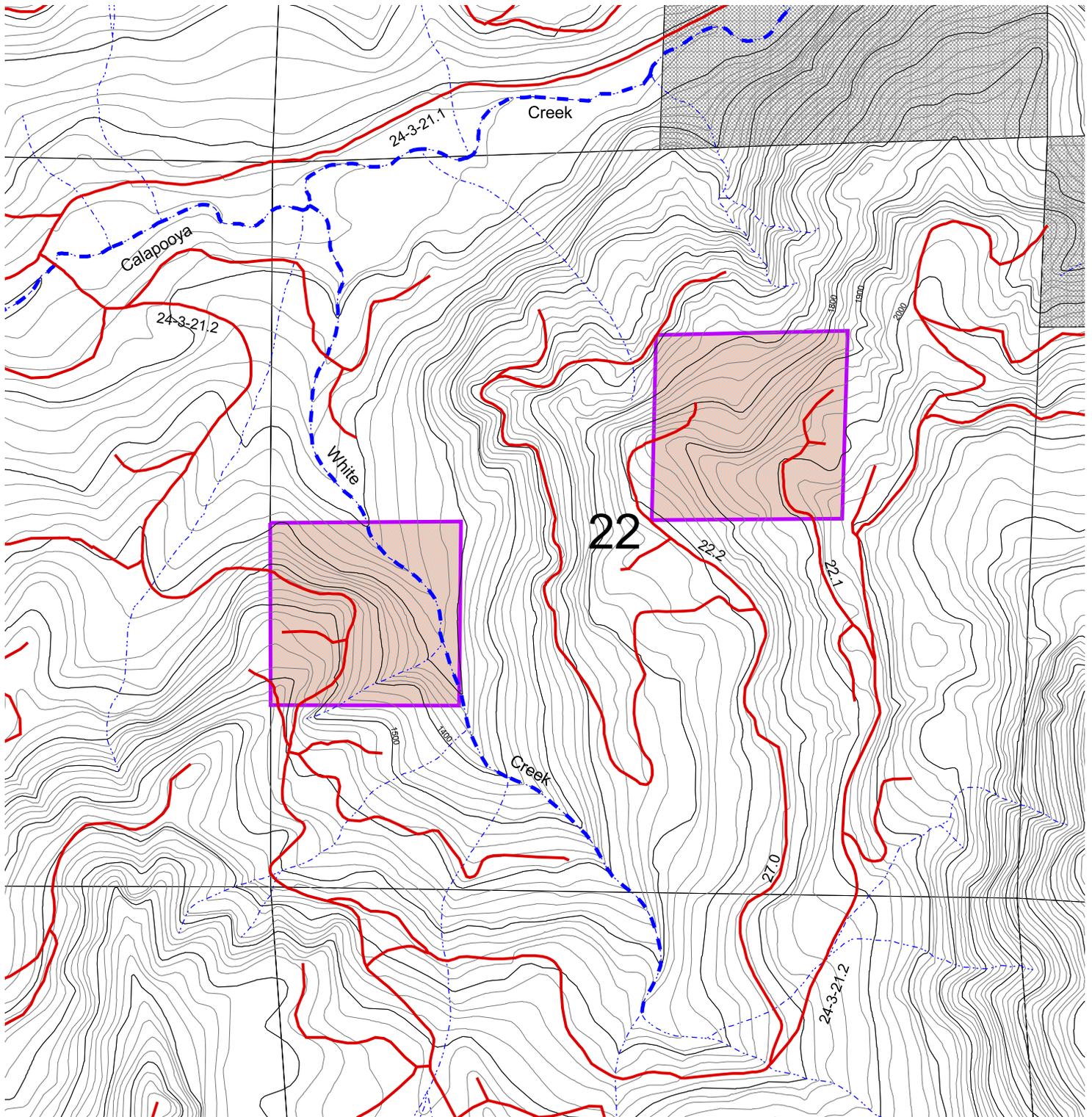
Willamette Meridian, Roseburg, OR.

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.



- Coho Salmon, Steelhead, and EFH Distribution
- Stream
- County Highway
- Proposed Management Access Road
- Existing Road
- 100' Contour
- 20' Contour
- Selected Exchange Area
- BLM (PD) Land
- BLM (O&C) Land
- Private Land

WHITE CREEK WEST & EAST SELECTED PARCEL



T24S, R3W
Willamette Meridian, Roseburg, OR.

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-  Selected Exchange Area
-  BLM (PD) Land
-  BLM (O&C) Land
-  Private Land
-  Coho Salmon, Steelhead, and EFH Distribution
-  Stream
-  Existing Road
-  100' Contour
-  20' Contour

BLM Planned Management of Offered RRC Lands

Roseburg District Bureau of Land Management

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

South River Field Office GIS



Bureau of Land Management

25

30

ACEC/RNA

- Area Drained by Beatty Creek
- Streams
- Section Lines
- Riparian Reserves
- Matrix
- Addition to ACEC/RNA
- Recreation
- BLM
- Existing ACEC/RNA
- Island Creek Day Use Recreation Site

36

31

S30W07

S30W06

S31W07

S31W06

Island Creek Day Use Recreation Site

2000

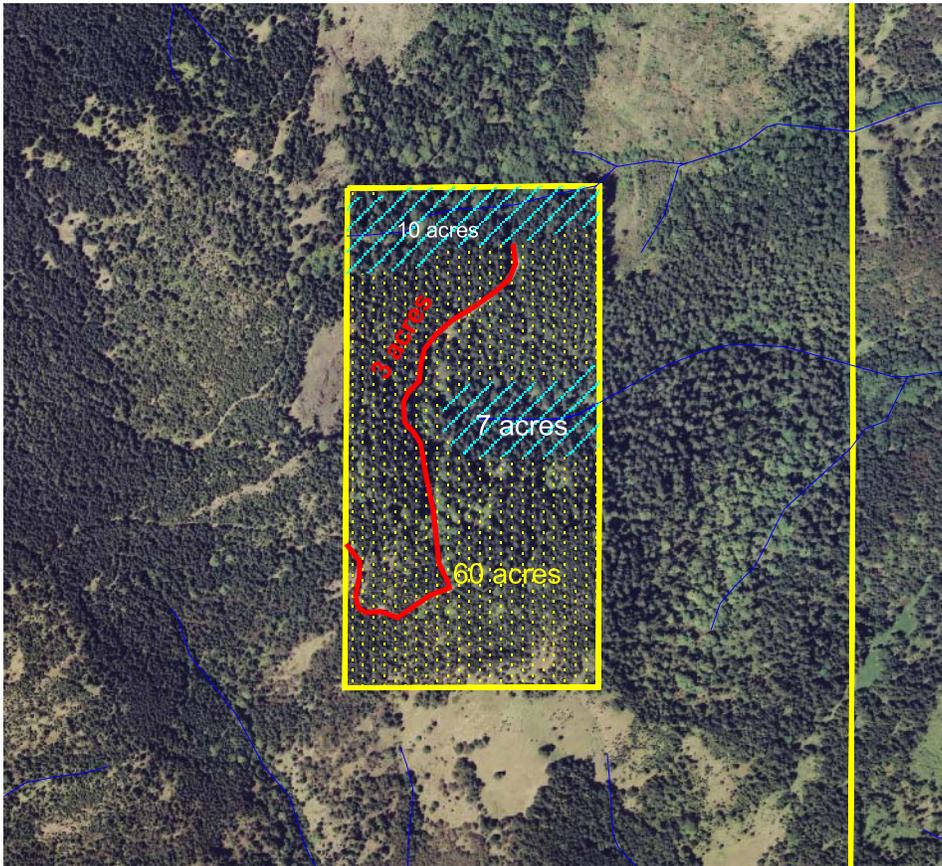
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2000

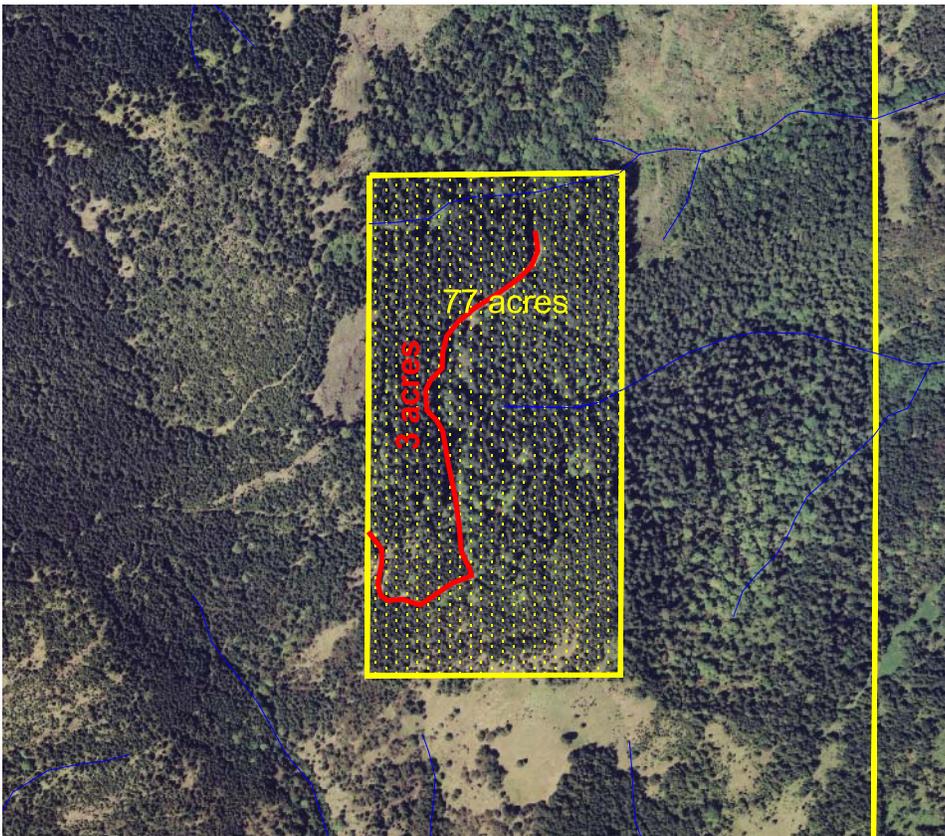
4000 Feet



Dickinson Mountain Harvest Availability Comparison



Harvest area available under BLM guidelines



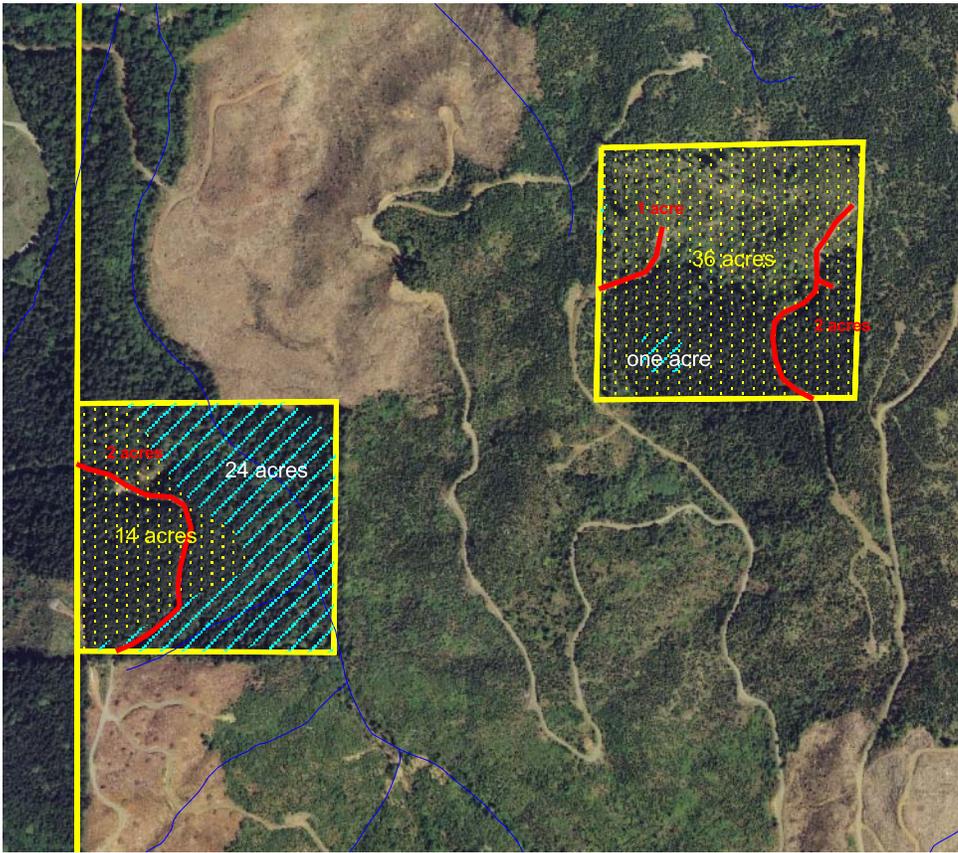
Harvest area available under OFPA guidelines



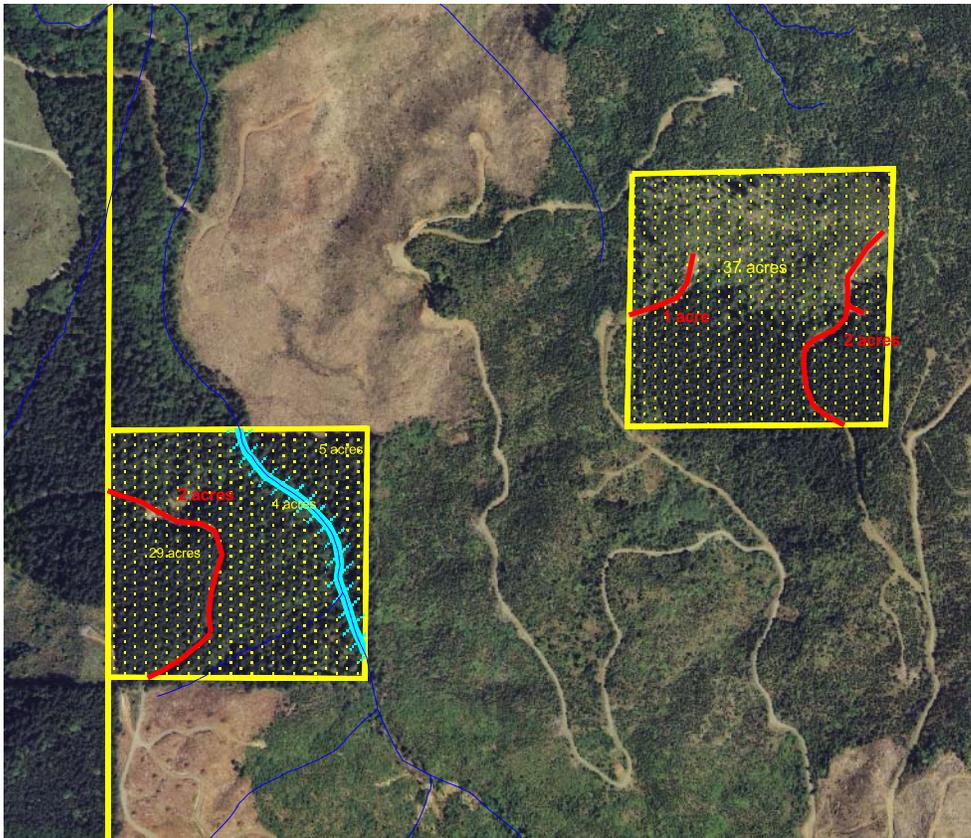
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of this data for individual or aggregate use with other data. This information may be updated without notification.



White Creek Harvest Availability Comparison



Harvest area available under BLM guidelines

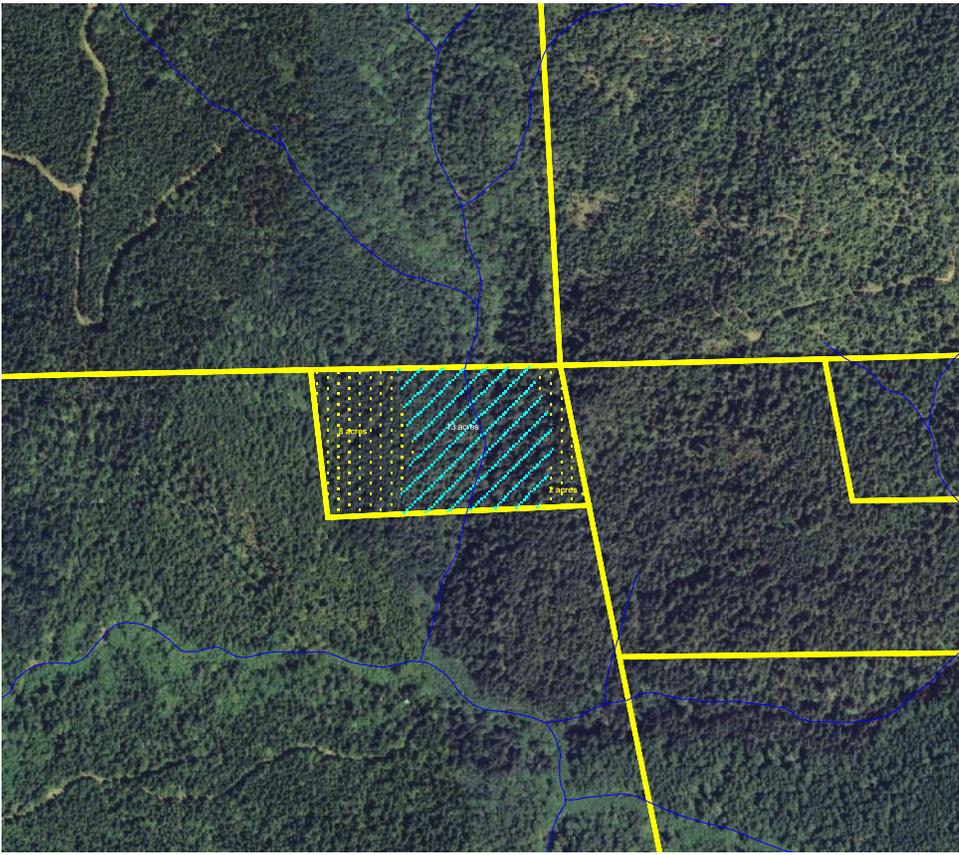


Harvest area available under OFPA guidelines

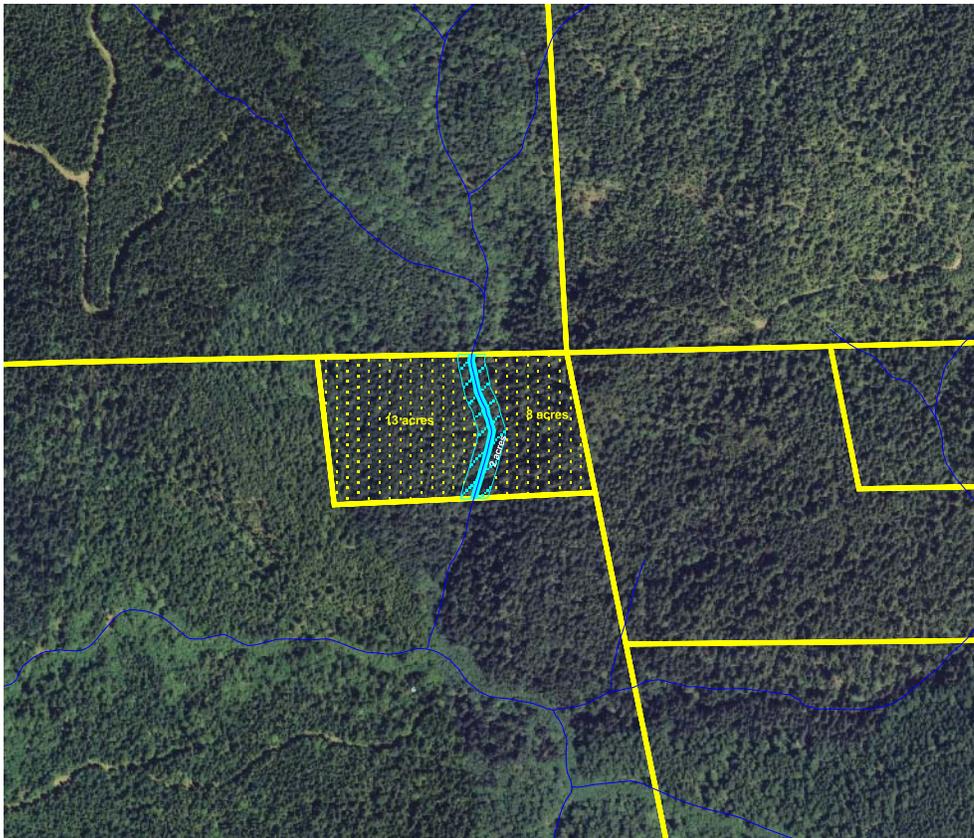
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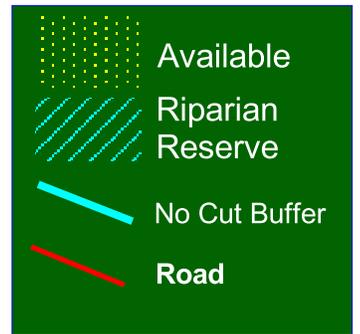
Hinkle Creek Harvest Availability Comparison



Harvest area available under BLM guidelines



Harvest area available under OFPA guidelines



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. This information may be updated without notification.



Appendix 2
Legal Descriptions
Offered Lands

OFFERED LANDS

Parcel 1 - (Beatty Creek)

T. 30 S., R. 6 W., Sec. 30, N $\frac{1}{2}$, SW $\frac{1}{4}$, (Tax Lot 100)	498.82 ac.
Sec. 31, E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, and N $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, that portion of the E $\frac{1}{2}$ SW $\frac{1}{4}$ lying northerly of the ordinary high water mark of the southerly bank of Cow Creek excluding those lands in the Oregon & California Railroad Grant patent dated May 6, 1896, (Portion of Tax Lot 200)	148.94 ac.*
S $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, (Tax Lot 600)	5.47 ac.
T. 30 S., R. 7 W., Sec. 36, S $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, (Portion of Tax Lot 200)	20.00 ac.
SE $\frac{1}{4}$ NE $\frac{1}{4}$. (Tax Lot 500)	40.00 ac.
That portion of the E $\frac{1}{2}$ SE $\frac{1}{4}$ lying northerly of the ordinary high water mark of the southerly bank of Cow Creek excluding those lands in the Oregon & California Railroad Grant patent dated May 6, 1896, and those lands described in warranty deed recorded in Book 1655, Page 142, Douglas County records. (Portion of Tax Lot 600)	<u>25.00 ac.*</u>
Parcel 1 Sub Total	738.23 ac.

*approximate acreage, survey would determine actual acreage

OFFERED LANDS

Parcel 2 - (Island Creek)

T. 30 S., R. 7 W.,

Sec. 36, That portion of the SE $\frac{1}{4}$ SW $\frac{1}{4}$ lying between the southerly boundary of the Oregon & California Railroad Grant patent dated May 6, 1896, and the ordinary high water mark of the easterly bank of Cow Creek,
(Portion of Tax Lot 200) 10.70 ac.*

Sec. 36, That portion of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ lying westerly of the ordinary high water mark of easterly bank of Cow Creek,
(Portion of Tax Lot 600) 0.60 ac.*

T. 31 S., R. 7 W.,

Sec. 1, That portion of the unnumbered lot (generally described as NW $\frac{1}{4}$ NW $\frac{1}{4}$) lying between the southerly boundary of the Oregon & California Railroad Grant patent dated May 6, 1896, and northeasterly of the ordinary high water mark of the southwesterly bank of Cow Creek.
(Portion of Tax Lot 200) 15.00 ac.*

Parcel 2 Sub Total 26.30 ac.*

TOTAL acreage for Parcels 1 and 2 764.53ac.*

*approximate acreage, survey would determine actual acreage

Appendix 3
Legal Descriptions
Selected Lands

SELECTED FEDERAL LANDS

Parcel 1 - (Hinkle Creek)

T. 25 S., R. 3 W.,
 Sec. 4, Lot 5,
 (Tax Lot 300) . . . 23.39 ac.

Parcel 1 Sub Total . . . 23.39 ac.

Parcel 2 - (Dickenson Mt.)

T. 23 S., R. 4 W.,
 Sec. 20, SW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$,
 (Tax Lot 400) . . . 80.00 ac.

Parcel 2 Sub Total . . . 80.00 ac.

Parcel 3 - (White Creek, west)

T. 24 S., R. 3 W.,
 Sec. 22, NW $\frac{1}{4}$ SW $\frac{1}{4}$,
 (Tax Lot 1800) . . . 40.00 ac.

Parcel 3 Sub Total . . . 40.00 ac.

Parcel 4 - (White Creek, east)

T. 24 S., R. 3 W.,
 Sec. 22, SW $\frac{1}{4}$ NE $\frac{1}{4}$,
 (Tax Lot 1900) . . . 40.00 ac.

Parcel 4 Sub Total . . . 40.00 ac.

TOTAL . . 183.39ac.

Appendix 4
Botany and Wildlife

TABLE 1
SEIS SURVEY AND MANAGE SPECIES POTENTIALLY PRESENT ON
SELECTED PARCELS

The Selected Parcels include habitat which could support survey & manage species which do not require pre-disturbance surveys. Impacts to these species, if they did occur, would not extend beyond those analyzed in the Survey & Manage SEIS (USDA Forest Service and USDI BLM 2000).

Potential survey & manage species with no pre-disturbance survey requirement.

Scientific Name	Group	Status Category¹
<i>Bondarzewia mesenterica</i>	Fungi	B
<i>Craterellus tubaeformis</i>	Fungi	D
<i>Galerina atkinsoniana</i>	Fungi	B
<i>Gyromitra esculenta</i>	Fungi	F
<i>Helvella maculata</i>	Fungi	B
<i>Hydnum umbilicatum</i>	Fungi	B
<i>Neournula pouchetii</i>	Fungi	B
<i>Pithya vulgaris</i>	Fungi	D
<i>Plectania melastoma</i>	Fungi	F
<i>Ramaria abietina</i>	Fungi	B
<i>Rhizopogon flavofibrillosus</i>	Fungi	B
<i>Chaenothica furfuracea</i>	Lichen	F
<i>Chaenothecopsis pusilla</i>	Lichen	E
<i>Dendriscoaulon intricatulum</i>	Lichen	B
<i>Hypogymnia oceanica</i>	Lichen	F
<i>Nephroma bellum</i>	Lichen	F
<i>Nephroma occultum</i>	Lichen	B
<i>Pannaria saubinetii</i>	Lichen	F
<i>Ramalina thrausta</i>	Lichen	A ¹
<i>Buxbaumia viridis</i>	Bryophyte	D
<i>Plethodon elongatus</i>	Vertebrate	D
<i>Helminthoglypta hertleni</i>	Mollusk	B
<i>Megomphix hemphilli</i>	Mollusk	F
<i>Pristoloma articum crateris</i>	Mollusk	B

¹Pre-disturbance surveys not required until development of survey protocols (USDA Forest Service and USDI BLM 2001, Standards and Guidelines, p 23).

Table 2
Special Status Wildlife Species Occurrence on Affected Lands

(Species Status: FT = federal threatened, FE = federal endangered, FPEO = federal proposed endangered in Oregon, SM = survey & manage, BS = Bureau sensitive, BSO = Bureau sensitive in Oregon, BTO = Bureau tracking in Oregon, BT = Bureau tracking, XC = former federal candidate).							
Common Name	Species Status	Offered Parcels		Selected Parcels			
		Beatty Creek	Island Creek	Dickinson Mtn.	Hinkle Creek	East White Creek	West White Creek
Threatened & Endangered Species							
Bald Eagle	FT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT
Columbian White-Tailed Deer	FE	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE	WITHIN KNOWN RANGE POTENTIAL HABITAT PRESENT			
Fender's Blue Butterfly	FPEO	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT
Marbled Murrelet	FT	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE	NOT WITHIN KNOWN RANGE
Northern Spotted Owl	FT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT	POTENTIAL HABITAT PRESENT
Vernal Pool Fairy Shrimp	FT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT	POTENTIAL HABITAT NOT PRESENT
continued next page							

