

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

**ENVIRONMENTAL ASSESSMENT NO. OR090-03-16**

**Get Ready Timber Sale**

## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

The Bureau of Land Management proposes to commercially thin approximately 120 acres of timber within the Matrix Land Use Allocation (LUA), and treat by density management approximately 15 acres of timber within the Riparian Reserve LUA. Harvest would take place within stands ranging in age from 34 to 56 years. Approximately 4,800' of existing road would be renovated and fully decommissioned, approximately 3,500' of road would be constructed over old, compacted road surface and fully decommissioned; and approximately 3,100' of new road would be constructed and fully decommissioned. Approximately 3,500' of additional OHV trails would be fully decommissioned. The project area is located in Section 25, Township 16 South, Range 7 West, Willamette Meridian, Lane County, Oregon in the Siuslaw Resource Area of the Eugene District of the Bureau of Land Management (BLM).

### **1.2 PURPOSE OF AND NEED FOR THE ACTION**

The project area is within the Matrix LUA and has management objectives for General Forest Management Area (GFMA) and Riparian Reserves. The purpose of the proposed action is to meet planning objectives in the Matrix, which includes providing an output of merchantable timber while maintaining forest health and productivity. The purpose of the action in the Riparian Reserves is to contribute to the attainment of Aquatic Conservation Strategy (ACS) Objectives. The need for the action is established in the Eugene District Record of Decision and Resource Management Plan (RMP) (June 1995), which directs that timber be harvested from Matrix lands to provide a sustainable supply of timber, and that actions be taken to attain ACS objectives. Additionally, the stand is at an age where thinning would be beneficial.

Currently off-highway vehicle (OHV) users are actively exploiting the project area and in some cases creating unauthorized trails and resource damage. An additional purpose is to assure that OHV activities do not degrade forest health and productivity or slow attainment of ACS objectives. The need for this action is also established in the RMP, which directs that OHV use on BLM-administered land be managed to protect natural resources, provide visitor safety, and minimize conflicts among various users.

## 1.3 CONFORMANCE WITH LAND USE PLAN

All alternatives are in conformance with the "Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl" (NSO ROD) (April 1994); the RMP, as amended by the "Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines", USDA Forest Service and USDI Bureau of Land Management, January 2001. This EA is tiered to these documents.

Additional site-specific information is available in the Get Ready Timber Sale project analysis file. This file and the above referenced documents are available for review at the Eugene District Office.

## 2.0 ISSUES SELECTED FOR ANALYSIS

### **ISSUE 1: *How would timber harvest and associated activities affect northern spotted owl habitat and marbled murrelet nesting habitat?***

The project area may be considered dispersal habitat for spotted owls and nesting habitat for marbled murrelets. Timber harvest could affect the project area's ability to function as habitat.

**Measurements:** *change in quality of acres foraging/dispersal habitat (NSO); change in acres suitable nesting MAMU habitat; noise disturbance in MAMU breeding season*

### **ISSUE 2: *How would timber harvest and roads affect attainment of Aquatic Conservation Strategy (ACS) objectives at the watershed scale?***

The Proposed Action and alternatives incorporate the use of design features and selected Best Management Practices (BMPs) to insure the project proposal does not prevent or retard attainment of the nine ACS Objectives on a watershed or landscape scale. Some of the alternatives include riparian treatments.

**Measurements:** *effects determination (retard, maintain, restore) for each ACS objective*

### **ISSUE 3: *What are the effects of roads and yarding on soil productivity?***

Yarding systems affect soil productivity and compaction in different ways. Applying selected BMPs listed in the RMP may ameliorate these impacts.

**Measurements:** *acres of compaction*

### **ISSUE 4: *What are the effects of timber harvest and related activities on the spread of noxious weeds?***

Scotch broom and knapweed are known to exist within the watershed. These plants are able to quickly colonize areas with bare soil. Harvest activities and road construction increase the amount of bare soil and provide areas in which these weeds can thrive.

**Measurements:** *acres ground disturbance from roads, landings*

### **ISSUE 5: *What are the effects of road renovation, road construction, and road decommissioning on the adverse impacts of unauthorized OHV use?***

Heavy OHV use is occurring within the project area. There are concerns that removing trees and exposing existing dirt roads would entice OHV use into the project area.

**Measurements:** *length of driveable road segments; length of road decommissioned*

**ISSUE 6: How would this project contribute to the Eugene District RMP goal for the Allowable Sale Quantity?**

The purpose of the project is to provide a sustainable supply of timber while maintaining forest health and productivity. Alternatives may be developed to address the issues above that would affect the harvest volume. Analysis of this issue will show how each alternative would affect the amount of timber harvested.

**Measurements:** MMBF

**3.0 ALTERNATIVES**

Alternatives 1, 2, 3, and 4 consider timber harvest and other forest management activities on a project area of approximately 240 acres (see maps).

**TABLE 1: Alternatives**

	Alternative 1 Commercial Thin No New Roads		Alternative 2 Commercial Thin with Road Construction		Proposed Action Alternative 3 Commercial Thin with Road Construction and add'tl OHV mitigations		Alternative 4 No Action	
	Acres	Volume	Acres	Volume	Acres	Volume	Acres	Volume
Upland Harvest	70		120		120		0	
Riparian Reserve Density Management	10		15		15		0	
Totals	80	0.8 MMBF*	135	1.4 MMBF	135	1.4 MMBF	0	0 MMBF
Construction & decommissioning of new roads	None		Spurs A, B, D, F, G, J, K, L, (3,500' old road surface) Spurs C, E, H (3,100' new roads) Total 6,600'			None		
Renovation & decommissioning of existing roads	Road No. 16-7-25.2 (1,500')		Road No. 16-7-25.1 (900') Road No. 16-7-25.2 (3,900') Total 4,800'			None		
Existing OHV Trails/Roads** Decommissioned	1,500'		8,300'		11,800'		0'	

\*MMBF = million board feet

\*\*Includes renovated roads and new construction on old road surfaces

**3.1 DESIGN FEATURES COMMON TO ALL ACTION ALTERNATIVES**

**Fuels Reduction**

A tracked excavator would pile slash within 25' of the ridgetop portion of Road No. 16-6-31. Landing piles and burnable fuel concentrations along permanent roads would be covered and burned. Landing piles and burnable fuel concentrations along temporary roads would be spread over road surfaces after decommissioning or covered and burned.

## **Silviculture**

No site preparation would be needed. Harvested areas would not be planted.

## **Retention**

Down material of advanced decay (Decay Class 3, 4, or 5) would be retained for coarse woody debris (CWD).

Snags, Pacific yews, western redcedars, and hardwood trees would be retained where possible. Snags and hardwoods felled for safety reasons would be retained as CWD.

All trees not specifically identified for retention would be cut. Conifers would be thinned from below, retaining the larger diameter, more vigorous trees. Approximately 125 square feet of basal area per acre (BA/acre) would be retained. The number of trees retained per acre would vary with tree size and stand age, ranging from 90 trees per acre (TPA) in the older stands up to 150 TPA in the youngest stand.

## **Reserves**

The height of one site-potential tree has been determined to be 210' slope distance in the Long Tom Watershed. Riparian Reserves 210' wide on either side of non-fishbearing streams, and 420' on either side of fishbearing streams would be managed in accordance with the standards and guidelines in the NSO ROD (Appendix C, pp. 31-38).

All action alternatives consider density management of the Riparian Reserves to the same densities as adjacent uplands. Acres vary by alternative. Riparian Reserves for Streams 4-9, 16, 18, 22, 23, and 26 would be treated to within approximately 150' of streams. Riparian Reserves for all other streams would be treated to within approximately 100' of the streams.

A *Ramalina thrausta* (Survey and Manage lichen) site would be reserved. An *Allotropa virgata* (Eugene District review plant species) site would be reserved. Each species would have a reserve of approximately 0.75 acres to maintain current microsite conditions.

## **Roads and Yarding**

In order to slow the spread of noxious weeds, all yarding and road construction equipment, including excavators, would be cleaned prior to arrival on BLM land.

BLM Road No. 16-7-25.2 would be renovated under each action alternative, but the length of renovation would vary by alternative (Alternative 1, approximately 1,500'; Alternatives 2 and 3, approximately 3,900'). Upon completion of the project, the renovated road would be decommissioned and blocked.

Operations on dirt roads would be limited to the dry season. This would include all roads except Road No. 16-6-31, a rock road.

Upon completion of operations (within 3 years), renovated and/or newly constructed BLM roads would be decommissioned and blocked in the following manner.

- a) The road subgrades would be lifted and aerated with a track mounted excavator or winged subsoiler.
- b) Water bars or drainage dips would be installed along the road where necessary.
- c) Adequate drainage for any unmaintained road would be ensured.
- d) Road surfaces would be blocked using barricades appropriate for the road.
- e) Slash, boulders, and/or logging debris would be placed on road surfaces along as much of the length of the road as possible, including small diameter trees, if available.

Cable yarding would be to designated or approved landings using the following BMPs. A cable system capable of lateral yarding 75' would be used. Yarding corridors would not exceed 12' in width and would be 150' apart at the end farthest from the yarder. One-end suspension of logs would be required during cable yarding, and intermediate supports would be required where necessary to attain the required suspension. Ground-based yarding is not proposed.

### **3.2 DESIGN FEATURES COMMON TO ALTERNATIVES 2 AND 3**

#### **Roads and Yarding**

In addition to renovation of Road No. 16-7-25.2 as described in **3.1**, Road No. 16-7-25.1 (approximately 900') would be renovated, and Spurs A-H and J-L (approximately 6,600') would be constructed as temporary dirt spurs with 14-foot subgrades. Spurs A, B, D, F, G, J, K, and L would involve widening of existing compacted road surfaces. All temporary dirt surface roads would be decommissioned upon completion of harvesting in a manner similar to that described in **3.1**.

### **3.3 ALTERNATIVE 1 - Commercial Thin (No New Roads)**

This is a commercial thin alternative in which approximately 80 acres (10 Riparian Reserve, 70 GFMA) of the 240-acre project area would be treated. Approximately 0.8 MMBF of timber would be offered for sale.

#### **Roads and Yarding**

No new roads would be constructed. Road Nos. 16-7-25.2 and 16-6-31 would provide landing areas for a cable yarding system. Downhill cable yarding to existing roads would be required in some areas. Yarding equipment on Road No. 16-6-31, a high-volume public road, would be allowed to block traffic for no more than 20 minutes at a time.

Because there is unsurveyed potential suitable marbled habitat within the project area, a seasonal restriction for marbled murrelets would be required. No harvest activities would be allowed April 1- August 5. A daily timing restriction would be required for operations occurring between August 6 – September 15. During this time, operations would not begin until 2 hours after official sunrise and must cease 2 hours before official sunset

#### **Off-Highway Vehicle Mitigation**

Road No. 16-7-25.2 shows signs of OHV use. The first 1,500' would be used as a haul road and would be decommissioned upon completion of operations as described in **3.1**.

All other design features would be as described in **3.1**.

### **3.4 ALTERNATIVE 2 - Commercial Thin (with New Roads)**

This is a commercial thin alternative in which approximately 135 acres (15 Riparian Reserve, 120 GFMA) of the 240-acre project area would be treated. Approximately 1.4 MMBF of timber would be offered for sale.

#### **Roads and Yarding**

Because there is unsurveyed potential suitable marbled murrelet habitat within the project area, a daily timing restriction on all operations would be required April 1 – September 15 of each year. During this time, the breeding season, operations would not begin until 2 hours after official sunrise and would cease 2 hours before official sunset. Operations between September 15 and March 31 would have no restrictions due to marbled murrelets. (Since 55 acres would be accessed by dirt roads, a seasonal restriction limiting harvest operations to fall and winter would not be feasible due to wet soil conditions.)

### **Off-Highway Vehicle Mitigation**

Road Nos. 16-7-25.1 and 16-7-25.2; Spurs A, B, and D; the first 150' of Spur F (which coincides with the first 150' of OHV Trail 4); and Spurs G, J, and L show signs of OHV use. These road surfaces would be used as haul roads and would be decommissioned upon completion of operations as described in **3.1**.

All other design features would be as described in **3.1** and **3.2**.

### **3.5 ALTERNATIVE 3 - Commercial Thin (with Additional OHV Mitigation) PROPOSED ACTION**

This is a commercial thin alternative in which approximately 135 acres (15 Riparian Reserve, 120 GFMA) of the 240-acre project area would be treated. Approximately 1.4 MMBF of timber would be offered for sale.

#### **Roads and Yarding**

As described for Alternative 2, a daily timing restriction on all operations would be required between April 1 – September 15 of each year. During this time, the breeding season, operations would not begin until 2 hours after official sunrise and would cease 2 hours before official sunset. Operations between September 15 and March 31 would have no restrictions due to marbled murrelets.

#### **Off-Highway Vehicle Mitigation**

In addition to the OHV mitigation described in Alternative 2, the remaining portion of Road No. 16-7-25.2 and other trail segments showing signs of OHV use would be decommissioned upon completion of operations. These include Trails 1-3, the remainder of Trail 4, and Trails 5 and 6. These trail segments would not be used during timber sale operations and so would be decommissioned under a contract separate from the timber sale contract.

All other design features would be as described in **3.1** and **3.2**.

### **3.6 ALTERNATIVE 4 - NO ACTION**

All timber harvest activities would be deferred; no management activities described under the action alternatives would occur, and no timber would be offered for sale at this time. Because the project area is within the GFMA, a Land Use Allocation harvest may be proposed in the future.

### **3.7 ALTERNATIVE CONSIDERED BUT NOT ANALYZED**

A commercial thin alternative using ground-based logging equipment was considered. This alternative would have required skid roads spaced approximately 150' apart. Because of the existing OHV use, and because certain soils in the project area have been identified as susceptible to compaction on the Eugene District, this alternative was dropped from further analysis.

## **4.0 EXISTING CONDITIONS**

The plant and animal communities in this project area do not differ significantly from those discussed in the Eugene District Proposed Resource Management Plan/Environmental Impact Statement (RMP EIS) (Chapter 3). The Project area is discussed in general and resources that are specific to the identified issues are discussed in greater detail in this section.

## 4.1 LONG TOM WATERSHED

The project area is in the Long Tom Watershed. The Long Tom Watershed is located in Lane and Benton Counties, west of Eugene. The watershed lies at the southwestern headwaters of the much larger Upper Willamette River Basin and contains approximately 262,800 acres.

The watershed landscape pattern is that of checkerboard ownership with approximately 21,800 acres (8%) managed by the BLM. The BLM forest lands are concentrated in the Coast Range foothills or "Valley Fringe". Forestry and agriculture are the primary land uses. Commercial forests are located primarily in the upper reaches of the watershed (Long Tom Watershed Analysis, October 2000).

Approximately 40% of the forested BLM-administered lands within the watershed are in the 0-30 year age classes. Approximately 40% are in the 40 to 70-year age classes, and approximately 20% are in the late successional or 80-year and older age classes (Based on Forest Operations Inventory (FOI) stand data 1999).

## 4.2 TIMBER

The proposed harvest area is comprised of second-growth timber stands which became established after logging in the early 1950s and 1960s. The older stands regenerated from seed trees following harvest, and the younger stands were planted. Much of the area was precommercially thinned in 1975 and 1979.

The common stand condition is a generally well-stocked overstory of Douglas-fir. Conifer stocking is such that tree diameters vary considerably in different areas of the stand. Some areas have a broader range of tree sizes which offer some structural variety, but generally the stand is fairly uniform in structure. Understory vegetation is comprised of common species, primarily swordfern, salal, and Oregon-grape.

Riparian areas are generally dominated by alder and bigleaf maple. Upland portions of the Riparian Reserves are similar to the adjacent Matrix stand conditions.

Large snags (greater than 20" dbh) and large coarse wood, primarily a remnant of prior logging, are sparse throughout the stand.

A stand exam completed in February of 1999 indicates the following information: average stand age ranges from 34-56 years, average diameter ranges from 11-14", basal area ranges from 180-265 square feet per acre, and average TPA ranges from 190-270.

## 4.3 WILDLIFE (INCLUDING SPECIAL STATUS AND SPECIAL ATTENTION SPECIES)

### Threatened and Endangered Species

#### Northern Spotted Owl (Threatened)

Approximately 11,600 acres of dispersal habitat for the northern spotted owl lie in federal ownership within the Long Tom Watershed. Dispersal habitat for owls consists of conifer forests with at least 40% cover that function for roosting and foraging, but lack suitable structure for nesting (usually 40-80 years old). Stands within the project area provide temporary habitat for transient owls searching for a longer term territory and may also provide foraging habitat for owls on nearby territories. The proposed harvest area is within the home range of a historic nesting site (Hayes Creek), and several stands of suitable nesting habitat (>80 years old) occur within 0.25 mile of the proposed harvest area and haul route. However, surveys of these stands are conducted annually and there has been no confirmed occupancy by owls since 1996.

### **Marbled Murrelet (Threatened)**

Suitable nesting habitat for marbled murrelet consists primarily of old growth and mature coniferous forests. Murrelets also have been found in younger forests (60-80 years) with structural elements similar to old growth, such as remnant old-growth trees or younger trees with platforms created by deformities or dwarf mistletoe infestations (Nelson 1997, Nelson and Wilson 2001). Although the proposed harvest area is not considered suitable marbled murrelet habitat, several isolated remnant trees occur within Riparian Reserves in the southeast corner of Section 25. These trees have the potential to provide suitable nest sites for marbled murrelets in the future. Potential suitable habitat (unsurveyed) exists within 0.25 mile to the south of the project area, and also along the haul route.

### **Survey and Manage Species**

#### **Mollusks**

There are no known Survey and Manage mollusk sites within the project area and no surveys were required for mollusks.

#### **Red Tree Vole**

The project area falls within the central part of the red tree vole's range. As a result of the 2001 Annual Survey and Manage Species Review, pre-disturbance surveys are no longer necessary for red tree voles in the central part of its range (Category D). Also, new information indicates that additional identification of sites within Matrix lands is not necessary to ensure persistence of this species. Therefore, effects to this species will not be analyzed in this document.

#### **Other Wildlife**

This project area provides habitat for a variety of species that utilize mid-seral forest habitat. For a list of species that may occur here, refer to Table 3-54 in the RMP (page 3-52).

## **4.4 SOILS**

### **Geology/landslides**

The project area is geologically mapped within the Flournoy/Tyee (Tt) Formation that consists of massive and rhythmically bedded feldspathic and micaceous sandstone and subordinate siltstone. Each bed is graded and ranges from coarse sandstone at the base to fine sandstone and siltstone above. The Tyee formation is widespread in the central Coast Range. The formation is bluish-grey to grey, rhythmically bedded, micaceous, and arkosic sandstone and sandy siltstone (Walker and Macleod, 1991). Field reconnaissance and air photo interpretation indicate that no large landslides have occurred during historical time in the project area. One fill failure is located on Road No. 16-7-25.2 at Stream 11.

### **Soils/compaction/erosion**

Predominant soils found in the project area include Digger, Honeygrove and Peavine (U.S.D.A. 1987). Honeygrove and Peavine are clay soils that are highly erodible, compact easily and stay in suspension longer in water. The soils are moderately deep and have a high Site Index that correlates to a high amount of on-site nitrogen and potential site productivity. All soils are susceptible to compaction.

Digger-Rock outcrop complex (50-85% slope) is moderately deep (27-37"). The surface layer is a gravelly loam, and the subsoil may contain 15-25% clay. The surface may be littered with stones. Permeability is moderately rapid and runoff is rapid with hazard of erosion being high. Because Digger soils tend to develop on steep slopes, there is a high hazard of erosion and slumping in disturbed areas. Windthrow is a hazard when the soil is wet and winds are strong. Disturbed areas are subject to rill and gully erosion and sloughing.

Honeygrove soils are deep (40-60"). The surface layer is a silty clay loam, and the subsoil is up to 60% clay. There may be up to 15% rock fragments present. Permeability is moderately slow. These soils are susceptible to compaction. Physical and chemical data of the Honeygrove soil indicate that at 15 Bar (wilting conditions), between 0 and 8.1", the soil moisture content is 37.1% (Huddleston 1982). Clay soils have been shown to remain above 45% in soil moisture during the dry season in the Coast Range (Sidle and Drlaca, 1981).

Peavine soils are moderately deep (30-40"). The surface layer is a silty clay loam, the subsoil is silty clay with soil horizons containing 30-60% clay. Unstable areas associated with Peavine soil are in steep, concave slopes at the heads of drainages, the edges of benches, or areas where ground water accumulates. Common slope failure is of the slump and earthflow type. Rock fragment content in the soil profile is typically less than 20%. Permeability is moderately slow due to the heavy textures and absence of coarse fragments. These soils are susceptible to compaction. Physical and chemical data of the Peavine soil indicate that at 15 Bar (wilting conditions), between 0 and 4", the soil moisture content is 22.3% (Huddleston 1982).

There are approximately two acres of existing dirt road (Road Nos. 16-7-25.1 and 16-7-25.2); one acre of visibly compacted old roadbed; and one acre of OHV trails within the project area (total of four acres legacy compaction). The roadbeds and trails average approximately 15' in width. Some of the OHV trails are newly pioneered and pose environmental concern due to soil disturbance, compaction and forest soil erosion.

## **4.5 AQUATIC AND RIPARIAN RESOURCES AND FISHERIES**

### **Aquatic Characterization**

The project area is located within the headwaters of the sub-watershed of the Upper Long Tom River. The Upper Long Tom River sub-watershed is approximately 21,000 acres. The largest stream in the project area is a third-order tributary (Stream 17), part of an unnamed headwater drainage to Long Tom River. This drainage is approximately 2,200 acres. Most of the remaining streams are first-order, headwater tributaries to the Hayes Creek drainage. The Hayes Creek drainage area is also approximately 2,200 acres. Short Jake Creek is a third-order stream that flows into Hayes Creek. Hayes Creek is a fourth-order stream that flows into Long Tom River.

Road density in the Hayes Creek drainage is about 4.6 miles/square mile, and road density is 4.3 miles/square mile in the unnamed Long Tom River drainage. Road density in the sub-watershed is 5.8 miles/square mile.

There are 31 streams located within or adjacent to the project area; most are small, intermittent, first-order headwater streams. Streams 10-14, 20-24, 27, and 28 drain toward Hayes Creek in a south, southeast, or southwest direction. Streams 1-5, 8, 9, 19, and 25 drain towards Short Jake Creek in an east, south or southeast direction. Streams 6, 7, 15-18, 26, and 29-31 drain towards Long Tom River in an east, west, northeast, northwest, or southeast direction.

Most stream reaches within the project area are greater than 15% gradient, except for Stream 17, which is a third-order stream with gentle gradient (3-5%), and for reaches of some of the larger streams. Most of the streams have substrate that is fine material to gravel. The larger streams generally have substrate that is gravel and cobble. Some of the steeper reaches of streams also have areas of bedrock channel.

Most streams have a low to moderate density of large woody debris and canopy cover of 70-90% (or greater). Riparian areas are generally a mix of conifer and hardwoods. Riparian areas that are hardwood dominated are along most of the reaches of Streams 2-4, 21, 24-26, 29, and 30 and along the southern portion of Stream 17.

Channel down cutting or channel aggrading does not appear to be a notable problem on the surveyed reaches. Bank stability appears to be good. Streams 6, 7, and 27 have discontinuous areas of channel scour where flow is subsurface. Streams 12, 14, 16, and 17 are crossed by existing skid trails from the last logging entry. These are localized areas of discontinuous flow and/or erosion/sedimentation. Fill depths are 1-3' and channels have been re-established in some of these areas.

Road No. 16-7-25.2 is an existing dirt road that is in poor repair and rutted from OHV use. It crosses just above the headwaters of Stream 11 and is very narrow at this location because of a fill failure. This location is a low spot where chronic sedimentation to Stream 11 occurs. Other low spots on the road tend to have pooled areas of water in the winter months. A few OHV trails provide access to this road.

The project area is generally moderate to moderately steep in topography. Topography varies from 0-90%, with much of the area at 20-65% in slope gradient. Elevations in the unit vary from 900' to about 1,480'. Rain-on-snow events in the Coast Range are unusual at elevations below 1,500'. There are numerous filed water rights for irrigation and domestic use on Long Tom River below the project area. The closest filed water right is for irrigation use about two miles below the project area.

### **Fisheries Characterization**

With the exception of stream 17, all streams are non-fishbearing due to high gradient and physical barriers. These small streams and headwaters generally stairstep over logs (12" diameter), small boulders (1' to 3' diameter) and cobble (6" to 12" diameter). Some of the steeper reaches have areas of bedrock channel.

Stream 17, a second order perennial stream, has a gentle gradient (3-5%). This stream has moderate small and medium size (36" dbh) woody debris in the channel and the substrate includes a large amount of gravel and sand. Cutthroat trout were found in Stream 17, which contains spawning and rearing habitat for this species. There are no anadromous fish found in the Long Tom Watershed above Fern Ridge Reservoir. A presence/absence fish survey, utilizing netting and visual observation, was conducted along Streams 1-31. Results are shown in Table 2.

**Table 2: Summary of Fish Presence/Absence**

<b>Fish Presence/Absence</b>		
<b>Stream</b>	<b>Presence</b>	<b>Description</b>
17	Present	Cutthroat trout present in the portion of Stream 17 that borders the northern boundary of the proposed harvest area.
1-16, 18-31	Absent	No fish species present

## **4.6 BOTANY**

### **Native Plants, Special Status, and Survey & Manage Species**

Surveys were conducted in the project area for federally listed Threatened or Endangered, BLM Special Status, and Survey and Manage vascular plants, lichens and bryophytes. Surveys for vascular plants occurred in June, 2002 and August 2003. Surveys of the entire project area for lichens and bryophytes occurred in November 2002. Methods followed established Survey and Manage survey protocols.

No federally listed or Special Status species were located during surveys. The Survey and Manage lichen *Ramalina thrausta* was found at three locations adjacent to Riparian Reserves, on conifer twigs and shrubs, in association with older, fire-scarred legacy trees. These three locations are approximately 200' apart, constituting a single site according to Survey and Manage standards.

An *Allotropa virgata* site was relocated. This mycotrophic plant was formerly a Survey and Manage species, and is now on the Eugene District Review list. The species was removed from the Survey and Manage list due to large numbers of populations in the high Cascades and southwest Oregon, but it is infrequent on the Eugene District. This site was originally discovered in 1994, and was seen in 1997 (51 plants) and 2002 (13 plants). The site is approximately 100' from an existing road and has a fairly open canopy due to this road. *Lotus aboriginus* plants are growing within the population as a result, indicating the change in environment from interior forest conditions.

### **Noxious Weeds and Invasive Non-native species**

Oregon State listed noxious weeds located during plant surveys include Scotch broom, Himalayan blackberry, bull thistle, Canada thistle, tansy ragwort, and common St.-John's wort. These weeds are generally sparse in the project area, but some larger infestations of Scotch broom were found along roadsides and in an adjacent area that was regeneration harvested in 1996.

The 1996 harvest areas within Section 25 and adjacent to the project area were surveyed for non-native species abundance in June 2003. A thinned area in the southeast portion of the section had seven species, with about 1% or less overall cover. Cat's ear (*Hypochaeris radicata*) was the most abundant weed, and bull and Canada thistles were present. The weeds were not restricted to yarding corridors, but were absent where dense shrubs (especially salal, oceanspray and hazel) were found. The regeneration harvest area in the northeast portion of the section had approximately 5% weed cover overall, and 11 species including Scotch broom, and bull thistle. Similar levels of infestation were also found in the watershed in thinnings dating from 2001 (Ten High Timber Sale), and 1993 (on land acquired from a private timber company). Stands without recent thinning generally have no non-native species.

## **4.7 RECREATION**

Recreation consists of dispersed activities such as driving for pleasure and hunting. In addition, the existing road system within this section is being utilized for OHV activity, which is causing environmental damage. Several of the spur roads have been deeply rutted from OHV use during wet conditions. These ruts are so deep in some roads that drivers have blazed new trails, paralleling these roads, through the dense vegetation and standing timber. Other OHV trails connect road systems within Section 25 and are also deeply rutted. As a result, sediment run off (as well as vegetation damage) is evident. Six OHV trails (or trail systems) were identified within Section 25. Trails 2 and 6 are within Section 25 but not within the project area.

## **4.8 VISUAL RESOURCES MANAGEMENT**

The project area is within the RMP visual resource management Class IV which allows major modifications of the existing character of the landscape. There are no structures within the project area or large bodies of water such as rivers or lakes. The project area is covered with young timber and moderate to dense vegetation. One heavily traveled rocked road (Road No. 16-7-31) passes through the middle of the project area, with numerous narrower and shorter rocked or dirt spur roads. These roads provide up close viewing of the local scenery. The project area cannot be viewed at great distances from any major public highways or residential areas due to topography or bordering timbered lands. As a result, key observations points (KOPs) were not established.

## 5.0 DIRECT AND INDIRECT EFFECTS

### 5.1 UNAFFECTED RESOURCES

The following resources are either not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concern; prime or unique farm lands; Native American religious concerns; solid or hazardous wastes; Wild and Scenic Rivers; Wilderness; minority populations; visual resources management; air quality; bald eagle habitat; and low income populations.

### 5.2 SUMMARY OF EFFECTS

**Table 3: Summary of Effects**

	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Proposed Action Alternative 3</b>	<b>Alternative 4</b>
<b>Pertinent Design Features</b> →	<ul style="list-style-type: none"> <li>•Commercial Thinning Uplands (70 acres)</li> <li>•Cable yard</li> <li>•Density Management Riparian Reserves (RRs) (10 acres)</li> <li>•Cable corridors through RRs</li> <li>•Seasonal restriction Apr 1- August 5 for MAMU; daily timing restriction August 6 – Sept 15</li> <li>•Use of dirt roads would be restricted to “dry season”</li> <li>•No new roads</li> <li>•Renovate &amp; decommission Road No. 16-7-25.2 (1,500’), Total 1,500’ renovation and decom of old road</li> </ul>	<ul style="list-style-type: none"> <li>•Commercial Thinning Uplands (120 acres)</li> <li>•Cable yard</li> <li>•Density Management RRs (15 acres)</li> <li>•Cable corridors through RRs</li> <li>•Daily timing restriction Apr 1- Sept 15 for MAMU</li> <li>•Use of dirt roads would be restricted to “dry season”</li> <li>•Construct 3,100’ new compacted road surface; decommission</li> <li>•Construct 6,600’ on old roadbeds decommission</li> <li>•Renovate &amp; decommission Road Nos. 16-7-25.1 (900’) &amp; 16-7-25.2 (3,900’)</li> </ul>	<ul style="list-style-type: none"> <li>•Commercial Thinning Uplands (120 acres)</li> <li>•Cable yard</li> <li>•Density Management RRs (15 acres)</li> <li>•Cable corridors through RRs</li> <li>•Daily timing restriction Apr 1- Sept 15 for MAMU</li> <li>•Use of dirt roads would be restricted to “dry season”</li> <li>•Construct 3,100’ new compacted road surface; decommission</li> <li>•Construct 6,600’ on old roadbeds decommission</li> <li>•Renovate &amp; decommission Road Nos. 16-7-25.1 (900’) &amp; 16-7-25.2 (3,900’)</li> <li>•Trail segments 1-6 decommissioned (3,200’)</li> <li>•Remaining portion of Road No. 16-7-25.2 decommissioned (4,400’)</li> </ul>	<ul style="list-style-type: none"> <li>•No Action</li> </ul>

ISSUE ↓	Alternative 1	Alternative 2	Proposed Action Alternative 3	Alternative 4
<p><b>How would timber harvest and associated activities affect NSO habitat and MAMU nesting habitat?</b></p> <p><i>Measurements: change in quality of acres foraging/dispersal habitat (NSO); change in acres suitable nesting MAMU habitat; noise disturbance in MAMU breeding season</i></p>	<p><b>NSO:</b></p> <ul style="list-style-type: none"> <li>• Degrade 70 acres Dispersal Habitat for 10-20 years</li> <li>• Accelerate development of suitable nesting habitat in RRs</li> <li>• Not likely to jeopardize the continued existence</li> <li>• Not likely to destroy or adversely modify spotted owl critical habitat</li> </ul> <p><b>MAMU:</b></p> <ul style="list-style-type: none"> <li>• No change in acres of suitable nesting MAMU habitat</li> <li>• No disturbance effect due to seasonal &amp; daily restrictions</li> <li>• Not Likely to Adversely Affect</li> </ul>	<p><b>NSO:</b></p> <ul style="list-style-type: none"> <li>• Degrade 135 acres Dispersal Habitat for 10-20 years</li> <li>• Accelerate development of suitable nesting habitat in RRs</li> <li>• Not likely to jeopardize the continued existence</li> <li>• Not likely to destroy or adversely modify spotted owl critical habitat</li> </ul> <p><b>MAMU:</b></p> <ul style="list-style-type: none"> <li>• No change in acres of suitable nesting MAMU habitat</li> <li>• Noise disturbance; No Seasonal Restriction</li> <li>• May Affect, Likely to Adversely Affect</li> </ul>	<p><b>NSO:</b></p> <ul style="list-style-type: none"> <li>• Degrade 135 acres Dispersal Habitat for 10-20 years</li> <li>• Accelerate development of suitable nesting habitat in RRs</li> <li>• Not likely to jeopardize the continued existence</li> <li>• Not likely to destroy or adversely modify spotted owl critical habitat</li> </ul> <p><b>MAMU:</b></p> <ul style="list-style-type: none"> <li>• No change in acres of suitable nesting MAMU habitat</li> <li>• Noise disturbance; No Seasonal Restriction</li> <li>• May Affect, Likely to Adversely Affect</li> </ul>	<p><b>NSO:</b></p> <ul style="list-style-type: none"> <li>• No degradation of Dispersal Habitat resulting from this proposal</li> <li>• No acceleration of development of suitable nesting habitat</li> <li>• Not likely to jeopardize the continued existence</li> <li>• Not likely to destroy or adversely modify spotted owl critical habitat</li> </ul> <p><b>MAMU:</b></p> <ul style="list-style-type: none"> <li>• No change in acres of suitable nesting MAMU habitat</li> <li>• No disturbance effect</li> <li>• No Effect</li> </ul>
<p><b>How would timber harvest and roading affect attainment of Aquatic Conservation Strategy (ACS) objectives at the watershed scale?</b></p> <p><i>Measurements: retard, maintain, restore</i></p> <p>*Late Successional Characteristics</p>	<p><b>OBJ 1</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Hasten LSC* in 10 acres RR)</li> </ul> <p><b>OBJ 2</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 3</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• No restoration of fill failure above Stream 11</li> </ul> <p><b>OBJ 4</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 5</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• No restoration of fill failure above Stream 11</li> </ul> <p><b>OBJ 6</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 7</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 8</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 9</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul>	<p><b>OBJ 1</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Hasten LSC in 15 acres RR)</li> </ul> <p><b>OBJ 2</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 3</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Repair fill failure above Stream 11)</li> </ul> <p><b>OBJ 4</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 5</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Repair fill failure above Stream 11)</li> </ul> <p><b>OBJ 6</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 7</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 8</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 9</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul>	<p><b>OBJ 1</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Hasten LSC in 15 acres RR)</li> </ul> <p><b>OBJ 2</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 3</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Repair fill failure above Stream 11)</li> </ul> <p><b>OBJ 4</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 5</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• Restore (Repair fill failure above Stream 11)</li> </ul> <p><b>OBJ 6</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 7</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 8</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 9</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul>	<p><b>OBJ 1</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• No hastening of LSC in RR</li> </ul> <p><b>OBJ 2</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 3</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• No restoration of fill failure above Stream 11</li> </ul> <p><b>OBJ 4</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 5</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> <li>• No restoration of fill failure above Stream 11</li> </ul> <p><b>OBJ 6</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 7</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 8</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul> <p><b>OBJ 9</b></p> <ul style="list-style-type: none"> <li>• Maintain</li> </ul>

<b>ISSUE ↓</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Proposed Action Alternative 3</b>	<b>Alternative 4</b>
<p><b>What are the effects of roads and yarding on soil productivity?</b></p> <p><i>Measurements: acres of compaction</i></p>	<p><b>Soil Compaction/ Site Productivity</b></p> <ul style="list-style-type: none"> <li>•AAE = 1.4 acres</li> <li>•2.3 acres legacy compaction remaining after harvest</li> <li>•0.5 acres road decommissioned</li> </ul>	<p><b>Soil Compaction/ Site Productivity</b></p> <ul style="list-style-type: none"> <li>•AAE = 2.4 acres</li> <li>•1 acre legacy compaction remaining after harvest</li> <li>•3.6 acres road decommissioned</li> </ul>	<p><b>Soil Compaction/ Site Productivity</b></p> <ul style="list-style-type: none"> <li>•AAE = 2.4 acres</li> <li>•0 acres legacy compaction remaining after harvest</li> <li>•4.6 acres road decommissioned</li> </ul>	<p><b>Soil Compaction/ Site Productivity</b></p> <ul style="list-style-type: none"> <li>•No AAE</li> <li>•2.7 acres legacy compaction remaining after harvest</li> <li>•0 acres road decommissioned</li> </ul>
<p><b>What are the effects of timber harvest and related activities on the spread of noxious weeds?</b></p> <p><i>Measurements: acres ground disturbance from roads, landings</i></p>	<ul style="list-style-type: none"> <li>•1.1 acres disturbed due to road renovation and decommissioning</li> <li>•80 acres disturbed due to thinning operations</li> </ul>	<ul style="list-style-type: none"> <li>•6.7 acres disturbed due to road renovation and decommissioning</li> <li>•135 acres disturbed due to thinning operations</li> </ul>	<ul style="list-style-type: none"> <li>•6.7 acres disturbed due to road renovation and decommissioning</li> <li>•135 acres disturbed due to thinning operations</li> </ul>	<ul style="list-style-type: none"> <li>•0 acres disturbed due to road renovation and decommissioning</li> <li>•0 acres disturbed due to thinning operations</li> </ul>
<p><b>What are the effects of road renovation, road construction, and road decommissioning on the adverse impacts of unauthorized OHV use?</b></p> <p><i>Measurements: length of driveable road segments; length of road decommissioned</i></p> <p>**Does not include Road No. 16-6-31.</p>	<ul style="list-style-type: none"> <li>•10,300' of driveable road segments** available after harvest</li> <li>•1,500' of existing road bed decommissioned</li> </ul>	<ul style="list-style-type: none"> <li>•3,500' of driveable road segments available after harvest</li> <li>•8,300' of existing road bed decommissioned</li> </ul>	<ul style="list-style-type: none"> <li>•0' of driveable road segments available after harvest</li> <li>•11,800' of existing road bed decommissioned</li> </ul>	<ul style="list-style-type: none"> <li>•11,800' of driveable road segments available after harvest</li> <li>•0' of existing road bed decommissioned</li> </ul>
<p><b>How would this project contribute to the Eugene District RMP goal for ASQ?</b></p> <p><i>Measurement: MMBF</i></p>	<ul style="list-style-type: none"> <li>•0.8 million board feet (MMBF)</li> </ul>	<ul style="list-style-type: none"> <li>•1.4 MMBF</li> </ul>	<ul style="list-style-type: none"> <li>•1.4 MMBF</li> </ul>	<ul style="list-style-type: none"> <li>•0 MMBF</li> </ul>

**5.3 ISSUE 1: How would timber harvest and associated activities affect northern spotted owl habitat and marbled murrelet nesting habitat?**

**Spotted Owl**

Alternatives 1-3 would temporarily degrade 70-120 acres (out of 11,600 in the watershed) of dispersal habitat for the northern spotted owl by opening up the canopy and possibly disturbing downed wood that provides habitat for its prey base. Although thinning would temporarily degrade habitat conditions, the overall canopy closure would remain above 40% and harvested areas would still function as low quality dispersal habitat.

Although there would be short-term negative effects of opening the canopy (10-20 years), thinning would accelerate the development of older forest characteristics that provide suitable nesting habitat for owls.

Modification of dispersal habitat associated with the action alternatives would be considered a “May Affect, but Not Likely to Adversely Affect” for the northern spotted owl.

Suitable nesting habitat (80-year-old stands) occurs within 0.25 mile of the proposed harvest area and haul route adjacent to the proposed harvest area. Because these areas are surveyed annually and there has been no recent nesting activity in the area (since 1996), there are no anticipated impacts to owls due to disturbance.

There would be no short-term effects from habitat modification or disturbance to the northern spotted owl from Alternative 4. In the long term (30+ years), development in the Riparian Reserves of older forest characteristics and their associated benefits to spotted owls would occur more slowly than with Alternatives 1-3, through natural disturbance processes and forest succession.

### **Marbled Murrelet**

Because there is no suitable marbled murrelet habitat within the proposed harvest area, Alternatives 1-3 would cause no short-term effects to marbled murrelets from habitat modification. Several large remnant conifers with potential nesting structure located within the Riparian Reserve would be given sufficient buffers to avoid any impacts to the trees. Density management within the Riparian Reserves would hasten attainment of late-seral characteristics necessary to provide suitable nesting habitat for murrelets, a positive, long-term effect.

Unsurveyed suitable habitat occurs within 0.25 mile of the project area. The proposed harvest and other actions associated with Alternative 1 would not be permitted during the critical breeding period (April 1-August 5). Daily timing restrictions from August 6 through September 15 would mitigate potential disturbance impacts. Therefore, Alternative 1 “May Affect, but is Not Likely to Adversely Affect” the marbled murrelet.

Under Alternatives 2 and 3 (Proposed Action), because harvest operations would be allowed during the critical breeding period (April 1- September 15), there is a possibility of disturbance to nesting marbled murrelets. Implementation of daily timing restrictions on harvest activities during this time period would mitigate impacts to the extent possible. Because of potential disturbance impacts, Alternatives 2 and 3 “May Affect, and (are) Likely to Adversely Affect” the marbled murrelet.

Under Alternative 4, no potential or suitable habitat for the marbled murrelet would be modified or affected by disturbance. Within the Riparian Reserves, attainment of late-seral characteristics necessary to provide suitable nesting habitat for murrelets would be slower than Alternatives 1-3.

### **Cumulative Effects - All Action Alternatives**

When considered together, the Rock Fish project (a commercial thinning proposed for Fiscal Year 2004 located in T16S, R7W, Section 23) and the Get Ready project could reduce the short-term quality of dispersal habitat on as many as 690 acres, or 25% of the BLM-managed land within the quarter township. No dispersal habitat would be lost from either project, so adequate dispersal habitat in the quarter township would remain. It is expected that the Long Tom Watershed would continue to provide adequate dispersal habitat for the spotted owl, although the spatial arrangement of these habitats would change over time as harvests continue and other stands mature.

Stands outside of Riparian Reserves would be subject to commercial harvest rotations, approximately 80 years on Matrix lands. Regeneration harvest could take place in these stands in 30 years.

## **5.4 ISSUE 2: *How would timber harvest and roading affect attainment of Aquatic Conservation Strategy (ACS) objectives at the watershed scale?***

All alternatives would maintain ACS objectives 2, 4, and 7. The remaining ACS objectives have been analyzed further.

**Objective 1:** All alternatives would maintain the distribution, diversity, and complexity of watershed and landscape-scale features in relation to the aquatic systems. Alternatives 1-3 would have the potential benefit of hastening the development of late-successional characteristics of the Riparian Reserve residual stand because of the density management that would occur (10 acres Alternative 1, 15 acres Alternatives 2 and 3).

**Objective 3:** All alternatives would maintain the physical integrity of the aquatic system. The action alternatives would contribute to the restoration of the physical integrity of the aquatic system by developing larger trees more quickly than Alternative 4, which proposes no treatment of Riparian Reserves. Through repair of the fill slope failure at the headwater of Stream 11, and the decommissioning of Road No. 16-7-25.2, Alternatives 2 and 3 would restore the physical integrity of Stream 11 by reducing or eliminating the chronic sedimentation that is occurring.

**Objective 5:** All alternatives would maintain, and Alternatives 2 and 3 (Proposed Action) would restore, the sediment regime under which this aquatic ecosystem evolved. Increases in erosion/sedimentation from the action alternatives are expected to be low due to the BMPs. Alternatives 2 and 3 (Proposed Action) may have a greater risk of sedimentation than Alternative 1 because there would be more volume hauled. However, in all cases this risk would be very low because of the filtering effect of untreated Riparian Reserves around all streams. Alternative 4 would have no risk of increased erosion or sedimentation.

All action alternatives would reduce overall compaction through decommissioning of some existing roads; Alternative 1 would decommission the least, and Alternative 3 (Proposed Action) the most. Alternatives 2 and 3 would help restore the sediment regime by reducing or eliminating the chronic sedimentation from the fill failure and road delivery of sediment in the vicinity of the headwater of Stream 11. The fill failure would be repaired and Road No. 16-7-25.2 would be decommissioned to restrict access to this area.

**Objective 6:** All alternatives are likely to maintain in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The risk of rain-on-snow events of large magnitude is unlikely at these elevations. All action alternatives might contribute to an increase in summer low flows, overall water yield, and peak flows because of a reduction in evapotranspiration and interception due to the removal of trees. Peak flow effects are expected to gradually diminish within a few to several decades. These effects would increase with the number of trees removed and the amount of compaction. Of the action alternatives, Alternative 1 would have the least effect and Alternative 3 (Proposed Action) the greatest effect. Effects from compaction on peak flow from Alternatives 2 and 3 would be similar to Alternative 1. Temporary road construction would increase effects slightly over Alternative 1. Alternative 3 (Proposed Action) would be slightly less than Alternative 2 because more existing compacted surfaces would be decommissioned. All action alternatives would have the benefit of reducing existing compaction by decommissioning existing road surfaces. Alternative 4 (no action) would not alter the existing low flow, peak flow, or water yield, nor reduce existing compaction.

**Objective 8:** All alternatives would maintain and restore the species composition and structural diversity of plant communities in riparian areas and would maintain the amount and distribution of coarse woody debris sufficient to sustain the present physical complexity and stability of the riparian areas. Treatment of portions of the Riparian Reserves under Alternatives 1-3 would cause a reduction in the canopy closure for the short term, which could result in some micro-climatic alteration or other adverse effects for species that prefer complete canopy closure or that do not tolerate disturbance. Any such effect would be minor because of the residual trees, the extensive untreated Riparian Reserves, and because of the current poor habitat condition of the stands for most late-successional dependent wildlife species. Ultimately, Alternatives 1-3 would hasten the development of late-successional characteristics in the Riparian Reserves.

**Objective 9:** All alternatives would maintain and restore the existing habitat of native plant, invertebrate, and vertebrate riparian-dependent species. Alternatives 1-3 may also contribute to the restoration of habitat for native plant, invertebrate, and vertebrate riparian-dependent species. Treatment of the outer portions of the Riparian Reserve (Alternatives 1-3) would accelerate late-successional forest characteristics that would benefit riparian-dependent species in the long term, and untreated portions of the Riparian Reserves would continue to provide habitat for these species in the short term. Alternative 4 would not have this benefit.

Based on the above analysis of the effects on attainment of the ACS objectives, each alternative is consistent with the ACS and objectives for the Riparian Reserves and would not prevent or retard the natural rate of attainment of any of the ACS objectives. Management actions under Alternatives 1-3 would hasten development of large conifers in the Riparian Reserves and enhance attainment of ACS objectives. Under Alternative 4, the stands would continue to develop and mature slowly without treatment.

### **Cumulative Effects - All Alternatives**

Approximately 95% of the harvesting would occur in the Hayes Creek drainage, with the remainder in the unnamed headwater drainage to Long Tom River. The harvest areas proposed in the different action alternatives are all less than 0.5% of the unnamed drainage area to Long Tom River; vary from about 4-6% of the Hayes Creek drainage area; and vary from about 0.4-0.7% of the total sub-watershed area.

## **5.5 ISSUE 3: *What are the effects of roads and yarding on soil productivity?***

### **Slope Stability**

There are no slope stability concerns for any of the alternatives.

### **Road Impacts: Sedimentation**

None of the alternatives would cause a direct effect of sedimentation or an indirect effect to water quality.

### **Soil Compaction/Site Productivity**

The direct effect of building and renovating roads and/or cable logging is soil compaction. The indirect effect is a loss in site productivity through compaction. Through the use of the BMPs, soil compaction would not exceed the allowable areal extent (2%) for any of the alternatives, assuring productivity losses of less than 1%. The nutrient status of the forest would benefit from logging slash left on the forest floor from any of the action alternatives.

Alternative 1 would renovate and decommission approximately 1,500' of Road No. 16-7-25.2, or approximately 0.5 acres, leaving approximately 2,900' of this road as a compacted roadbed. Approximately 2.8 acres of legacy compaction would remain in the project area at project completion. Alternative 1 would allow an areal extent of <1.4 acres to remain compacted after amelioration. Alternative 1 would have less recovery of soil compaction than Alternatives 2 and 3.

Alternative 2 would renovate and decommission approximately 8,300' of existing roadbed, or approximately 3.4 acres. Alternative 2 would allow <2.4 acres to remain compacted after amelioration. Alternative 2 would have less recovery of soil compaction than Alternative 3, but more recovery than Alternatives 1 and 4.

Alternative 3 (Proposed Action) would renovate and decommission approximately 11,800' of existing roadbed, or approximately 4.5 acres. The total area of compacted roadbeds and trails that would remain within the project area at completion of this project is approximately 0 acres (decommissioning would include approximately 2,400' of OHV trails within the project area and an additional 800' outside the project area). Alternative 3 would allow <2.4 acres to remain compacted after amelioration. Alternative 3 would have the highest recovery of soil compaction among all alternatives.

Alternative 4 would cause no additional soil compaction or soil displacement to occur because no harvesting or new road construction would be conducted. No haul would occur on forest roads from this project. However, Alternative 4 would have the most effect on soil productivity of all alternatives because of the potential of compaction, soil disturbance and sedimentation from OHV use. By taking no action, soil site productivity could potentially decline with OHV use, and sedimentation from the headwaters would remain at current levels or could potentially increase with OHV use.

**Table 4: Summary of Impacts to Soils**

	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Proposed Action Alternative 3</b>	<b>Alternative 4</b>
Allowable Areal Extent of Compaction after amelioration at (2%)	<1.4 Acres	<2.4 Acres	<2.4 Acres	NA
Acres of Decommissioning	0.5	3.4	4.5 (includes additional OHV trails outside project area)	0
Acres of compacted roadbeds and trails remaining at completion of project	2.8	0.8	0	1.8

**Cumulative Effects - All Alternatives**

Alternatives 1-4 would not be expected to have any cumulative effect on soil compaction within the Long Tom Watershed. Continued management of BLM lands and on-going right-of-way agreements with adjacent landowners may result in additional permanent new roads being built within the watershed over time on BLM lands, contributing to compaction and a loss of soil productivity within the watershed. The transportation management plan for the Long Tom Watershed proposed to decommission approximately 50 miles (46%) of the 110 miles of BLM-controlled road in the Long Tom Watershed road system (EA-01-09). To date, BLM has completed approximately 16 miles of this decommissioning.

**5.6 ISSUE 4: What are the effects of timber harvest and related activities on the spread of noxious weeds?**

Ground disturbance and loss of canopy could lead to increases in the invasive non-native and noxious weeds in the area. The requirement to wash equipment before entering the area would mitigate the spread of weeds.

Under Alternative 1, 80 acres would be disturbed due to thinning, and 1 acre disturbed due to landings and road construction, renovation, and decommissioning. Alternatives 2 and 3 (Proposed Action) would create 135 acres of thinned area, and approximately 7 acres of road and landing disturbance. No additional weed habitat would be created by Alternative 4.

Based on observations in timber harvests adjacent to the project area, thinned areas would have about 1% cover of invasive non-native and noxious weed species for up to 15-20 years after the harvest. The decommissioned roads would likely have non-native cover similar to the adjacent regeneration harvest and roadsides (approximately 5%, including Scotch broom), depending on seed dispersal and efficacy of native grass seeding. Thysell and Carey (2001) found that thinning increased the diversity and abundance of non-native weeds. Most weeds decreased from 1 to 3 years after thinning, although sod-forming grasses continued to increase.

False brome (*Brachypodium sylvaticum*) could be introduced, particularly by OHVs. OHVs frequent areas with false brome elsewhere in the district, and could introduce the species in the mud they carry. The nearest known false brome site is 6 miles to the north, near Hult Reservoir. This grass is listed as noxious by ODA and can dominate disturbed areas indefinitely to the near exclusion of other herbaceous species. It is also shade tolerant relative to other noxious weeds, and can thrive under thinned canopies. Alternative 3 (Proposed Action), with OHV mitigations, would lessen the likelihood of false brome introduction.

### Cumulative Effects - All Alternatives

Within the Long Tom Watershed, there are locations where displacement of native species by invasive non-natives, particularly Scotch broom and knapweed, has occurred. Ground disturbance within the project area from any of the action alternatives analyzed here may contribute to this effect.

Roads act as the primary vector for the long-distance spread of invasive non-natives across landscapes. The Bureau of Land Management has an active invasive non-native control program, and is currently targeting roadside populations of Scotch broom and knapweed in this watershed and across the Eugene District. The Long Tom Watershed is highly roaded, but there would be no net gain in permanent roads under any of the alternatives, and in fact with Alternatives 2 and 3 there would be a net loss.

## 5.7 ISSUE 5: *What are the effects of road renovation, road construction, and road decommissioning on the adverse impacts of unauthorized OHV use?*

The following analysis considers these assumptions: The analysis is limited to the project area, with the exception of OHV trails 2 and 6; existing OHV trails 2 and 6 are within the section south of the project area; the road lengths listed as available for driving indicate what would be available upon completion of operations; Road No. 16-6-31 was not used in calculations of OHV roads or trails as it is a heavily traveled rock road; and all OHV trails were created illegally and are resulting in resource damage.

**Table 5: OHV Road and Trail Summary**

	Alternative 1	Alternative 2	Proposed Action Alternative 3	Alternative 4
Road footage available for use	10,300	3,500	0	11,800
Existing road footage decommissioned	1,500	8,300	11,800	0
New road footage decommissioned	0	3,100	3,100	0
Evaluation: OHV use	Medium use	Low use	No use	Highest use
Evaluation: resource protection	Low protection	Medium protection	Highest protection	No protection

### Alternative 1

New road construction would not occur in this alternative. Renovation of approximately 1,500' of Road No.16-7-25.2 would occur. Upon completion of operations this portion of the road would be decommissioned. No other existing roads or trails would be modified, leaving approximately 10,300' of available roads and trails for use. Compared to the other alternatives this would result in some resource protection and medium road use for OHVs. See the summary table for total road and trail footage comparisons and evaluations.

## **Alternative 2**

New road construction would occur (Spurs C, E, F, G H, J, and K), totaling approximately 3,100'. Upon completion of operations these spurs would be decommissioned. New road construction upon existing roadbeds (Spurs A, B, D, F (first 150'), G (first 900'), J (first 850'), and L) totaling approximately 3,500' would be decommissioned upon completion of operations. Road Nos. 16-7-25.1 and 16-7-25.2 would be renovated and decommissioned, totaling approximately 4,800'. The OHV trails currently identified (1-6) and the remainder of Road No. 16-7-25.2 would be left in their existing conditions (except the first 150' of Trail 4, which coincides with the first 150' of Spur F). This would leave 3,500' available for OHV use while decommissioning 8,300' of existing roads. Compared to the other alternatives, there would be medium resource protection and low OHV use. See the summary table for total road and trail footage comparisons and evaluations.

## **Alternative 3 (Proposed Action)**

This alternative is similar to Alternative 2, except Trails 1-6 and the portion of Road No. 15-7-25.2 that would not be used in the timber sale would be decommissioned as well. This would result in zero road footage available for use after the timber sale, while decommissioning approximately 11,800' of existing roads and trails. The trails may be decommissioned separately (possibly at a later date) from the timber sale contract. Compared to the other alternatives, this would result in the highest protection for resources as there would be no road use for OHVs. See the summary table for total road and trail footage comparisons and evaluations.

## **Alternative 4**

This alternative (no action) would retain the roads and trails in their present conditions. There would be no construction, renovation, or decommissioning, of any roads or trails. Approximately 11,800' of existing roads and trails would remain available for use. Compared to the other alternatives this would result in the least protection for resources and the highest use available for OHVs. See the summary table for total road and trail footage comparisons and evaluations.

## **Cumulative Effects - All Alternatives**

There is an increasing trend of OHV use on BLM lands within the Long Tom Watershed. The Long Tom Watershed is highly roaded, (primarily from past timber management activities), providing many access points or opportunities for OHV users. Potential actions taken in Section 23 to limit unauthorized OHV activities as part of the proposed Rock Fish thinning could displace OHV users from there and increase the risk that displaced OHV users would "discover" the adjacent Get Ready project area.

### **5.8 ISSUE 6: *How would this project contribute to the Eugene District RMP goal for the Allowable Sale Quantity?***

Alternatives 2 and 3 (Proposed Action) would contribute the most toward reaching the Eugene District RMP goal for ASQ at approximately 1.4 MMBF each. Alternative 1 would contribute 0.8 MMBF. Alternative 4 would not contribute toward reaching the Eugene District RMP goal for ASQ.

## **6.0 CUMULATIVE EFFECTS**

This analysis incorporates by reference the analysis of cumulative effects in the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (NSO FSEIS) (Chapter 3 & 4, pp. 4-10) and the RMP EIS (Chapter 4). Those documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives analyzed here would have cumulative effects on soils, water or air quality beyond those effects analyzed in the above documents.

It is likely that some stands on BLM-administered lands in the Long Tom Watershed will be treated with commercial thinnings or regeneration harvests given that the surrounding sections are GFMA and Connectivity LUAs. For Fiscal Years 2003 and 2004, 7<sup>th</sup> Paradise (commercial thinning, TS 17S, R 7W, Sec. 3), has been analyzed for treatment; and Rock Fish (commercial thinning, TS 16S, R7W, Sec. 23 – Long Tom and Lake Creek Watersheds) and Dead Horse (commercial thinning, TS 15S, R 6W, Sections 21 and 27), will be analyzed for treatment. Timber sales analyzed previously but not yet logged include Little AI, a thinning in TS 17S, R 6W, Sections 7, 8, and 17, sold in 2001, and Bishops Hat, a thinning in TS 17S, R 7W, Sec. 21, sold in 2002.

On private lands in the watershed, more intensive timber management actions, including clearcutting and broadcast burning, are occurring and are likely to continue. Also, it is possible that some forest stands on private land will be converted to non-forest land, for either agricultural or residential use. Private lands provide habitat for deer, elk, and neotropical birds but will primarily alternate between early- to mid-seral stages.

## 7.0 CONSULTATION AND COORDINATION

### 7.1 LIST OF PREPARERS

The Proposed Action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists.

NAME	TITLE	DISCIPLINE
Karin Baitis	Soil Scientist	Soils
Mark Stephen	Forest Ecologist	Ecology
Gary Cairns	Engineer	Roads/Transportation
Dave Reed	Fuels Specialist	Fuels/Air Quality
Michael Southard	Archaeologist	Cultural Resources
Peter O'Toole	Silviculturist/Timber Planner	Silviculture
Carla Alford	T & E and Wildlife Biologist	Wildlife Habitat
Rob Preece	Biological Technician	Fisheries
Douglas Goldenberg	Botanist	Botanical Resources
Janet Zentner	Forester	Logging Systems
Saundra Miles	Recreation Planner	Visual Resources and Recreation
Gary Hoppe	Landscape Planner	Planning and Environmental Coordination
Steve Steiner	Forest Hydrologist	Hydrology

### 7.2 CONSULTATION

This Proposed Action has been addressed in the FY 2003-04 Habitat Modification Biological Opinion which was issued on September 30, 2002. All required mitigation measures included in this Opinion would be followed to ensure compliance with the Endangered Species Act.

Because of the modification of dispersal habitat in an area that would continue to provide an adequate amount of this habitat after harvest, this project "May Affect, but is Not Likely to Adversely Affect" the northern spotted owl.

Unsurveyed suitable habitat for the marbled murrelet exists within 0.25 miles of the proposed harvest area and haul route. A daily timing restriction would be enforced during the breeding season. Therefore, disturbance from Alternative 3 (Proposed Action) "May Affect, and is Likely to Adversely Affect" marbled murrelets.

There would be no effect to the bald eagle.

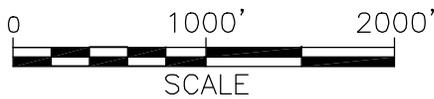
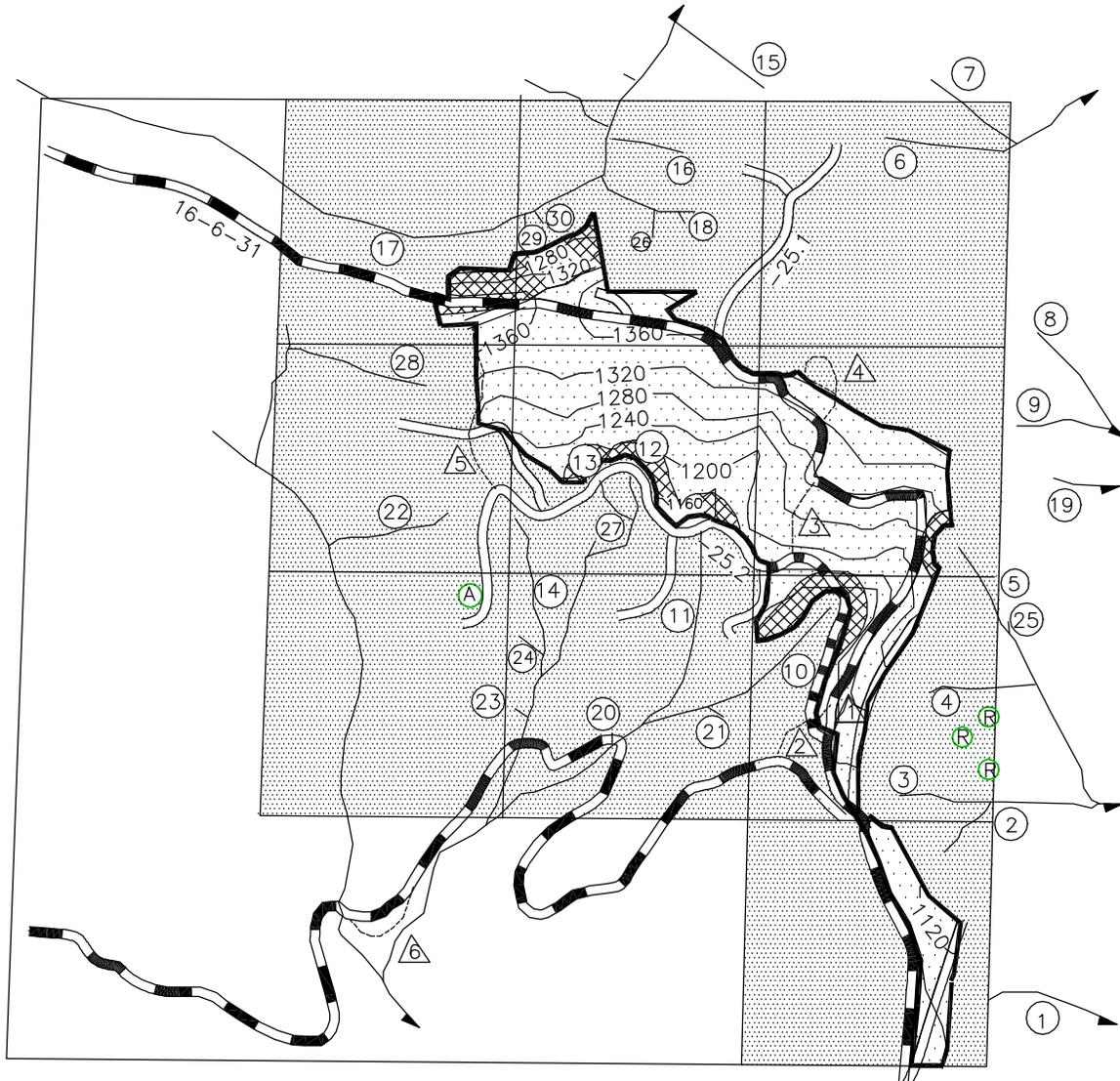
The Bureau of Land Management Siuslaw Resource Area consulted with the Confederated Tribes of Siletz, and the Confederated Tribes of the Grande Ronde. No response was received.

## 8.0 REFERENCES

- USDA Forest Service and USDI Bureau of Land Management. February 1994. Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Portland, Oregon.
- USDA Forest Service and USDI Bureau of Land Management. April 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl.
- USDI Bureau of Land Management. November 1994. Eugene District Resource Management Plan/Environmental Impact Statement. Eugene, Oregon: Eugene District Office.
- USDI Bureau of Land Management. June 1995. Eugene District Record of Decision and Resource Management Plan. Eugene, Oregon: Eugene District Office.
- USDI Bureau of Land Management. May 1997. Cottage Grove Lake/Big River Watershed Analysis. Eugene, Oregon: Eugene District Office.
- USDA Forest Service and USDI Bureau of Land Management. January 2001. Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines.
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- Nelson, S.K. 1997. Marbled Murrelet (*Brachyramphus marmoratus*). In The Birds of North America, No. 276. (A. Poole and F. Gills, eds). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologist's Union, Washington, D.C.
- Nelson, S.K. and A.K. Wilson. 2001. Marbled Murrelet habitat characteristics of state lands in western Oregon. Unpublished final report, OR Coop. Fish and Wildlife Research Unit, Oregon State University, Department of Fisheries and Wildlife, Corvallis, OR. 108 pp.
- Thysell, D.R. and A.B. Carey. 2001. Manipulation of density of *Pseudotsuga menziesii* canopies: preliminary effects on understory vegetation. Can. J. For. Res. 31:1513-1525.

UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 BUREAU OF LAND MANAGEMENT

GET READY  
 ALTERNATIVE 1  
 T. 16 S., R. 7 W., SECTION 25



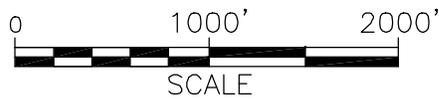
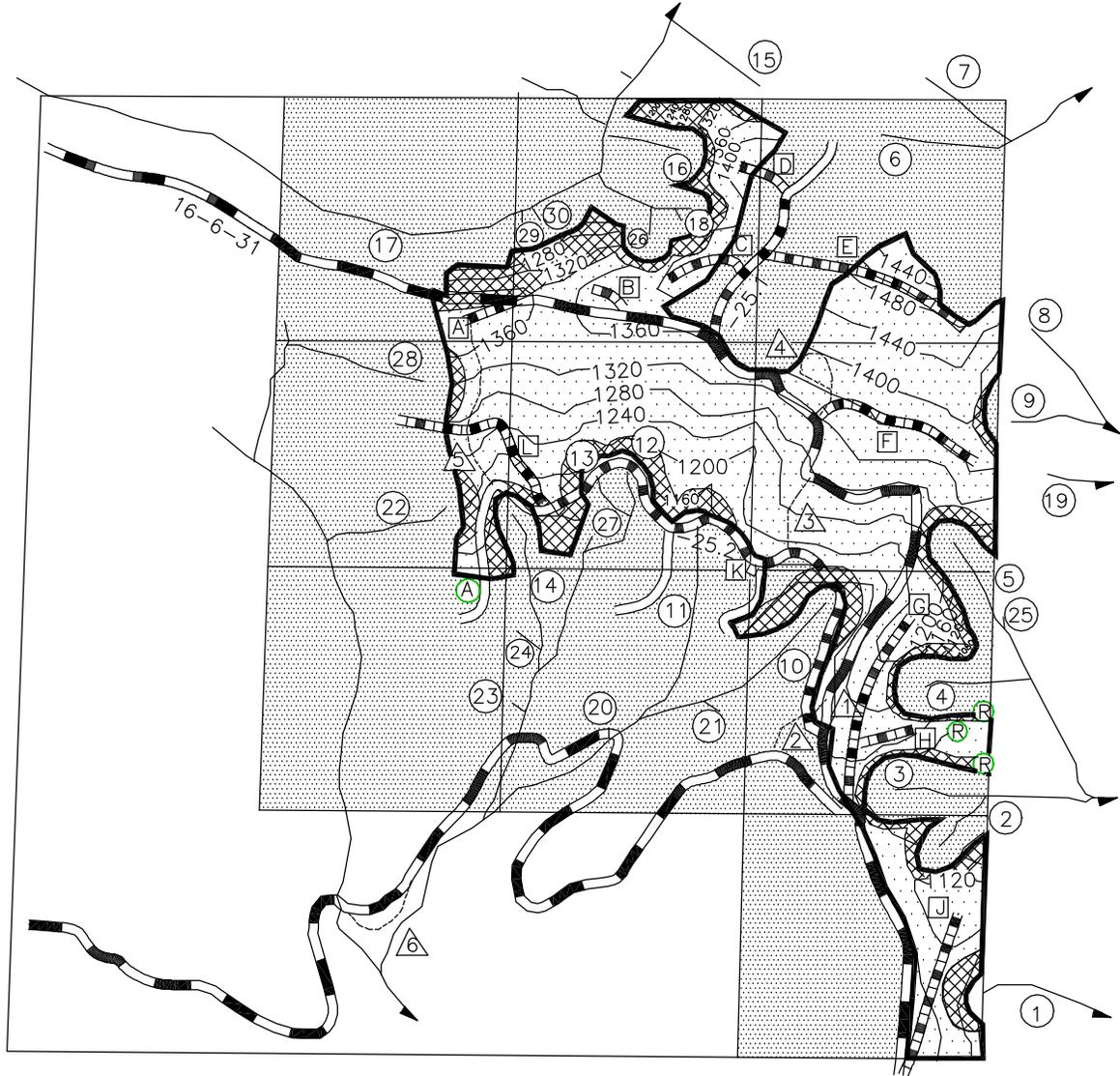
SCALE  
 LEGEND

-  PARTIAL CUT AREA
-  RESERVE AREA
-  RIPARIAN RESERVE HARVEST AREA
-  RAMALINA POPULATION
-  ALLOTROPA POPULATION

-  ROADS TO BE RENOVATED
-  ROCK SURFACED ROAD
-  DIRT SURFACED ROAD
-  OHV TRAIL
-  OHV TRAIL NUMBER
-  STREAM
-  STREAM NUMBER

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

GET READY  
ALTERNATIVE 2  
ALTERNATIVE 3 (PROPOSED ACTION)  
T. 16 S., R. 7 W., SECTION 25



LEGEND

- |   |                                  |   |                        |
|---|----------------------------------|---|------------------------|
|  | PARTIAL CUT AREA                 |  | ROAD TO BE CONSTRUCTED |
|  | RESERVE AREA                     |  | ROADS TO BE RENOVATED  |
|  | RIPARIAN RESERVE<br>HARVEST AREA |  | ROCK SURFACED ROAD     |
|  | RAMALINA POPULATION              |  | DIRT SURFACED ROAD     |
|  | ALLOTROPA POPULATION             |  | OHV TRAIL              |
|  | SPUR ROAD IDENTIFICATION         |  | OHV TRAIL NUMBER       |
|   |                                  |  | STREAM                 |
|   |                                  |  | STREAM NUMBER          |

DATE: 9/16/03

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**EUGENE DISTRICT OFFICE**  
**Preliminary Finding of No Significant Impact**  
for  
**Get Ready Timber Sale**  
**ORO90-EA-03-16**

Determination:

On the basis of the information contained in the Environmental Assessment, and all other information available to me, it is my determination that implementation of the proposed action or alternatives will not have significant environmental impacts beyond those already addressed in the Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (April 1994), and the Eugene District Record of Decision and Resource Management Plan (June 1995) as amended by the Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management January 2001; with which this EA is in conformance, and does not, in and of itself, constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.

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Steven Calish  
Field Manager, Siuslaw Resource Area

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Date

Environmental Assessment

for

Get Ready Timber Sale  
ORO90-EA-03-16

September 2003

United States  
Department of the Interior  
Bureau of Land Management  
Eugene District Office  
Siuslaw Resource Area