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INDEMNITY SELECTION
United States Department of the Interior
BUREAU OF LAND MANAGEMENT
ROSEBURG DISTRICT
ENVIRONMENTAL ASSESSMENT

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U.S. Department of the Interior, Bureau of Land Management
Roseburg District Office
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Roseburg, Oregon 97470

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Chapter 1. PURPOSE AND NEED FOR PROPOSED ACTION

This chapter discusses the purpose and need for the federal action, the federal decision and factors for decision-making, how the action must comply with relevant authorities, and issues eliminated from further analysis.

A. PURPOSE AND NEED FOR PROPOSED ACTION

The Bureau of Land Management (BLM) is required to transfer federal land to the State of Oregon (the State) in order to fulfill a legal obligation dating back to Oregon Statehood. The State filed an application with BLM on August 16, 2006 requesting the transfer of approximately 180 acres of public lands to its management. This request was made as an indemnity selection for school lands granted under the provisions of the Oregon Admission Acts, approved February 14, 1859 (11 Stat. 383).

A 1992 US District Court decision in Oregon v. Bureau of Land Management, Civil No. 85-646-MA, found the State was entitled to select 5,202.29 acres of Public Domain lands administered by BLM “in lieu” of certain “base” lands to which the State was entitled under the Admission Acts, but which were unavailable for transfer to the State for various reasons (such as the lands were within a National Forest or otherwise conveyed prior to survey). Base lands represent the State's right to select eligible public lands elsewhere to compensate for those rights lost to the State when the original grant lands were unavailable. The value of base lands is then compared to the value of lands that the State selects; this value is to be “roughly equivalent in value” as provided in the US Supreme Court decision in Andrus v. Utah, 446 US 500 (No. 78-1522, May 19, 1980).

The 1992 US District Court decision in Oregon v. Bureau of Land Management, Civil No. 85-646-MA ordered BLM to allow land transfers to the State to proceed to patent. The final judgment concluded that there were 11,947.47 acres of unused base lands and 6,745.47 acres of overdrawn base lands, leaving the balance of the above mentioned 5,202.29 acres of land due to the state of Oregon as indemnity. The Court identified a list of unused base lands, but did not specify which unused base lands could be selected or which would be used to offset the overdrawn base lands. As such, BLM and Department of State Lands (DSL) agreed that DSL may use any of the unused 11,947.47 acres as base lands to make its remaining selections.

The base lands identified for use in the indemnity selections on the Roseburg District BLM consist of two parcels managed by the Mt. Hood National Forest; these parcels are on the Court's list of parcels contained in the final judgment. BLM and DSL will evaluate the value of the base lands and selected lands from the Roseburg District and determine that they are roughly equivalent in value. The court decision also stated that “each clear list issued will contain a value certification by BLM for both the base and selected lands”.

BLM is responsible for satisfying this federal obligation of land roughly equivalent in value to the base lands to the State of Oregon as part of fulfilling statehood land grant

rights. Satisfaction of indemnity selection rights and disposal of parcels for that purpose are considered to serve the national interest in the context of Section 102(a)(1) of the Federal Land Policy and Management Act of 1976. Undertaking the proposed action (Chapter 2) would satisfy approximately 180 acres of this 5,202.29 acre federal obligation. Other indemnity selections are occurring elsewhere in the State to completely satisfy the federal obligation.

Federal Decision to be Made

BLM's transfer of lands to the State is Court-ordered under the 1992 decision. BLM must determine which parcels are the best suited to transfer, however. Factors to be considered in making this determination are:

- Whether the transfer of the parcels conforms to law and policy; and
- The degree to which the transfer may affect threatened or endangered species.

B. CONFORMANCE WITH LAND USE PLANS

The lands proposed for selection by the State are managed under the direction of the *Roseburg District Record of Decision and Resource Management Plan (ROD/RMP 1995)*. Implementation of the proposed action must conform to the requirements of the ROD/RMP, which incorporates as management direction the standards and guidelines of the *Record of Decision for Amendments (ROD) to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 1994b)*, 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 2001b (S&M ROD))* and *Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (USDA, USDI 2004b)*.

This Environmental Assessment (EA) will consider the environmental consequences of the proposed action and no action alternatives in order to provide sufficient evidence for determining suitability of the parcels for transfer. The EA will also determine whether the anticipated impacts would exceed those considered in the Roseburg District PRMP/EIS and require the preparation of a Supplemental Environmental Impact Statement (SEIS). In addition to the PRMP/EIS, this analysis is tiered to assumptions and analysis of consequences provided by:

- The *Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl (USDA, USDI 1994a)*;
- The *FSEIS 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 2001a)*; and

- The FSEIS to Clarify Provisions Relating to the Aquatic Conservation Strategy (USDA, USDI 2004a).

The ROD/RMP assigned all lands administered by the Roseburg District BLM to one of three Land Tenure Zones. All of the parcels considered for conveyance in this analysis are Public Domain lands assigned as Tenure Zone 2. While the ROD/RMP objectives for these lands include guidance to “block up” areas in Zone 2 with significant resource values and exchange other lands in Zone 2 to “block up” areas in Zones 1 and 2 with significant resource values, the ROD/RMP also directs that BLM make administered lands in Zones 1, 2, and 3 available for a variety of uses as authorized by section 302 of the Federal Land Policy and Management Act. The sale of Zone 1 and 2 lands is generally prohibited, but Zone 2 lands may be transferred to other public agencies or managed under some form of cooperative agreement. Zones 1 and 2 lands would generally remain under BLM administration. (ROD/RMP p.67-68)

In accordance with the ROD/RMP, BLM generally does not dispose of Zone 2 lands. However, the disposal of parcels under an indemnity selection is considered to serve the national interest in the context of Section 102(a)(1) of FLPMA, and BLM policy is to accommodate the State’s request to the extent possible (BLM Manual 2621 – Indemnity Selections, .6B,C). As such, BLM is making Zone 2 lands available to meet the State’s selection.

Two of the parcels considered for conveyance are within the Late-Successional Reserve (LSR) land use allocation. The Roseburg ROD/RMP (p. 29) states the objective of Late-Successional Reserves is to “protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth forest-related species including the northern spotted owl and marbled murrelet.” Under the ROD/RMP, review by the Regional Ecosystem Office is required for all actions that are deemed to have adverse effects on the above stated LSR objectives (ROD/RMP p.29). The Regional Ecosystem Office delegated this authority to the Late-Successional Reserve Working Group in its memorandum dated May 14, 2003 (*Delegation of RIEC authority to review specific changes to Northwest Forest Plan (NWFP) standards and guidelines and land allocations*). Review by the Late-Successional Reserve Working Group would be required prior to any transfer of ownership of LSR parcels in order to ensure conformance with the land use plan.

These two LSR parcels are also located in designated Critical Habitat for listed threatened and endangered species. The Roseburg ROD/RMP (p.42) directs that “habitat essential for the survival or recovery of listed and proposed species” be retained under federal management or other appropriate management organization. Two of the parcels considered for conveyance are within designated critical habitat for threatened or endangered species, which under the Endangered Species Act is habitat essential to the conservation of a species (ROD/RMP p.103). Because critical habitat is habitat essential to survival or recovery of a listed species, if BLM should select parcels containing critical habitat for transfer, an RMP amendment would be necessary prior to any transfer of ownership to ensure conformance with the land use plan.

C. RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The State of Oregon application for Indemnity School Land selections has been filed pursuant to Sections 2275 and 2276 of the Revised Statutes, as amended (43 U.S.C. 851, 852), Sec. 102(a) of the Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701, 1712), and Sec. 7 of the Taylor Grazing Act of 1934 (43 U.S.C. 315f). The authority to transfer “in lieu” lands to the State is found in Sections 2275 and 2276 of the Revised Statutes, as amended (43 U.S.C. 851, 852), and guided by regulations found at 43 CFR 2621.

In accordance with Sec. 120 (h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a Level I Hazardous Materials Survey has been completed on all parcels. Parcel 4 was determined to have illegally-dumped solid waste debris on the parcel; prior to any transferal, the pieces of debris would be removed. No hazardous substances and no petroleum products or their derivatives are known to have been released or disposed of on any of the other nine parcels analyzed in this environmental assessment (EA).

In accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S. C. 1531 *et seq.*), the Bureau of Land Management has prepared a biological assessment and will complete consultation with the US Fish and Wildlife Service prior to conveyance.

In accordance with Section 106 responsibilities under the National Historic Preservation Act, cultural resource surveys were conducted on five of the ten parcels. The remaining parcels are exempt under the 1998 Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Oregon.

In accordance with the Magnuson-Stevens Fishery Conservation and Management Act, an Essential Fish Habitat assessment was prepared (Appendix C, Essential Fish Habitat Assessment).

D. ISSUES AND RESOURCES ELIMINATED FROM FURTHER ANALYSIS

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

“Critical elements” are listed in Appendix 5 of the BLM National Environmental Policy Handbook (NEPA Handbook H-1790-1, BLM, October 1988). The following critical elements are not found in the project area or are not affected by the Proposed Action, and are thus not relevant to the proposed action and eliminated from further analysis: air quality, ACEC, cultural resources, prime or unique farmlands, flood plains, Native American religious concerns, wild and scenic rivers, wilderness, invasive and nonnative species, and environmental justice.

SURVEY AND MANAGE SPECIES

The transfer of ownership from the federal government to the State of Oregon is not a habitat-disturbing activity. The Regional Ecosystem Office determined that land tenure adjustments do not require Survey and Manage protocol in a memorandum dated March 27, 1997. Therefore, because the proposed action is a land tenure adjustment, it does not require Survey and Manage protocol.

OTHER RESOURCES

The following resources were considered and eliminated from detailed analysis for reasons listed below:

- Mineral Resources – All ten parcels are non-mineral in character; there are no existing mineral claims on any of the ten parcels.
- Visual Resource Management - All ten parcels are within the Visual Resource Management Class IV, which allows for major modifications of the existing character of the landscape (ROD/RMP, p.53).
- Recreation - Recreational use is limited to areas where public access is available over roads wholly under the control of the BLM. Only Parcels 4 and 9 have public access, and no parcels have developed recreational facilities or areas proposed for recreational development. Recreational opportunities are limited to those of a dispersed nature, which could include hiking, picnicking, wildlife observation, and hunting. Off-highway vehicle use is “limited” exclusively to existing roads and designated trails (ROD/RMP, p. 58). Other forms of off-highway vehicle recreation are not recognized as an authorized use of the public lands. Because the access and recreational opportunities provided on the parcels are extremely limited, effects to recreational resources are not analyzed.
- Cultural Resources - The three parcels (4, 7, and 9) in the Western Cascades were surveyed for cultural resources; none were found. Two of the coast range parcels (1 and 5) were surveyed for cultural resources; none were found. The remaining five Coast Range parcels (2,3,6,8, and 10) fall under the Coast Range exemption of the 1998 Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Oregon. As surveys did not reveal cultural resources and five parcels are exempt according to the 1998 Protocol, further analysis on effects to cultural resources is unnecessary. BLM has completed its Section 106 responsibilities under the 1997 Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers regarding the manner in which BLM will meet its responsibilities under the National Historic Preservation Act (the National Programmatic Agreement).
- Soils – Because the Oregon Forest Practices Act would guide any subsequent timber harvest, providing best management practices to protect water quality, effects to soils are expected to be negligible and are not analyzed.
- Wild Horse and Burro Management Areas– None of the parcels are part of a wild horse or burro management area.
- Rangeland Resources – None of the parcels are rangelands.

- Water rights - There are no registered water rights within any of the proposed parcels or within one mile downstream of any parcels. Since there are no existing water rights, they will not be further discussed in this document.

Chapter 2. PROPOSED ACTION AND ALTERNATIVES

This chapter describes both the proposed action and the no action alternative analyzed in this EA.

A. PROPOSED ACTION

The BLM proposes to convey approximately 180 acres of Public Domain lands to the State of Oregon in response to the State's indemnity selection application, in partial fulfillment of the land grants made to the State of Oregon when it entered the Union in 1859.

The lands being considered for transfer to the State are scattered parcels found entirely within the north half of the Roseburg District. Site specific descriptions of each parcel are in Chapter 3, the Affected Environment, and maps of each parcel are found in Appendix A, Maps.

The State and BLM selected ten parcels for analysis and potential transfer to the State based upon several criteria:

- Parcels are all non-mineral in character;
- Parcels are all Public Domain lands;
- Parcels all contain late-successional growth; and
- Parcels are similar to base lands in character.

The State may pursue selection of any of the ten parcels analyzed in this EA (totaling 464.05 acres) in any combination, but final selection is based upon negotiations of those parcels found to be the most suitable for conveyance. Though analyzing the effects of transferring each parcel, BLM only proposes to convey the approximate acreage necessary to meet its federal obligation under this application. These parcels are already small, scattered tracts; for management purposes BLM would not split the parcels into partial parcels for transfer – this may result in slightly more than 180 acres being transferred.

Beyond the Federal action of conveyance, there is the possibility that the State may transfer the parcels into private ownership to satisfy State of Oregon land debts. Regardless of whether the State retains ownership or transfers the parcels, BLM assumes, for analytical purposes, that the land will be managed for timber production under Oregon Forest Practices Act requirements. Because of the inter-dependent nature of the federal conveyance and subsequent harvest by either the State or a private owner, future timber harvest would be an indirect effect of the BLM action.

B. ALTERNATIVES

NO ACTION ALTERNATIVE

Under the "No Action" alternative, BLM would retain all of the above-mentioned parcels in their entirety. These parcels would be managed according to their specific Land Use Allocations as described in the RMP. Such management would likely include timber harvest on parcels in the Matrix land allocations.

C. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

BLM considered "partial selection" alternatives, with predetermined combinations of parcels, but did not analyze them in detail because the Proposed Action already serves this function by analyzing more acreage (464.05 acres) than the State will select (approximately 180 acres).

Alternative parcels were also considered but not analyzed in detail because:

- There is an adequate amount of acreage for the State to select from;
- The BLM is responding to a State request for specific parcels and types of land; and
- Other parcels did not meet criteria for disposal eligibility (as discussed in the description of the proposed action).

Chapter 3. AFFECTED ENVIRONMENT

This chapter describes the resources that are present, or potentially present, and which may be affected by the proposed action. The description of the current conditions inherently represents the cumulative effects of the past resource management activities undertaken by the BLM and private entities. This section forms the baseline for comparison of the effects of the alternatives under consideration.

A. GENERAL DESCRIPTION OF THE AFFECTED ENVIRONMENT

The ten parcels analyzed for suitability and potential transfer to the State are all within the BLM Roseburg District's Swiftwater Resource Area, and entirely within Douglas County, Oregon (see Appendix A, Maps). These parcels are within the mountainous terrain of the Coast Range and Cascade Range of Western Oregon. Lands in this area are predominantly public, State, and private timberlands managed for timber production and related forest values. The selected parcels are mostly composed of Douglas-fir forests ranging from mature stands to old growth, with limited young-mid seral stands on a few parcels. Other habitat types include grassy meadows and riparian areas with mixed deciduous and conifer species.

Under the ROD/RMP, all ten parcels are Public Domain lands, not Oregon and California (O & C) Grant Lands. The parcels are classified as Land Tenure Zone 2 and are available for transfer to the State (ROD/RMP p.68). The parcels' land use allocations vary from Riparian Reserves to Late Successional Reserve (LSR) to Matrix (composed of both Connectivity/Diversity Blocks and General Forest Management Areas).

Wildlife – General Description

The parcels are widespread across the District; all contain late-successional habitat and all are in proximity to a variety of other habitat types. The State of Oregon indemnity selection has been determined to have *no effect* on two federally listed wildlife species, including the Fender's blue butterfly (*Icaricia icarioides fenderi*) or Canada lynx (*Lynx canadensis*), as the proposed parcels do not contain suitable habitat or are outside the range of these species. The project area is within the range of three federally threatened listed wildlife species: the Northern spotted owl (*Strix occidentalis caurina*), the marbled murrelet (*Brachyramphus marmoratus*), and the bald eagle (*Haliaeetus leucocephalus*). All ten parcels contain suitable habitat for the Northern spotted owl, and many of the parcels also contain suitable habitat for marbled murrelets and/or bald eagle.

Suitable habitat for the Northern spotted owl consists of habitat used by owls for nesting, roosting and foraging; suitable habitat also functions as dispersal habitat. Generally this habitat is 80 years of age or older, multi-storied and has sufficient snags and down wood to provide opportunities for nesting, roosting, and foraging. The canopy closure generally exceeds 60 percent. The unit wildlife biologist makes site-specific determinations and delineations of suitable habitat. Currently, there are approximately 222,208 federal acres of suitable spotted owl nesting, roosting, and foraging habitat on District of which approximately 156,179 acres (70 percent) are protected in Reserves. There is an

additional 106,614 federal acres of dispersal-only habitat of which 66,098 acres (62 percent) are protected in Reserves. There are approximately 610 northern spotted owl activity centers on District (includes 365 master sites) of which 550 activity centers (90 percent) are protected in Reserves.

Suitable habitat for the marbled murrelet consists of habitat used by murrelets for nesting. Generally this habitat is 80 years of age or older, contains multiple canopy layers, and contains platforms or nesting branches ≥ 5.9 inches (15 cm) in diameter (Burger 2002, Nelson & Wilson 2002: 24, 27, 42, 97, 100). There are approximately 97,595 federal acres of suitable marbled murrelet nesting habitat, of which 83,186 acres (85 percent) are protected in Reserves. There are 12 known marbled murrelets sites on District, of which all (100 percent) are protected in Reserves.

Suitable habitat for the bald eagle typically is multi-layered, uneven-aged, and contains old-growth conifer stands that are located within approximately one mile of large bodies of water (Anthony et al. 1982). There are approximately 25,177 federal acres of suitable bald eagle nesting habitat on District, of which approximately 19,023 acres (76 percent) are protected in Reserves. There are 10 known nesting territories on District, with all but one territory (which is located along the North Umpqua River) located on the Mainstem of the Umpqua River within the Swiftwater Resource Area. Six of these territories (60 percent) are protected in Reserves, while the remaining four territories are located on private lands.

The following table describes habitat for these listed species within the project area.

Table 1. Listed Species and Critical Habitat Concerns by Parcel

P	T-R-S	ACRES	LISTED SPECIES AND CRITICAL HABITAT CONCERNS PER PARCEL									
			SPOTTED OWL				MARBLED MURRELET			BALD EAGLE ⁴		
			KNOWN ACTIVITY CENTER ¹	NUMBER OF HOME RANGES ³ OVERLAP WITH A PARCEL	SUITABLE HABITAT	CRITICAL HABITAT	KNOWN OCCUPIED SITE	SUITABLE HABITAT	CRITICAL HABITAT	KNOWN SITE	SUITABLE HABITAT	UMPQUA RIVER CORRIDOR HABITAT MGMT AREA
1	20S-06W-32	40.00	0	4	YES	OR-53	NO	YES	OR-04-I	NO	NO	NO
2	21S-06W-06	64.54 ⁵	0	2	YES	OR-53	NO	YES	OR-04-I	NO	NO	NO
3	21S-07W-10	40.00	0	1	YES	NO	NO	YES	NO	NO	NO	NO
4	22S-04W-34	40.00	0	1	YES	ADJACENT TO OR-23	OUT OF RANGE	NO	NO	NO	NO	NO
5	22S-07W-28	39.06	0	1	YES	NO	NO	YES	NO	NO	YES	NO
6	22S-07W-26	80.45	0	4	YES	NO	NO	YES	NO	NO	YES	NO
7	23S-04W-04	40.00	0	0	YES	NO	OUT OF RANGE	NO	NO	NO	NO	NO
8	23S-07W-24	22.00 ⁶	0	5	YES	ADJACENT TO OR-57	NO	YES	ADJACENT TO OR-04-F	NO	YES	NO
9	25S-03W-32	40.00	1 ²	1	YES	NO	OUT OF RANGE	NO	NO	NO	YES	NO
10	25S-07W-14	40.00	0	2	YES	NO	NO	YES	NO	NO	YES	NO

1. Activity center, which may include a Known Owl Activity Center (KOAC), is within 0.25 miles of a parcel.
2. Activity center includes a 100-acre KOAC, which is contiguous suitable NRF habitat with the habitat in the parcel.
3. Provincial Home Range: Coast Range = 1.5 miles; Cascades = 1.2 miles
4. Critical Habitat has not been designated for the bald eagle.
5. Of the 64.54-acre parcel, a total of 60.0 acres is suitable habitat for spotted owl, marbled murrelet, and bald eagle.
6. Of the 40.0-acre parcel, a total of 22.0 acres is suitable habitat for spotted owl, marbled murrelet, and bald eagle.

Additionally, many of the Bureau Sensitive and Assessment species are suspected to occur within any or all of the parcels. Surveys have not been conducted for Special Status Species on all of the parcels. The BLM is responsible for responding to the State's indemnity selection in a timely manner. The seasonality of surveys and staffing limitations prevented BLM from performing surveys for Special Status wildlife on the parcels. As an alternative methodology, BLM analysis assumes the presence of these species based on likelihood of occurrence due to habitat availability and nearby occurrences.

The table below includes those Special Status wildlife species which are documented or suspected to occur within the Roseburg District; some of these species may be present in the project area.

Table 2. Special Status Wildlife Species that May be Present in the Project Area.

SPECIES	STATUS ¹	PRESENT IN PROJECT AREA? ²	GENERAL HABITAT REQUIREMENTS
BUREAU SENSITIVE			
American Peregrine Falcon <i>Falco peregrinus anatum</i>	BS, SE	Suspected <i>Parcel 10</i>	Cliffs, rock outcrops; open habitats for hunting birds; known peregrine sites are within 2 miles of Parcels 8 and 10
Chace Sideband <i>Monadenia chaceana</i>	BS	Out of Range	Rocky, talus habitats in the Klamath Province and southwards
Columbian White Tailed Deer <i>Odocoileus virginianus leucurus</i>	BSO, CR	Suspected <i>Parcels 4,7</i>	Bottomlands, oak/hardwood forests; cover for fawning; Parcels 4,7,10 are within the range of the deer
Crater Lake Tightcoil <i>Pristiloma arcticum crateris</i>	BSO	Out of Range	Perennially wet areas in late seral forests above 2000ft elevation and east of Interstate-5; seeps, springs, riparian areas
Green Sideband <i>Monadenia fidelis beryllica</i>	BSO	Suspected <i>Parcels 1,2,3,5,6,8,10</i>	Coast Range, riparian forests at low elevations; deciduous trees & shrubs in wet, undisturbed forest
Klamath Tail-Dropper <i>Prophyaon sp. nov.</i>	BS	Out of Range	Moist, open areas along streams or springs in Ponderosa Pine forests; as far North as Crater Lake
Lewis' Woodpecker <i>Melanerpes lewis</i>	BSO, CR	Out of Range	Open woodland habitat near water; open woodland canopy and large diameter dead/dying trees, snag cavities
Northern Goshawk <i>Accipiter gentilis</i>	BSO, XC, CR	Suspected <i>All parcels</i>	Mature and older conifer forests; multi-storied canopies and great structural diversity; Parcels 1 and 2 are within 1.3 and 0.8 miles of a known nest site
Northwestern Pond Turtle <i>Clemmys marmorata marmorata</i>	BSO, XC, CR	Suspected <i>Parcels 1,3,4,5,7,8</i>	Ponds, low gradient rivers; upland over-wintering habitat, coarse woody debris
Oregon Shoulderband <i>Helminthoglypta hertleini</i>	BSO	Suspected <i>Parcel 10</i>	Talus and rocky substrates, grasslands or other open areas with low-lying vegetation
Oregon Vesper Sparrow <i>Pooecetes gramineus affinis</i>	BSO, CR	No habitat	Open habitats such as grasslands, meadows, farmlands
Purple Martin <i>Progne subis</i>	BSO, CR	Suspected <i>Parcel 8</i>	Snags cavities in open habitats (i.e., grasslands, brushlands, open woodlands)
Rotund Lanx <i>Lanx subrotundata</i>	BSO	No Habitat	Major rivers and large tributaries with cold, well-aerated water and rocky substrate
Scott's Apatanian Caddisfly <i>Allomyia scotti</i>	BSO	Out of Range	High-elevation (>4,000ft), cold streams in the mountainous regions of Oregon

SPECIES	STATUS ¹	PRESENT IN PROJECT AREA? ²	GENERAL HABITAT REQUIREMENTS
Spotted Tail-dropper <i>Prophyaon vannatae pardalis</i>	BS	Suspected <i>Parcels 1,3,5,6,8</i>	Mature conifer forests in the Coast Range; associated with significant deciduous tree/shrub component
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	BSO, XC, CR	Suspected <i>All parcels</i>	Late successional forests; Caves, mines, buildings, bridges, tunnels
BUREAU ASSESSMENT			
Foothill Yellow-legged Frog <i>Rana boylei</i>	BAO, XC, V	Suspected <i>Parcel 7</i>	Low gradient streams/ponds; gravel/cobble, bedrock pools
Fringed Myotis <i>Myotis thysanodes</i>	BAO, XC, V	Suspected <i>All parcels</i>	Late-successional conifer forests, associated with water; caves, mines, bridges, rock crevices
Harlequin Duck <i>Histrionicus histrionicus</i>	BAO, XC, U	Out of Range	Mountain Streams in forested areas on west slope of the Cascade Mountains
Pacific Pallid Bat <i>Antrozous pallidus pacificus</i>	BA	Suspected <i>All parcels</i>	Usually rocky outcroppings near open, dry open areas; occasionally near evergreen forests
Pallid Bat <i>Antrozous pallidus</i>	BA	Suspected <i>All parcels</i>	Usually rocky outcroppings near open, dry open areas; occasionally near evergreen forests
White-Tailed Kite <i>Elanus leucurus</i>	BAO	Suspected <i>Parcels 4,5,6,7,8,9,10</i>	Open grasslands, meadows, emergent wetlands, farmlands, lightly, wooded areas; wooded riparian habitats close to open hunting; tall trees and shrubs
<p>1. Status abbreviations: FE--Federal Endangered, FT--Federal Threatened, SE--State Endangered, ST--State Threatened, XC--Former Federal Candidate, CR--ODFW Critical, V--ODFW Vulnerable, P--ODFW Peripheral/Naturally Rare, U--ODFW Undetermined, BS-- Bureau Sensitive in Oregon and Washington, BSO-- Bureau Sensitive in Oregon, BA-- Bureau Assessment Species in Oregon and Washington, BAO--Bureau Assessment Species in Oregon, BT--Bureau Tracking in Oregon and Washington, BTO--Bureau Tracking in Oregon</p> <p>2. Suspected = species has not been documented, however based on literature review, species is expected to occur.</p>			

Botany – General Description

The project area is within the range of Kincaid’s lupine (*Lupinus sulphureus var. kincaidii*), which is a threatened plant species under the Endangered Species Act. Kincaid’s lupine is known from the Willamette Valley and Douglas County. The primary habitat for Kincaid’s lupine in Douglas County is open woodland and meadow edges, often near roadsides, associated with Pacific madrone, incense cedar, and Douglas-fir trees with a relatively open canopy cover. Most of the Douglas County populations appear to tolerate more shaded habitat conditions than the Willamette Valley populations with canopy cover of 50 to 80 percent (Barnes 2004). These plants are found in wooded areas dominated by Douglas-fir, Pacific madrone, and other trees and shrubs (Barnes 2004).

There are extant populations of Kincaid’s lupine to the north and to the south of the ten parcels. Kincaid’s lupine populations in Douglas County, Oregon, represent the furthest southern extent of the current range. In Douglas County, Kincaid’s lupine occurs at fourteen sites ranging in size from 0.21 to 3.55 acres. There are approximately eight sites on Federal lands and six sites on private lands. Four of the sites on private lands are only known from herbarium specimens and haven’t been seen since the collection date.

There is no designated critical habitat in Douglas County as a result of the Programmatic Conservation Agreement for Kincaid’s Lupine in Douglas County, completed in 2006.

This agreement documents the strategy of the BLM, US Fish and Wildlife Service, and US Forest Service to protect, conserve, and contribute to the recovery of Kincaid’s lupine and its habitat on federal lands. Additionally, three timber companies, whose lands contain habitat for Kincaid’s lupine, are working cooperatively with federal agencies to implement conservation and recovery activities for this species on their private properties.

There are no known Kincaid’s lupine sites on any of the indemnity parcels. All of the parcels for this indemnity selection occur between the Willamette Valley Kincaid’s lupine populations and the South Douglas County populations. Because habitat descriptions for the south Douglas County populations include sites with canopy cover from 0 to 80 percent, it is reasonable to expect potential suitable habitat on all of the ten parcels.

The Rough popcorn flower (*Plagiobothrys hirtus*) occurs in Douglas County and is listed as endangered under the Endangered Species Act. However, the ten parcels analyzed in this EA are outside of its range. As such, effects to the rough popcorn flower were not analyzed in this assessment.

Table 3. Summary of Listed Botanical Species and Habitat Concerns by Parcel

T-R-S L O	Parcel	Area	LISTED BOTANICAL SPECIES AND HABITAT CONCERNS PER PARCEL					
			KINCAID’S LUPINE			ROUGH POPCORN FLOWER		
			KNOWN SITE	SUITABLE HABITAT	SURVEY STATUS	KNOWN SITE	SUITABLE HABITAT	SURVEY STATUS
20S-06W-32	1	40.0	0	YES	INCOMPLETE	0	NO	N/A
21S-06W-06	2	64.54	0	YES	INCOMPLETE	0	NO	N/A
21S-07W-10	3	40.0	0	YES	COMPLETE	0	NO	N/A
22S-04W-34	4	40.0	0	YES	COMPLETE	0	NO	N/A
22S-07W-28	5	39.06	0	YES	COMPLETE	0	NO	N/A
22S-07W-26	6	80.45	0	YES	INCOMPLETE	0	NO	N/A
23S-04W-04	7	40.0	0	YES	INCOMPLETE	0	NO	N/A
23S-07W-24	8	40.0	0	YES	INCOMPLETE	0	NO	N/A
25S-03W-32	9	40.0	0	YES	INCOMPLETE	0	NO	N/A
25S-07W-14	10	40.0	0	YES	INCOMPLETE	0	NO	N/A

The selected parcels are within the range of and have potential suitable habitat for several Special Status Species. Roseburg District BLM has 62 Special Status flora species that occur on the District or are suspected to occur. The species listed below in Table 4 are those species whose habitat most closely fits the habitat found in the parcels being considered for transfer. Surveys have not been conducted for Special Status Species on all of the parcels. The BLM is responsible for responding to the State’s indemnity selection in a timely manner. The seasonality of surveys and staffing limitations prevented BLM from performing surveys for Special Status botanical species on all of the parcels. As the parcels are widespread across the District, all contain late-successional

habitat and are in proximity to various other habitat types, many of the Sensitive and Assessment species are suspected to occur within any or all of the parcels.

Botanical surveys were conducted on three parcels with the highest potential for species based on aerial photo interpretation and proximity to known and historical sites. These three parcels were determined to have the highest potential for Special Status Species based upon the diversity of habitat within the parcel, such as rock outcrops, meadows, and streams. The diversity of habitat increased the number of Special Status Species that would potentially be found on the parcel. Table 4 details the Special Status botanical species that may be present in the project area.

Table 4. Special Status Botanical Species that May be Present in the Project Area.

SPECIES	WITHIN SPECIES RANGE?	HABITAT PRESENT?	GENERAL HABITAT REQUIREMENTS
BUREAU SENSITIVE			
<i>Chiloscyphus gemmiparus</i> Liverwort	Yes	No	Rocks in the bed of cold water streams
<i>Trematodon boasii</i> Moss	No	No	Riparian in the subalpine
<i>Arcangiella camphorata</i> Fungus	Yes	No	Forms sporocarps beneath the soil surface associates with Douglas-fir and Western Hemlock. Fruits in Spring and Fall
<i>Bridgeoporus nobilissimus</i> Giant polypore fungus	No	No	Range of Pacific Silver Fir and Noble Fir.
<i>Dermocybe humboldtensis</i> Fungus	Yes	Yes	Sporocarps usually occur in association with the roots of various Pinaceae ssp. Fruits in Fall.
<i>Phaeocollybia californica</i> Fungus	Yes	Yes	Associated with the roots of Douglas-fir and Western Hemlock. Fruits in Spring and Fall
<i>Phaeocollybia gregaria</i> Fungus	Yes	Yes	Associated with the roots of Douglas-fir. Fruits in the Fall.
<i>Phaeocollybia olivacea</i> Fungus	No	No	Scattered or in arcs in mixed forests containing Fagaceae or Pinaceae in coastal lowlands. Fruits in the Fall.
<i>Phaeocollybia oregonensis</i> Fungus	Yes	Yes	Associated with the roots of Douglas-fir and Western Hemlock. Fruits in the fall.
<i>Ramaria spinulosa</i> var. <i>diminutive</i> Fungus	Yes	Yes	Fruits in humus or soil and matures above the ground, associated with Pinaceae ssp. Fruits in the Fall.
<i>Rhizopogon chamalelotinus</i> Fungus	Yes	Yes	Found underground in association with the roots of Douglas-fir and Sugar Pine.
<i>Rhizopogon exiguus</i> Fungus	Yes	Yes	Found in association with the roots of Douglas-fir and Western Hemlock
<i>Eucephalus vialis</i> Wayside aster	Yes	Yes	Mixed evergreen/hardwood forests typically with open canopies.
<i>Calochortus coxii</i> Crinite mariposa-lily	Yes	No	Dry open slopes or under open canopies on serpentine soils.
<i>Calochortus umpquaensis</i> Umpqua mariposa-lily	Yes	No	Grassland and forests on serpentine soils.
<i>Arabis koehleri</i> var. <i>koehleri</i> Koehler's rockcress	Yes	No	Dry, rocky serpentine slopes, ridges.
<i>Bensoniella oregana</i> Bensonia	Yes	No	Along the margins of bogs, wet meadows, and springs in mixed coniferous forests in partial and full sun.
<i>Cimicifuga elata</i> Tall bugbane	Yes	Yes	Woods and thickets at low elevations.

<i>Frasera umpquaensis</i> Umpqua swertia	Yes	No	Moist meadows and moist coniferous forest. Mostly grows in shaded conditions but can also occur in full sun.
<i>Horkelia congesta</i> ssp. <i>congesta</i> Shaggy horkelia	Yes	Yes	Meadows and open woods.
<i>Kalmiopsis fragrans</i> Fragrant kalmiopsis	Yes	No	Dry, stony mountain slopes.
<i>Lathyrus holochlorus</i> Thin-leaved peavine	Yes	Yes	Fencerows and partially cleared land, Willamette Valley, s. to Roseburg, OR.
<i>Limnanthes gracilis</i> var. <i>gracilis</i> Slender meadow-foam	Yes	No	Vernally moist to wet rocky slopes and meadows on various substrate including serpentine
<i>Perideridia erythrorhiza</i> Red-rooted yampah	Yes	Yes	Moist meadows or along the edge of coniferous forest.
<i>Romanzoffia thompsonii</i> Thompson's mistmaiden	Yes	Yes	Seasonally wet rock outcrops on open slopes
<i>Sisyrinchium hitchcockii</i> Hitchcock's blue-eyed grass	Yes	Yes	Valley grasslands and oak savannahs
BUREAU ASSESSMENT			
<i>Crumia latifolia</i> Moss	Yes	No	Wet calcareous cliffs near the coast.
<i>Diplophyllum plicatum</i> Liverwort	Yes	No	Bark of hardwoods and conifers, on thin soil over rock, and on decaying wood, primarily in cool, moist sites
<i>Funaria muhlenbergii</i> Moss	Yes	Yes	Shaded forests on fine textured soil.
<i>Pseudoleskeella serpentinensis</i> Moss	Yes	No	Serpentine endemic
<i>Schistostega pennata</i> Moss	Yes	No	On damp rocks, soil and decaying wood , in dark places.
<i>Tayloria serrata</i> Moss	Yes	Yes	Soil and rotten wood enriched by old dung.
<i>Tetraphis geniculata</i> Moss	Yes	Yes	Decomposing stumps and logs of coniferous trees.
<i>Tetraplodon mnioides</i> Moss	Yes	Yes	Soil and rotten wood enriched by old dung.
<i>Tripterocladium leucocladulum</i> Moss	Yes	Yes	Shaded to exposed rocks, cliffs and bark of hardwoods.
<i>Bryoria subcana</i> Lichen	No	N/A	Bark and wood of conifers in forest in stream and high precipitation ridges within 30 mile of the ocean.
<i>Calicium adpersum</i> Lichen	Yes	Yes	Cool microsites. Habitat not well known, rarely collected.
<i>Lobaria linita</i> Lichen	Yes	Yes	Mature forests in the Western Hemlock Zone.
<i>Pannaria rubiginosa</i> Lichen	Yes	Yes	Mature Douglas-fir/western hemlock forest.
<i>Pilophorus nigricaulis</i> Lichen	Yes	Yes	Non-forest communities on talus slopes, cliffs, and rock outcrops.
<i>Stereocaulon spathuliferum</i> Lichen	Yes	No	Cascades; cool N-facing talus slopes.
<i>Sulcaria badia</i> Lichen	Yes	Yes	Bark and wood mainly from oak and maple.
<i>Adiantum jordanii</i> California maiden-hair	Yes	Yes	Shaded hillsides, moist woods on damp banks at base of rocks and trees.
<i>Asplenium septentrionale</i> Grass-fern	Yes	Yes	Volcanic or granite rock crevices and ledges under a forest canopy.
<i>Carex brevicaulis</i> Short stemmed sedge	No	No	Coastal.

<i>Carex comosa</i> Bristly sedge	Yes	No	Marshes, lakeshores and wet meadows.
<i>Carex gynodynama</i> Hairy sedge	Yes	Yes	Moist meadows, open forests.
<i>Carex serratodens</i> Saw-tooth sedge	Yes	No	Wet Meadows.
<i>Cicendia quadrangularis</i> Timwort	Yes	No	Meadows
<i>Eschscholzia caespitosa</i> Gold poppy	Yes	Yes	Fields and brushy slopes of the foothills and valleys
<i>Festuca elmeri</i> Elmer's fescue	Yes	Yes	Forest and Woodland.
<i>Horkelia tridentata</i> ssp. <i>tridentate</i> Three-toothed horkelia	Yes	Yes	Dry open coniferous forest.
<i>Iliamna latibracteata</i> California globe-mallow	Yes	Yes	Stream banks and moist ground in the shade or open.
<i>Pellaea andromedifolia</i> Coffee fern	Yes	Yes	Dry rock outcrops mostly in the open sun but at times along shaded stream banks.
<i>Polystichum californicum</i> California sword-fern	Yes	Yes	Rock outcrops beneath forest canopies or on open slopes. Often inside rock overhangs or on shear bluffs and cliffs
<i>Scirpus subterminalis</i> Water clubrush	Yes	No	Shallow water (aquatic).
<i>Utricularia gibba</i> Humped bladderwort	Yes	No	Shallow water in the valleys and mountains.
<i>Utricularia minor</i> Lesser bladderwort	Yes	No	Shallow standing or slow moving water.
<i>Wolffia borealis</i> Dotted water-meal	Yes	No	Lakes, ponds, and pools of standing water.
<i>Wolffia Columbiana</i> Columbia water-meal	Yes	No	Lakes, ponds, and pools of standing water.

Fisheries – General Description

There are no federally listed fish species in the project area. The selected parcels are within the range of and have potential suitable habitat for several Special Status Species. Surveys have not been conducted for Special Status Species on all of the parcels. The BLM is responsible for responding to the State's indemnity selection in a timely manner. The seasonality of surveys and staffing limitations prevented BLM from completing surveys for Special Status fish species on all of the parcels; however, potential presence has been predicted based upon species range and habitat information.

BLM used the Oregon Department of Fish and Wildlife Streamnet data to characterize parcels. Streamnet data is a standard used by National Marine Fisheries Service, Oregon Department of Forestry and Oregon Department of Fish and Wildlife for fish distribution. Streamnet data is considered accurate for planning proposes. However, as with any remote sensing data, field verification would be necessary for specific on-the-ground activities. Due to their proximity to Essential Fish Habitat, the streams and riparian areas in Parcels Five and Seven were surveyed in May 2006 by BLM fisheries personnel.

Table 5 details the Special Status fish species that may be present in the project area.

Table 5. Special Status Fish Species that May be Present in the Project Area.

SPECIES	PRESENT IN PROJECT AREA?	NOTES
BUREAU SPECIAL STATUS		
Oregon Coast steelhead <i>Onchorynchus mykiss</i>	May Be Present	Steelhead trout fry was detected in Elk Creek adjacent to Parcel 7.
Chum salmon <i>Onchorynchus keta</i>	Out of Range	Chum salmon (<i>Onchorynchus keta</i>) were erroneously listed as “documented” in the Roseburg District in the current Special Status Species list. There are no chum salmon or their habitat in the project area.
BUREAU SENSITIVE		
Umpqua Oregon Chub <i>Oregonichthys kalawatseti</i>	Out of Range	No parcels contain suitable habitat for the chub.
BUREAU TRACKING		
Coastal Cutthroat trout <i>Onchorynchus clarki clarki</i>	May Be Present	
Pacific Lamprey <i>Lampetra tridentate</i>	May Be Present	
OREGON DEPT. OF FISH AND WILDLIFE “CRITICAL”, OREGON NATURAL HERITAGE PROGRAM LIST 1		
Oregon coast (OC) coho salmon <i>Onchorynchus kisutch</i>	May Be Present	Coho salmon fry were detected in streams adjacent to Parcel 5 (Hancock Creek) & 7 (Elk Creek).

Essential Fish Habitat is designated by the Magnuson-Stevens Fishery Conservation and Management Act of 1996 as habitat that is currently or was historically available to Oregon Coast coho and Chinook salmon (Federal Register 2002 Vol. 67, No. 12). Only Parcel 7 contains Essential Fish Habitat. The potential effects to Essential Fish Habitat are discussed in the Essential Fish Habitat assessment found in Appendix C and summarized in Chapter 4.

Water Resources – General Description

The proposed parcels are within four watersheds (Upper Smith River, Elk Creek/Umpqua River, Lower North Umpqua, and Upper Umpqua River). Beneficial uses of water within the parcel areas primarily consist of benefits to aquatic life and wildlife. Beneficial uses of water downstream of the parcels consist primarily of livestock watering, domestic water supply, irrigation, and fish and aquatic life. Beneficial uses identify the existing or potential uses of the water; water quality standards are designed to protect the most sensitive of these uses.

There are a number of streams downstream of the parcels that are listed on the Oregon Department of Environmental Quality’s 2002 303(d) List of Water Quality Limited Waterbodies (ODEQ 2003 (b)). These streams include: Smith River, South Fork Smith River, Cleghorn Creek, Brush Creek, and the North Umpqua River for summer temperature; Elk Creek for summer temperature, fecal coliforms, and dissolved oxygen; and the Umpqua River for summer temperature and fecal coliforms. Stream locations are based on GIS analysis. Actual locations of all streams have not been verified.

Economic Contributions – General Description

Under federal ownership, most revenue generated from these tracts is distributed to various federal accounts. Four percent of net revenue from land or resource sales is paid to the State of Oregon. These parcels are exempt from property taxation, but the federal government makes payments in lieu of taxes on public domain land acreage. These parcels are not O&C Lands from which the local government receives timber revenue.

B. PARCEL DESCRIPTIONS

Maps illustrating the location and access for each parcel may be found in Appendix A.

Parcel 1 – (SE¼ NE¼, Section 32, T20S, R6W, WM. (40 ac.))

General Setting - The 40.00 acre parcel is within the Upper Smith River fifth-field watershed, in the Coast Range overlooking County Road 37 and Smith River. This parcel is within a Tier 1 watershed¹. The parcel is within a Late-Successional Reserve (LSR) land use allocation and includes Critical Habitats for Northern spotted owl and marbled murrelet.

Access – Parcel 1 has no secured public access².

Timber - Dominated by a well-stocked, 250 year-old Douglas-fir conifer forest cover. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife - Parcel 1 is within designated Northern spotted owl Critical Habitat (Unit OR-53) and Late Successional Reserve (RO264). This parcel contains suitable habitat for the spotted owl. Parcel 1 does not contain a Known Owl Activity Center or any known spotted owl nest sites.

Parcel 1 contains suitable marbled murrelet habitat and is within designated marbled murrelet Critical Habitat (Unit OR-04-i), within Marbled Murrelet Inland Management Zone 2.³ There are no known marbled murrelet nest sites in this parcel.

¹ A tier one watershed is “a watershed that contributes directly to conservation of at-risk ... fish species, [and has] a high potential of being restored as part of a watershed restoration program” (RMP, pg. 20)).

² Secured public access occurs where BLM has acquired access rights for the Federal Government and the American public via easement.

³ The Federal Ecosystem Management Assessment Team (FEMAT) identified two zones of murrelet habitat based on observed use and expected occupancy. In Oregon, zone 1 extends 0-35 miles inland from the marine environment. The majority of murrelet occupied sites and sightings occur in this zone. Zone 2 encompasses areas inland from the eastern boundary of zone 1 to 50 miles from the marine environment and is typified by relatively low numbers of murrelet sightings, which is partially a function of fewer inventories (FEMAT 1993).

There are no known bald eagle nest sites within 2.0 miles of the parcel. The parcel is more than 8.2 miles from a major water source and is not expected to be used for nesting or roosting by bald eagles.

Water Resources - Parcel 1 is in the Upper Smith River Watershed. This parcel provides drainage to an unnamed tributary to Elk Creek (Tributary to Smith River) and two unnamed tributaries to Smith River. According to GIS data, this parcel contains three first order stream segments⁴. These streams would most likely be classified as intermittent streams which would stop flowing during the dry season.

Fisheries Values - Parcel 1 contains the headwaters of two non-fish bearing streams within the parcel boundaries. The stream at the northwestern portion of the parcel is approximately 0.3 miles from Elk Creek, a fish bearing stream. The second stream is in the southern portion of the parcel and is approximately 0.6 stream mile from the main stem of Smith River (a fish-bearing river). A third stream runs parallel to and just outside of the eastern boundary of the parcel and also drains to Smith River. The parcel is approximately 0.3 stream mile from Essential Fish Habitat for coho salmon (Elk Creek).

Threatened & Endangered Plants - Parcel 1 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements - None.

Permits/Reciprocal Agreements⁵ – R-645 (Wooley) and R-645A (Seneca Jones Timber Co.)

Parcel 2 – (Govt. Lot 7 and SE¹/₄ SW¹/₄, Section 6, T21S, R6W, WM. (64.54 ac.))

General Setting - The 64.54 acre parcel is within the Upper Smith River fifth-field watershed, in the Coast Range overlooking the South Fork Smith River. This parcel is within a Tier 1 watershed. The 250 year-old Douglas-fir stand is within an LSR land use allocation and includes Critical Habitat for Northern spotted owl and marbled murrelet.

⁴ Stream Order refers to the classification of a stream's position within the drainage basin network. A first order stream is the smallest unbranched tributary. A first order stream begins at its inception point (the point at which a stream begins) and continues until it joins with another first order stream, at that point it becomes a second order stream.

⁵ Reciprocal right-of-way agreements are agreements exchanging access rights between BLM and a permittee pursuant to 43 CFR 2812 regulations. Additionally, BLM grants permits to individuals or companies that must utilize or cross BLM-administered land for activities such as timber hauling.

The parcel also has four acres of 20 year-old second growth. A portion of the parcel is non-forested (due to factors such as roads).

Access – Parcel 2 has no secured public access.

Timber - Fifty-eight acres of the parcel are dominated by a well-stocked, 250 year-old Douglas-fir conifer forest. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Four acres of the parcel are dominated by well-stocked, 20 year-old Douglas-fir conifer forest cover. Trees are mainly 5 inches diameter at breast height. Area was clear-cut in 1984 as a salvage sale and natural seeding reforested the area. It was pre-commercially thinned in 2001 to 222 trees per acre.

Threatened & Endangered Wildlife –Parcel 2 is in designated Northern spotted owl Critical Habitat (Unit OR-54) and Late Successional Reserve (R0256). This parcel contains suitable habitat for the spotted owl. Parcel 2 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

This parcel contains suitable marbled murrelet habitat and is within designated marbled murrelet Critical Habitat (Unit OR-04-i) within Marbled Murrelet Inland Management Zone 2 (FEMAT 1993). There are no known marbled murrelet nest sites in this parcel.

There are no known bald eagle nest sites within 2.0 miles of the parcel. The parcel is more than 6.5 miles from a major water source and is not expected to be used for nesting or roosting by bald eagles.

Water Resources - Parcel 2 is in the Upper Smith River Watershed. This parcel provides drainage to two unnamed tributaries to South Fork Smith River and two unnamed tributaries to Little South Fork Smith River. According to GIS data, this parcel contains ten first order stream segments, three second order segments, and one third order segment. These streams would most likely be classified as intermittent streams which would stop flowing during the dry season. However, the third order segment has potential to provide perennial (year-round) flow.

Fisheries Values - Parcel 2 contains the headwaters of two non-fish bearing streams and one fish-bearing stream within the parcel boundaries. The non fish-bearing stream in the northern portion of the parcel is approximately 0.4 stream mile from South Fork Smith River, a fish bearing stream. The non fish-bearing stream in the eastern portion of the parcel is approximately 0.6 mile from South Fork Smith River.

The fish-bearing stream is a third order perennial stream containing suitable habitat for coastal cutthroat trout and Pacific lamprey. This stream is in the southwestern portion of the parcel and is a tributary to Little South Fork Smith River, also a fish-bearing stream. The parcel is approximately 0.4 stream mile from Essential Fish Habitat for coho salmon (South Fork Smith River).

Threatened & Endangered Plants - Parcel 2 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional timber stands, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – None

Permits/Reciprocal Agreements – R-645 (Wooley) & R-645-A (Seneca Jones Timber Co.)

Parcel 3 - (NE¼ SE¼, Section 10, T21S, R7W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is within the Upper Smith River fifth-field watershed in the Coast Range, overlooking Cleghorn Creek. Parcel 3 is within a Tier 1 watershed. This parcel contains 120 year-old Douglas-fir forest. Parcel 3 is within the Matrix land use allocation, with 11 acres of General Forest Management Area (GFMA) surrounding 29 acres of Riparian Reserve.

Access – Parcel 3 has no secured public access.

Timber - Dominated by a well-stocked, 120 year-old Douglas-fir conifer forest cover. Trees are mainly 10-20 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 3 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 3 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 3 is within suitable marbled murrelet habitat and is within Marbled Murrelet Inland Management Zone 1 (FEMAT 1993). There are no known marbled murrelet nest sites in this parcel.

There are no known bald eagle nest sites within 2.0 miles of the parcel. The parcel is more than 5.0 miles from a major water source and is not expected to be used for nesting or roosting by bald eagles.

Water Resources - Parcel 3 is in the Upper Smith River Watershed. This parcel provides drainage to an unnamed tributary to Cleghorn Creek. According to GIS data, this parcel contains four first order stream segments, three second order segments, and one third order segment. These streams would most likely be classified as intermittent

streams which would stop flowing during the dry season. However, the third order segment has potential to provide perennial (year-round) flow.

Fisheries Values - Parcel 3 contains the headwaters of a non-fish bearing third order perennial stream within the parcel boundaries. The stream runs south to north through the center portion of the parcel. Parcel 3 is on a tributary approximately 0.4 mile from Cleghorn Creek. Cleghorn Creek is a fish-bearing stream that supports habitat for Pacific lamprey, resident non-anadromous fish, coho salmon and steelhead trout and coastal cutthroat trout. The parcel is located approximately 0.4 stream mile from Essential Fish Habitat for coho salmon (Cleghorn Creek).

Threatened & Endangered Plants - Parcel 3 is within the range of Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations. Surveys were conducted for Special Status Species and no occurrences were found. BLM conducted surveys for Special Status Species in accordance to Bureau standards and found no occurrences.⁶

Easements – Route 1: RE-R-292 (Molly Hancock). Route 2: None.

Permits/Reciprocal Agreements – None

Parcel 4 - (NE¼ SE¼, Section 34, T22S, R4W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is in the Elk Creek fifth-field watershed within the western foothills of the Cascade Range, overlooking County Road 8. The parcel contains 150 year-old Douglas-fir forest. This parcel is within the Matrix land use allocation, with 29 acres of the parcel within Connectivity/Diversity Block 85, surrounding an 11 acre corridor of Riparian Reserve. When conducting the standard hazardous materials review, BLM staff discovered the presence of illegally dumped debris.

Access - Parcel 4 has secured public access.

Timber - Dominated by a well-stocked, 150 year-old Douglas-fir conifer forest cover. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 4 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 4 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

The parcel is outside the range of the marbled murrelet.

⁶ Special Status Species surveys are conducted in a meandering pattern throughout the parcel, with complete surveys when habitat for one of the species is found. For species with seasonality, these surveys were conducted during the appropriate season for establishing the identity of the species.

There are no known bald eagle nest sites within 2.0 miles of the parcel. The parcel is more than 10.0 miles from a major water source and is not expected to be used for nesting or roosting by bald eagles.

Water Resources - Parcel 4 is in the Elk Creek/Umpqua River Watershed. This parcel provides drainage to the upper portion of Bennet Creek and an unnamed tributary to Bennet Creek. According to GIS data, this parcel contains one first order stream segment. This stream would most likely be classified as intermittent which would stop flowing during the dry season.

Fisheries Values - Parcel 4 contains the headwaters of a single non-fish bearing stream. The stream runs west to east along the southern portion of the parcel and is approximately 0.7 stream mile from Bennet Creek, a fish bearing stream. The parcel is approximately 0.7 stream mile from Essential Fish Habitat for coho salmon (Bennet Creek).

Threatened & Endangered Plants - Parcel 4 is within the range of Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations. BLM conducted surveys for Special Status Species in accordance to Bureau standards and found no occurrences.

Easements – RE-R-330 (Weyerhaeuser Timber Co.), RE-R-254 (Douglas County)

Permits/Reciprocal Agreements – None

Parcel 5 - (Govt. Lot 1, Section 28, T22S, R7W, WM. (39.06 ac.))

General Setting – The 39.06 acre parcel is within the Elk Creek fifth-field watershed in the Coast Range, overlooking Hancock Creek. The parcels contain 110 - 250 year-old Douglas-fir forest. The parcel is within the Matrix land use allocation, with 15.06 acres within Connectivity/Diversity Block 75 surrounding 24 acres of Riparian Reserve. A portion of the parcel is non-forested (due to factors such as roads).

Access – Parcel 5 has no secured public access.

Timber - Twenty-seven acres of the parcel are dominated by a well-stocked, 250 year-old Douglas-fir conifer forest. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Eleven acres of the parcel are dominated by a well-stocked, 110 year-old Douglas-fir conifer forest cover. Trees are mainly 10-20 inches diameter at breast height. No completed timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 5 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 5 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 5 contains suitable marbled murrelet habitat and is within Marbled Murrelet Inland Management Zone 1 (FEMAT 1993). Surveys of the suitable habitat were completed in 2000 and 2001 with no detections of murrelets. There are no known marbled murrelet nest sites in this parcel.

There are no known bald eagle sites in the parcel. The parcel is near major waterways, within one mile of Elk Creek to the north and within 2.0 miles of the Umpqua River to the west. Repeated eagle sightings within the immediate area indicate possible within the parcel itself or within the vicinity of the parcel.

Water Resources - Parcel 5 is in the Elk Creek/Umpqua River Watershed. This parcel provides drainage to four unnamed tributaries to Hancock Creek. According to GIS data, this parcel contains five first order stream segments, and one second order segment. These streams would most likely be classified as intermittent streams which would stop flowing during the dry season.

Fisheries Values - Parcel 5 contains the headwaters of two non-fish bearing streams within the parcel boundaries. The stream at the northwestern portion of the parcel is approximately 0.5 miles from Hancock Creek, a fish bearing stream. The second stream is in the eastern portion of the parcel and is approximately 0.1 miles from Hancock Creek. The parcel is approximately 0.1 mile from Essential Fish Habitat for coho salmon (Hancock Creek). Hancock Creek supports habitat for Pacific lamprey, coho salmon, coastal cutthroat, steelhead trout and resident non-anadromous fish.

Threatened & Endangered Plants - Parcel 5 is within the range of Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations. BLM conducted surveys for Special Status Species in accordance to Bureau standards and found no occurrences.

Easements – None

Permits/Reciprocal Agreements – R-421 (Robert Whipple)

Parcel 6 - (SE¹/₄NE¹/₄ and NE¹/₄SE¹/₄ Section 26, T22S, R7W, WM. (80.45 ac.))

General Setting – The 80.45 acre parcel is within the Elk Creek fifth-field watershed in the Coast Range, northeast of Hancock Creek. The parcel contains 150 year-old Douglas-fir forest. The parcel is within the Matrix land use allocation, and has 32.45 acres of GFMA surrounding 48 acres of the Riparian Reserve land use allocation.

Access - Parcel 6 has no secured public access.

Timber - Dominated by a well-stocked, 150 year-old Douglas-fir conifer forest cover. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 6 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 6 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 6 contains suitable marbled murrelet habitat, and is within Marbled Murrelet Inland Management Zone 2 (FEMAT 1993). There are no known marbled murrelet nest sites in this parcel.

There are no known bald eagle sites in the parcel. Parcel 6 contains suitable habitat and is near major waterways, within 2.0 miles of Elk Creek to the northwest and within 3.0 miles of the Umpqua River to the west and southwest. Repeated eagle sightings within the immediate area indicate possible nesting within the parcel or within the vicinity of the parcel.

Water Resources - Parcel 6 is in the Elk Creek/Umpqua River Watershed. This parcel provides drainage to two unnamed tributaries to Brush Creek. According to GIS data, this parcel contains four first order stream segments, one second order segment, and one fourth order segment. The first and second order streams would most likely be classified as intermittent streams which would stop flowing during the dry season. The fourth order segment would most likely provide perennial (year-round) flow.

Fisheries Values - Parcel 6 contains a portion of a fish-bearing fourth order perennial stream flowing west to east through the central portion of the parcel. This stream supports habitat for Pacific lamprey, resident non-anadromous fish, and coastal cutthroat trout. This stream is approximately 0.2 miles from Brush Creek, which is also fish-bearing. The parcel is approximately 0.2 miles from Essential Fish Habitat for coho salmon (Brush Creek).

Threatened & Endangered Plants - - Parcel 6 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – None

Permits/Reciprocal Agreements –R-645P (Juniper Properties)

Parcel 7 - (NW¼ SE¼, Section 4, T23S, R4W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is within the Elk Creek fifth-field watershed in the western foothills of the Cascade Range, straddling Elk Creek. The parcel contains 110 - 250 year-old Douglas-fir forest. Parcel 7 is within the Matrix land use allocation, with 5 acres of GFMA surrounding 35 acres of Riparian Reserve.

Access - Parcel 7 has no secured public access.

Timber - Eighteen acres of the parcel are dominated by a well-stocked, 250 year-old Douglas-fir conifer forest. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Twenty-two acres of the parcel are dominated by a well-stocked, 110 year-old Douglas-fir conifer forest cover. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife - Parcel 7 contains suitable nesting, roosting, and foraging habitat for Northern spotted owl. Parcel 7 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 7 is outside the range of the marbled murrelet.

There are no known bald eagle nest sites within 2.0 miles of the parcel. The parcel is more than 10.0 miles from a major water source and is not expected to be used for nesting or roosting by bald eagles.

Water Resources - Parcel 7 is in the Elk Creek/Umpqua River Watershed. This parcel provides drainage to the main stem of Elk Creek. According to GIS data, this parcel contains four first order stream segments, two second order segments, and one sixth order segment. The first and second order streams would most likely be classified as intermittent streams which would stop flowing during the dry season. The sixth order segment (Elk Creek) provides perennial (year-round) flow.

Elk Creek is listed on the Oregon Department of Environmental Quality's 2002 303(d) List of Water Quality Limited Waterbodies (ODEQ 2003 (b)). Elk Creek is listed for exceeding the summer temperature standard in this area of the watershed.⁷

Fisheries Values - Parcel 7 contains the main stem of Elk Creek and three non-fish bearing tributary streams within the parcel boundaries. The main stem of Elk Creek flows from the southern portion of the property to the western portion and supports habitat for coho salmon, steelhead, Pacific lamprey, coastal cutthroat trout and resident non-anadromous fish species. Parcel 7 contains both Oregon Coast steelhead and

⁷ The Department of Environmental Quality's 303(d) list contains the names of water bodies that do not meet water quality standards and where Total Maximum Daily Loads will be developed. Waterbodies are listed regardless of ownership.

Oregon Coast coho salmon and their habitat. The parcel contains Essential Fish Habitat for coho salmon (main stem Elk Creek).

Threatened & Endangered Plants - - Parcel 7 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – None

Permits/Reciprocal Agreements – R-763P (Juniper Properties)

Parcel 8 - (NE¹/₄ NE¹/₄, Section 24, T23S, R7W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is within the Upper Umpqua fifth-field watershed in the Coast Range, north of Martin Creek. This parcel is a mix of approximately 22 acres of 250 year-old Douglas-fir and approximately 16 acres of 20 year-old second growth. Parcel 8 is within the Matrix land use allocation, with 15 acres of GFMA surrounding 25 acres of Riparian Reserve. A portion of the parcel is non-forested (due to factors such as roads).

Access - Parcel 8 has no secured public access.

Timber - Twenty-two acres of the parcel are dominated by a well-stocked, 250 year-old Douglas-fir conifer forest. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Six acres of the parcel are dominated by well-stocked, 20 year-old Douglas-fir conifer forest. Trees are mainly 5 inches diameter at breast height. The area was clear-cut in 1988, broadcast burned in 1989, and planted with Douglas-fir in 1990. The unit was pre-commercially thinned in 2001 to 303 trees per acre.

Ten acres of the parcel are dominated by well-stocked, 20 year-old Douglas-fir conifer forest. Trees are mainly 5 inches diameter at breast height. The area was clear-cut in 1988, planted with Douglas-fir in 1989, and pre-commercially thinned in 2001 to 303 trees per acre.

Threatened & Endangered Wildlife – Parcel 8 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 8 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 8 contains suitable marbled murrelet habitat and is within Marbled Murrelet Inland Management Zone 2 (FEMAT 1993). There are no known marbled murrelet nest sites in this parcel.

There are no known bald eagle sites in Parcel 8. The closest known bald eagle site is 1.4 miles west of the parcel. Parcel 8 is 1.6 miles from the Umpqua River and contains suitable habitat expected to be used by eagles for nesting and roosting.

Water Resources - Parcel 8 is in the Upper Umpqua River Watershed. This parcel provides drainage to an unnamed tributary to Brads Creek. According to GIS data, this parcel contains five first order stream segments and two second order segments. The first and second order streams would most likely be classified as intermittent streams which would stop flowing during the dry season.

Fisheries Values - Parcel 8 contains portions of an unnamed tributary to Brads Creek. A small segment of a fish-bearing stream is in the extreme northwest portion of the parcel and supports habitat for non-anadromous resident fish and coastal cutthroat trout. Another tributary flows south to north through the center portion of the parcel and is a non-fish bearing stream. The parcel is approximately 1.2 stream miles from Essential Fish Habitat for coho salmon (Brads Creek).

Threatened & Endangered Plants - - Parcel 8 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – None

Permits/Reciprocal Agreements – R-600 (Darryl Ray), R-880 (Roseburg Resources Co.)

Parcel 9 - (SE¹/₄ SE¹/₄, Section 32, T25S, R3W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is within the Lower North Umpqua fifth-field watershed in the western foothills of the Cascade Range, east of French Creek. The parcel contains 250 year-old Douglas-fir forest. Parcel 9 is within the Matrix land use allocation, with 11 acres of GFMA surrounding 29 acres of Riparian Reserve.

Access – Parcel 9 has secured public access.

Timber - Dominated by a well-stocked, 250 year-old Douglas-fir conifer forest with Incense-cedar. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 9 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 9 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites. However, the parcel is immediately adjacent to the French Creek Northern spotted owl designated 100-acre Known Owl Activity Center. This Known Owl Activity Center is contiguous with the forest stand in Parcel 9. The activity center is less than 0.2 miles from the parcel.

Parcel 9 is outside the range of the marbled murrelet.

There are no known bald eagle sites in Parcel 9. The closest known bald eagle site is 2.8 miles northwest of the parcel. The parcel is 1.7 miles from the North Umpqua River and contains suitable habitat expected to be used by eagles for nesting and roosting.

Water Resources - Parcel 9 is in the Lower North Umpqua Watershed. This parcel provides drainage to an unnamed tributary to French Creek. According to GIS data, this parcel contains one first order stream segment, three second order segments, and one third order segment. The first and second order streams would most likely be classified as intermittent streams which would stop flowing during the dry season. The third order segment would most likely provide perennial (year-round) flow.

Fisheries Values - Parcel 9 contains one fish-bearing stream and two non-fish bearing streams within the parcel boundaries. The fish-bearing stream is a third order perennial stream in the western portion of the parcel and supports habitat for Pacific lamprey, coastal cutthroat trout and non-anadromous resident fish species. The parcel is approximately 0.8 stream mile from Essential Fish Habitat for coho salmon (French Creek).

Threatened & Endangered Plants - - Parcel 9 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – RE-R-55, RE-R-55A, RE-R-625, RE-R-639

Permits/Reciprocal Agreements – None

Parcel 10 - (SE¼ SE¼, Section 14, T25S, R7W, WM. (40 ac.))

General Setting – The 40.00 acre parcel is within the Upper Umpqua fifth-field watershed in the Coast Range, east of Calapooya Creek and west of Sutherlin. Parcel 10 contains 250 year-old Douglas-fir forest. This parcel is within the Matrix land use allocation, with 34 acres of GFMA surrounding 6 acres of Riparian Reserve.

Access - Parcel 10 has no secured public access.

Timber - Dominated by a well-stocked, 250 year-old Douglas-fir conifer forest. Trees are mainly 10-30 inches diameter at breast height. No timber management activities are on record.

Threatened & Endangered Wildlife – Parcel 10 contains suitable nesting, roosting, and foraging habitat for the Northern spotted owl. Parcel 10 does not contain a designated Known Owl Activity Center or any known spotted owl nest sites.

Parcel 10 contains suitable marbled murrelet habitat and is within Marbled Murrelet Inland Management Zone 2 (FEMAT 1993). There are no known marbled murrelet nest sites in this parcel. Intensive surveys in section 13 were completed in 1999-2001 in suitable habitat adjacent (east) to the parcel, and murrelets were not detected. The parcel has not been surveyed for murrelets and no murrelet sites are known to occur within the parcel. The closest known murrelet site is 3.6 miles northwest of the parcel.

There are no known bald eagle nest sites within the parcel. The parcel contains suitable habitat for the bald eagle and is less than one mile from the Umpqua River. Additionally, the parcel is 1.2 miles east from the Bottle Creek bald eagle nest site and 2.8 miles southeast from the Golden Bar nest site.

Water Resources - Parcel 10 is in the Upper Umpqua River Watershed. This parcel provides drainage to an unnamed tributary to the Umpqua River. According to GIS data, this parcel contains one first order stream segment. This first stream would most likely be classified as an intermittent stream which would stop flowing during the dry season.

Fisheries Values - Parcel 10 contains the headwaters of a non-fish bearing first order stream within the parcel boundaries. The stream is at the southern portion of the parcel is approximately 1.1 stream miles from the main stem Umpqua River, a fish bearing stream. The parcel is approximately 1.1 stream miles from Essential Fish Habitat for coho salmon and Chinook salmon (Umpqua River).

Threatened & Endangered Plants - - Parcel 10 is forested, with some potential suitable habitat for Kincaid's lupine. This parcel is situated midway between the Willamette Valley populations of Kincaid's lupine and the south Douglas County populations.

Surveys were not conducted for Special Status Species flora on this parcel. Because the parcel contains late-successional habitat, BLM expects that the parcel contains potentially

suitable habitat for many of the botanical species on the Special Status Species list. BLM expects that there is a reasonable likelihood of finding at least one of these species present.

Easements – None

Permits/Reciprocal Agreements – R-257 (Dean Henry)

Chapter 4. ENVIRONMENTAL CONSEQUENCES

This Chapter discusses the environmental consequences of the federal action.

A. ENVIRONMENTAL CONSEQUENCES OF PROPOSED

ACTION

The federal action of conveying the land to the State of Oregon, in and of itself, would not have any environmental effects; it is simply a transfer of ownership, meeting the purpose and need for action. Under the proposed action, BLM would transfer approximately 180 acres of public land, selected by the State from a combination of ten subject tracts, to the State of Oregon. The conveyance of 180 acres would diminish the land base of the Roseburg District BLM by .04 percent. Once transferred, the subject lands would no longer be under the jurisdiction and management of the federal government and therefore would not be available for planned multiple use activities by the public in accordance to the Roseburg District RMP.

BLM anticipates that the State may transfer parcels into private ownership in the future; BLM is not aware of confirmed plans between the State and private parties at this time. The BLM assumes, for analytical purposes, that once under State or private management, the parcels would be managed for timber production and would eventually be harvested in line with prevailing zoning restrictions and the Oregon Forest Practices Act. Because of the inter-dependent nature of the federal conveyance and subsequent harvest by either the State or a private owner, future timber harvest is projected to be a likely indirect effect of the BLM action, even though BLM is not aware of management or harvest plans for any of the parcels at this time.

The following effects analysis is based on the assumption that the lands will be harvested; however, BLM is precluded from in-depth, site-specific effects analysis of the proposed action because of the variables related to potential, non-federal timber harvest at an undefined point in the future. BLM is also precluded from such analysis of the effects of the no action alternative, as BLM has no harvest plans for any of these parcels at this time. Without plans, BLM cannot reasonably predict such important factors as when harvest may occur, where roads may be placed, or what harvest and yarding techniques may be used.

The effects analysis is presented in several ways. The following table (Table 6) compares general management under the Roseburg ROD/RMP to general management under the Oregon Forest Practices Act. BLM has characterized management under the Oregon Forest Practices Act by summarizing published guidance (*Oregon's Forest Protection Laws* (Logan 2002) and *Oregon Department of Forestry Forest Practices Administrative Rules and Forest Practices Act, Chapter 629*) and working with Oregon Department of Forestry staff. It must be noted that these are generalizations of management under the Forest Practices Act. The goals and objectives of private timber landowners may be different from those of the State on non-federal public land; this would likely result in different management styles.

This section contains both general discussion of effects by resource and analysis of effects on a parcel by parcel basis, in a tabular format.

Table 6. Comparison of Management Scenarios by Alternative

RESOURCE	NO ACTION ALTERNATIVE (SUMMARY OF MANAGEMENT UNDER THE CURRENT RESOURCE MANAGEMENT PLAN)	PROPOSED ACTION (SUMMARY OF MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER RESOURCES	<p>LSR*: While thinning and other management activities are permitted within the LSR, the two parcels in this EA are dominated by 250 year-old Douglas fir. The age and composition of these stands makes it unlikely that BLM would pursue treatment options to achieve late-successional characteristics. (Parcels 1, 2)</p> <p>C/D*: Managed on a 150 year area control rotation. Retain 12-18 green trees per acre within regeneration harvest units. Leave 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long. (Parcels 4, 5)</p> <p>GFMA*: Managed for harvest at or above the culmination of the mean annual increment, the age range producing the maximum average growth over the life of the stand. This typically means harvesting between 80-100 years of age, though harvest may occur at age 60 to produce desired age class distribution. Retain 6-8 green trees per acre within regeneration harvest units. Leave 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long. (Parcels 3, 6, 7, 8, 9, 10)</p>	<p>- The Oregon Forest Practices Act (OFPA) does not establish rotations for timber management; this is at the landowner's discretion. Based upon management of private timber lands adjacent to BLM-administered lands in Douglas County, BLM assumes that private lands are managed intensively on a 40-60 year rotation.</p> <p>- BLM did not assume a rotation age for non-federal public forest land, only that the land would be managed for eventual timber harvest.</p>
RIPARIAN RESERVES & WATER RESOURCES	<p>-Protection of water resources is achieved through management of Riparian Reserves. Riparian Reserves are land use allocations whose widths are determined by watershed. Riparian Reserve widths are equal to the distance of two site-potential trees for all fish bearing streams and one site-potential tree for all non-fish bearing perennial and intermittent streams. The Riparian Reserve widths apply to both sides of the stream.</p> <p>-Generally, no timber felling, yarding, or loading occurs within the Riparian Reserve. However, BLM may do density management within the Riparian Reserve to control stocking and manage stands to acquire desired vegetation characteristics needed to obtain Aquatic Conservation Strategy objectives. (ROD/RMP p. 25).</p>	<p>- Protection of water resources is achieved through management of the Riparian Management Areas (RMA).</p> <p>- Water bodies are classified by size and type. The size, use, and type of the waterbody determines the riparian management zone. The waterbodies affected by this proposal are all streams.</p> <p>- Small streams – average annual flow of 2 cubic feet/second or less, or any stream with a drainage area less than 200 acres. Generally small streams are those less than 4 feet wide</p> <p>- Medium streams – average annual flow greater than 2 but less than 10 cubic feet/second. Generally, medium streams are between 4 and 10 feet wide.</p> <p>- Large streams – average annual flow exceeds 10 cubic feet/second.</p>

RESOURCE	NO ACTION ALTERNATIVE (SUMMARY OF MANAGEMENT UNDER THE CURRENT RESOURCE MANAGEMENT PLAN)	PROPOSED ACTION (SUMMARY OF MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
RIPARIAN RESERVES & WATER RESOURCES (CONTINUED)	Parcels 1, 2, and 3: Generally no timber harvest entry into Riparian Reserves. 200 foot buffer for non-fish bearing streams, 400 foot for fish bearing streams	<p>Generally large streams are wider than 20 feet.</p> <p>- Riparian Management Areas range from 50 ft – 100 ft along the slope, depending upon the size of the stream and whether it is fish bearing (Type F), used for domestic water and is non-fish bearing (Type D), or is neither fish-bearing or domestic (Type N). The Riparian Management Area widths apply to both sides of the stream (i.e. an RMA of 100 feet on each side of the stream totals 200 feet of special protection).</p> <p><u>Large</u> Type F Streams – 100 feet Type D Streams – 70 feet Type N Streams – 70 feet</p> <p><u>Medium</u> Type F Streams – 70 feet Type D Streams – 50 feet Type N Streams – 50 feet</p> <p><u>Small</u> Type F Streams – 50 feet Type D Streams – 20 feet Type N Streams – varies, but most small Type N Streams do not require a vegetated RMA. Certain water protection requirements are still applicable, however, such as placing skid roads away from the stream.</p>
	Parcels 4, 5, 6, and 7: Generally no timber harvest within Riparian Reserves. 200 foot buffer for non-fish bearing streams, 400 foot buffer for fish bearing streams.	
	Parcels 8, 10: Generally no timber harvest entry into Riparian Reserves. 180 foot buffer for non-fish bearing streams, 360 foot buffer for fish bearing streams.	
	Parcel 9: Generally no timber harvest entry into Riparian Reserves. 180 foot buffer for non-fish bearing streams, 360 foot buffer for fish bearing streams.	
WILDLIFE RESOURCES	LSR: Design projects to improve conditions for wildlife if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible. CRITICAL HABITAT: Any activities within Parcels 1 and 2 would be designed to be consistent with recovery plans for listed species for which the critical habitat has been designated. Protect primary constituent elements for the survival and recovery of listed species.	<p>- Critical Habitat for Northern spotted owl and marbled murrelet is not protected.</p> <p>- For harvests of 25 acres or less, no wildlife trees or downed logs are required. For harvests > 25 acres, wildlife trees and downed logs are required. The requirement may be met by leaving 2 down logs and 2 snags or green trees per acre. 50 percent of these must be conifers. Each log must be at least 10 cubic feet.</p> <p>- OFPA requires 70-acre core areas for Northern spotted owl nest sites and activity centers. Forest operations that may cause</p>
	C/D: Maintain 25-30 percent of each block in late-successional forest at any point in time. Protect established 100-acre Known Owl Activity Centers. Retain snags within harvest units to support cavity nesting species at 40 percent of potential population levels. Retain	

RESOURCE	NO ACTION ALTERNATIVE (SUMMARY OF MANAGEMENT UNDER THE CURRENT RESOURCE MANAGEMENT PLAN)	PROPOSED ACTION (SUMMARY OF MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
	<p>green trees for future snag recruitment.</p> <p>GFMA: Protect established 100-acre Known Owl Activity. Retain snags within harvest units to support cavity nesting species at 40 percent of potential population levels. Retain green trees for future snag recruitment.</p> <p>- For all land use allocations, manage for the conservation of federal listed and proposed species and their habitats to achieve their recovery. Protect and manage Special Status Species so as not to elevate their status to any higher level of concern.</p> <p>- When BLM prepares timber sales, BLM follows current policies pertaining to wildlife management, such as, Survey and Manage protocol.</p>	<p>disturbance to the spotted owl are not allowed within a quarter mile of nest sites between March 1 and September 30.</p> <p>- OFPA requires protection of bald eagle nesting sites between January 1 and August 31. A forested buffer is required around these sites that include the nest tree, alternate nest trees, perching and fledging trees. In addition, forest operations that may disturb the bald eagles are not allowed, within a quarter mile of nest or perch trees, or a half mile if the eagles have a line-of-sight vision from the trees to the disturbance. Roosting sites are similarly protected between November 15 and March 15 in the project area.</p> <p>- The Oregon Department of Forestry determines site-specific protection measures with the landowner for other species with sensitive sites (such as marbled murrelet and peregrine falcon).</p> <p>- The State performs surveys for threatened and endangered species on State land prior to harvest activity.</p>
FISHERIES RESOURCES	<p>- Protection of fisheries is achieved through attainment of the Aquatic Conservation Strategy objectives. Riparian Reserves, Key Watershed provisions, and Timber Production Capability Classifications assist in meeting fish habitat objectives.</p> <p>- Project design features and best management practices (BMPs) associated to the Resource Management Plan and contained within the timber sale contract are specifically developed to minimize all impacts to the aquatic environment, including non-fish bearing intermittent streams.</p> <p>- General Forest Management Areas would have full Riparian Reserves. These reserves would be sufficient to prevent adverse impacts through the regeneration harvest related actions (timber felling and yarding) to fisheries resources.</p> <p>- Late Successional Reserves with stands over the age of 80 years typically would not have any commercial harvest activities.</p>	<p>- The Riparian Management Areas as defined under the Oregon Forest Practices Act are designed to minimize impacts to fish-bearing streams. However, there would be minimal protection for intermittent headwater non-fish bearing streams that feed into fish-bearing streams.</p> <p>- Current state forest practice rules do not adequately protect ecological effectiveness nor provide any margin for error to accommodate natural disturbance or uncertainties in knowledge. Habitat conditions on private and state lands are inadequate to provide well distributed, stabilized populations of salmonids (FEMAT 1993, V-61)</p> <p>- Oregon Department of Forestry may develop site-specific protections for threatened and endangered fish species such as</p>

RESOURCE	NO ACTION ALTERNATIVE (SUMMARY OF MANAGEMENT UNDER THE CURRENT RESOURCE MANAGEMENT PLAN)	PROPOSED ACTION (SUMMARY OF MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
	<p>- Riparian Reserves would only have timber harvest through commercial thinning activities to address density management concerns for those stands. Currently within the Swiftwater Resource Area, BLM establishes a variable width streamside no harvest buffer along all streams, to protect aquatic resources within Riparian Reserves. In general, the buffer width will be 40 feet from the outer edge of the active stream channel for all non-fish bearing streams and a minimum of 100 feet from the outer edge of the active stream channel for all fish bearing streams. The buffer width may be expanded to include areas of instability, wide areas of riparian vegetation, or sensitive areas identified during site review. Likewise, the buffer width may decrease along some non-fish bearing streams when certain conditions, as described below, are met.</p> <p>- Variation from the standard 40-foot buffer would be based on site level review of soils, hydrology, vegetation, and riparian habitat. Specifically, soils would be reviewed for the presence or absence of steep slopes, potential erosion, sedimentation, and displacement issues; hydrology would be reviewed for overland and groundwater flow conditions (perennial, seasonal, ephemeral classification, wetlands, seeps, and springs); vegetation would be reviewed for diversity and crown characteristics (ground cover, vegetative composition, stream shading, etc); riparian habitat would be reviewed for the presence of key habitat components (aspect, vegetative composition and structure, snags, downed wood, etc). At the very minimum, a one-tree retention would be maintained along the stream bank for bank stability. Minimum buffer widths are expected to be used primarily on first or second order, ephemeral or intermittent streams, which lack riparian vegetation and where riparian habitat components are also absent.</p> <p>- The degree to which fisheries may be affected by timber harvest depends on harvest conditions (such as felling practices, yarding techniques and season of operation) and activities within the riparian management area.</p> <p>- Certain forest operations can improve the condition of the stream and riparian area. Some forest operations can improve fisheries through placement of large wood, road improvements, and management for large wood near streams.</p>	<p>Oregon chub.</p> <p>- The degree to which fisheries may be affected by timber harvest depends on harvest conditions (such as felling practices, yarding techniques and season of operation) and activities within the riparian management area.</p> <p>- Certain forest operations can improve the condition of the stream and riparian area. Some forest operations can improve fisheries through placement of large wood, road improvements, and management for large wood near streams.</p>

RESOURCE	NO ACTION ALTERNATIVE (SUMMARY OF MANAGEMENT UNDER THE CURRENT RESOURCE MANAGEMENT PLAN)	PROPOSED ACTION (SUMMARY OF MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
BOTANY RESOURCES	<ul style="list-style-type: none"> - The BLM Special Status Species policy ensures that BLM is not contributing to the need to list botanical species. The bureau implements these policies to protect rare botanical resources. Special Status botanical species sites would be protected where needed to avoid listing of species. Such species would also be protected where needed to conserve candidate species, according to established recommendations (ROD/RMP p.40). - When BLM prepares timber sales, BLM follows current policies pertaining to botany, such as, Survey and Manage protocol. - BLM employs herbicides only for noxious weeds controls; herbicides are not aerially applied. 	<ul style="list-style-type: none"> - Riparian management areas are designed to protect vegetation along waterbodies. - Private property owners are not required to survey for nor protect threatened or endangered plants on private property, even if the population is known before the activity begins. The State surveys for threatened and endangered plant species prior to ground disturbing activity on State land. Threatened and endangered plants are protected on State lands. - Herbicide use is common on private timber land after harvest, to prevent competition to new tree growth. Aerial application is common practice on private timber land. The State may use broad spectrum herbicides as part of site preparation.
<p>*LSR – LATE-SUCCESSIONAL RESERVE, *C/D – CONNECTIVITY DIVERSITY BLOCK, *GFMA – GENERAL FOREST MANAGEMENT AREA</p>		

Wildlife – General Discussion

The federally threatened Northern spotted owl, marbled murrelet, and bald eagle, would be affected by the proposed action. Approximately 180 acres of suitable nesting, roosting, foraging, and dispersal habitat for the Northern spotted owl would be removed from federal management through this conveyance. Depending upon which parcels are selected for transfer, up to 180 acres of suitable habitat for the marbled murrelet and bald eagle could also be removed from federal management. Table 7 summarizes the potential loss of habitat from federal ownership for the Northern spotted owl, marbled murrelet, and bald eagle.

Table 7. Summary of Impacts to Suitable Habitat for Threatened Wildlife Species

LAND USE ALLOCATION	PARCEL NUMBER									
	1	2	3	4	5	6	7	8	9	10
NORTHERN SPOTTED OWL - SUITABLE HABITAT										
MATRIX, RIPARIAN RESERVES¹ (ACRES)	0	0	40.00	40.00	39.06	80.45	40.00	22.00	40.00	40.00
LATE SUCCESSIONAL RESERVES (ACRES)	40.00	60.00	0	0	0	0	0	0	0	0

MARBLED MURRELET - SUITABLE HABITAT										
MATRIX, RIPARIAN RESERVES¹ (ACRES)	0	0	40.00	0	39.06	80.45	0	22.00	0	40.00
LATE SUCCESSIONAL RESERVES (ACRES)	40.00	60.00	0	0	0	0	0	0	0	0
BALD EAGLE- SUITABLE HABITAT										
MATRIX, RIPARIAN RESERVES¹ (ACRES)	0	0	40.00	0	39.06	80.45	0	22.00	40.00	40.00
LATE SUCCESSIONAL RESERVES (ACRES)	0	0	0	0	0	0	0	0	0	0
<i>1. Matrix lands include General Forest Management Areas and Connectivity/ Diversity Blocks land use allocations.</i>										

Suitable Habitat -- The amount of suitable habitat lost within each individual Northern spotted owl home range and the percentage loss of total available suitable habitat for each parcel is shown in Table 8. Two owl home ranges, Bell Mountain and the South Fork of Smith River, have two parcels which fall within each of their ranges and the effects of the loss of suitable habitat would be compounded if both parcels are transferred (Table 9). The Bell Mountain owl home range currently has 1,196 federal acres (26 percent of 4,524 total acres), of which 619 federal acres (52 percent) are suitable nesting, roosting, foraging, and dispersal habitat. This home range encompasses both Parcels 5 and 6 and would lose 19 percent of the suitable habitat within the home range if both parcels, totaling 119.5 acres, are transferred. The SF Smith River owl home range currently has 2,507 federal acres (55 percent of 4,524 total acres), of which 2,251 federal acres (90 percent) are suitable nesting, roosting, foraging, and dispersal habitat. This home range encompasses both Parcels 1 and 2 and would lose 5 percent of the suitable habitat within the home range if both parcels, totaling 120 acres, are transferred.

Table 8. Summary of Impacts to Northern Spotted Owl Sites and Habitat

NORTHERN SPOTTED OWL ACTIVITY CENTER ¹ (NUMBER OF ACTIVITY CENTERS)	SITE IDENTIFICATION NUMBER	KOAC	PROVINCIAL HOME RANGE		FEDERAL LANDS WITHIN HOME RANGE	SUITABLE NRF HABITAT			DISPERSAL HABITAT ²		CRITICAL HABITAT	
		ACRES	PROVINCE	ACRES	ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)	
PARCEL 1												
CLEVENGER CREEK (1)	1918	0	Coast	4,524	1,982 (44)	1,266 (64)	40 (3)	1,509 (76)	40 (3)	1,982 (100)	40 (2)	
ELK BEAVER CREEK (1)	0016	0	Coast	4,524	2,013 (44)	772 (38)	40 (5)	1,137 (56)	40 (4)	1,091 (54)	40 (4)	
HEFTY CREEK (2)	2040A	0	Coast	4,524	2,066 (46)	941 (46)	10 (1)	1,353 (65)	10 (0.7)	2,018 (98)	10 (0.5)	
SF SMITH RIVER ³ (5)	0260	0	Coast	4,524	2,507 (55)	2,251 (90)	40 (2)	2,347 (94)	40 (2)	2,507 (100)	40 (2)	
PARCEL 2												
SF SMITH RIVER ³ (5)	0260	0	Coast	4,524	2,507 (55)	2,251 (90)	60 (3)	2,347 (94)	60 (3)	2,507 (100)	64.5 (3)	
UPPER NORTH FORK (1)	4664	0	Coast	4,524	2,568 (57)	1,565 (35)	28 (2)	1,673 (65)	28 (2)	2,298 (51)	64.5 (3)	
PARCEL 3												
AMBERSON CREEK (1)	2300A	0	Coast	4,524	3,435 (76)	860 (25)	40 (5)	2,019 (59)	40 (2)	528 (15)	0 (0)	
PARCEL 4												
UPPER COX CREEK (1)	3902	0	Cascades	2,895	1,040 (36)	359 (35)	40 (11)	768 (74)	40 (5)	922 (89)	0 (0)	
PARCEL 5												
BELL MOUNTAIN ⁴ (4)	3263	110	Coast	4,524	1,196 (26)	619 (52)	39.1 (6)	934 (78)	39.1 (4)	0 (0)	0 (0)	
PARCEL 6												
BELL MOUNTAIN ⁴ (4)	3263	110	Coast	4,524	1,196 (26)	619 (52)	80.5 (13)	934 (78)	80.5 (9)	0 (0)	0 (0)	

NORTHERN SPOTTED OWL ACTIVITY CENTER ¹ (NUMBER OF ACTIVITY CENTERS)	SITE IDENTIFICATION NUMBER	KOAC	PROVINCIAL HOME RANGE		FEDERAL LANDS WITHIN HOME RANGE	SUITABLE NRF HABITAT		DISPERSAL HABITAT ²		CRITICAL HABITAT	
		ACRES	PROVINCE	ACRES	ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)
DEADMAN BUTTE (1)	0267	89	Coast	4,524	1,713 (38)	1,271 (74)	80.5 (6)	1,561 (91)	80.5 (5)	767 (45)	0 (0)
HANCOCK CREEK (1)	1816	104	Coast	4,524	2,016 (45)	947 (21)	80.5 (9)	1,720 (85)	80.5 (5)	148 (7)	0 (0)
SQUAW TRIB (1)	2201B	0	Coast	4,524	2,626 (58)	1,645 (63)	7.1 (0.4)	2,358 (90)	7.1 (0.3)	2,072 (79)	0 (0)
PARCEL 7											
There are no spotted owl activity centers that encompass this parcel within a home range.											
PARCEL 8											
MARTINS TRIB (2)	3904	0	Coast	4,524	1,582 (35)	830 (52)	22 (3)	1,090 (69)	22 (2)	130 (8)	0 (0)
NORTH MARTIN (1)	1923	0	Coast	4,524	2,107 (47)	1,115 (53)	22 (2)	1,377 (65)	22 (2)	556 (26)	0 (0)
NORTH MARTIN II (1)	4661	0	Coast	4,524	1,707 (38)	980 (57)	22 (2)	1,229 (72)	22 (2)	764 (45)	0 (0)
UPPER BRADS CREEK (3)	0269A	90	Coast	4,524	1,984 (44)	869 (44)	22 (3)	1,291 (65)	22 (2)	1,223 (62)	0 (0)
UPPER MARTIN CREEK (1)	1803	0	Coast	4,524	1,986 (44)	1,120 (56)	3.8 (0.3)	1,323 (67)	3.8 (0.3)	623 (31)	0 (0)
PARCEL 9											
FRENCH CREEK (1)	4014	97	Cascades	2,895	1,103 (38)	447 (41)	40 (9)	714 (65)	40 (6)	0 (0)	0 (0)
PARCEL 10											
BAR BOTTLE (1)	3266	71	Coast	4,524	1,229 (27)	651 (53)	40 (6)	1,083 (88)	40 (4)	448 (36)	0 (0)
BOTTLE CREEK (1)	1993	0	Coast	4,524	2,138 (47)	1,147 (54)	40 (3)	1,760 (82)	40 (2)	1,209 (57)	0 (0)

NORTHERN SPOTTED OWL ACTIVITY CENTER ¹ (NUMBER OF ACTIVITY CENTERS)	SITE IDENTIFICATION NUMBER	KOAC	PROVINCIAL HOME RANGE		FEDERAL LANDS WITHIN HOME RANGE	SUITABLE NRF HABITAT		DISPERSAL HABITAT ²		CRITICAL HABITAT	
		ACRES	PROVINCE	ACRES	ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)
<p>1. If activity centers occurred within the same contiguous stand, the activity centers were analyzed together as one site using the activity center that best represents the stand for this analysis.</p> <p>2. Dispersal Habitat includes all suitable habitat and dispersal-only habitat (stands with a birth date ≤ 1965).</p> <p>3. See Table 20 for impacts to this spotted owl site if parcels 1 and 2 are both selected.</p> <p>4. See Table 20 for impacts to this spotted owl site if parcels 5 and 6 are both selected.</p>											

Table 9. Impacts to Known Northern Spotted Owl Activity Centers that Encompass More than One Parcel within their Provincial Home Range.

NORTHERN SPOTTED OWL ACTIVITY CENTER(S)	PARCEL	SITE IDENTIFICATION NUMBER	KOAC	PROVINCIAL HOME RANGE		FEDERAL LANDS WITHIN HOME RANGE	SUITABLE NRF HABITAT		DISPERSAL HABITAT ¹		CRITICAL HABITAT	
			ACRES	PROVINCE	ACRES	ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)	ACRES (%)	REMOVED ACRES (%)
SF SMITH RIVER	1	0260	0	Coast	4,524	2,507 (55)	2,251 (90)	40 (2)	2,347 (94)	40 (2)	2,507 (100)	40 (2)
SF SMITH RIVER	2	0260	0	Coast	4,524	2,507 (55)	2,251 (90)	64.5 (3)	2,347 (94)	64.5 (3)	2,507 (100)	64.5 (3)
TOTAL								104.5 (5)		104.5 (5)		104.5 (4)
BELL MOUNTAIN	5	3263	110	Coast	4,524	1,196 (26)	619 (52)	39 (6)	934 (78)	39 (4)	0 (0)	0 (0)
BELL MOUNTAIN	6	3263	110	Coast	4,524	1,196 (26)	619 (52)	80.5 (13)	934 (78)	80.5 (9)	0 (0)	0 (0)
TOTAL								119.5 (19)		119.5 (13)		0 (0)

Critical Habitat -- Designated Critical Habitats for the Northern spotted owl and marbled murrelet may be removed from federal management, if Parcels 1 and/or 2 are transferred. Tables 10 and 11 summarize the impacts to the Critical Habitats for the Northern spotted owl and marbled murrelet. Critical Habitat is designated only on federal lands; if parcels containing Critical Habitat are transferred to the State, those lands would not retain a U.S. Fish and Wildlife Service Critical Habitat designation, and would not receive special protection under the Oregon Forest Practices Act.

Table 10. Summary of Impacts to Northern Spotted Owl Critical Habitat

CRITICAL HABITAT UNIT	NORTHERN SPOTTED OWL NESTING, ROOSTING, FORAGING (NRF) AND DISPERSAL HABITAT				
	TOTAL	NRF/ DISPERSAL HABITAT IN CHU	NRF/DISPERSAL HABITAT AFFECTED IN CHU		TOTAL CHU AFFECTED
	Acres	Acres	Acres	Percent	Percent
OR-53	50,593	20,547	104.5	0.5	0.2

Table 11. Summary of Impacts to Marbled Murrelet Critical Habitat

CRITICAL HABITAT UNIT	MARBLED MURRELET SUITABLE NESTING HABITAT				
	TOTAL	SUITABLE HABITAT IN CHU WITHIN DISTRICT	SUITABLE HABITAT AFFECTED IN CHU		TOTAL CHU AFFECTED
	Acres	Acres	Acres	Percent	Percent
OR-04-1	83,990	15,297	104.5	0.7	0.1

Connectivity / Diversity -- Of the eight proposed parcels on Matrix lands, parcels 4 and 5 are located within Connectivity/Diversity Blocks 85 and 75, respectively. Impacts to the Connectivity / Diversity Blocks are summarized in Table 12. Connectivity/ Diversity Blocks are expected to provide habitat to facilitate spotted owl movement and survival between LSRs (USDA/USDI 1994a). Within the Connectivity/Diversity Blocks, RMP direction is to maintain 25 to 30 percent of each block in late-successional forest at any point in time. If Parcel 4 is selected within Connectivity Block 85, 39.06 acres would be removed from the land use allocation, representing 7.7 percent of the late-successional habitat within the block; thus, 25.5 percent of Connectivity Block 85 would consist of late-successional habitat, above the District's Resource Management Plan standard of 25 percent. If Parcel 5 is selected within Connectivity Block 75, 40.0 acres would be removed from the land use allocation, representing 13.2 percent of the late-successional habitat within the block; thus, 43.1 percent of the Connectivity Block 85 would consist of late-successional habitat, above the District's Resource Management Plan standard of 25 percent.

Table 12. Impacts to Connectivity/Diversity Blocks on Matrix Lands.

PARCEL NUMBER	CONN/ DIV BLOCK NUMBER	TOTAL	TOTAL LATE-SUCCESSIONAL HABITAT		LOSS OF LATE-SUCCESSIONAL HABITAT DUE TO PROPOSED ACTION		REMAINING LATE-SUCCESSIONAL HABITAT POST TRANSFER OF PARCELS	
			Acres	Acres	Percent	Acres	Percent	Acres
4	85	1,832	507	27.7	39.06	7.7	467.9	25.5
5	75	608	302	49.7	40.00	13.2	262	43.1

Special Status Species -- As discussed in Chapter 3, BLM did not complete surveys for Special Status Species on each of the parcels. As such, BLM assumes, for analytical purposes, that some of the Special Status Species may be present on any or all of the parcels. Many of the BLM Special Status Species are not protected under State or private management. The effects of timber harvest on these species depend upon the species' habitat needs and preferences. A summary of the management effects on Special Status Species under both the ROD/RMP and Oregon Forest Practices Act is found in Table 13.

Table 13. Summary of Management Effects to Special Status Wildlife Species

SPECIES	STATUS ¹	PRESENT IN PROJECT AREA? ²	MANAGEMENT EFFECTS UNDER THE NO ACTION ALTERNATIVE (ROSEBURG RMP)	POTENTIAL MANAGEMENT EFFECTS OF THE PROPOSED ACTION (OREGON FOREST PRACTICES ACT)
BUREAU SENSITIVE				
American Peregrine Falcon <i>Falco peregrinus anatum</i>	BS, SE	Suspected <i>Parcel 10</i>	New and existing sites protected. Manage for the species and its habitat so as not to contribute to the need to re-list.	New and existing sites protected.
Chace Sideband <i>Monadenia chaceana</i>	BS	Out of Range		
Columbian White Tailed Deer <i>Odocoileus virginianus leucurus</i>	BSO, CR	Suspected <i>Parcels 4,7</i>	Manage for the species and its habitat so as not to contribute to the need to re-list.	Manage to avoid need to re-list through continued or expanded use of protective measures.
Crater Lake Tightcoil <i>Pristiloma arcticum crateris</i>	BSO	Out of Range		
Green Sideband <i>Monadenia fidelis beryllica</i>	BSO	Suspected <i>Parcels 1,2,3,5,6,8,10</i>	Manage for the species and its habitat so as not to contribute to the need to list. Retain hardwoods.	No protection under OFPA.
Klamath Tail-Dropper <i>Prophyaon sp. nov.</i>	BS	Out of Range		
Lewis' Woodpecker <i>Melanerpes lewis</i>	BSO, CR	Out of Range		
Northern Goshawk <i>Accipiter gentilis</i>	BSO, XC, CR	Suspected <i>All parcels</i>	New and existing sites protected. Manage for the species and its habitat so as not to contribute to the need to list.	Manage to avoid need to list through continued or expanded use of protective measures.
Northwestern Pond Turtle <i>Clemmys marmorata marmorata</i>	BSO, XC, CR	Suspected <i>Parcels 1,3,4,5,7,8</i>	Manage for the species and its habitat so as not to contribute to the need to re-list. Protect ponds	Manage to avoid need to list through continued or expanded use of protective measures.

SPECIES	STATUS ¹	PRESENT IN PROJECT AREA? ²	MANAGEMENT EFFECTS UNDER THE NO ACTION ALTERNATIVE (ROSEBURG RMP)	POTENTIAL MANAGEMENT EFFECTS OF THE PROPOSED ACTION (OREGON FOREST PRACTICES ACT)
			and reserve coarse woody debris.	
Oregon Shoulderband <i>Helminthoglypta hertleini</i>	BSO	Suspected <i>Parcel 10</i>	Manage for the species and its habitat so as not to contribute to the need to list.	No protection under OFPA.
Oregon Vesper Sparrow <i>Pooecetes gramineus affinis</i>	BSO, CR	No habitat		
Purple Martin <i>Progne subis</i>	BSO, CR	Suspected <i>Parcel 8</i>	Manage for the species and its habitat so as not to contribute to the need to list. Retain snags.	Manage to avoid need to list through continued or expanded use of protective measures.
Rotund Lanx <i>Lanx subrotundata</i>	BSO	No Habitat		
Scott's Apatanian Caddisfly <i>Allomyia scotti</i>	BSO	Out of Range		
Spotted Tail-dropper <i>Prophysaon vannattaie pardalis</i>	BS	Suspected <i>Parcels 1,3,5,6,8</i>	Manage for the species and its habitat so as not to contribute to the need to list. Retain hardwoods.	No protection under OFPA.
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	BSO, XC, CR	Suspected <i>All parcels</i>	Manage for the species and its habitat so as not to contribute to the need to list. Snags will be retained, known roosts and hibernacula will be protected.	Manage to avoid need to elevate status through conservation actions.
BUREAU ASSESSMENT				
Foothill Yellow-legged Frog <i>Rana boylei</i>	BAO, XC, V	Suspected <i>Parcel 7</i>	Manage for the species and its habitat so as not to elevate its status.	Manage to avoid need to list through continued or expanded use of protective measures.
Fringed Myotis <i>Myotis thysanodes</i>	BAO, XC, V	Suspected <i>All parcels</i>	Manage for the species and its habitat so as not to elevate its status. Snags will be retained, known roosts and hibernacula will be protected.	Manage to avoid need to list through continued or expanded use of protective measures.
Harlequin Duck <i>Histrionicus histrionicus</i>	BAO, XC, U	Out of Range		
Pacific Pallid Bat <i>Antrozous pallidus pacificus</i>	BA	Suspected <i>All parcels</i>	Manage for the species and its habitat so as not to elevate its status. Snags will be retained, known roosts and hibernacula will be protected.	No protection under OFPA.
Pallid Bat <i>Antrozous pallidus</i>	BA	Suspected <i>All parcels</i>	Manage for the species and its habitat so as not to elevate its status. Snags will be retained, known roosts and hibernacula will be protected.	No protection under OFPA.
White-Tailed Kite <i>Elanus leucurus</i>	BAO	Suspected <i>Parcels 4,5,6,7,8,9, 10</i>	New and existing nest sites protected. Manage for the species and its habitat so as not to elevate its status.	No protection under OFPA.
<p>1. Status abbreviations: FE--Federal Endangered, FT--Federal Threatened, SE--State Endangered, ST--State Threatened, XC--Former Federal Candidate, CR--ODFW Critical, V--ODFW Vulnerable, P--ODFW Peripheral/Naturally Rare, U--ODFW Undetermined, BS-- Bureau Sensitive in Oregon and Washington, BSO-- Bureau Sensitive in Oregon, BA-- Bureau Assessment Species in Oregon and Washington, BAO--Bureau Assessment Species in Oregon, BT--Bureau Tracking in Oregon and Washington, BTO--Bureau Tracking in Oregon</p> <p>2. Suspected = species has not been documented, however based on literature review, species is expected to occur.</p>				

Water Resources – General Discussion

Timber harvest on Federal lands is managed according to the Northwest Forest Plan, under which no change in water quality is expected due to the protection of the Riparian Reserve and standards and guidelines of the Northwest Forest Plan designed to protect water quality. Following transfer, harvest on State or private timber lands is covered under the Oregon Forest Practices Act. Although streamside buffers are less than what is required under federal management, Oregon Revised Statutes 527.765 directs the State Board of Forestry to establish best management practices to ensure forest operations do not impair the achievement or maintenance of water quality standards for the State of Oregon.

In 2002, the Oregon Department of Forestry (ODF) and Department of Environmental Quality (DEQ) conducted a sufficiency analysis evaluating the effectiveness of the Forest Practices Act in protecting water quality. This report made the following evaluations regarding specific stream types and sizes:

- RMA prescriptions for western Oregon may result in short-term temperature increases on some Type F streams; however the significance of the potential temperature increases at a watershed (or sub-basin) scale is uncertain.
- Small Type N streams: Current research and monitoring results show current practices may result in short-term (two to three years) temperature increases on some Type N streams. The significance of potential temperature increases on Type N streams to downstream fish-bearing streams and at a watershed (or sub-basin) scale is uncertain.
- All other streams: Influences on stream temperatures from shade levels resulting from specific BMP prescriptions for the other stream category types have not been assessed due to a lack of relevant data. However, in light of the data and findings specific to medium and small Type F streams, and given the higher level of vegetation retention on large Type F streams, it is likely that the standard is being met on large Type F streams.
- Medium and small Type F streams: Monitoring data indicates the assumptions used to determine basal area targets for small and medium streams in western Oregon may not be consistent with what the Riparian Management Areas are capable of growing along these streams. The data also shows that 60 percent of harvest operations occurring along fish-bearing streams do not result in management within the Riparian Management Areas. There is a reasonable possibility that, under the current rules, some of these streams are not likely to result in the “desired future condition” in a timely manner, as described in the goals of the Oregon Forest Practices Act.
- Small Type N streams: There is increasing scientific evidence that small non-fish-bearing streams prone to debris flows provide an important source of large wood for downstream fish habitat. While these streams are providing some level of

functional large wood inputs and shade production under the current rules, the rules were not specifically designed to retain significant sources of large wood and shade in these areas. There is a reasonable possibility that, under the current rules, some of these streams are not likely to adequately support functions and processes important to downstream fish use waters, as described in the goals of the Oregon Forest Practices Act.

- All other streams: Influences on habitat modification resulting from specific best management practices for the other stream category types have not been assessed since they were considered a lower priority. However, given the higher level of vegetation retention on large Type F streams, and in light of the data and findings specific to medium and small Type F streams, it is likely the standard is being met on these streams.

Removal of trees tends to increase soil moisture and base streamflow in summer when rates of evapotranspiration are high; these summertime effects only last a few years (Ziemer and Lisle 1998). The additional quantities of stream flow represent only a small component of a watershed's annual yield (Harr 1976, Reiter and Beschta 1995). Slight increases in summer flow at the project level would benefit riparian areas, which are often moisture limited during the summer.

With the onset of the rainy season in the fall, the soil becomes recharged with moisture. Several studies have shown that the first storms of the fall have the most increase in peak flow from pre-logging conditions (Rothacher 1973, Harr et al. 1975, Harr, et al. 1979, Ziemer 1981). These fall storms are generally small and geomorphically inconsequential. Large peak flows occur mid-winter after soil moisture deficits are satisfied in both logged and unlogged watersheds (Ziemer and Lisle 1998). Increases in peak or storm flows in winter and spring can alter channel morphology by flushing smaller substrate, causing the channel to downcut and increase stream bank failures. Studies on increased peak flows are varied in their findings on how much increase in flow would result from a given amount of timber harvest. Most studies agree that the effects of harvest treatment decreases as the flow event size increases (Rothacher 1971, Rothacher 1973, Wright et al. 1990) and is not detectable for flows with a two year return interval or greater (Harr et al. 1975, Ziemer 1981, Thomas and Megahan 1998, Thomas and Megahan 2001).

After examining 94 watershed experiments conducted worldwide, Bosch and Hewlett (1982) concluded that water yield increases are usually only detectable when at least 20 percent of the forest cover has been removed.

Stormflow response of small basins is affected primarily by hillslope processes, which are sensitive to management activities. Stormflow response of larger basins is governed primarily by the geomorphology of the channel network, which is less likely to be affected by management activities (Robinson et al 1995). Also, runoff response time is generally shorter for small watersheds when compared to larger watersheds, and runoff per unit area is higher. As small streams form increasingly larger drainage networks, the ability of individual small watersheds to affect flow decreases (Garbrecht 1991). As a

result, peak flow increases following harvesting or other forest practices at the drainage level are likely to be undetectable farther downstream.

Based on the relationships described above, the potential risk of increased peak flow from this project was assessed. Twenty Analytical Hydrologic Units (AHUs) were defined within the project area to assess the potential impacts. Peak flow was analyzed for each AHU. A summary of the analysis is provided below. See Appendix C for details of this analysis.

First, the potential impact from past timber harvest was assessed for each AHU. An Equivalent Clearcut Area (ECA) was calculated for each AHU using remote sensing imagery (Healey et al. 2003) and GIS to determine hydrologic recovery conditions before and after the proposed treatments. AHUs which had ECA values of less than 20 percent (Bosch and Hewlett 1982), were considered to have no risk of peak flow increases and were dropped from further analysis.

Next, for those AHUs which had ECA values of 20 percent or greater, an estimated bankfull discharge (which has a return interval between one and two years) was calculated based on the regional curve developed for the South Umpqua river system (Kuck 2000). Then, at the point where these AHUs joined the closest downstream fish stream, the total area above that point was calculated and another bankfull flow was calculated for that area. The amount of flow contributed to that point by the AHU was then determined. Those AHU's which contributed 5 percent or less of the total flow at the point of nearest fish were also considered to have no risk of peak flow increase since water yield changes of 5 percent and less are indistinguishable from natural variation in large watersheds (Huff et al. 2000).

This analysis indicated that five AHUs have the potential for measurable increases in peak flows. These AHUs provide drainage to parcels 2, 3, 4, and 5. Those AHUs which were considered to have the potential for increases in peak flow received further review. The main stream draining these AHUs was visited and evaluated using the Pfanchuch Channel Stability rating system. This assessment was used to determine the streams capacity to absorb potential increases in stream energy associated with increases in peak flows. A summary of the potential effects from each parcel are included in the table below. Details of these effects are included in Appendix C.

Botany – General Discussion

If BLM has not conducted surveys for a listed plant, the District Biological Opinion and the Endangered Species Act require that BLM determine the effects to a listed plant to be “may affect, likely to adversely affect”. There would be no effect to the species if it did not occur on the parcel, but because BLM has not been able to conduct surveys, the determination is that the proposed action may affect Kincaid's lupine. Private entities have no requirements to protect or preserve any Federally Listed floral species or State Listed floral species. Bureau Special Status Species only pertain to federal lands.

One federally listed plant, Kincaid's lupine, could be affected by the proposed action. Depending upon which parcels are selected for transfer, up to 131.8 acres of suitable

habitat (less than 80 percent canopy cover) for Kincaid’s lupine could be removed from federal ownership. Kincaid’s Lupine prefers upland prairie or meadow edge habitat. Removal of the tree canopy could help create such habitat, providing a benefit to the species. However, any use of herbicides, which is more likely under State or private management, would preclude Kincaid’s lupine from realizing this benefit. Undetected populations of Kincaid’s lupine would be damaged or eradicated in areas of heavy surface disturbance (such as road building or landings).

Parcels 3, 4, and 5 were surveyed; no Kincaid’s lupine was found. The lack of surveys for the Federally Listed Kincaid’s lupine on parcels 1, 2, 6, 7, 8, 9 and 10 puts the transfer of these parcels out of compliance with BLM’s current Biological Opinion with US Fish and Wildlife Service, making this a may affect, likely to adversely affect for Kincaid’s lupine, if any of these parcels are selected for transfer.

Approximately 180 acres of suitable habitat for several of the species on the Roseburg Districts Special Status Species would be removed from federal ownership. Timber harvest on these parcels under the Oregon Forest Practices Act would have different effects on different botanical species; each species has its own habitat needs and preferences. Continued management under the Oregon Forest Practices Act would likely prevent the stands from reaching complex, multi-aged stand structure, thereby removing habitat for late-successional dependent species. The potential aerial application of herbicides to the parcels following timber harvest would likely cause mortality among some or all of the species that might survive the initial harvest.

Due to the large number of Special Status botanical species that could potentially be found in the project area, the effects to these species have been consolidated in the table below (Table 14), rather than discussed on an individual parcel-by-parcel basis.

Table 14. Special Status Botanical Species Effects from non-Federal Timber Harvest

SPECIES	WITHIN SPECIES RANGE?	HABITAT PRESENT?	POTENTIAL EFFECTS
BUREAU SENSITIVE			
<i>Dermocybe humboldtensis</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that effect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Phaeocollybia californica</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Phaeocollybia gregaria</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer

			and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Phaeocollybia oregonensis</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Ramaria spinulosa</i> var. <i>diminutive</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Rhizopogon chamaleotinus</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Rhizopogon exiguus</i> Fungus	Yes	Yes	1. Loss of food supply. 2. Changes in environmental conditions near the forest floor that affect fruiting (temperature, humidity and light levels). 3. Changes in soil conditions (compaction, summer and early autumn moisture levels, distribution of rotting wood and organic matter in the soil profile , litter layer). ¹
<i>Eucephalus vialis</i> Wayside aster	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
<i>Cimicifuga elata</i> Tall bugbane	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
<i>Horkelia congesta</i> ssp. <i>congesta</i> Shaggy horkelia	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
<i>Lathyrus holochlorus</i> Thin-leaved peavine	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
<i>Perideridia erythrorhiza</i> Red-rooted yampah	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
<i>Romanzoffia thompsonii</i> Thompson's mistmaiden	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Sisyrinchium hitchcockii</i> Hitchcock's blue-eyed grass	Yes	Yes	An increase in light exposure would benefit this specie, but the specie would not be expected to survive the application of herbicides, burial or soil disturbance.
BUREAU ASSESSMENT			
<i>Funaria muhlenbergii</i> Moss	Yes	Yes	Decline in populations due to loss of shade and moisture. Not likely to survive the application of herbicides, burial or soil disturbance.
<i>Tayloria serrata</i> Moss	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Tetraphis geniculata</i> Moss	Yes	Yes	Decline in populations due to loss of decomposing stumps and logs

			of coniferous trees, shade and moisture. Not likely to survive the application of herbicides, burial or soil disturbance.
<i>Tetraplodon mnioides</i> Moss	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Tripterocladium leucocladulum</i> Moss	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Calicium adpersum</i> Lichen	Yes	Yes	Habitat is not well known, however humidity would decrease and temperatures would raise altering cool micro sites.
<i>Lobaria linita</i> Lichen	Yes	Yes	Humidity would decrease and temperatures would raise altering cool micro sites where this species has been found.
<i>Pannaria rubiginosa</i> Lichen	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Pilophorus nigricaulis</i> Lichen	Yes	Yes	Habitat is unlikely to be affected by the action.
<i>Sulcaria badia</i> Lichen	Yes	Yes	Habitat is unlikely to be affected by the action.
<i>Adiantum jordanii</i> California maiden-hair	Yes	Yes	Decline in plant populations due to loss of shade and moisture. Not likely to survive application of herbicide, burial or soil disturbance
<i>Asplenium septentrionale</i> Grass-fern	Yes	Yes	Information is not available to determine the effect of the action on this species.
<i>Carex gynodynamis</i> Hairy sedge	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Eschscholzia caespitosa</i> Gold poppy	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Festuca elmeri</i> Elmer's fescue	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Horkelia tridentata</i> ssp. <i>tridentata</i> Three-toothed horkelia	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Iliamna latibracteata</i> California globe-mallow	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Pellaea andromedifolia</i> Coffee fern	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
<i>Polystichum californicum</i> California sword-fern	Yes	Yes	Will survive canopy loss. Not likely to survive application of herbicides, burial or soil disturbance.
¹ Pilz, Dave. PNW Forest Mycology Team. HJ Andrews. Fungi information http://www.fs.fed.us/pnw/mycology/studies/index .			

Fisheries – General Discussion

Management activities within non-fish bearing headwater streams could have direct impacts on the downstream fisheries habitat. The degree of impacts on downstream fisheries habitat would depend on the proximity and stream channel conditions. Large organic debris within small headwater streams affects channel morphology, storage of sediments and organic materials, habitat diversity, as well as the stability of streambed and banks. Much of the stream's large organic debris enters as top, limbs, or whole trees

blown down by strong winds. The removal of adjacent timber from the headwater streams within the proposed parcels would reduce and/or eliminate the availability of large organic debris to the stream channel until the reestablishment of riparian vegetation (approximately 15 years). Large reduction in large organic debris within the headwater environment would adversely influence channel morphology, invertebrate habitat, and nutrient resources (McDade 1987). The amount of influence would depend on the specifics of the stream channel stability, substrate, bank stability, and flow dynamics.

Fisheries habitat further downstream would be affected by these influences through sedimentation (turbidity and coarse sediment). Increases in turbidity may delay adult salmonid spawning migrations, and may force juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there.

Large organic debris helps form a stepped profile in headwater streams, in which the stream is composed of a series of long, low-gradient reaches separated by short, steep falls and cascades (Swanson et. al. 1976, Swanson and Lienkaemper 1978, Keller and Swanson 1979, Keller and Tally 1979). The result is a decrease in the energy available for erosion, decreased sediment transport capabilities, slower routing of detritus and greater habitat diversity than in channels with more even gradients (Swanson and Lienkaemper 1978). Large organic debris also provides for substantial in-stream sediment storage over long periods of time (Beschta 1977, Keller and Swanson 1979, Keller and Tally 1979, Mosley 1981, Megahan 1982). This high sediment storage capacity serves as a buffer, reducing the effect of sedimentation on downstream areas during periods of high sediment input (Meehan et. al. 1977, Swanson and Lienkaemper 1978, Keller and Tally 1979).

A detailed assessment of the impacts of future management options on fisheries is not practicable due to the wide range of management actions that could occur within the designated Riparian Management Areas (RMAs) under the Oregon Forest Practices Act (OFPA). For example, the Act allows management actions within the Riparian Management Area based on basal area calculations. However, consideration of retained basal area within the Riparian Management Areas is dependent on the diameter at breast height (dbh) of the trees within those areas. A difference in the diameter at breast height could mean the difference between 20 percent of the trees per acre or 80 percent trees per acre being retained adjacent to the stream channels (i.e. large trees have greater diameter breast height equaling more basal area per tree, resulting in less trees retained). Site specific information regarding the basal area within each parcel's Riparian Management Area is not available at this time due to the lack of a forest management plan for the parcels. Assessment of impacts associated to large woody debris, shading, stream bank stability, organic matter input, water quality and riparian microclimate is dependent on

which trees have been removed and how many trees are left adjacent to the stream. The parcel by parcel effects analysis (Tables 15-24) assumes an average range of impacts within the RMAs from no streamside protection to full retention with the riparian areas.

Other timber harvest actions such as roadways, yarding practices (cable, helicopter, ground based) and stream crossings could substantially affect the impacts on fisheries habitat through sedimentation and/or fish passage impacts. However, for analytical purposes, it is assumed under the private harvest operations that newly constructed roadways would be engineered to be stable to prevent landslides and erosion. Ground based yarding would be completed on relatively flat ground and helicopter yarding would not be used. All stream crossing would be designed to minimize sedimentation and provide fish passage.

Summary of Essential Fish Habitat Assessment

BLM prepared an Essential Fish Habitat Assessment to determine the effects to Essential Fish Habitat and to determine whether consultation with National Marine Fisheries Service was necessary. Of the 10 parcels considered for transfer, only Parcel 7 contains Essential Fish Habitat within its boundary. Parcels 1, 2, 3, 4, 5, 6, and 9 are all located within one-stream mile of documented EFH. Parcels 8 and 10 are located greater than one-stream mile from documented EFH.

There would be no direct effect rising to the level of adverse effect to EFH caused by the transfer of federal land to the state (transfer of title) as defined under 50 CFR 600 which would require consultation with the National Marine Fisheries Service. Indirect effects to EFH may occur as a result of subsequent management of the parcel under state ownership, including timber harvest, and are considered in this EA. However, from an EFH standpoint, a detailed assessment of the impacts of future management options on EFH is not practicable due to:

- the lack of any federal discretion regarding subsequent management of these transferred lands;
- the lack of a State timber management plan for these parcels;
- the wide range of management actions that could occur within the designated Riparian Management Areas (RMA's) under the Oregon Forested Practices Act; and
- the lack of detail regarding specific harvest actions such as road construction and season of use, yarding practices (cable, helicopter, ground based) and stream crossings.

Only until a management alternative is identified can effects be specifically analyzed. At that time, with specific information, those possible effects can be evaluated to determine if they rise to the level of adverse effect and consultation under EFH is needed. Therefore, because the federal action before us now does not rise to the level of adverse effect, consultation under the MSA is not required.

Once a State timber harvest plan has been developed for the transferred parcels, the National Marine Fisheries Service may choose to provide conservation recommendations to the State if they believe the proposed State actions would adversely affect EFH.

Economic Impact – General Discussion

Transferring approximately 180 acres to the State would reduce the BLM Roseburg District's land base by 0.04 percent. The estimated volume of timber on these parcels is approximately 7.6 million board feet. The Roseburg District's annual allowable sale quantity is 45 million board feet (ROD/RMP p. 60). Given the amount of available timber on the rest of the District, the reduction in BLM-managed land base does not affect the Roseburg District's ability to achieve its annual allowable sale quantity.

Upon transfer to the State of Oregon, the approximately 180 acres would remain exempt from property taxation, but federal payments in lieu of taxes for those acres to the State would cease. The State of Oregon would no longer receive payment of four percent of the timber sale receipts from forest management activities by the Bureau of Land Management on these parcels. Should the State then transfer parcels into private ownership, the acreage would be placed on the Douglas County tax rolls and timber would be subject to the State Timber Severance taxes.

Access and Reciprocal Right-of-Way Agreements – General Discussion

BLM would convey all parcels subject to any reciprocal rights of way agreements. Valid existing rights would remain; as such, these rights are not affected, and are not discussed below.

B. ENVIRONMENTAL CONSEQUENCES OF NO ACTION

ALTERNATIVE

The No Action Alternative does not meet the purpose and need for the action, as it does not respond to the State's request to transfer federal land to the State. The obligation of the United States to convey lands to the State in lieu of unavailable base is required by law, with the final entitlement established by the District Court in 1992. The No Action Alternative denies the State's current selection and the legal obligation to transfer land would remain. It would be reasonable to expect that eventually the State would select other lands for the fulfillment of the identified obligation.

Tracts that would remain under federal management would continue to be managed according to the land use allocations in the ROD/RMP. Tracts not conveyed to the State of Oregon could still be harvested under standards and guidelines for timber harvest under the Northwest Forest Plan. Timber harvest under both the Northwest Forest Plan and the Oregon Forest Practices Act would typically eliminate some or all of the roosting, nesting, and foraging habitat for the Northern spotted owl, nesting habitat for the marbled murrelet, and nesting and roosting habitat for bald eagles. Timber harvest under the Northwest Forest Plan usually requires larger Riparian Reserves, a greater number of

green trees, and a larger amount of down woody material and snags be retained after harvest than the Oregon Forest Practices Act.

The effects of timber harvest conducted under the guidelines of the ROD/RMP were analyzed in the Plan's Environmental Impact Statement, to which this EA is tiered (USDI BLM 1994).

C. COMPARISON OF ENVIRONMENTAL CONSEQUENCES BY PARCEL

Tables 15-24 summarize and compare potential environmental effects of the no action alternative and the proposed action, by parcel, based upon the different management scenarios presented above in Table 6. As discussed previously, this effects analysis is broad; the analysis compares reasonably foreseeable management under the BLM with that of management under the Oregon Forest Practices Act, rather than site-specific effects analysis of planned timber harvest.

The Oregon Forest Practices Act provides the State or private landowner(s) with flexibility as to how the rules are implemented. For example, landowners have various ways to achieve necessary wildlife tree and snag retention on harvest units. Additionally, landowners have different objectives for their resources; these objectives would result in different management decisions. As BLM cannot predict the details of possible future harvest, BLM cannot predict precisely how the Oregon Forest Practices Rules would be implemented on the ground, or how exactly the harvest would affect the environment. Instead, BLM assumes management and effects that may reasonably occur over time on lands selected by the State, based upon current State management policies.

Table 15. Environmental Effects to Parcel 1 (40 acres).⁸

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	- No timber harvested (due to the age of the timber and the Late Successional Reserve allocation).	- 40.0 acres timber harvested.
RIPARIAN RESERVES & WATER RESOURCES	- No special Riparian Reserve management direction because the land is already withdrawn under the Late Successional Reserve land use allocation.	- Likely Small Type N streams. - No streamside retention. - Harvest of this parcel would not result in any peak flow effects at the point of nearest fish.
WILDLIFE	- 40.0 acres of designated Northern spotted owl and marbled murrelet critical habitat retained. - Projects implemented would improve or enhance late-successional wildlife habitats as recommended in the applicable LSR Assessment.	- 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat would be lost. - Three owl home ranges would be affected by the loss of 40 acres of suitable nesting, roosting, foraging, and dispersal habitat for the spotted owl and a fourth home range would lose 10.2 acres of suitable habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - Loss of 40 acres of suitable nesting habitat for the marbled murrelet. - Habitat unlikely to develop into suitable marbled murrelet nesting habitat in the future. - <i>May affect, likely to adversely affect</i> spotted owl Critical Habitat and marbled murrelet Critical Habitat through the removal of 40 acres of their respective primary constituent elements (those physical and biological features of Critical Habitat essential to a species' conservation). - <i>May affect, likely to adversely affect</i> Northern spotted owl marbled murrelet. - Special Status Species would not receive protection on private land.
FISHERIES	- Projects implemented would improve or enhance aquatic habitats as recommended in the applicable LSR Assessment. Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service.	- No direct impacts from the harvest of timber on the parcel to fisheries due to the lack of habitat and/or species present. Although the loss of large organic debris from the riparian areas would directly affect the channel conditions within the parcel, this effect would be diminishable and discountable to the fisheries habitat further downstream.

⁸ Stream types and sizes appearing in Tables 15-24 are defined in Table 6 of the EA, the Comparison of Management Scenarios.

BOTANY	- Natural disturbance will cause stand dynamics to change over time. For example, diseased trees may die and fall, creating new gaps within the stand and changing some of the potential habitat for flora.	- Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.
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Table 16. Environmental Effects to Parcel 2 (64.54 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	- No timber harvested (due to the age of the timber and the Late Successional Reserve allocation).	- Harvest approximately 62.54 acres of timber. Approximately 2 acres would be left as a Riparian Management Area.
RIPARIAN RESERVES & WATER RESOURCES	- No special Riparian Reserve management direction because the land is already withdrawn under the Late Successional Reserve land use allocation.	- Most streams are likely Small Type N streams with no streamside retention. - One fish bearing stream is likely Small Type F stream. - Riparian Management Area of 50 feet on Type F stream. Some harvest may be allowed within this area depending on the basal area of this location. - Harvest of this parcel may result in increased peak flows of up to 20 percent or up to approximately 2 cubic feet per second more during a bankfull event in the fish bearing stream draining this parcel. This stream was assessed for channel stability and was found to have adequate stream structure to dissipate any potential increase in stream energy. Therefore, no impact from increased peak flows would occur.
WILDLIFE	- 64.54 acres of designated Northern spotted owl Critical Habitat and marbled murrelet Critical Habitat retained. - Projects implemented would improve or enhance late-successional wildlife habitats as recommended in the applicable LSR Assessment.	- Loss of suitable nesting, roosting, foraging, and dispersal habitat for the spotted owl would affect one owl home range, losing 60 acres; a second home range would lose 28 acres. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - Loss of 64.54 acres of suitable habitat for marbled murrelet. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future. - <i>May affect, likely to adversely affect</i> spotted owl Critical Habitat and marbled murrelet Critical Habitat through the removal of 64.54 acres of their respective primary constituent elements (those physical and biological features of critical habitat essential to a species'

		<p>conservation).</p> <ul style="list-style-type: none"> - <i>May affect, likely to adversely affect</i> Northern spotted owl marbled murrelet. - Special Status Species would not receive protection on private land.
<p>FISHERIES</p>	<p>-Projects implemented would improve or enhance aquatic habitats as recommended in the applicable LSR Assessment. Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service.</p>	<ul style="list-style-type: none"> - There would be no direct impacts from the harvest of timber along the non-fish bearing streams to fisheries due to the lack of habitat or species present. - The Riparian Management Area along side the fish bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. However, some degree of sedimentation and stream shade loss would be expected. - The impacts to fisheries from the discharge of sediment would be a result of two distinct mechanisms - increased turbidity and increased deposition of coarse sediment. Increases in turbidity can impact salmonids by delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. The impact of sediment would be persistent until the affected riparian has been re-vegetated (approximately 15 years). - Studies in Western Oregon indicate that the majority (>80 percent) of large wood pieces found in stream channels originate from within 30 meters (~100 feet) of the stream channel (Lienkamper and Swanson, 1987). Of this instream large wood, 60-70 percent of the larger, channel-influencing conifers originate from within 15 meters of the stream (McDade et al, 1988). In addition, Thomas et al (1993) found that in-stream large woody material can originate from

		<p>as far as 60 meters (~200 feet) away from the stream channel. Therefore, riparian timber harvest that removes large conifers from within 60 meters of a stream channel would reduce the potential for large wood recruitment into that stream. Over time, this loss of potential large wood recruitment would result in aquatic habitat that is simple in nature, without the complex large wood features (like logjams) that are critical to forming high quality habitat. Without large wood, there would be little retention of spawning gravels, fewer deep pools, higher water velocities, and an overall reduction in the number of fish that could potentially rear there.</p> <ul style="list-style-type: none"> - The reduction in large wood potential would be most pronounced on smaller, non fish-bearing streams that would not receive a protective buffer. On fish bearing streams, implementation of a 50-foot buffer would partially offset the loss of mitigate source input for large woody debris. - Additional management within the Riparian Management Area could remove potential wood recruitment into the stream channel. In addition, loss of shade trees could impact stream temperature. The degree of this impact would depend on the intensity of the management action.
BOTANY	<ul style="list-style-type: none"> - Natural disturbance will cause stand dynamics to change over time. For example, diseased trees may die and fall, creating new gaps within the stand and changing some of the potential habitat for flora. 	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

Table 17. Environmental Effects to Parcel 3 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 11.0 acres of timber harvested (29.0 acres withdrawn) - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - Approximately 37 acres of timber harvested. Approximately 3 acres would be left as a Riparian Management Area.
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 29.0 acres of Riparian Reserve would not be harvested. - Non fish-bearing streams would have a riparian buffer of 200 feet. - Fish-bearing streams would have a riparian buffer 400 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 200 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<ul style="list-style-type: none"> - Most streams are likely Type N streams with no streamside retention. - One fish-bearing stream is likely Small Type F stream. - Type F stream would have a Riparian Management Area of 50 feet. Some harvest may be allowed within this area depending on the basal area of this location. Harvest of this parcel may result in increased peak flows flows of up to 20 percent or up to approximately 3 cubic feet per second more during a bankfull event in the fish bearing stream draining this parcel. This stream was assessed for channel stability and was found to have a wide flood plain with good sinuosity to help dissipate stream energy. Instream structure appears to be adequate to dissipate potential increases in stream energy. Therefore, no impacts from increased flows would occur.
WILDLIFE	<ul style="list-style-type: none"> - 11.0 acres timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Reducing foraging and nesting opportunities makes it more difficult for owls to successfully fledge young. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. 	<ul style="list-style-type: none"> - 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - One owl home range would be impacted with the loss of 40.0 acres of suitable habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - 40.0 acres of suitable marbled murrelet habitat in Marbled Murrelet Inland Management Zone 1 (FEMAT 1993) lost. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future - 40.0 acres of suitable bald eagle habitat lost. - Habitat unlikely to develop into bald eagle habitat in the future.

	<ul style="list-style-type: none"> - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. -Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - <i>May affect, likely to adversely affect</i> the Northern spotted owl, marbled murrelet, and bald eagle. - Special Status Species would not receive protection on private land.
<p>FISHERIES</p>	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e., stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<ul style="list-style-type: none"> - There would be no direct impacts from the harvest of timber along the non-fish bearing streams to fisheries due to the lack of habitat or species present. - The Riparian Management Area along side the fish bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. - However, minor sedimentation and stream shade loss would be expected due to timber harvest activities within the riparian management zone. - The impacts to fisheries from the discharge of sediment would be a result of two distinct mechanisms - increased turbidity and increased deposition of coarse sediment. Increases in turbidity can impact salmonids by delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. The impact of sediment would be persistent until the affected riparian has been re-vegetated (approximately 15 years). - Due to the stable conditions of the stream channel, the impact of sedimentation would expect to be localized. - Studies in Western Oregon indicate that the majority (>80 percent) of large wood pieces found in stream channels originate from within 30 meters (~100 feet) of the stream channel (Lienkamper and

		<p>Swanson, 1987). Of this instream large wood, 60-70 percent of the larger, channel-influencing conifers originate from within 15 meters of the stream (McDade et al, 1988). In addition, Thomas et al (1993) found that in-stream large woody material can originate from as far as 60 meters (~200 feet) away from the stream channel. Therefore, riparian timber harvest that removes large conifers from within 60 meters of a stream channel would reduce the potential for large wood recruitment into that stream. Over time, this loss of potential large wood recruitment would result in aquatic habitat that is simple in nature, without the complex large wood features (like logjams) that are critical to forming high quality habitat. Without large wood, there would be little retention of spawning gravels, fewer deep pools, higher water velocities, and an overall reduction in the number of fish that could potentially rear there.</p> <ul style="list-style-type: none"> - The reduction in large wood potential would be most pronounced on smaller, non fish-bearing streams that would not receive a protective buffer. On fish bearing streams, implementation of a 50-foot buffer would partially offset the loss of mitigate source input for large woody debris. - Additional management within the riparian management area could remove potential wood recruitment into the stream channel. In addition, loss of shade trees could impact stream temperature. The degree of this impact would depend on the intensity of the management action.
BOTANY	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present). 	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present).

Table 18. Environmental Effects to Parcel 4 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 29.0 acres of timber harvested - 12-18 green trees would be retained per acre within regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the unit. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - 40.0 acres of timber harvested
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 11.0 acres of Riparian Reserve would not be harvested. - Non fish-bearing stream would have a riparian buffer of 200 feet. - Fish-bearing stream would have a riparian buffer of 400 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 200 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<ul style="list-style-type: none"> - Non-fish-bearing stream is likely a small Type N stream. - No streamside retention. - Harvest of this parcel could result in an increase in peak flows of up to 20 percent or up to approximately 3 cubic feet per second more during a bankfull event in this stream. This stream was assessed for channel stability and was found to have adequate stream structure to dissipate any potential increase in stream energy. Therefore, no impact from increased peak flows would occur.
WILDLIFE	<ul style="list-style-type: none"> - 29.0 acres of timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. -Reducing foraging and nesting opportunities makes it more difficult for owls to successfully fledge young. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. -Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - One owl home range would be impacted with the loss of 40.0 acres of suitable habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - <i>May affect, likely to adversely affect</i> the Northern spotted owl. - Special Status Species would not receive protection on private land.
FISHERIES	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian 	<ul style="list-style-type: none"> - No direct impacts from the harvest of timber from the proposed parcel to fisheries due to the lack of habitat and/or

	<p>Reserves.</p> <ul style="list-style-type: none"> - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<p>species present.</p> <ul style="list-style-type: none"> - Although the loss of large organic debris from the riparian areas would directly affect the channel conditions within the parcel, this effect would be diminishable and discountable to the fisheries habitat further downstream.
BOTANY	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present). 	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present).

Table 19. Environmental Effects to Parcel 5 (39.06 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 15.06 acres of timber harvested (24 acres withdrawn). - 12-18 green trees would be retained per acre within regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on units. - Part of this parcel was previously offered in a sold unawarded sale. No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - 39.06 acres of timber harvested
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 24.0 acres of Riparian Reserve would not be harvested. - Non-fish-bearing stream would have a riparian buffer 200 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 200 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the 	<ul style="list-style-type: none"> - Likely small Type N streams. - No streamside retention. - Harvest could result in an increase in peak flows of up to 20 percent or up to approximately 2 cubic feet per second more during a bankfull event in one of the tributaries draining this parcel. This tributary is on private land and could not be accessed to assess the stream condition. Hancock Creek, which this stream drains to, was assessed for channel stability and was found to not have adequate structure to dissipate increased stream energy. It is unlikely

	Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality.	the potential increase in flow from the tributary would result in excessive stream energy since a 2 cubic feet per second increase would be well within the natural range of flows for Hancock Creek. Therefore, no impact from increased peak flows would occur.
WILDLIFE	<ul style="list-style-type: none"> - 15.06 acres of timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities and increased predation risk. - Reducing foraging and nesting opportunities makes it more difficult for owls to successfully fledge young. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. -Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - 39.06 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - One owl home range would be impacted with the loss of 39.06 acres of suitable habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - 39.06 acres of suitable marbled murrelet habitat in Marbled Murrelet Inland Management Zone 1 (FEMAT 1993) lost. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future. - 39.06 acres of suitable bald eagle habitat lost. - Habitat unlikely to develop into bald eagle habitat in the future. - <i>May affect, likely to adversely affect</i> the Northern spotted owl, marbled murrelet, and bald eagle. - Special Status Species would not receive protection on private land.
FISHERIES	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<ul style="list-style-type: none"> - The loss of large organic debris from the riparian areas would directly affect the channel conditions within the parcel. Loss of stream side vegetation would increase erosion. The increase in sediment would have a direct impact on fisheries habitat in Hancock Creek. However, this impact would be concurrent with increases in background sediment levels within Hancock Creek during the wet season. The magnitude of this impact would be diluted in Hancock Creek by the stream flow from the upstream drainage area. In addition, the relative magnitude of this impact would be further diminished the further downstream from the confluence of the affected tributary. Due to this diminishing effect, the increase in sedimentation would not be expected to

		<p>impact more than 0.05 mile of Hancock Creek downstream from the project site and would not impact Elk Creek. - The impacts to fisheries from the discharge of sediment into Hancock Creek would be a result of two distinct mechanisms - increased turbidity and increased deposition of coarse sediment. Increases in turbidity can impact salmonids by delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. The impact of sediment would be persistent until the affected riparian has been re-vegetated (approximately 15 years).</p>
BOTANY	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present). 	<ul style="list-style-type: none"> - Botany surveys were conducted on this parcel; neither Kincaid's lupine nor any Special Status Species was found. - No effects to Special Status botanical species (none present).

Table 20. Environmental Effects to Parcel 6 (80.45 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 32.45 acres of timber harvested (48 acres withdrawn). - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - Approximately 77.45 acres of timber harvested. Approximately 3 acres would be left as a Riparian Management Area.
RIPARIAN	<ul style="list-style-type: none"> - 48.0 acres of Riparian Reserve would 	<ul style="list-style-type: none"> - Non fish-bearing streams are likely

<p>RESERVES & WATER RESOURCES</p>	<p>not be harvested.</p> <ul style="list-style-type: none"> - Non fish-bearing stream would have a riparian buffer of 200 feet. - Fish-bearing stream would have a riparian buffer of 400 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 200 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<p>small Type N streams with no streamside retention.</p> <ul style="list-style-type: none"> - Fish-bearing stream is likely a small Type F stream. - Riparian Management Area of 50 feet on each side of the small type F stream. Some harvest may be allowed within this area depending on the basal area of this location. - Harvest of this parcel may result in increased peak flows of up to 20 percent or up to approximately 4 cubic feet per second more during a bankfull event in the fish-bearing stream draining this parcel. This stream was assessed for channel stability and was found to have adequate stream structure to dissipate any potential increase in stream energy. Therefore, no impact from increased peak flows would occur.
<p>WILDLIFE</p>	<ul style="list-style-type: none"> - 32.45 acres timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. - Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - 80.45 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - Three owl home ranges would be impacted with the loss of 80.45 acres of suitable habitat and a fourth home range would lose 7.05 acres. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - 80.45 acres of suitable marbled murrelet habitat in Marbled Murrelet Inland Management Zone 2 (FEMAT 1993) lost. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future. - 80.45 acres of suitable bald eagle habitat lost. Habitat unlikely to develop into bald eagle habitat in the future. - <i>May affect, likely to adversely affect</i>, the Northern spotted owl, marbled murrelet, and bald eagle. - Special Status Species would not receive protection on private land.
<p>FISHERIES</p>	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable 	<ul style="list-style-type: none"> - There would be no direct impacts from the harvest of timber along the non fish-bearing streams to fisheries due to the lack of habitat or species present. - The Riparian Management Area along side the fish bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. However, minor sedimentation and stream shade loss

	<p>buffer widths on all streams and seasonal restrictions to minimize sedimentation.</p> <ul style="list-style-type: none"> - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<p>would be expected.</p> <ul style="list-style-type: none"> - The impacts to fisheries from the discharge of sediment would be a result of two distinct mechanisms - increased turbidity and increased deposition of coarse sediment. Increases in turbidity can impact salmonids by delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. The impact of sediment would be persistent until the affected riparian has been re-vegetated (approximately 15 years). Due to stable conditions of the stream channel, impacts from increased sedimentation would be localized. - Additional management within the Riparian Management Area could remove potential wood recruitment into the stream channel. In addition, loss of shade trees could impact stream temperature. The degree of this impact would depend on the intensity of the management action. - Source for large woody debris (pieces 50 feet long and 24 inches dbh) to the stream channel can be up to one tree height (200 feet) from the stream channel (Thomas et al. 1993). Implementation of the 50-foot riparian management area would partially offset the loss of source input for large woody debris. Loss of recruitment potential for large woody debris to the stream channel would indirectly impact spawning and rearing habitat.
BOTANY	<ul style="list-style-type: none"> - Special Status botanical species would receive protection. 	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

Table 21. Environmental Effects to Parcel 7 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 5.0 acres of timber harvested (35.0 acres withdrawn). - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time, but BLM may consider a thinning in the northeast corner of the parcel in the future. 	<ul style="list-style-type: none"> - Approximately 32 acres of timber harvested. Approximately 8 acres would be left as a Riparian Management Area.
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 35.0 acres of Riparian Reserve would not be harvested. - Non fish-bearing stream would have a riparian buffer of 200 feet. - Fish-bearing stream would have a riparian buffer of 400 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 200 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. - The 303(d) listing of Elk Creek would not change. 	<ul style="list-style-type: none"> - Non fish-bearing streams in Parcel 7 are likely small Type N streams with no streamside retention. - Elk Creek likely a large Type F stream - Riparian management area of 100 feet on each side of Elk Creek. Some harvest may be allowed within this area depending on the basal area of this location. Harvest of this parcel would not result in any peak flow effects at the point of nearest fish. Stream temperature would not be affected because the Riparian Management Area would maintain existing stream shade. - The 303(d) listing of Elk Creek would not change.
WILDLIFE	<ul style="list-style-type: none"> - 5.0 acres timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - No effect to any home range (parcel is not within the home range of any known owl sites). - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - <i>May affect, likely to adversely affect</i> the Northern spotted owl. - Special Status Species would not receive protection on private land.
FISHERIES	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian 	<ul style="list-style-type: none"> - Although the loss of large organic debris and stream shading from the non-fish bearing riparian areas would directly

	<p>Reserves.</p> <ul style="list-style-type: none"> - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<p>affect the channel conditions within the parcel, this effect to the non fish-bearing streams would be diminishable and discountable to fisheries habitat and Essential Fish Habitat further downstream.</p> <ul style="list-style-type: none"> - The Riparian Management Area along side the fish-bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. - Source for large woody debris (pieces 50 feet long and 24 inches diameter at breast height) to the stream channel can be up to one tree height (200 feet) from the stream channel (Thomas et al. 1993). Implementation of the 100 foot riparian management area would only partially offset the loss of source input for large woody debris. Loss of recruitment potential for large woody debris to the stream channel would indirectly impact spawning and rearing habitat.
BOTANY	<ul style="list-style-type: none"> - Special Status botanical species would receive protection 	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

Table 22. Environmental Effects to Parcel 8 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 15.0 acres of timber harvested - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - Approximately 39.8 acres of timber harvested. Approximately 0.2 acres would be left as a Riparian Management Area.
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 25.0 acres of Riparian Reserve would not be harvested. - Non fish-bearing streams would have a riparian buffer of 180 feet. - Fish-bearing streams would have a riparian buffer of 360 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 180 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<ul style="list-style-type: none"> - Non fish-bearing streams are likely small Type N streams with no streamside retention - Fish-bearing stream is likely a small Type F stream - Riparian management area of 50 feet on each side of the stream for the Type F stream. Some harvest may be allowed within this area depending on the basal area of this location. Harvest of this parcel would not result in any peak flow effects at the point of nearest fish.
WILDLIFE	<ul style="list-style-type: none"> - 15.0 acres of timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. -Special habitat features would be retained such as coarse woody debris, 	<ul style="list-style-type: none"> - 22.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - Four owl home ranges would be impacted with the loss of 22.0 acres of suitable habitat and a fifth home range would lose 4 acres. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - 22.0 acres of suitable marbled murrelet habitat in Marbled Murrelet Inland Management Zone 2 (FEMAT 1993) lost. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future. -22.0 acres of suitable bald eagle habitat lost. - Habitat unlikely to develop into bald eagle habitat in the future. - <i>May affect, likely to adversely affect,</i>

	snags, hardwoods, ponds to benefit and protect various Special Status Species.	the Northern spotted owl, marbled murrelet, and the bald eagle. - Special Status Species would not receive protection on private land.
FISHERIES	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<ul style="list-style-type: none"> - There would be no direct impacts from the harvest of timber along the non-fish bearing streams to fisheries due to the lack of habitat or species present. - The riparian management area along side the fish bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. - Additional management within the riparian management area could remove potential wood recruitment into the stream channel. In addition, loss of shade trees could impact stream temperature. The degree of this impact would depend on the intensity of the management action. - Source for large woody debris (pieces 50 feet long and 24 inches diameter at breast height) to the stream channel can be up to one tree height (200 feet) from the stream channel (Thomas et al. 1993). Implementation of the 50 foot riparian management area would partially offset the loss of source input for large woody debris. Loss of recruitment potential for large woody debris to the stream channel would indirectly impact spawning and rearing habitat.
BOTANY	- Special Status botanical species would receive protection	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

Table 23. Environmental Effects to Parcel 9 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 11.0 acres of timber harvested (29.0 acres withdrawn) - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - Approximately 36 acres of timber harvested. Approximately 4 acres would be left as a Riparian Management Area.
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 29.0 acres of Riparian Reserves would not be harvested. - Non fish-bearing streams would have a riparian buffer of 180 feet. - Fish-bearing streams would have a riparian buffer of 360 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report cites a case study in which a one site potential tree buffer (in this case 180 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels (p. V-28). No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<ul style="list-style-type: none"> - Non fish-bearing streams are likely small Type N streams with no streamside retention - Fish-bearing stream is likely a medium type F stream. - Medium Type F stream would receive a riparian management area of 70 feet on each side of the stream. Some harvest may be allowed within this area depending on the basal area of this location. - Harvest of this parcel would not result in any peak flow effects at the point of nearest fish.
WILDLIFE	<ul style="list-style-type: none"> - 11.0 acres timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. - Special habitat features would be retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species. 	<ul style="list-style-type: none"> - 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - One owl home range would be impacted with the loss of 40.0 acres of suitable habitat. - The parcel does not include habitat within the designated core area, however the stand in Parcel 9 is contiguous with a stand included in a Known Owl Activity Center. - 40.0 acres lost (32 percent of 126 acres of suitable nesting, roosting, and foraging habitat) within 0.25 miles of the activity center through the removal of spotted owl suitable nesting, roosting, foraging and dispersal habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. - 40.0 acres of suitable bald eagle habitat

		<p>lost.</p> <ul style="list-style-type: none"> - Habitat unlikely to develop into bald eagle habitat in the future. - <i>May affect, likely to adversely affect</i>, the Northern spotted owl and the bald eagle. - Special Status Species would not receive protection on private land.
<p>FISHERIES</p>	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<ul style="list-style-type: none"> - There would be no direct impacts from the harvest of timber along the non-fish bearing streams to fisheries due to the lack of habitat or species present. - The Riparian Management Area along side the fish bearing stream within the parcel would minimize impacts to sedimentation, large organic debris and stream temperatures. However, minor sedimentation and stream shade loss would be expected from harvest activities within the management area. - The impacts to fisheries from the discharge of sediment would be a result of two distinct mechanisms - increased turbidity and increased deposition of coarse sediment. Increases in turbidity can impact salmonids by delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats. Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in coarse sediment deposits on the stream bed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of coarse sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. The impact of sediment would be persistent until the affected riparian has been re-vegetated (approximately 15 years). Sedimentation within the stream channel would be expected to be localized to the area of impact. - Additional management within the Riparian Management Area could remove potential wood recruitment into the stream channel. In addition, loss of shade trees could impact stream temperature. The degree of this impact

		<p>would depend on the intensity of the management action.</p> <ul style="list-style-type: none"> - Source for large woody debris (pieces 50 feet long and 24 inches diameter at breast height) to the stream channel can be up to one tree height (200 feet) from the stream channel (Thomas et al. 1993). Implementation of the 50 foot riparian management area would partially offset the loss of source input for large woody debris. Loss of recruitment potential for large woody debris to the stream channel would indirectly impact spawning and rearing habitat.
BOTANY	<ul style="list-style-type: none"> - Special Status botanical species would receive protection 	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

Table 24. Environmental Effects to Parcel 10 (40 acres).

RESOURCE	POTENTIAL EFFECTS OF THE NO ACTION ALTERNATIVE (CONTINUED MANAGEMENT UNDER THE ROSEBURG RMP)	POTENTIAL EFFECTS OF THE PROPOSED ACTION (MANAGEMENT UNDER THE OREGON FOREST PRACTICES ACT)
TIMBER	<ul style="list-style-type: none"> - 34.0 acres of timber harvested (6 acres withdrawn). - 6-8 green trees would be retained per acre on regeneration harvest units. - 120 linear feet of logs per acre \geq 16 inches in diameter and 16 feet long would be left on the units. - No BLM sale plans exist at this time. 	<ul style="list-style-type: none"> - 40.0 acres of timber harvested
RIPARIAN RESERVES & WATER RESOURCES	<ul style="list-style-type: none"> - 6.0 acres of Riparian Reserve would not be harvested. - Non fish-bearing streams would have a riparian buffer of 180 feet. - Fish-bearing streams would have a riparian buffer of 360 feet. - BLM timber harvest would not result in any peak flow effects. The Forest Ecosystem Management Assessment Team (FEMAT) report (p. V-28) cites a case study in which a one site potential tree buffer (in this case 180 feet) was deemed adequate to prevent harvest-related sediment increases in stream channels. No increase in stream temperature would be expected since the Riparian Reserve would remain intact and existing stream shade would be maintained. Therefore, BLM management would not result in an incremental change to water quality. 	<ul style="list-style-type: none"> - Non-fish bearing stream likely small Type N stream. - No streamside retention. - Harvest of this parcel would not result in any peak flow effects at the point of nearest fish.
WILDLIFE	<ul style="list-style-type: none"> - 34.0 acres timber harvested, removing habitat elements such as large-diameter trees with nesting cavities or platforms, multiple canopy layers, and hunting perches. - Removal of these elements would subject spotted owls to reduced nesting, roosting, foraging and dispersal opportunities. - Removal of individual trees with potential nesting platforms would reduce nesting habitat for marbled murrelets. - Harvest will remove habitat elements necessary for nesting bald eagles, specifically large-diameter trees with platform structures and multiple canopy layers. - Once these elements are removed, bald eagles would be subjected to reduced nesting and roosting opportunities. - Special habitat features would be 	<ul style="list-style-type: none"> 40.0 acres of suitable Northern spotted owl nesting, roosting, foraging, and dispersal habitat lost. - Two owl home ranges would be impacted with the loss of 40.0 acres of suitable habitat. - Habitat unlikely to develop beyond dispersal spotted owl habitat in the future. 40.0 acres of suitable marbled murrelet habitat in Marbled Murrelet Inland Management Zone 2 (FEMAT 1993) lost. - Habitat unlikely to develop into marbled murrelet nesting habitat in the future. - 40.0 acres of suitable bald eagle habitat lost. - Habitat unlikely to develop into bald eagle habitat in the future. - <i>May affect, likely to adversely affect,</i>

	retained such as coarse woody debris, snags, hardwoods, ponds to benefit and protect various Special Status Species.	the Northern spotted owl, marbled murrelet, and the bald eagle. - Special Status Species would not receive protection on private land.
FISHERIES	<ul style="list-style-type: none"> - There would be no adverse impacts to fisheries during regeneration harvest due to the implementation of the Riparian Reserves. - There would be no adverse impacts associated to density management actions within the Riparian Reserves due to implementation of the RMP's best management practices and site specific project design features such as variable buffer widths on all streams and seasonal restrictions to minimize sedimentation. - Any restorative activities that may cause adverse impacts to Essential Fish Habitat (i.e. stream culvert replacements and In stream placements) would be consulted on by National Marine Fisheries Service. 	<ul style="list-style-type: none"> - No direct impacts from the harvest of timber from the proposed parcel to fisheries due to the lack of habitat and/or species present. - Although the loss of large organic debris from the riparian areas would directly affect the channel conditions within the parcel, this effect would be diminishable and discountable to the fisheries habitat further downstream
BOTANY	- Special Status botanical species would receive protection	<ul style="list-style-type: none"> - Botanical species would be affected by timber harvest and associated activities. See Table 11 for a summary of effects. - Special Status Species would not receive protection on private land.

D. CUMULATIVE EFFECTS

Cumulative effects are the environmental effects of the action when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes these actions (40 CFR 1508.7). The effects of past actions are not specifically identified; the description of the current environment inherently includes the effects of the past actions.

An analysis of the cumulative effects of the proposed action is presented for those resources likely to be affected by the action. Cumulative effects were analyzed by fifth-field watershed, as this scale allows for consideration of effects in the larger context of BLM management.

Upper Smith River: Parcels 1, 2, 3

There are approximately 95,540 acres within the watershed, of which approximately 56,570 acres (59 percent) are in federal ownership. Of total federal acres, approximately 41,720 acres (74 percent), including 16,570 acres of Riparian Reserves, are located in the Federal Reserve System. Selection of Parcels 1, 2, and/or 3 could result in up to approximately 145 acres transferring out of BLM management.

WILDLIFE

Currently, approximately 44 percent (11,332 acres) of federal lands within the watershed on District are in mature or old-growth forests. State and private lands within this watershed, support marginal habitats for the bald eagle, northern spotted owl, marbled murrelet and late-seral dependent Special Status Species and do not notably contribute to the viability of these species given the management objectives for those lands. The State and private lands in the watershed do, however, provide some dispersal habitat for spotted owls, as well as other wildlife species, and may be used as connectivity between blocks of late-seral habitat contained within the federal reserves. Suitable habitat conditions for these late-successional dependent species are not expected to improve substantially on nonfederal lands within the foreseeable future. Within the watershed, private and state lands comprise approximately 38,970 acres (41 percent).

There are approximately 14 spotted owl Master Sites within the watershed, which includes 39 known activity centers. Cumulative effects to spotted owls are an ongoing concern and would likely continue in the future within the project area and the State of Oregon. Oregon Forest Practices Rules require protection of a 70-acre core area around active nest sites; the rules do not provide any protection or conservation of other surrounding habitat. For a species that requires up to several thousand acres of habitat to persist, these rules allow for the progressive elimination of active spotted owl sites (USDI FWS 2005). Continuous removal of suitable habitat around 70-acre cores would eventually render the core nest areas non-functional and displacement of spotted owls is the likely outcome (USDI FWS 2005).

There are no known marbled murrelet sites within this watershed. Cumulative effects to murrelets are an ongoing concern and would likely continue in the future within the action area and the State of Oregon. To date, the Oregon Forest Practices Rules have not adopted any regulations that specifically provide protection to murrelets.

Currently, there is no known bald eagle nest located within this watershed. There are protections in the Oregon Forest Practice Rules to protect eagle nests, perches, and roost sites, both from timber harvest and disturbance during the breeding season. Because of these State-required protections, it is unlikely that any currently occupied sites would be lost on non-Federal lands in the short term.

BOTANY

The Upper Smith River parcels have more of a marine influence and are more likely to support those species that require higher humidity and lower temperatures. This drainage

has western hemlock and western red cedar as major components, an indication of the higher humidity and lower temperature.

Throughout the range of Kincaid's lupine, habitat is rapidly disappearing due to development activities, forestry practices, grazing, and roadside maintenance. Weeds and fragmentation are degrading populations throughout its range. The District's Special Status Species face many of the same threats as Kincaid's lupine, such as habitat loss and degradation due to factors like development and weed introduction. Some of these species are dependant on mature trees for habitat; rotation ages of less than 80 years, as practiced on lands managed for timber production, reduces the opportunity for habitat to develop for botanical species associated with late successional forest habitat. Aerial application of herbicides following timber harvest reduces the opportunity for botanical species to survive over the long term.

On State lands, Kincaid's lupine and other threatened and endangered species are protected; the State employs measures to reduce impacts to such species. There are no requirements for private landowners to protect or preserve federally listed or state listed botanical species.

WATER RESOURCES & FISHERIES

BLM lands in the Upper Smith River Fifth-Field Watershed are managed as a Tier 1 Key Watershed which contribute directly to conservation of at-risk anadromous salmonids and have a high potential of being restored as part of a watershed restoration program. Transfer of these parcels would result in the loss of approximately 105 acres of Late Successional Reserve and approximately 29 acres of Riparian Reserve from BLM management (less than 0.005 percent of Riparian Reserves within this watershed). The impact to water resources and fisheries habitat from the loss of riparian habitat along the stream channels would be limited to the proposed project area and would not be discernible at the fifth-field watershed scale. The proposed project would not have any discernible impact on the ability of the agencies to achieve the goals of the Aquatic Conservation Strategy.

Loss of these parcels would eliminate federal restoration opportunities in these areas of the watershed.

Elk Creek/Umpqua River: Parcels 4, 5, 6, 7

There are approximately 187,000 acres within the watershed, of which approximately 42,580 acres (23 percent) are in federal ownership. Of total federal acres, approximately 30,453 acres (72 percent), including 12,330 acres of Riparian Reserves, are located in the Federal Reserve System. Selection of Parcels 4, 5, 6 and/or 7 could result in up to approximately 199.51 acres transferring out of BLM management. Currently, the Bell Mountain Commercial Thinning is proposed near Parcel 5. The proposed action is to thin 151 acres. The pre-decisional EA (#OR-104-06-09) and pre-decisional Finding of No Significant Impact (FONSI) were recently released for public comment; no decision has

been made on the proposed action. The Bell Mountain commercial thinning of 151 acres is not anticipated to have any significant effects to the human environment. In sum, the Bell Mountain project and the transfer of all parcels within the Elk Creek watershed could affect 350.51 acres or .18 percent of the total watershed. At this scale, no cumulative effect would be discernible.

WILDLIFE

Currently, approximately 40 percent (16,805 acres) of federal lands within the watershed are in mature or old-growth forests. State and private lands within this watershed, support marginal habitats for the bald eagle, northern spotted owl, marbled murrelet and late-seral dependent Special Status Species and do not notably contribute to the viability of these species given the management objectives for those lands. The State and private lands in the watershed do, however, provide some dispersal habitat for spotted owls, as well as other wildlife species, and may be used as connectivity between blocks of late-seral habitat contained within the federal reserves. Suitable habitat conditions for these late-successional dependent species are not expected to improve substantially on nonfederal lands within the foreseeable future. Within the watershed, private and state lands comprise approximately 144,420 acres (77 percent).

There are approximately 34 spotted owl Master Sites within the watershed, which includes 82 known activity centers. Cumulative effects to spotted owls are an ongoing concern and would likely continue in the future within the project area and the State of Oregon. Oregon Forest Practices Rules require protection of a 70-acre core area around active nest sites; the rules do not provide any protection or conservation of other surrounding habitat. For a species that requires up to several thousand acres of habitat to persist, these rules allow for the progressive elimination of active spotted owl sites (USDI FWS 2005). Continuous removal of suitable habitat around 70-acre cores would eventually render the core nest areas non-functional and displacement of spotted owls is the likely outcome (USDI FWS 2005).

There are two known marbled murrelets sites on federal lands within the watershed; there are four additional sites where murrelets have been detected, but nesting behavior has not been observed. There are no known murrelet sites on private lands within this watershed. Cumulative effects to marbled murrelets are an ongoing concern and would likely continue in the future within the action area and the State of Oregon. To date, the Oregon Forest Practice Rules have not adopted any regulations that specifically provide protection to murrelets

There are no known bald eagle nest sites within the watershed; however, based on observation data, it is believed there is at least one nesting pair near Elk Creek. Available bald eagle habitat on non-Federal lands could potentially be harvested within the next several years. In addition, there are protections in the Oregon Forest Practice Rules to protect eagle nests, perches, and roost sites, both from timber harvest and disturbance during the breeding season. Because of these State-required protections, it is unlikely that any currently occupied sites would be lost on non-Federal lands in the short term.

BOTANY

The Elk Creek/Umpqua River parcels contain a wide variety of habitats. Some of the parcels have large south facing rock outcrops, while others contain cool north facing well forested slopes. As such, any of the species listed in Table 14 may be present in these parcels.

Throughout the range of Kincaid's lupine, habitat is rapidly disappearing due to development activities, forestry practices, grazing, and roadside maintenance. Weeds and fragmentation are degrading populations throughout its range. The District's Special Status Species face many of the same threats as Kincaid's lupine, such as habitat loss and degradation due to factors like development and weed introduction. Some of these species are dependant on mature trees for habitat; rotation ages of less than 80 years, as practiced on lands managed for timber production, reduces the opportunity for habitat to develop for botanical species associated with late successional forest habitat. Aerial application of herbicides following timber harvest reduces the opportunity for botanical species to survive over the long term.

On State land, Kincaid's lupine and other threatened and endangered species are protected; the State employs measures to reduce impacts to such species. There are no requirements for private landowners to protect or preserve federally listed or State listed botanical species.

WATER RESOURCES & FISHERIES

Transfer of Parcels 4, 5, 6 and/or 7 would result in a potential loss of up to 118 acres of Riparian Reserves (less than 0.01 percent of Riparian Reserves from this watershed). The impact to water resources and fisheries habitat from the loss of riparian habitat along the stream channels would be limited to the proposed project area and would not be discernible at the fifth-field watershed scale. (Impacts within Parcels 4 and 6 would be limited to the proposed project areas, and impacts associated to Parcels 5 and 7 would be limited to within 0.5 mile downstream from the proposed project sites). The proposed project would not have any discernible impact on the ability of the agencies to achieve the goals of the Aquatic Conservation Strategy.

Loss of these parcels would eliminate federal restoration opportunities in these areas of the watershed.

Lower North Umpqua River: Parcel 9

There are approximately 106,200 acres within the watershed, of which approximately 12,330 acres (12 percent) are in federal ownership. Of total federal acres, approximately 8,490 acres (8 percent), including 2,295 acres of Riparian Reserves, are located in the Federal Reserve System. Selection of Parcel 9 could result in approximately 40 acres transferring out of BLM management. The Green Thunder Regeneration Harvest and Commercial Thinning addendum (EA #OR-104-06-02, revising #OR-104-99-04) decision was protested and appealed to the Interior Board of Land Appeals (IBLA). Concurrently, the United States Ninth Circuit Court of Appeals issued a ruling in

Klamath Siskiyou Wildlands Center v. Boody, No. 06-35214. The remedy of this ruling, to be issued by the District Court, may affect the Green Thunder appeal. As such, BLM's motion to IBLA for a temporary stay of proceedings on the Green Thunder appeal was granted. BLM will state its position regarding further proceedings in the Green Thunder appeal within ten days of issuance of the remedy in the Klamath-Siskiyou Wildlands Center v. Boody case. BLM does not know when the remedy will be issued, and consequently does not know when the Green Thunder appeal process will resume.

WILDLIFE

Currently, approximately 51 percent (6,190 acres) of federal lands within the watershed are in mature or old-growth forests. State and private lands within this watershed, support marginal habitats for the bald eagle, northern spotted owl, marbled murrelet and late-seral dependent Special Status Species and do not notably contribute to the viability of these species given the management objectives for those lands. The State and private lands in the watershed do, however, provide some dispersal habitat for spotted owls, as well as other wildlife species, and may be used as connectivity between blocks of late-seral habitat contained within the federal reserves. Suitable habitat conditions for these late-successional dependent species are not expected to improve substantially on nonfederal lands within the foreseeable future. Within the watershed, private and state lands comprise approximately 93,870 acres (88 percent).

There are approximately 5 spotted owl Master Sites within the watershed, which includes 6 known activity centers. Cumulative effects to spotted owls are an ongoing concern and would likely continue in the future within the project area and the State of Oregon. Oregon Forest Practices Rules require protection of a 70-acre core area around active nest sites; the rules do not provide any protection or conservation of other surrounding habitat. For a species that requires up to several thousand acres of habitat to persist, these rules allow for the progressive elimination of active spotted owl sites (USDI FWS 2005). Continuous removal of suitable habitat around 70-acre cores would eventually render the core nest areas non-functional and displacement of spotted owls is the likely outcome (USDI FWS 2005).

There is one known bald eagle nest sites within the watershed and is located on federal lands. Available bald eagle habitat on non-Federal lands could potentially be harvested within the next several years, however, 82 percent of all suitable habitat for bald eagles within the watershed are on federal lands and this habitat is expected to persist and increase in LSRs over time. In addition, there are protections in the Oregon Forest Practice Rules to protect eagle nests, perches, and roost sites, both from timber harvest and disturbance during the breeding season. Because of these State-required protections, it is unlikely that any currently occupied sites would be lost on non-Federal lands in the short term.

BOTANY

Throughout the range of Kincaid's lupine, habitat is rapidly disappearing due to development activities, forestry practices, grazing, and roadside maintenance. Weeds and fragmentation are degrading populations throughout its range. The District's Special Status Species face many of the same threats as Kincaid's lupine, such as habitat loss and degradation due to factors like development and weed introduction. Some of these species are dependant on mature trees for habitat; rotation ages of less than 80 years, as practiced on lands managed for timber production, reduces the opportunity for habitat to develop for botanical species associated with late successional forest habitat. Aerial application of herbicides following timber harvest reduces the opportunity for botanical species to survive over the long term.

On State lands, Kincaid's lupine and other threatened and endangered species are protected; the State employs measures to reduce impacts to such species. There are no requirements for private landowners to protect or preserve federally listed or State listed botanical species.

WATER RESOURCES & FISHERIES

Transfer of Parcel 9 would result in the loss of approximately 29 acres of Riparian Reserve from federal management (approximately 0.01 percent of the Riparian Reserves within this watershed). The impact to water resources and fisheries habitat from the loss of riparian habitat along the stream channels would be limited to the proposed project area and would not be discernible at the fifth-field watershed scale. The proposed project would not have any discernible impact on the ability of the agencies to achieve the goals of the Aquatic Conservation Strategy.

Loss of this parcel would eliminate federal restoration opportunities in this area of the watershed.

Upper Umpqua River: Parcels 8, 10

There are approximately 169,700 acres within the watershed, of which approximately 58,730 acres (35 percent) are in federal ownership. Of total federal acres, approximately 50,950 acres (87 percent), including 5,780 acres of Riparian Reserves, are located in the Federal Reserve System. Selection of Parcel 8 and/or 10 could result in up to approximately 80 acres transferring out of BLM management. In 2003, BLM signed a decision on the Upper Umpqua Watershed Plan (EA #OR-104-02-09). This Plan analyzed the effects of multiple projects within the Upper Umpqua Watershed, including approximately 8000 acres of density management and commercial thinning. Individual project decisions are being made from this EA; several timber management activities have taken place since 2003. Currently, the Bare Cupboard project proposes approximately 223 acres of commercial thinning and density management, analyzed under the Upper Umpqua Watershed Plan. The proposed action is not anticipated to have significant effects to the human environment; the Upper Umpqua Watershed Plan was found to have no significant impact to the human environment. No decision has been

made on this proposal, but a decision is expected in February or March, 2007. In sum, the 223 acre Bare Cupboard project and the transfer of these parcels would affect 303 acres. This is .17 percent of the Upper Umpqua Watershed. At this scale, no cumulative effects of the actions would be discernible.

WILDLIFE

Currently, approximately 56 percent (29,334 acres) of federal lands within the watershed are in mature or old-growth forests. State and private lands within this watershed support marginal habitats for the bald eagle, northern spotted owl, marbled murrelet and late-seral dependent Special Status Species and do not notably contribute to the viability of these species given the management objectives for those lands. Portions of these lands also do not provide any habitat. These lands however, support some dispersal habitat for spotted owls and may be used as connectivity between blocks of late-seral habitat contained within the federal reserves. Habitat conditions on these lands are not expected to improve substantially within the foreseeable future. Within the watershed, private and state lands comprise approximately 110,970 acres (65 percent).

There are approximately 51 spotted owl Master Sites within the watershed, which includes 139 known activity centers. Cumulative effects to spotted owls are an ongoing concern and would likely continue in the future within the project area and the State of Oregon. Oregon Forest Practices Rules require protection of a 70-acre core area around active nest sites; the rules do not provide any protection or conservation of other surrounding habitat. For a species that requires up to several thousand acres of habitat to persist, these rules allow for the progressive elimination of active spotted owl sites (USDI FWS 2005). Continuous removal of suitable habitat around 70-acre cores would eventually render the core nest areas non-functional and displacement of spotted owls is the likely outcome (USDI FWS 2005).

There are six known marbled murrelets sites on federal lands within the watershed; there are five additional sites where murrelets have been detected, but nesting behavior has not been observed. There are no known murrelet sites on private lands within this watershed. Cumulative effects to murrelets are an ongoing concern and would likely continue in the future within the action area and the State of Oregon. To date, the Oregon Forest Practice Rules have not adopted any regulations that specifically provide protection to murrelets.

There are nine known bald eagle nest sites within the watershed, of which eight are located on federal lands. Available bald eagle habitat on non-Federal lands could potentially be harvested within the next several years, however, 85 percent of all suitable habitat for bald eagles within the watershed are on federal lands and this habitat is expected to persist and increase in LSRs over time. In addition, there are protections in the Oregon Forest Practice Rules to protect eagle nests, perches, and roost sites, both from timber harvest and disturbance during the breeding season. Because of these State-required protections, it is unlikely that any currently occupied sites would be lost on non-Federal lands in the short term.

BOTANY

These parcels are along the valley fringes and could contain remnant valley openings; these are impossible to determine from aerial photos or the other information that the BLM collects on these stands. Some of the botanical species requiring cooler temperatures and higher humidity may not occur here.

Throughout the range of Kincaid's lupine, habitat is rapidly disappearing due to development activities, forestry practices, grazing, and roadside maintenance. Weeds and fragmentation are degrading populations throughout its range. The District's Special Status Species face many of the same threats as Kincaid's lupine, such as habitat loss and degradation due to factors like development and weed introduction. Some of these species are dependant on mature trees for habitat; rotation ages of less than 80 years, as practiced on lands managed for timber production, reduces the opportunity for habitat to develop for botanical species associated with late successional forest habitat. Aerial application of herbicides following timber harvest reduces the opportunity for botanical species to survive over the long term.

On State lands, Kincaid's lupine and other threatened and endangered species are protected; the State employs measures to reduce impacts to such species. There are no requirements for private landowners to protect or preserve federally listed or State listed botanical species.

WATER RESOURCES & FISHERIES

Transfer of Parcels 8 and/or 10 would result in the total loss of up to approximately 31 acres of Riparian Reserve (0.005 percent of the Riparian Reserves within this watershed). The impact to water resources and fisheries habitat from the loss of riparian habitat along the stream channels would be limited to the proposed project area and would not be discernible at the fifth-field watershed scale. The proposed project would not have any discernible impact on the ability of the agencies to achieve the goals of the Aquatic Conservation Strategy.

Loss of these parcels would eliminate federal restoration opportunities in these areas of the watershed.

Chapter 5. CONSULTATION AND COORDINATION

A. FEDERAL AGENCIES

U.S. Fish and Wildlife Service

B. STATE AND LOCAL AGENCIES

The BLM worked closely with these agencies in preparation of this EA:

Oregon Department of State Lands

Oregon Department of Forestry

The following State agencies were notified and their comments requested:

Oregon Department of Environmental Quality

Oregon Department of Fish & Wildlife

Oregon Department of Geology and Mineral Industries

Oregon Department of Land Conservation & Development

Oregon State Parks Division

Oregon Water Resources Department

The following local government agencies were also notified and their comments requested:

Douglas County Board of Commissioners

Douglas County Planning Division

C. PUBLIC CONTACT AND NOTIFICATION

The BLM announced the proposed classification of public lands for state indemnity selection through a legal notice in local newspapers in the Roseburg area on September 12 and 19 of 2006 and provided the public with a 30-day comment period. Comments were received and considered. Following completion of the environmental review, a notice announcing the availability of this environmental assessment and initial classification decision was published in the local newspapers in the Roseburg area on February 6, and a 30-day public comment period provided. Timely and substantive comments will be considered and responded to before the final decision. Upon completion of the Finding of No Significant Impact, a Final Classification Decision will be published under the procedures specified in 43 CFR Part 2400, proposing to classify selected parcels as suitable for transfer to the State of Oregon.

D. LIST OF PREPARERS

The following BLM resource specialists have examined the proposed action and provided either written or verbal input utilized in this assessment:

Participant	Title Resource	Value
Charlene Rainville	Lead Realty Specialist Project Coordinator	Access
Bill O'Sullivan	Management Representative	
Meagan Conry	Natural Resource Specialist Writer-Editor	Planning and NEPA
A.C. Clough	Fishery Biologist	Fisheries
Melanie Roan	Wildlife Biologist	Wildlife
Elizabeth Gayner	Wildlife Biologist	Wildlife
Julie Knurowski	Botanist	Botany
Eric Heenan	Geologist	Minerals
Isaac Barner	Archeologist	Cultural Resources
Dan Dammann	Hydrologist	Water Resources
Diann Rasmussen	Realty Specialist	Hazardous Materials
Fred Larew	Hazardous Materials Spec.	Hazardous Materials
Jim Harvey	Natural Resource Specialist	Hazardous Materials
Tim Votaw	Hazardous Materials Coordinator	Hazardous Materials
Robert Gilster	Roads Right of Way Specialist	Access
Chuck White	Roads Right of Way Specialist	Access

Chapter 6. ATTACHMENTS

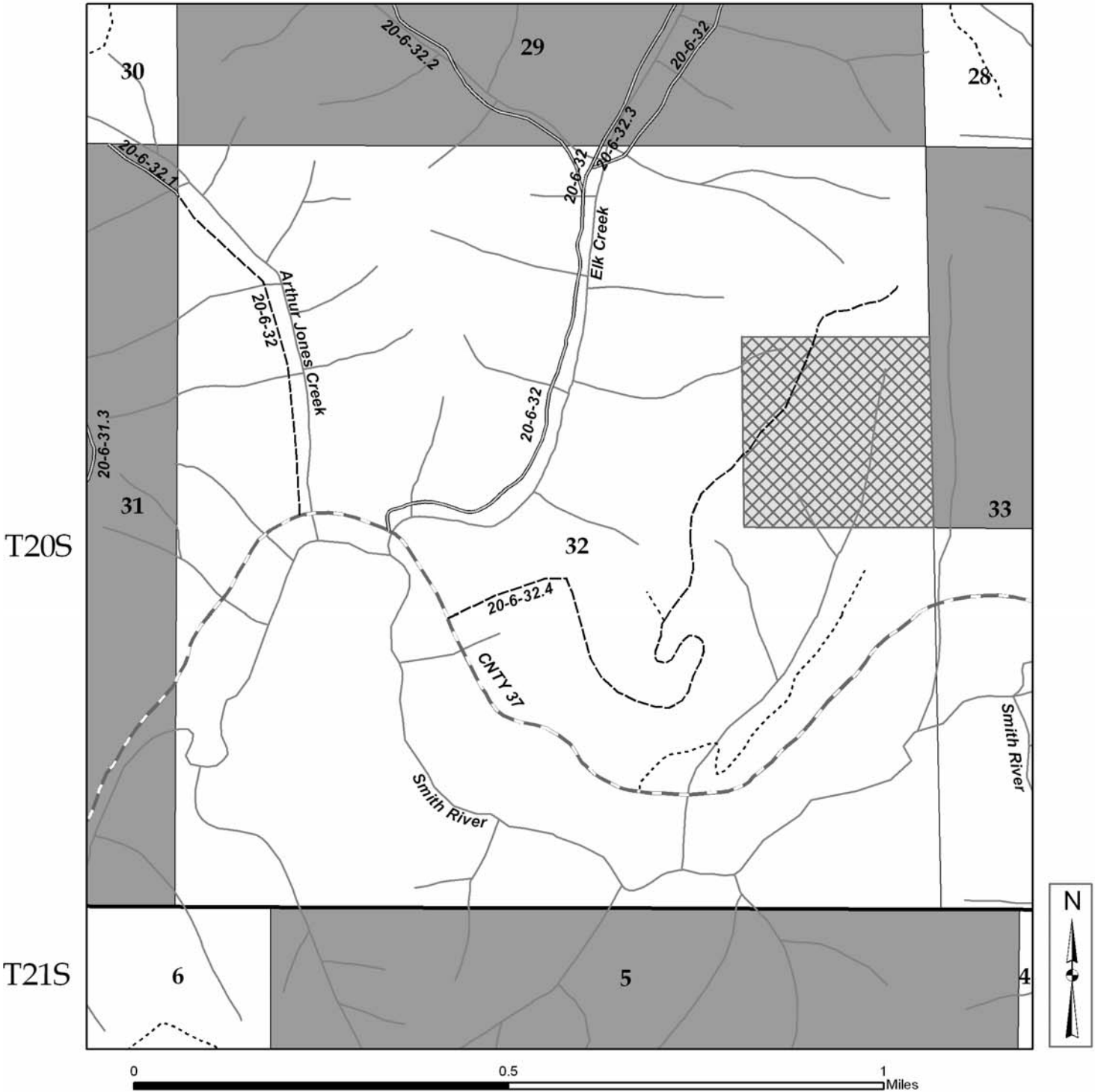
APPENDIX A. MAPS

BLM In-Lieu Selection Parcel 1

July 11, 2006

T20S R6W Sec 32, SE1/4 NE1/4

R6W



Late Successional Reserve
Critical Habitat Unit
Land Tenure Zone 2



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Roseburg District Office
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Roseburg, OR 97470

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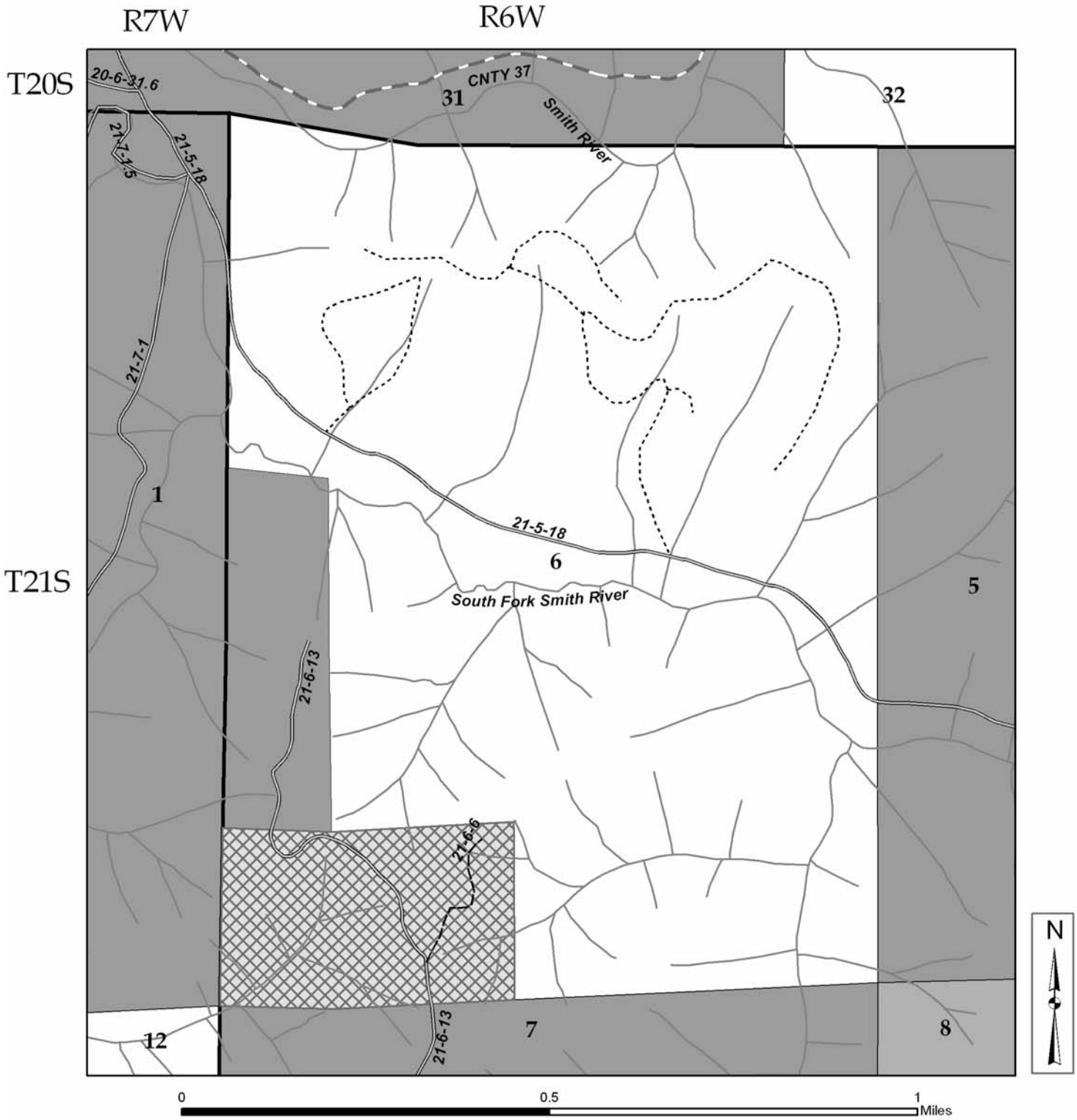
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	O&C Land
	Public Domain Land
	Private Land
	Stream
	Roads
	County
	Bureau of Land Management
	Private
	Not Known



BLM In-Lieu Selection Parcel 2

T21S R6W Sec 6, Government Lot 7 and SE1/4 SW1/4

July 11, 2006



Late Successional Reserve
Critical Habitat Unit
Land Tenure Zone 2



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Legend	
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	Public Domain Land
	Private Land
	Stream
	Roads
	County
	Bureau of Land Management
	Private
	Not Known



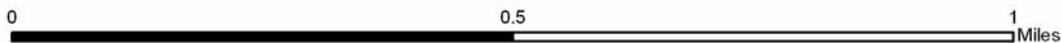
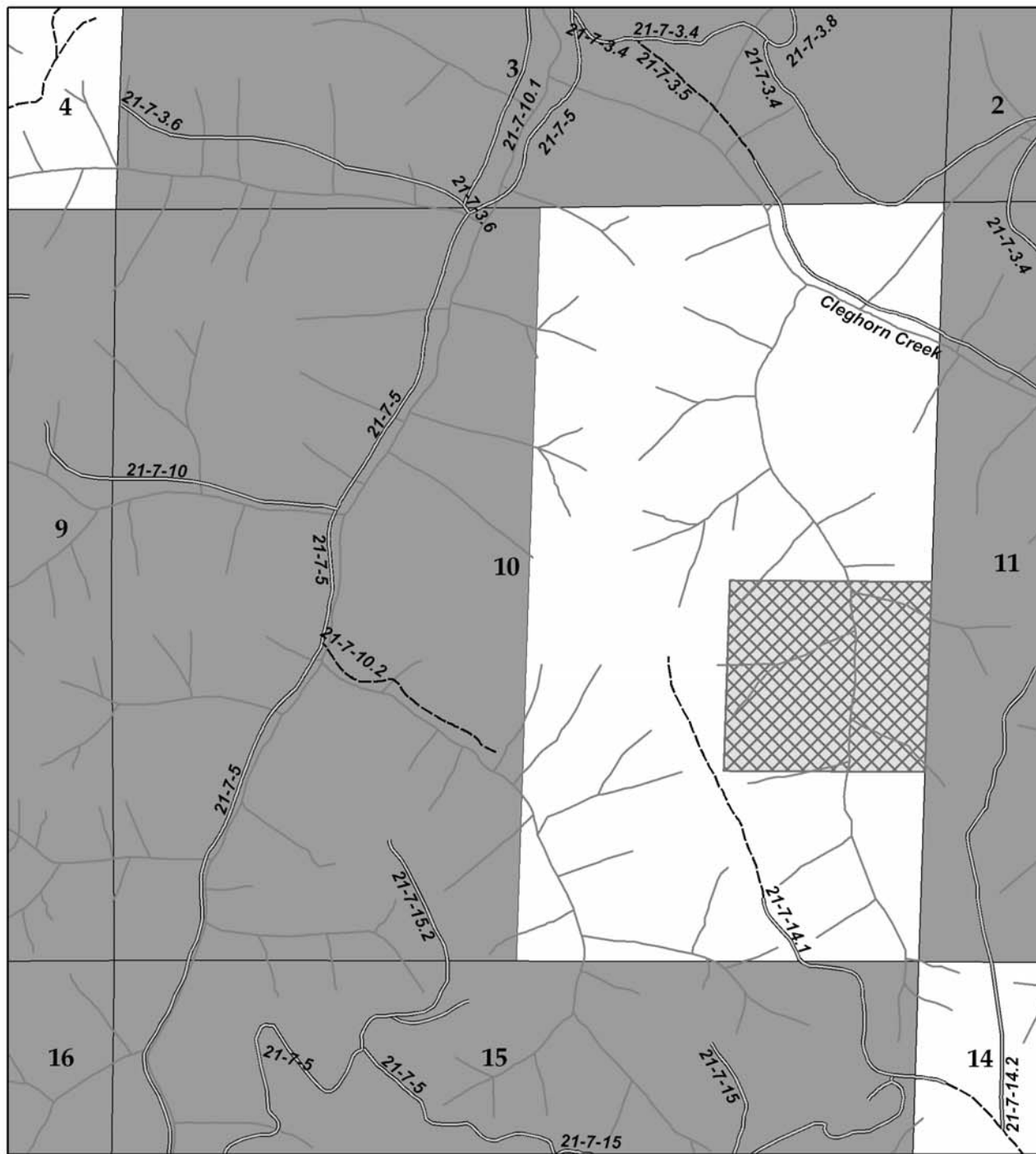
BLM In-Lieu Selection Parcel 3

T21S R7W Sec 10, NE1/4 SE1/4

July 11, 2006

R7W

T21S



Matrix / Riparian Reserve
Land Tenure Zone 2



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Legend	
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	Private Land
	Stream
	Roads
	County
	Bureau of Land Management
	Private
	Not Known



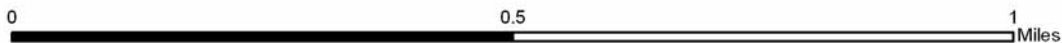
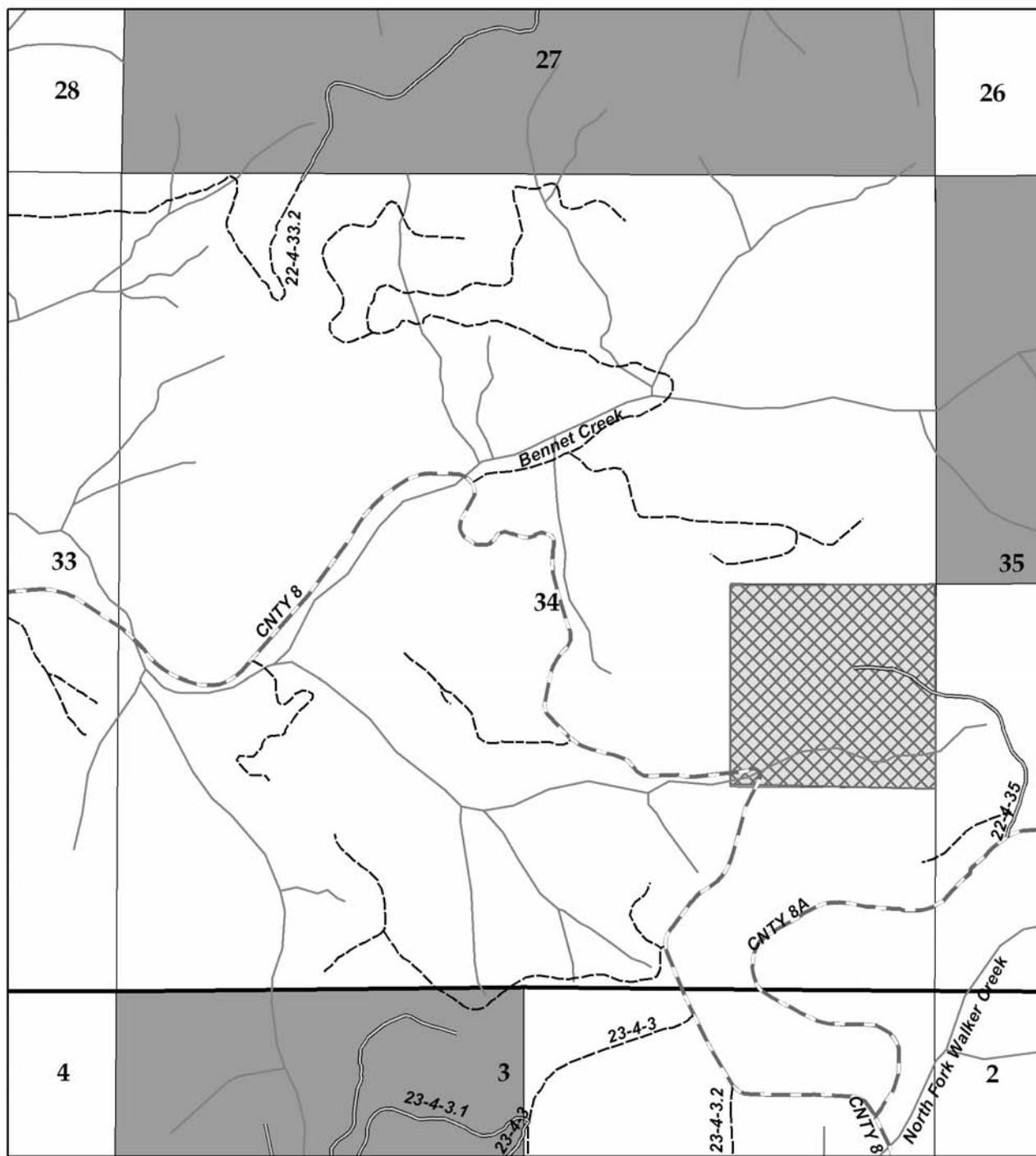
BLM In-Lieu Selection Parcel 4

T22S R4W Sec 34, NE1/4 SE1/4

July 11, 2006

R4W

T22S



Matrix / Riparian Reserve Land Tenure Zone 2



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Legend	
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	Public Domain Land
	Private Land
	Stream
	Roads
	County
	Bureau of Land Management
	Private
	Not Known

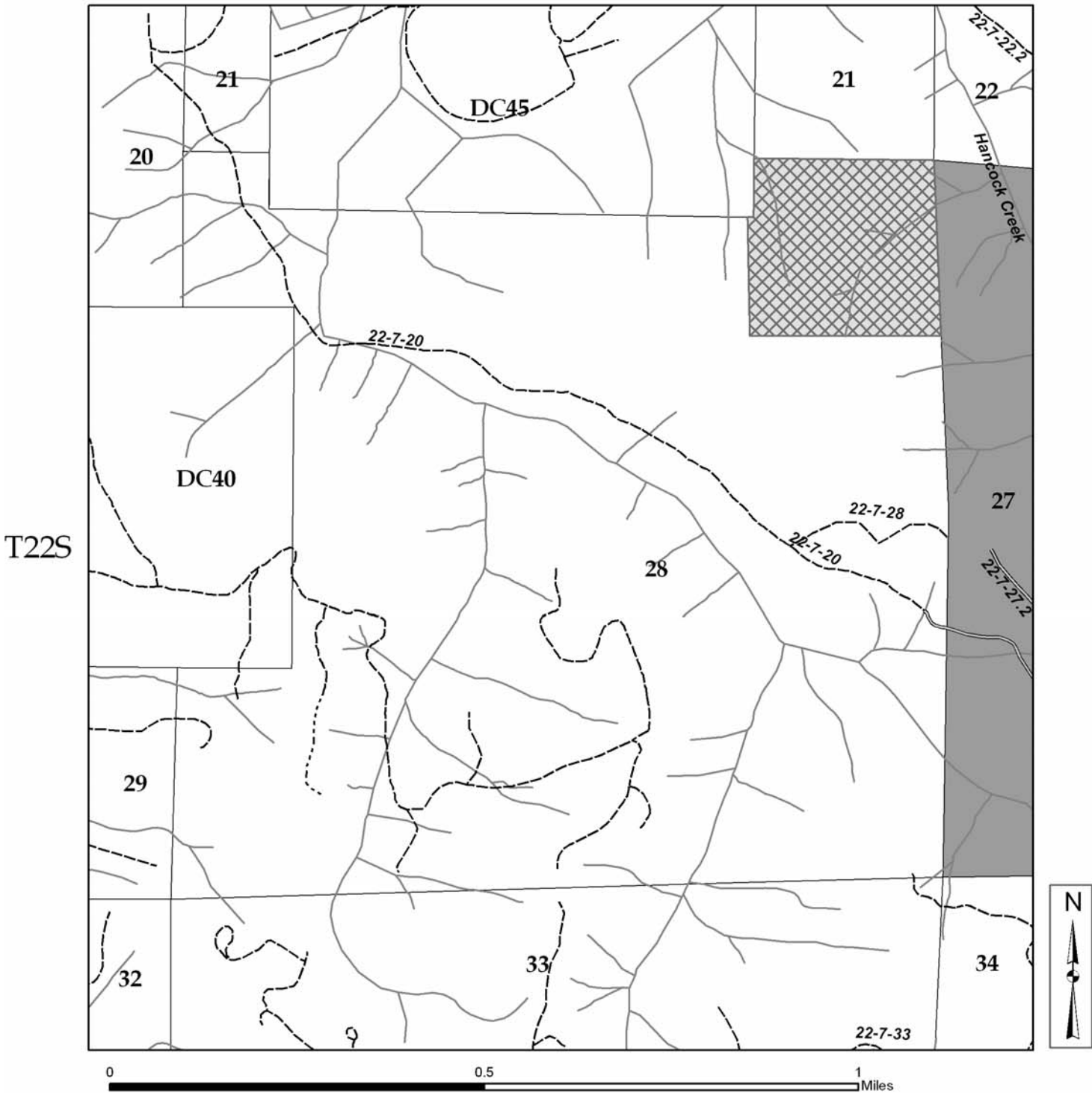


BLM In-Lieu Selection Parcel 5

T22S R7W Sec 28, Government Lot 1

July 11, 2006

R7W



Matrix /Connectivity Land Tenure Zone 2



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- | Legend | |
|--------|---------------------------|
| | In-Lieu Parcel |
| | O&C Land |
| | Public Domain Land |
| | Private Land |
| | Stream |
| | Roads |
| | County |
| | Bureau of Land Management |
| | Private |
| | Not Known |



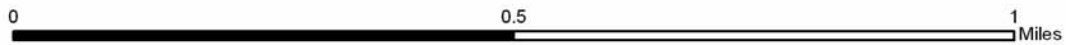
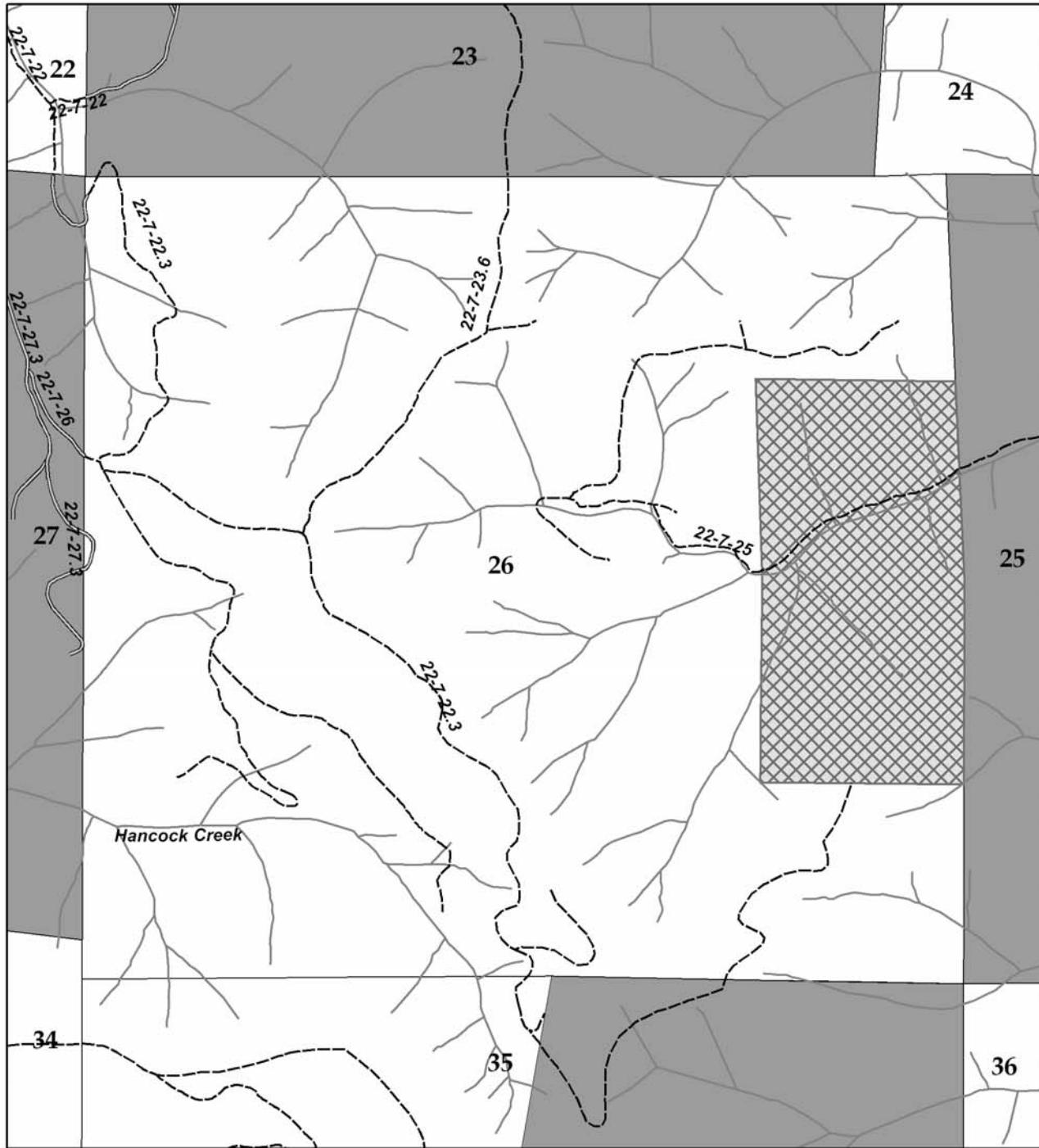
BLM In-Lieu Selection Parcel 6

T22S R7W Sec 26, SE1/4 NE1/4 and NE1/4 SE1/4

July 11, 2006

R7W

T22S



Matrix Land Tenure Zone 2



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Legend

- | | |
|--------------------|---------------------------|
| In-Lieu Parcel | Roads |
| O&C Land | County |
| Public Domain Land | Bureau of Land Management |
| Private Land | Private |
| Stream | Not Known |



BLM In-Lieu Selection Parcel 7

T23S R4W Sec 4, NW1/4 SE1/4

July 11, 2006

R4W

T24S

DC37

33

34

T23S

5

4

23-4-3.4

3

Elk Creek

23-4-3.3

Walker Creek

CNTY 7

8

23-4-9.2

9

10



Matrix
Land Tenure Zone 2



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Roseburg District Office
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Legend

- | | |
|--------------------|---------------------------|
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| O&C Land | County |
| Public Domain Land | Bureau of Land Management |
| Private Land | Private |
| Stream | Not Known |

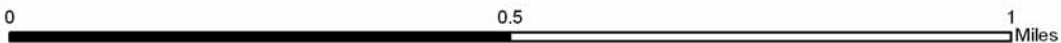
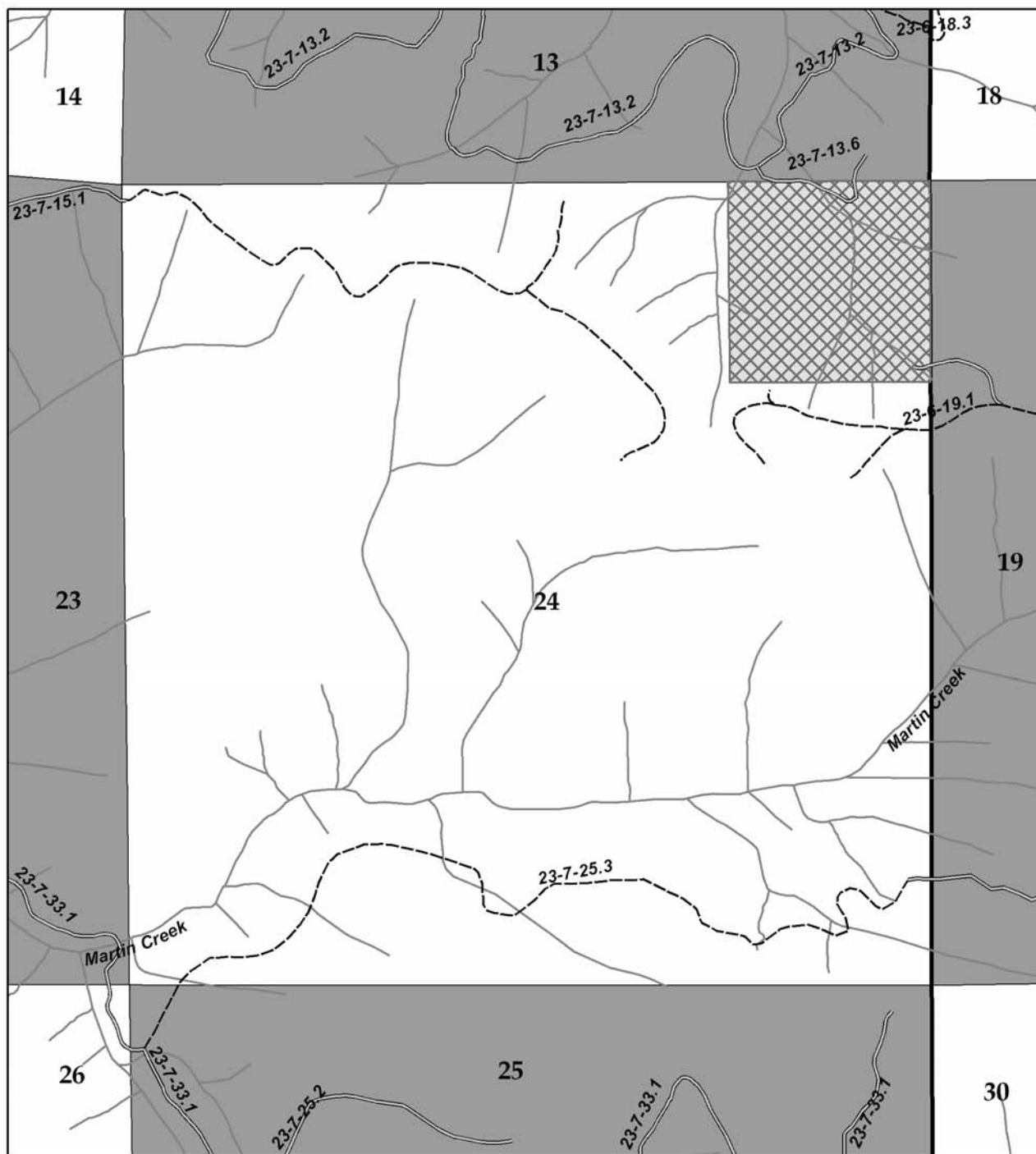


BLM In-Lieu Selection Parcel 8

July 11, 2006

T23S R7W Sec 24, NE1/4 NE1/4

R7W



T23S



Matrix Land Tenure Zone 2

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Legend	
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	Private
	Not Known

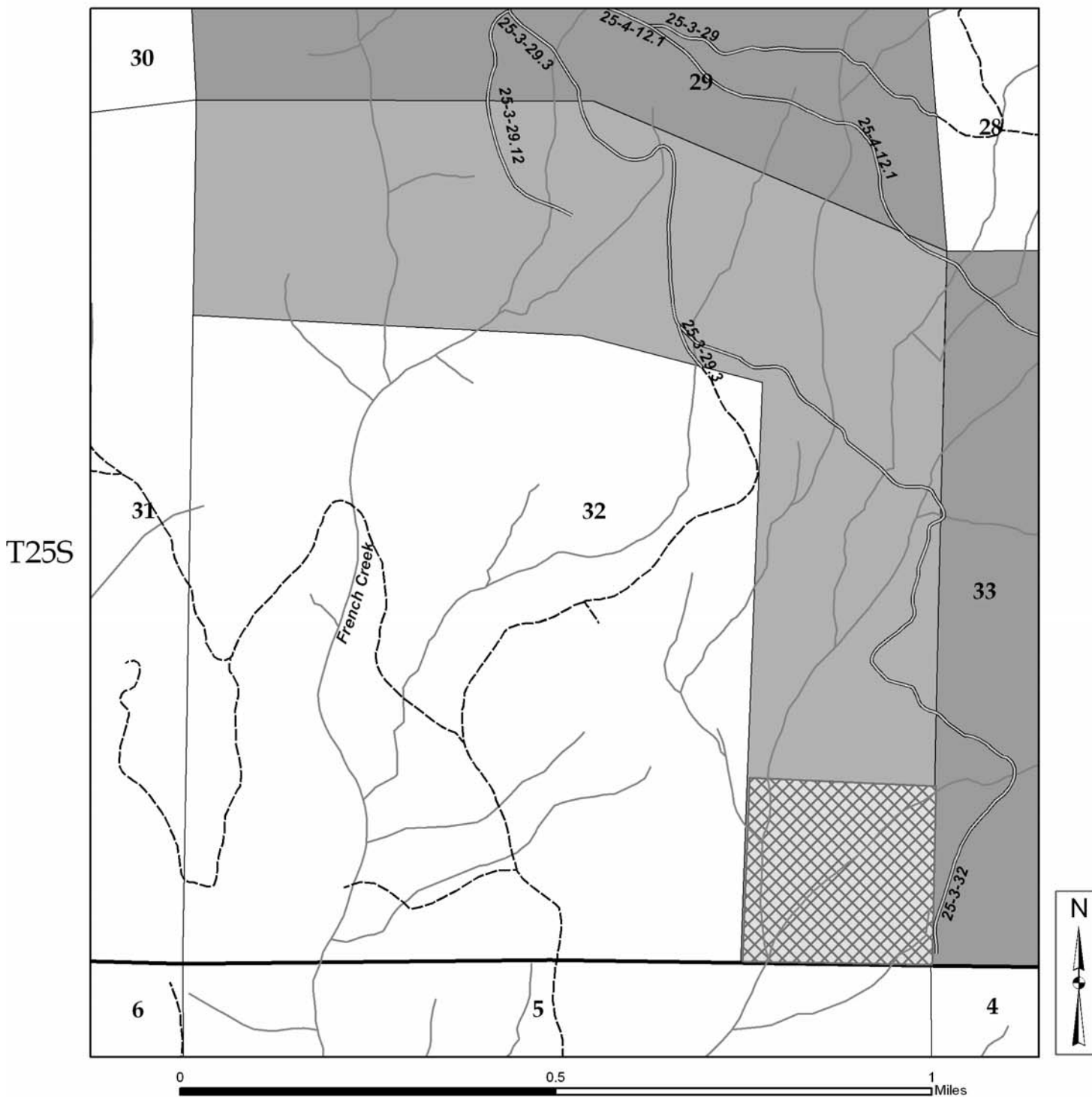


BLM In-Lieu Selection Parcel 9

T25S R3W Sec 32, SE1/4 SE1/4

July 11, 2006

R3W



Matrix Land Tenure Zone 2



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	Stream
	Roads
	County
	Bureau of Land Management
	Private
	Not Known



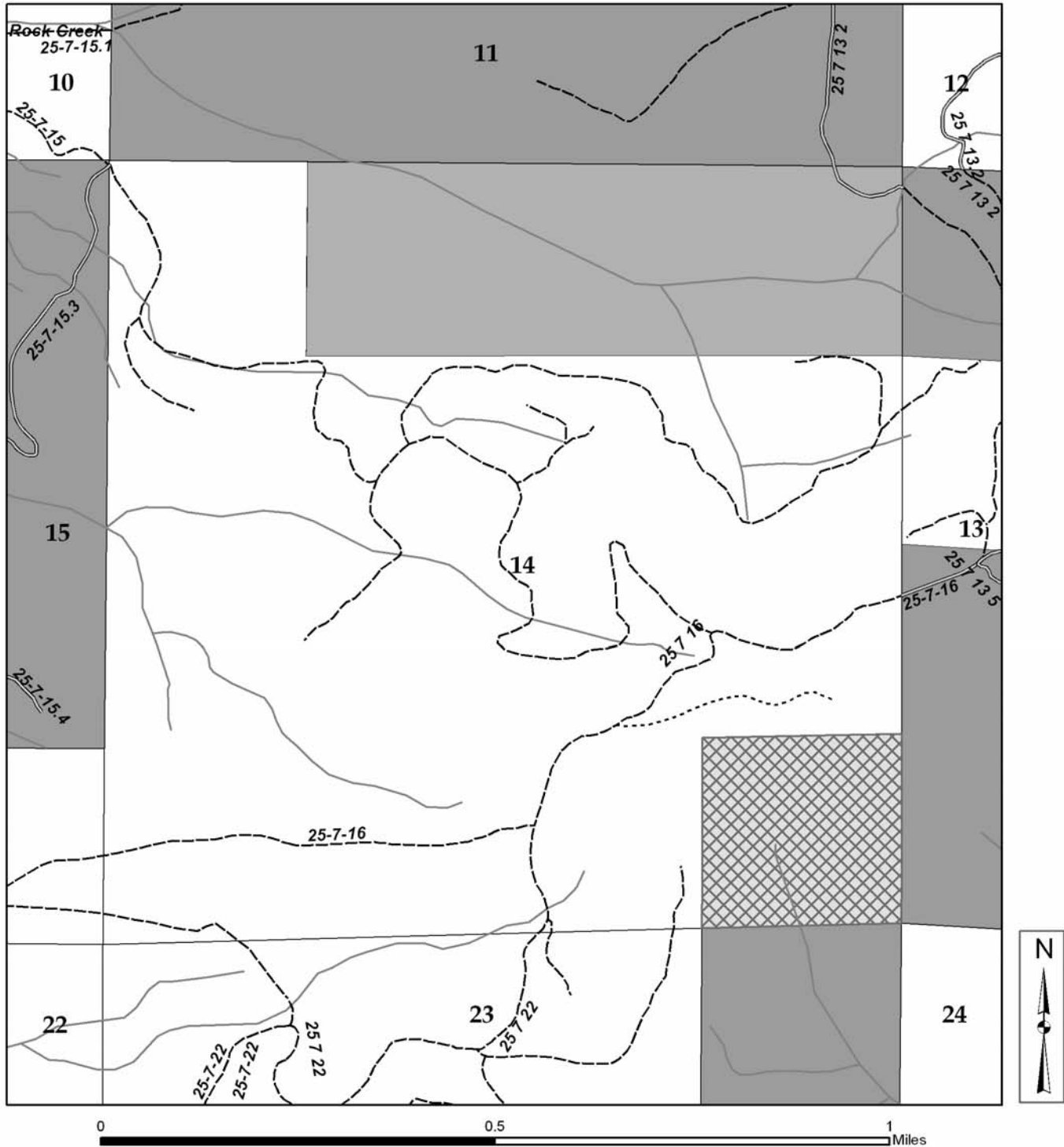
BLM In-Lieu Selection Parcel 10

T25S R7W Sec 14, SE1/4 SE1/4

July 11, 2006

R7W

T25S



Matrix Land Tenure Zone 2



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- | Legend | |
|--------|---------------------------|
| | In-Lieu Parcel |
| | O&C Land |
| | Public Domain Land |
| | Private Land |
| | Stream |
| | Roads |
| | County |
| | Bureau of Land Management |
| | Private |
| | Not Known |



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APPENDIX B. PEAK FLOW ANALYSIS DISCUSSION

Because water yield and peak flows are dependent upon the capture and runoff of precipitation, they are determined by analyzing the entire drainage network of a given area. Therefore, when analyzing and interpreting these flows it may be inaccurate to disregard any drainage area that is upstream of the extent of the proposed action or is contributing to effects associated with peak flow. Even though this area may not be directly or indirectly impacted by the proposed action, it is contributing to current stream flow conditions and must be considered.

The potential risk of increased peak flow from this project was assessed. Twenty Analytical Hydrologic Units (AHUs) were developed to assess the potential impacts. These areas were designated based on the locations of the proposed parcels, fish distribution, and drainage areas potentially contributing to project area stream channel conditions. All AHUs were delineated to the point of nearest coho salmon distribution. Although there are currently no federally listed species in the project area, since Oregon coast coho have been federally listed in the recent past, it was considered to be the most sensitive beneficial use and was used for the basis of this analysis. These AHUs are considered to be the finest scale within which the risk of increased peak flows can accurately and meaningfully be assessed. Each AHU includes all the land draining into these streams and range from 11 to 2300 acres in size.

Past timber harvest (vegetation removal) can result in increases in water yield due to a decrease in evapotranspiration and interception (Satturlund and Adams, 1992). If a forested area is greater than 30 years of age, it is assumed to be hydrologically recovered (i.e., water yield increases have disappeared) since the last harvest. All of the proposed parcels are greater than 30 years of age.

The Transient Snow Zone (TSZ) is defined as that area between 2,000 to 5,000 foot elevation that may alternately receive snow or rain. A TSZ effect is caused by a warm rain-on-melting snow event in openings created within the TSZ where there is less vegetation to intercept snowfall. If a large acreage of timber harvest or burned area is within the TSZ, there may be increased peak flows if a rain-on-snow event occurs. Only one of the parcels (Parcel 10) is within the TSZ.

Roads and landings may modify storm flow peaks by reducing infiltration on compacted surfaces, allowing rapid surface runoff, or by intercepting subsurface flow and surface runoff, and channeling it more directly into streams (Ziemer, 1981). However, effects from peak flows have been shown to increase significantly only when roads occupy at least 12 percent of the watershed (Harr, et al. 1975), which is not the case in this project since the area in roads ranges from 0 to 6 percent within all the AHUs.

Removal of trees tends to increase soil moisture and base streamflow in summer when rates of evapotranspiration are high; these summertime effects only last a few years (Ziemer and Lisle, 1998). The additional quantities of stream flow represent only a small component of a watershed's annual yield (Harr, 1976 and Reiter and Beschta, 1995).

Slight increases in summer flow at the project level would benefit riparian areas, which are often moisture limited during the summer.

With the onset of the rainy season in the fall, the soil becomes recharged with moisture. Several studies have shown that the first storms of the fall have the most increase in peak flow from pre-logging conditions (Rothacher, 1973, Harr, et al. 1975, Harr, et al. 1979, Ziemer, 1981). These fall storms are generally small and geomorphically inconsequential. Large peak flows occur mid-winter after soil moisture deficits are satisfied in both logged and unlogged watersheds (Ziemer and Lisle, 1998). Increases in peak or storm flows in winter and spring can alter channel morphology by flushing smaller substrate, causing the channel to downcut and increase stream bank failures. Studies on increased peak flows are varied in their findings on how much increase in flow would result from a given amount of timber harvest. Most studies agree that the effects of harvest treatment decreases as the flow event size increases (Rothacher 1971; Rothacher 1973, Wright et al. 1990) and is not detectable for flows with a two year return interval or greater (Harr et al. 1975, Ziemer 1981, Thomas and Megahan 1998, Thomas and Megahan 2001).

After examining 94 watershed experiments conducted worldwide, Bosch and Hewlett (1982) concluded that water yield increases are usually only detectable when at least 20 percent of the forest cover has been removed. The Alsea Watershed Study (AWS) documents the affects of forest management activities on stream flows in the Coast Range of Oregon. One objective of the AWS was to compare the impact of two patterns of clearcutting on water yield. In 1965, ridge-line roads were constructed into Deer Creek (750 acres) and Needle Branch (175 acres). In 1966, Deer Creek was patch-cut in three units covering about 25 percent (187 acres) of the watershed. The units were separated from streams by buffer strips from 50-100 feet wide. Needle Branch was 82 percent clearcut with no buffer strips along streams. Average increase in water yield for Needle Branch was 27 percent. Deer Creek exhibited smaller yield increases. The average increase in annual yield for the patch-cut with stream buffer watershed was only 5 percent (Harr 1976).

The results from Deer Creek in the AWS study indicate partial cutting within a watershed combined with riparian buffers of 50-100 feet can reduce increases in water yield. Therefore, given the design criteria for BLM timber sales which utilize Riparian Reserves of 180 to 400 feet on all streams, resulting increases in water yield are expected to be much less than 5 percent, and probably undetectable. For this analysis, it was assumed that if increases in water yield are undetectable, then increases in peak flows would also be undetectable.

Timber harvest under private ownership is conducted according to the Oregon Forest Practices Act which utilized Riparian Management Areas of 0 to 100 feet depending on stream type. Where private harvest units utilize Riparian Management Areas of at least 50 feet, potential increases in water yield are expected to be decreased as shown in the Alsea Watershed Study. However, the Oregon Forest Practices Act does allow some harvest within the Riparian Management Area depending on basal area conditions at the

site. Because of this, it is difficult to estimate how much harvest would be allowed under private ownership of the proposed parcels and how much of the Riparian Management Area would be left. Adams and Ringer (1994) summarized numerous studies conducted in the Pacific Northwest looking at the effects of timber harvest on water quantity. Fourteen studies reported increases in peak flows ranging from 0 percent to 48 percent following timber harvest of 30 to 100 percent of a watershed. The average increase in peak flows of these 14 studies was 20 percent. Based on this, potential increases in peak flows for the Proposed Action are expected to be approximately 20 percent.

Stormflow response of small basins is affected primarily by hillslope processes, which are sensitive to management activities. Stormflow response of larger basins is governed primarily by the geomorphology of the channel network, which is less likely to be affected by management activities (Robinson et al 1995). Also, runoff response time is generally shorter for small watersheds when compared to larger watersheds, and runoff per unit area is higher. As small streams form increasingly larger drainage networks, the ability of individual small watersheds to affect flow decreases (Garbrecht 1991). As a result, peak flow increases following harvesting or other forest practices at the drainage level are likely to be undetectable farther downstream.

Based on the relationships described above, the potential risk of increased peak flow from this project was assessed. As described above, twenty Analytical Hydrologic Units (AHUs) were defined within the project area to assess the potential impacts. Peak flow was analyzed for each AHU.

First, the potential impact from past timber harvest was assessed for each AHU. An Equivalent Clearcut Area (ECA) was calculated for each AHU using remote sensing imagery and GIS to determine hydrologic recovery conditions before and after the proposed treatments. The data layer Stand-replacing Harvests and Fires in Oregon, 1972-2002 (Healey et al 2003) was used to determine the degree of change to the forest landscape within the Action Area over the last 30 years. The ECA method (Galbraith 1975) was originally developed to predict potential increases in annual water yield. The type of ECA analysis commonly used accounts for acres of created forest openings and uses partial recovery coefficients for regrowth of young forest stands. The ECA indicator as used in fisheries ESA consultations (NMFS 1996 and NOAA et al. 2003) is expressed as a percentage. A 15 percent ECA value can represent 15 percent of the actual acres in a watershed if those acres had the forest canopy entirely removed in one year, and the remainder of the acres in that watershed was at full recovery (defined as some percentage of canopy closure). The 15 percent value may represent greater actual acreages in a watershed in various states of hydrologic recovery. It was originally developed for forested lands in Montana and Idaho where snowmelt processes are the dominant hydrological events.

ECA values have not been demonstrated to have meaningful correlation to runoff response or changes to stream channel morphology. This is because the ECA index does not address the underlying causal geomorphological and hydrological mechanisms. There is little or no calibration of vegetative treatments with flow response such as originally was the case by the developer. (Galbraith 1975) Furthermore, the ECA method

was never intended for precipitation-dominated areas, such as the analysis area, but rather for permanent snow accumulation elevations. In contrast, the analysis area is low elevation, rain-dominated, and snow storage seldom occurs, is transitory and confined to a very limited portion of the drainage.

The ECA procedure was meant to track changes in annual water yield, and this was assumed to be proportional to the increase in area logged. Increased water yield was assumed to be proportional to an increase in spring snowmelt runoff that may influence peak flows. Although regeneration harvest generally does increase water yields, the assumed correlation between an increase in water yield and an increase in peakflow has not been established.

There is no agreed upon ECA procedure in use and many derivatives are being applied. NMFS (1996) does not provide guidance on which derivative to use. ECA calculations have been undertaken for all precipitation-runoff processes, for all watershed elevations (beyond intended uses) including permanent snowpack accumulation areas, rain-on-snow intermediate elevations, and lowland precipitation dominated areas. Furthermore, many users have coupled ECA with an Aggregate Recovery Percentage (ARP) procedure, which was developed to index potential increased peak flows in rain-on-snow elevations (Christner 1981). The result is a hybrid procedure, being called ECA that is really an acres accounting system. Vegetative age classes are determined, starting from a regeneration harvest or open condition, including roads, meadow areas, or agricultural land, and then adding in various young stand ages up to a stand condition that is assumed to represent hydrologic maturity in terms of some combination of age, height, canopy cover, or diameter. Coefficients are applied for partial recovery.

This procedure is assumed to indicate increased annual yield with types and patterns of forest tree removal, and this increase is assumed to cause increased peak flows, or be problematic when an indicated ECA threshold is surpassed. However, an ECA procedure, used without reservation across the landscape, leaves the user with difficulty assimilating the differences in rain and snow processes leading to varying runoff regimes. Forest stand characteristics, necessary to modify snow accumulation or melt rates leading to differences in streamflow, may have no effect in rain only watersheds. Coefficients for partial recovery without extensive calibration are suspect in describing water yield or runoff processes. Therefore, the ECA procedure is not a sufficiently precise tool be relied upon for process based decisions. In common practice by the BLM and Forest Service, ECA and similar indices are used as a coarse screen to indicate when further field evaluation is needed, or as a means to compare alternatives during project analysis.

With this in mind, an ECA value was calculated for each AHU in the analysis area. AHUs which had ECA values of less than 20 percent (Bosch and Hewlett 1982), were considered to have no risk of peak flow increases and were dropped from further analysis. Eight AHUs met this criterion under the proposed action.

Next, for those AHUs which had ECA values of 20 percent or greater, an estimated bankfull discharge (which has a return interval between 1 and 2 years) was calculated

based on the regional curve developed for the South Umpqua river system (Kuck, 2000). Then, at the point where these AHUs joined the closest downstream fish stream, the total area above that point was calculated and another bankfull flow was calculated for that area. The amount of flow contributed to that point by the AHU was then determined. Those AHU's which contributed 5 percent or less of the total flow at the point of nearest fish were also considered to have no risk of peak flow increase since water yield changes of 5 percent and less are indistinguishable from natural variation in large watersheds (Huff et al. 2000). Seven of the remaining AHUs met these criteria under the proposed action.

This analysis indicated that five AHUs have the potential for measureable increases in peak flows under the proposed action. These AHUs provide drainage to parcels 2, 3, 4, 5, and 6. Estimating a 20 percent increase in peak flows with a return interval of 2 years or less would mean an increase of 2-4 cubic feet per second (depending on size of the AHU) during a bankfull flow event. This amount of increase would be well within the natural range of flows for these streams. However, as an extra precaution, those AHUs which were considered to have the potential for increases in peak flow received further review. The main stream draining these AHUs was visited and evaluated using the Pfankuch Channel Stability and condition rating system (Pfankuch 1975). The stream channels providing drainage to Parcels 2, 4, and 6 were rated as Good condition and have adequate stream structure to dissipate stream energy. No impacts from increased flows are expected in these streams. The stream providing drainage to Parcel 3 was rated as Fair condition. This stream does have a wide flood plain with good sinuosity to help dissipate stream energy. Instream structure does appear to be adequate to dissipate potential increases in stream energy. Therefore, no impacts from increased flows are expected. One of the streams providing drainage to Parcel 5 is located on private land and could not be accessed. Hancock Creek, which this stream drains to, was rated as Poor condition and does not appear to have adequate structure to dissipate increased stream energy. It is unlikely the potential increase in flow from the tributary would result in excessive stream energy since a two cubic feet per second increase (which is a 20 percent increase of a bankfull flow for this stream) would be well within the natural range of flows for Hancock Creek. Therefore, no impact from increased peak flows would occur.

APPENDIX C. ESSENTIAL FISH HABITAT ASSESSMENT

1) Description of the Action: The proposed federal action analyzed in this EA is the transfer of approximately 180 acres to the State of Oregon under the 1992 Federal Court decision (*Oregon v. Bureau of Land Management*, Civil No. 85-646-MA). The transfer itself is a required (i.e. non-discretionary) action; however the BLM does maintain some discretion over which parcels will be submitted for consideration. Refer to page 3, for additional details on this action

2) Analysis of the potential adverse effects of the action on EFH and the managed species

Of the 10 parcels considered for transfer, only Parcel 7 contains Essential Fish Habitat within its boundary. This parcel is located adjacent to the upper mainstem of Elk Creek, with approximately 1,500 linear feet of Elk Creek flowing through it (see page 32).

Parcels 1, 2, 3, 4, 5, 6, and 9 are all located within one stream mile of documented EFH. Parcels 8 and 10 are located greater than one stream miles from documented EFH.

Potential effects of timber harvest activities on each parcel are described in Chapter Four, Environmental Consequences, pages 53 to 73.

3) Conclusion about the effects of the action on EFH:

There would be no direct effect rising to the level of adverse effect to EFH caused by the transfer of federal land to the state (transfer of title) as defined under 50 CFR 600 which would require consultation with the National Marine Fisheries Service. Indirect effects to EFH may occur as a result of subsequent management of the parcel under state ownership, including timber harvest, and are considered in this EA. However, from an EFH standpoint, a detailed assessment of the impacts of future management options on EFH is not practicable due to: 1) the lack of any federal discretion regarding subsequent management of these transferred lands; 2) the lack of a State timber management plan for these parcels; 3) the wide range of management actions that could occur within the designated Riparian Management Areas (RMA's) under the Oregon Forested Practices Act; and 4) the lack of detail regarding specific harvest actions such as road construction and season of use, yarding practices (cable, helicopter, ground based) and stream crossings. Only until a management alternative is identified can effects be specifically analyzed. At that time, with specific information, those possible effects can be evaluated to determine if they rise to the level of adverse effect and consultation under EFH is needed. Therefore, because the federal action before us now does not rise to the level of adverse effect, consultation under the MSA is not required.

Once a State timber harvest plan has been developed for the transferred parcels, the National Marine Fisheries Service may choose to provide conservation recommendations to the State if they believe the proposed State actions would adversely affect EFH.

4) Proposed Mitigation:

The BLM is not able to encumber any transferred title with management stipulations not spelled out in applicable laws. Therefore, there is no proposed mitigation to go along with this action.

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