1792A
McGowan/Parsons
EA-06-03

May 3, 2006

Concerned Citizen,

The Upper Willamette Resource Area of the Eugene District Bureau of Land Management has completed the Environmental Assessment (EA) and Finding of No Significant (FONSI) for the proposed McGowan/Parsons Project located in Section 31, T. 15 S., R. 2 W. and Sections 5 and 7, T. 16 S., R. 2 W., W.M.

You have expressed an interest in receiving copies of Environmental Assessments for district projects. Enclosed is a copy of the EA for your review and any comments. Public notice of this proposed action will be published in the Eugene Register Guard on March 22, 2006. The EA will be available on the internet at http://www.edo.or.blm.gov/planning/nepa if current internet access problems related to ongoing litigation are resolved. The public comment period will end on June 2, 2006. Please submit comments to me at the district office, by mail or by e-mail at OR090mb@or.blm.gov by close of business (4:15 p.m.) on or prior to June 2, 2006. If you have any questions concerning this proposal, feel free to call Christie Hardenbrook at 683-6110.

Comments, including names and street addresses of respondents, will be available for public review at the district office, 2890 Chad Drive, Eugene, Oregon during regular business hours (7:45 a.m. to 4:15 p.m.), Monday through Friday, except holidays, and may be published as part of the EA or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Sincerely,

Emily Rice, Field Manager
Upper Willamette Resource Area

Enclosure

5401
E-07-673

# McGowan/Parsons Project
# Upper Willamette Resource Area
# BLM Eugene District

## Environmental Assessment
## OR090-06-03

## 1.0 PURPOSE AND NEED FOR ACTION

The Bureau of Land Management (BLM) proposes to initiate forest management activities on stands located in T. 15 S., R. 2 W., Section 31 and T. 16 S., R. 2 W., Sections 5 and 7. The land use allocations for these areas are Matrix and Riparian Reserve.

The objectives for these actions are to (1) to provide a sustainable supply of timber from the Matrix lands while maintaining valuable structural components (i.e. snags and down woods) and habitat for special status species; and (2) to treat stands to accelerate the growth of trees to restore large conifers in Riparian Reserves. Many of the 60-65 year old stands in these sections are overstocked, causing reduced tree growth and stand vigor.

This project also proposes aquatic habitat restoration and road improvements in the McGowan and Parsons Creek 7th Field Watersheds. The objectives of these actions is to (1) enhance stream habitat conditions for the various life stages of fish and other aquatic-dependent species; (2)restore migration passage to suitable upstream habitat: and (3) reduce road related sediment sources to stream habitat. These actions are needed to address these current conditions: (1) streams in these watersheds lack in-stream structure which creates habitat diversity and complexity for the various life stages of aquatic species, several culverts are barriers to aquatic species movement; (2) portions of the major timber haul roads are contributing sediment to streams due to inadequate surfacing and undersized and/or failing culverts.

### 1.2 CONFORMANCE

This environmental assessment (EA) is tiered to the Northwest Forest Plan ROD and the Eugene District RMP, as amended by the Record of Decision (ROD) for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (January 2001), and the Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (March 2004). These documents are available for review at the BLM Eugene District Office or on the internet at http://www.or.blm.gov/nwfp.htm. The Parson's Complex project file contains additional information compiled by the Interdisciplinary Team (ID Team) to analyze effects and is available for review at the Eugene District Office.

## 2.0 ALTERNATIVES

### 2.1 ALTERNATIVE 1: NO ACTION

Thinning, aquatic habitat restoration or road management actions would not occur within the project section at this time. The purpose and need of the project would not be met.

## 2.2 ALTERNATIVE 2: THINNING AND AQUATIC HABITAT RESTORATION

### 2.2.1 UPLAND THINNING

This alternative consists commercial thinning on approximately 515 acres in sections 31, 5, and 7. Thinning would be designed to increase tree size through time, extend the culmination of mean annual increment (CMAI), and capture anticipated mortality. Stands would be thinned from below, which means trees selected for harvest would be the suppressed, intermediate, and co-dominant conifer trees. Cut trees would be Douglas-fir and western hemlock. This prescription would result in a stand with variable spacing between the Douglas-fir, cedar and hemlock. There would be gaps around portions of the stand affected by laminated root rot; and unthinned patches around rock outcrops, shallow soils, wet sections and unthinned riparian zones. By leaving hardwoods, western red cedar, incense cedar and Pacific yew trees, both species and structural diversity would be retained and tree vigor improved.

The following are silvicultural prescriptions and approximate acres by section:

Section 31 (75 acres): thinning would reduce the number of trees from approximately 120 trees per acre (TPA) to 70-80 TPA, with an average spacing of 25 feet.

Section 5 (290 acres): thinning throughout this section would reduce the number of trees from approximately 105 TPA to 55-65 TPA, with an average spacing of 25 to 30 feet. Where heavy concentrations of root rot occur, trees would be cut and removed around the perimeter of the disease centers to decrease the spread. Apparent healthy Douglas-fir trees remaining in the center of these disease centers would be retained. The openings left by laminated root rot would be planted with disease resistant western red cedar.

Section 7 (150 acres): section 7A would be reduced from approximately 135 TPA to 70-80 TPA with an average spacing of 25 feet. In other portions of section 7, thinning would reduce the number of trees from approximately 104 TPA to 65-75 TPA, with an average spacing of 25 feet. Where heavy concentrations of root rot occur, trees would be cut and removed around the perimeter of the disease centers to decrease the spread. Apparent healthy Douglas-fir trees remaining in the center of these disease centers would remain. The openings created where laminated root rot is prevalent would be planted with disease resistant western red cedar.

### 2.2.2 RIPARIAN RESERVE MANAGEMENT

Of the approximately 460 Riparian Reserve acres within the project, 160 acres would be thinned and 300 acres would be left untreated. Silvicultural treatments for these acres would be the same as the upland. Thinning would be designed to enhance late seral forest structure by accelerating tree growth. Stream buffers would vary between 75 feet and 100 feet (see Riparian Map in Appendix).

### 2.2.3 Yarding Methods

In total, thinning would be accomplished with a combination of helicopter, cable and ground-based yarding systems. Cable yarding would be proposed for approximately 383 acres, helicopter logging on 275 acres, and ground-based yarding would be proposed for approximately 18 acres (see maps in Appendix A).

**Table 1: Thinning vs. Regeneration Acres by Alternative**

| | Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|
| **Thinning** | **Approximate Acres** | **Approximate Acres** | **Approximate Acres** |
| Section 5 | 0 | 370 | 80 |
| Section 7 | 0 | 215 | 170 |
| Section 31 | 0 | 90 | 90 |
| **Total Thin** | **0** | **675** | **340** |
| **Regeneration** | **Approximate Acres** | **Approximate Acres** | **Approximate Acres** |
| Section 5 | 0 | 0 | 290 |
| Section 7 | 0 | 0 | 45 |
| Section 31 | 0 | 0 | 0 |
| **Total Regeneration** | **0** | **0** | **335** |

### 2.2.4 INSTREAM RESTORATION

Placement of large wood and boulder structures would be positioned within the mainstem and tributaries of McGowan and Parsons Creek. On-site or transported materials (trees or boulders) would be used. Some tree pulling and/or felling would occur within the riparian, and would function as instream structure or riparian coarse woody debris. Depending on riparian conditions, conifer trees would be targeted for tree pulling and/or felling and would involved a ranged of diameter classes (12-50 inches DBH).

### 2.2.5 ROADS

Improvements and Construction

Approximately 22 miles of existing BLM controlled roads, would be utilized as part of the project. Of that, an estimated 13 miles of road would need maintenance including 5 miles of added crushed rock surfacing (Table 2). There would be approximately 1/2 mile of proposed new temporary road construction with no associated stream crossings. These roads would be tilled and/or blocked after use.

Culvert Replacements

Under this alternative, 21 road-stream crossing culverts (non-fish bearing), 34 cross drains, and 6 fish passage barriers have been identified for replacement on existing permanent road (see Tables 3 and 4). Replacements would meet BLM and Oregon Department of Fish and Wildlife (ODFW) design criteria for fish passage and 100 year flows.

Road Decommissioning

One road, 16-2-7.2c, which is approximately 2 miles long would be fully decommissioned and left in an erosion resistant condition. Actions would include (1) road-stream crossings and cross drains removed, (2) stream channels and banks restored to a more natural condition, (3) drain dips installed, (4) road bed tilled, and/or receive slash or brush, (5) roads blocked, and (6) to reduce erosion and sedimentation to streams, disturbed areas would be mulched and planted with native species.

### 2.2.6 FUELS

Slash within the thinned sections, less than 6” in diameter and within 25’ of roads would be piled as necessary, covered and burned. Landing piles would also be covered and burned.

**Table 2: McGowan/Parson's Roads – Proposed Improvements and Construction**

| **Temporary Road Construction** | | |
|---|---|---|
| Spur T Natural surface | 1100 ft. | |
| Spur U Natural surface | 800 ft. | |
| Spur P Crushed rock surface | 1200 ft. | |
| | **= approximately 1/2 mile** | |
| **Maintenance by Road Number** | | |
| Spur Q rock surfacing | 200 ft. | 8" lift |
| 15-1-31G1 Rock surfacing | 1100 ft. | 10" lift |
| 16-2-18.1 B major improvement Widening and ditching – rock surfacing | 8700 ft. | 8" lift |
| 16-2-10 major improvement Widening and ditching – rock surfacing | 7000 ft. | 4" lift |
| 16-2-18.1A chip seal surfacing | 6500 ft. | |
| 15-1-31G2 Rock surfacing | 1300 ft. | 4" lift |
| 15-1-31C5 – E | 8500 ft. | grading |
| 16-2-27 chip seal surfacing | 22200 ft. | |
| 15-2-31 rock surfacing | 2100 ft. | 4" lift |
| 15-2-31.2 | 1200 ft. | 4" lift |
| 16-2-7.1 | 5300 ft. | 4" lift |
| 16-2-7.2 | 2600 ft. | 4" lift |
| 16-2-7.3 | 3200 ft. | 4" lift |
| 16-2-7.5 | 1300 ft. | 4" lift |
| 16-2-5A | 1400 ft. | 4" lift |
| | **= approximately 13 miles** | |
| **Timber Sale Road Decommissioning** | | |
| Spur T | 1100 ft. | tilled |
| Spur U | 800 ft. | tilled |
| Spur P | 1200 ft. | tilled |
| Spur Q | 800 ft. | tilled |
| 15-1-31G1 | 800 ft. | tilled |
| 15-1-31G1 | 1100 ft. | blocked |
| | **= approximately 1 mile** | |

**Table 3: Culvert Replacements – Non-Fish Bearing Culvert and Cross Drains**

| **Road Numbers** | **Improvements** |
|---|---|
| 16-2-18.1 B | Replace 2 stream crossings and 6 cross drains |
| 16-2-18.1A | Replace 2 stream crossings and 6 cross drains |
| 16-2-27 | Replace 10 stream crossings and 15 cross drains |
| 16-2-29 | Replace 1 stream crossing |
| 16-2-7.2C | Replace 5 stream crossings |
| 16-2-28.1 | Replace 2 stream crossings and 7 cross drains |

**Table 4: Culvert Replacements – Fish Bearing Culverts**

| **Road Numbers** | **Location** | **Improvements** |
|---|---|---|
| 16-2-27 | Allison Creek | Replace 1 mainstem crossing |
| 16-2-28.1 | Allison Creek | Replace 1 mainstem crossings |
| 16-2-27 | McGowan | Replace 1 mainstem and 1 tributary crossing |
| 16-2-29 | McGowan | Replace 1 mainstem and 1 tributary crossing |

## 2.3 ALTERNATIVE 3: REGENERATION AND THINNING HARVEST WITH AQUATIC HABITAT RESTORATION

Riparian treatments, road management, aquatic habitat restoration, and harvest methods, would be the same as Alternative 2. However under this alternative, in addition to the thinning, regeneration harvest would occur on approximately 335 combined acres (in sections 5 and 7A) where stands have reached culmination of mean annual increment (CMAI). In sections 5 and 7A, regeneration harvest would leave 6-8 conifer trees per acre and 4-5 Douglas-fir trees per acre for coarse woody debris recruitment and snags. The diseased portions of the stand would be replanted with disease resistant western red cedar trees and the rest would be planted with a mix of Douglas-fir and cedar.

Fuel treatments would be the same as alternative 2 except 239 acres of regeneration harvest would be excavator piled, covered and burned. Thirty-nine acres of regeneration harvest would be swamper burned.

## 2.4 DESIGN FEATURES

1. Harvesting for all action alternatives:
   Specific project actions are restricted in some sections during certain times of the year to avoid impacts to bald eagles and/or spotted owls.
   - Harvest Actions (felling, yarding, etc.) in harvest sections 5A, 5B, 5D, 5E, 5F, 5G,and 5H would occur only from 10/1 – 2/28.
   - Helicopter Actions in harvest sections 5A, 5B, 5D, 5E, 5F, 5G,and 5H, and those that use landings in T. 16 S., R. 2 W., Sections 4 and 6, would occur only from 10/1 – 2/28. Any newly proposed helicopter landings would be evaluated for potential seasonal restrictions and authorized for use.
   - Rock and Log Hauling along authorized routes would occur at any time of year in all locations – including rock hauling from the quarry in T. 16 S., R. 2 W., Sec 6. All restrictions apply to all years project actions are occurring. Road construction and renovation, and harvest and helicopter actions may be waived/reduced in a given year if survey information indicates spotted owls are not nesting in the section.
2. Snags, down logs, and large remnant trees would be retained on site and would not be cut, except those in temporary road construction right of ways, landings, yarding corridors, and those posing a safety hazard.
3. Log lengths would be limited to 40 feet in length where necessary to protect residual trees, snags and coarse woody debris during yarding.
4. Directional falling and yarding would be utilized for the protection of retention trees, existing coarse woody debris, snags, and reserve sections.
5. Require one-end suspension of logs using ground-based or cable yarding systems to reduce the potential for erosion and run-off during yarding. Intermediate supports may be required to accomplish this objective.
6. Place cable corridors on the landscape to avoid felling large remnant trees.
7. Treat cable corridors with the potential for accelerated erosion with logging slash and/or waterbars as needed.
8. Ground-based yarding operations would occur where designated **(**see Appendix A for map). The following requirements would be applied to ground base yarding sections:
   - Placement of skid trails would be avoided within the Riparian Reserves.
   - Average distance between trails would be 150 feet or greater when feasible.
   - Use existing skid trails, where possible.
   - Avoid placing skid trails on rocky soils.
   - Preplan and designate skid trails to occupy less than 10% of the unit.

- Restrict yarding to seasonally dry periods when soil moisture content provides the most resistance to compaction. This is usually July 1st through October 1st.
- Till all compacted skid trails, with an excavator to a depth of 18 inches, when soil moisture is appropriate. Minimize damage to residual tree roots adjacent to trails. To reduce erosion and restore soil productivity, pull slash, logging debris and brush from the adjacent forest floor onto the skid trails.
- If tillage cannot be accomplished the same operating season, all skid trails and temporary native surface roads would be left in an erosion resistant condition and blocked prior to the onset of wet weather. This would include construction of drainage dips, water bars, lead off ditches, and barriers (rootwads or brush piles) to prevent vehicle access until final blockage and/or tilling.

9. Mechanized Cutting (cut-to-length systems) may be used where slopes are less than 40%.
   - Restrict activity to seasonally dry periods (typically July 1st until October 1).
   - Limit movement off primary trails to a single pass.
   - Harvester processors would be kept moving on top of slash whenever possible with slash a minimum depth of 12 inches.
10. Helicopter yarding:
    - Yarding would be done with a helicopter capable of suspending logs free and clear of the ground and treetops.
    - All helicopter landings would have prior approval to construct and or use
    - The helicopter landing located on Road 16-2-10 would be designed so there is no hydrologic connection to nearby streams. Rock aggregate would be placed on the existing road and at this landing. Additional cross drains would be installed to ensure minimal sediment runoff from the site during logging operations.
11. All trees with stain from laminated root rot would be marked with two parallel marks on the stump for identification. A treatment strip, of approximately 15' to 30', would be cut around root rot section to reduce spread.

<u>Harvest Design Features Specific to Alternative 2 and Thinning Units in Alternative 3:</u>

1. All western red-cedar, incense cedar, Pacific yew, and hardwood trees would be retained, except where necessary to accommodate safety and logging systems.

<u>Harvest Design Features Specific to Regeneration Units in Alternative 3:</u>

1. Create an average of 240 linear feet per acre of down logs with an average 20 inch diameter at the large end and a minimum of 20 feet in length.
2. Create an average of 3 snags per acre from trees greater than or equal to 20" DBH.
3. Retain six-eight trees per acre, from conifer species representative and proportional to the stand.

<u>Road Construction, Road Improvements, Aquatic Habitat Restoration, Road Decommissioning and Hauling:</u>

1. Oregon Department of Fish and Wildlife (ODFW) in-water guidelines would apply to all in-stream activities. This includes stream crossing replacements. Work would be done between July 1-October 15.
2. Perennial stream crossings would require: 1) temporary flow diversion structure, 2) sediment containment structure placed across the channel below the work section (i.e. straw bales), 3) work section pumped of standing water, and 4) disturbed section planted with native seed and straw mulched.
3. Rock surfacing on temporary roads would be removed prior to ripping and closure. Three inch or larger rock will be used on surfacing to enhance the removal and separation from the subgrade. Removal would be done in dry weather with minimal contamination from subgrade.
4. The following requirements would be applied to road decommissioning:
   - Remove existing stream crossings and recycle old culverts.

- To safeguard water quality and downstream fish habitat, stream flow would be bypassed around project sites on Stream No. 5-1 and 5-2. In addition, straw bales may be positioned immediately downstream at excavation sites to reduce direct sediment delivery to nearby streams.
- Fill or waste material would be positioned in a location that would avoid direct or indirect sediment discharges to streams or wetlands.
- Depending on site conditions, road drainage features (drain dip or waterbar) may be constructed on either side of restored stream channels to reduce road sediment delivery.
- Restored stream banks would be planted with native plants, straw mulched, and planted with western red cedar where appropriate.
- Where road subgrade conditions warrant, compacted road surface may be tilled. If tillage is not possible then waterbars and lead-off ditches would be constructed to reduce sedimentation to streams and wetlands. Logging debris and brush would be placed along the full length of the roadbed where needed to reduce erosion.
- Earthen barricades with brush and slash additions would be constructed to block vehicle access.

5. Blasting and rock crushing in the quarry in T. 16 S., R. 2 W., Sec 6 can occur only from 10/1 – 11/15. Any newly proposed quarry use must be evaluated for potential seasonal restrictions and authorized for use.
6. Road Construction and Renovation in harvest sections 5A, 5B, 5D, 5E, 5F, 5G,and 5H can occur only from 7/16 – 2/28.

<u>Fuels Treatment</u>

1. Landing piles along permanent roads would be covered and burned.
2. Slash, less than 6” in diameter and greater than 3 feet in length, within 25 feet of either side of the permanent roads would be piled, covered and burned.
3. Landing piles along temporary roads would be scattered on top of the road surface to remove the fuel concentrations, and slow erosion. Resulting fuel bed should not be deep and continuous. Piles along temporary roads, not scattered on the road surface, would be covered and burned.
4. Smoke emissions from the burning of piles would be of short duration and in compliance with ODF through daily Smoke Management Instructions. The burning of piles would likely occur between November 1 and January 1, when the most favorable emission dispersion conditions are possible.

<u>Fuels Treatment Design Features Specific to Alternative 3:</u>

1. Slash, less than 6” in diameter and greater than 3 feet in length, within regeneration harvest sections would be piled, covered and burned to reduce fuel loadings and create planting spots for reforestation.
2. On slopes less than 35% excavator piling would occur, on slopes greater than 35% hand piling would be used. Excavator piling would be limited to periods when soil moistures are less than 35%. Up to 25% of the machine piles may be left unburned as wildlife habitat.

<u>For All Activities:</u>

1. In order to prevent the spread of noxious weeds from other locations, the Purchaser shall be required to clean logging, road construction, and tilling equipment prior to entry on BLM lands. The purpose of the cleaning is to remove dirt and plant debris that may contain noxious weed seeds from the undercarriage, tracks and tire treads of the equipment
2. The contractor would have a Spill Contamination Kit (SCK) on-site during any operation within the project area.
3. In the event of any diesel, hydraulic fluid, or other petroleum product release into soil and/or water, notification, removal, transport, and disposal would be accomplished in accordance with U.S. Environmental Protection Agency and Oregon Department of Environmental Quality Laws, and regulations.

# 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This environmental assessment incorporates the analysis of current condition and environmental effects, including cumulative effects, in *the Eugene District Proposed RMP/EIS, November, 1994* (Chapter 4), as amended by the *Record of Decision (ROD) for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (January 2001),* and the *Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (March 2004).* The following analysis of effects supplements those analyzed in the above EISs, and provides site-specific information and analysis particular to the alternatives considered.

## 3.1 VEGETATION AND BOTANY

### 3.1.1 AFFECTED ENVIRONMENT

The forests in the project are mid-seral 60-65 year-old stands that regenerated naturally after clearcut harvest. Few scattered remnant trees remain. Although pre-commercial thinning did not occur, fertilization was carried out over the entire section in 1993. The stands consist primarily of Douglas-fir, with scattered western hemlock, grand fir, western red-cedar, incense cedar, Pacific yew, madrone, chinquapin and red alder. Stand understories consist of salal, bigleaf maple, vine maple and oceanspray. The stands are currently in a stem exclusion phase, with a high overstory density that is suppressing the growth of smaller trees and understory vegetation.

Within the project section, approximately 200 acres are experiencing mortality due to laminated root rot (*Phellinus weirii*), which kills Douglas-fir and grand firs by destroying their roots. Subsequently, Douglas-fir beetles (*Dendroctonus pseudotsuga)* will infest these stressed live and recently downed Douglas-firs. Laminated root rot is spreading in patches and not generally distributed throughout the stand. These patches are open sections that have single Douglas-fir trees, scattered snags, down wood, hardwoods, small cedar and hemlock. Hardwoods are immune to laminated root rot and cedar trees are resistant. Western hemlock can develop butt rot from this disease.

Stand conditions in the outer portion of the Riparian Reserves are similar to the uplands. The immediate riparian zone of many of the streams in the project section are dominated by grasses, sedges, and deciduous trees - mostly red alder, bigleaf maple and scattered cottonwood trees.

<u>Special Status and Survey and Manage Species</u>
No Special Status or Survey and Manage plant, bryophyte, lichen or fungi species were found within or adjacent to the proposed project section.

<u>Invasive species</u>
Invasive non-native species identified during field surveys include blackberry, scotch broom, and thistle, which are all common along roadsides in western Oregon. All of these weeds occupy sections of high light (low tree/shrub canopy) and ground disturbance (i.e. roads and landings) and are spread by vehicles, logging equipment, and animals.

### 3.1.2 ENVIRONMENTAL CONSEQUENCES

**NO ACTION ALTERNATIVE**
Under the no action alternative typical forest succession would continue, resulting in a closed canopy forest with little understory vegetation. The root rot would continue to spread, increasing tree morality, causing openings to occur which would fill in with shrubs and brush. Weeds would continue to be spread by vehicles along the roads.

**ALTERNATIVE 2**

The proposed thinning treatment will reduce the canopy from 90% to 65%. This canopy would provide enough shade to prevent weedy, early species from invading. Only shade tolerant species such as false brome and blackberries would invade the project section. These species, once established would remain in the understory, potentially spreading when openings in the canopy occurred. However, with thinning, the effect is typically temporary. A small increase in weeds would occur until the canopy closes again, with a few shade tolerant weeds remaining in the under story. Also, with thinning there is an increase in roads and skids trails, which provide openings for weeds to spread. This typically happens anytime there is a disturbance (natural or human caused). Roads also allow the spread of weeds to new sections by being a transport corridor.

**ALTERNATIVE 3**

In regeneration harvest, the overstory canopy would be reduced from 90% to 10%. Regardless of the amount of soils disturbance, with more sunlight hitting the forest floor, the site would migrate to a mix of weedy, early seral species with some species remaining from the forest. These weedy, early successional plants would dominate the site until the canopy closed in or planted trees and shrubs grew up and shaded them.

Some species, such as blackberries, scotch broom and false brome may persist when the canopy closes. These species could become a permanent part of the plant community, potentially dominating the site anytime the canopy opens up. Blackberries and false brome compete with tree seedlings, potentially limiting success of reforestation of the regeneration harvest section. They also shade and crowd out many native species. Both blackberries and false brome are difficult to control, especially without the use of herbicides.

## 3.2 HYDROLOGY

### 3.2.1 AFFECTED ENVIRONMENT

The project section is mostly in the Mohawk River 5$^{th}$ Field Watershed, with a few acres in Section 31 in the Muddy Creek 5$^{th}$ Field Watershed. Muddy Creek and the Mohawk River are listed on the Draft 2004 Department of Environmental Quality 303(d) Water Quality Limited List for elevated temperatures. The Mohawk River is also listed for iron, a toxic substance.

Parsons Creek and McGowan Creek drain into the Mohawk River north of Springfield, Oregon. Most of the streams in Sections 31, 5, and 7 are tributaries of Parsons Creek. No temperature monitoring by the BLM has been conducted on this creek. The streams on the south end of Section 7 are the headwaters of McGowan Creek. McGowan Creek has been included on the Draft 2004 303(d) list for year round elevated temperature based on data collected by the BLM. No streams were found in the project section on the north side of Section 31 that is in the Muddy Creek watershed.

Seventy-three streams exist within or adjacent to the project section. Most of these are perennial and some are not connected by surface flow to the rest of the stream system, which is common in rotational landslide topography. One wetland was identified in Section 31, 5 wetlands in Section 5, and 5 wetlands in Section 7. Of these, one wetland in Section 5 and two wetlands in Section 7 are greater than an acre in size. Six seeps have been discovered in or adjacent to the project section.

The Parsons Creek drainage has been logged extensively. A comparison was made between the existing condition and the fully forested historical condition. The WAR (Water Available for Run-off) analysis indicated that current young vegetation conditions in the drainage could contribute to elevated peak flows under unusual storm conditions and result in noticeable changes in channel condition and stability (WFPB 1997).

Road influences to water quality include the interception of groundwater at Seep 4 by the "through cut" Road 16-2-7.2(c) in Section 5. Along this road, three stream crossings have failed, with the major erosion already having occurred. The McGowan Creek haul route has 20 stream crossings, nine of which are not functioning properly due to rust, mechanical damage, undersized, and in one case a failing log culvert (Road 16-2-18.1). Road related runoff exists at some of these locations due to poor culvert conditions.

The project section ranges in elevation from about 1400 to 3100 feet. About 150 acres are within the snow zone (>2810 feet), about 300 acres are within the transient snow zone (>2130 feet and <2810 feet), and the rest of the acres are in the rain dominated zone. Most of the rain dominated acreage is in Section 5.

Stream-side slope stability
In Section 31, around streams 31-1, 31-3, and 31-9 is a section with some pistol butting, seeps, etc. The proposed 75 foot no-touch section around the initiation points would protect existing slope stability.

### 3.2.2 ENVIRONMENTAL CONSEQUENCES

## No Action Alternative

Under this alternative, no harvest related actions, road restoration, or aquatic habitat restoration would occur. Water quality would continue to be impaired by road related sedimentation at failing and/or non-functional stream crossing culverts. Road stream-crossings on roads 16-2-7.2C, 16-2-18.1, 16-2-27 and other concerned crossings would continue to be a moderate to high risk of failure. The haul route along McGowan Creek Road and Road No. 16-2-18.1 may also continue to contribute sediment to streams at 9 locations where stream crossing culverts are not properly functioning due to rust, mechanical damage, being undersized, or otherwise failing.

The cumulative effect is that the existing road infrastructure would continue to erode. Water quality could be degraded in both Parsons and McGowan Creek drainages as these road stream crossings further deteriorate and possibly escalate due to the lack of maintenance.

Peak Flow
Removal of vegetation and/or increases in openings can increase snow accumulation and snow melt, particularly in sections that are subject to rain-on-snow events. Higher levels of snow accumulation and melt can be translated into more Water Available for Run-off (WAR) and higher peak flows through rain-on-snow events. Research is very limited on the effects on peak flows from alterations in canopy cover under different density management retention levels. The largest effect from rain-on-snow events is assumed to be in openings or recently clear-cut stands (hydrologically immature) that occur in the transient snow zone.

Under the no action alternative, no impacts to peak flow are anticipated from harvesting since no timber would be removed under this alternative. No roads would be decommissioned or repaired, road related surface runoff to streams could continue and possibly escalate as roads degrade from lack of maintenance.

Over 40 percent of the drainage has vegetation in the 'hydrologically immature' category where impacts to peak flows may be evident resulting from canopy alteration. As this young timber grows, the interception of water would increase, reducing those impacts of harvesting on peak flows. Likewise, further harvesting of mature stands of timber in the transient snow and snow zones could influence peak flows. Forgoing road repairs and road closures would also continue to allow road related runoff to reach nearby streams impacting channel stability, and ESA listed fish habitat.

**ALTERNATIVE 2**

Under this alternative, thinning in the Riparian Reserve is not expected to impact water quality parameters of temperature or turbidity since a no-harvest buffer ranging from 25 feet (seeps and springs) to 75 - 100 feet (streams) would be implemented. The primary shade zone along all streams would be maintained by these no-harvest buffers.

None of the proposed temporary road construction is expected to impact water quality. Those road segments are predominately in ridge top locations or in sections with little or no connection to the stream network. Replacing 11 stream crossing culverts and 12 cross drains on the haul route, and the placement of crushed rock aggregate on a portion of Road 16-2-18.1 would improve long term water quality at nearby streams. Small amounts of sediment could enter these streams during the construction work of culvert installation, but this is expected to be a short term impact. Typically, fine sediments disturbed by the equipment are flushed out by seasonal fall rains, and some erosion occurs until disturbed soils on the inlets/outlets are stabilized by vegetation, mulch, or rip-rap. Use of an existing landing along Road 16-2-10 in T. 16 S., R. 2 W., Section 4 could result in sediment delivery to a nearby stream. This landing lacks adequate aggregate surfacing to prevent or minimize sediment laden runoff from reaching a stream in the proximity.

Removal of 6 stream crossings along Road No. 16-2-7.2 (Section 5) would eliminate artificial barriers to sediment transport as well as reduce the potential for future road/culvert failures at those locations. Sediment, bed load materials, and woody debris stored above those culverts may mobilize after the stream crossing culverts are removed and restore the natural sediment regime. On roads to be decommissioned, tilling where subgrade conditions permit would help restore water infiltration to the soil and protect from surface runoff being directed to nearby streams.

Implementation of the Action Alternatives, combined with on-going and planned road renovation (both on BLM and private lands) would result in the cumulative effect of long term reduction of road related sediment delivery to streams, resulting in improved water quality and fish habitat in the Parsons and McGowan Creek drainages.

<u>Peak Flows</u>

Under alternative 2, commercial thinning is not expected to impact current peak flows. Renovation of existing roads used for harvesting and hauling would reduce surface runoff from entering nearby streams. Decommissioning roads no longer needed would also contribute to a reduction in road related runoff being delivered to the stream system in the project section.

As much of the existing young stands of timber mature in the watershed, an improved condition with regard to channel impacts from peak flows should occur. Harvesting of mature timber on public and private lands may reverse that trend. Road improvements and closures should also result in a reduction of road related runoff to streams.

**ALTERNATIVE 3**

Effects to water quality would be the same as Alternative 2.

Peak Flow

The Parsons Creek drainage has already been extensively logged, and existing peak flows are elevated as compared to a fully forested condition. The WAR analysis indicated that regeneration harvest alone would have little impact on existing peak flows, and changes in channel geomorphology from the existing condition are not anticipated as a result of harvesting only. Of note however, is that road improvements and closures of roads no longer needed should reduce the amount of road related run-off reaching streams. This is not taken into account in the WAR analysis which looks at vegetation age class only. Therefore, given the proposed road management work, a slight improvement to existing peak flows is anticipated because road related run-off would be reduced.

The cumulative effect of implementing this alternative is that more acres would be in an immature vegetative condition. It would take longer to achieve canopy closure to intercept rainfall. While noticeable changes to channel stability may not be evident, implementation of this alternative delays recovery of the drainage to a mature vegetative condition. Likewise, harvesting on other public and private lands of the remaining mature vegetation (currently 37 percent of the drainage) would delay recovery and possibly impact peak flows in the future.

## 3.3 FISHERIES

### 3.3.1 AFFECTED ENVIRONMENT

McGowan and Parsons Creek Watershed

Native cutthroat trout are the most abundant and widely distributed salmonid species in the McGowan and Parsons Creek drainage. They occupy all fish bearing streams. In addition, rainbow trout, steelhead, and non-salmonid species such as sculpin, dace, redside shiners, lamprey, and other species may be found throughout these drainages.

Spring Chinook (ESA Threatened) are native to the Mohawk River Watershed. However, limited information is available as to their distribution within the watershed, but it is suspected that their historical spawning habitat was mainstem Mohawk and a large portion of mainstem Mill Creek (BLM 1995). Due to habitat degradation and other factors, this run of spring Chinook is reported to have become extinct by 1910 (Parkhurst et al. 1950; Willis et al. 1960). Currently, no sustainable population is known to exist in the Mohawk watershed. However, depending on stream flow conditions adults may stray into the Mohawk from the McKenzie River to spawn. Spawning may occur throughout the mainstem Mohawk, but according to Streamnet (2006) the primary spawning habitat is located in mainstem Mohawk from the confluence with Mill Creek (RM13) to river mile (RM) 21. Migration and rearing habitat for juveniles can be found in the larger tributaries, such as McGowan and Parsons Creek, where they can rear for up to a year. In an effort to re-establish the population, ODFW has recently outplanted adult spring Chinook from the McKenzie Hatchery into the upper Mohawk River.

McGowan and Parsons Creek are large 7$^{th}$ Field watersheds with a substantial amount of potential fish bearing habitat (~ 18 miles). The lower portions of these drainages are located in rural residential areas with light animal grazing where the mid- and upper portion are primarily forest managed (BLM and private industrial landownership). Recent aquatic habitat surveys documented that both mainstem channels are deficient in large structural elements such as boulders and large wood debris (BLM 2000-2005; Mohawk Watershed Partnership 1998-2005; and ODFW 1999). Both of these structural elements are a primary determinant of channel

**Figure 1: Fish passage barrier in the McGowan Creek Watershed**

morphology and the creation of habitat complexity for fish and other aquatic-dependent species. An assessment of the Mohawk watershed (Huntington 2000), noted that the limiting factors for cutthroat and other aquatic species include: warm water temperatures, simplified channels that have limited woody debris and few complex pools (cover), locally high levels of fine sediment that affect spawning success, and migration barriers at road crossings.

Road-Stream Crossings

A number of culverts within the McGowan and Parsons Creek watersheds have been identified as: 1) barriers to the movement of anadromous and resident fish species and other aquatic dependent species; 2) failed or failing culverts that pose a moderate to high risk of road failure and subsequent safety concern for public use; and 3) undersized culverts, which under moderate to high flows, have an increased risk of failure and negatively impact downstream channel conditions.

Harvest Area

Within and adjacent to the project section, the headwater reaches can be characterized as moderately to highly confined channels in a narrow valley floor. Some lower gradient, unconfined channel does exist in the headwaters indicating some depositional sections (Section 5). Channel gradients vary from moderate (6%-20%) to steep (<20%). Cascade/plunge pool/riffle sequence is the dominant habitat type. Channels display numerous step-over-boulder/log features. Cobble, boulder and small gravel material dominate the channel substrate. Distribution of in-channel large woody debris is moderate to high in all decay classes.

Within riparian stands, canopy closure is estimated to be greater than 70%; therefore, stream temperature is anticipated to be within properly functioning limits. Generally, most riparian areas, stream channels, and streambanks are in stable condition, with the exception of some old road/stream crossings and stream reaches mentioned in the previous section (Hydrology).

Estimated upper limits of fish use were determined based on presence/absence surveys by BLM (2005) and ODF (2000-2005). No fish were observed within or immediately adjacent to the project area; however, based on channel gradient and habitat conditions approximately 2,930 feet of Stream No. 5-1 within Section 5, T. 16 S., R. 2 W. is considered to be suitable habitat for cutthroat trout. All other tributaries within the project section are considered non-fish bearing due to steep channel gradients (>30) and/or numerous high step-over log/boulder features that would restrict upstream migration of fish. Table 3 summarizes the estimated or actual upper extent of fish bearing habitat for each stream reach in relation to project units. The majority of these headwater reaches provide habitat for cutthroat trout and potentially steelhead.

### 3.3.2 ENVIRONMENTAL CONSEQUENCES

**NO ACTION ALTERNATIVE**

Under this alternative, no harvest related actions, road restoration, or aquatic habitat restoration would occur. Road-stream crossings, noted in Tables 4 would continue to be partial or complete passage barriers to adult and juvenile fish. Due to the non-functioning condition of cross drain culverts, the potential for road ditchline flow to divert to stream channels is high. Most of the existing culverts pose a high risk of road failure and potential sedimentation to fish bearing habitat.

Aquatic restoration projects would not occur under this alternative. Stream conditions would remain the same unless modified by natural processes such as flooding. Recovery of stream channel habitat would occur over a much longer period with the absence of instream large woody debris. Water quality would be maintained at current levels.

The cumulative effect of taking no action is that the existing road infrastructure would continue to erode and the water quality in nearby streams would be impacted from road related sediment. Channel habitat conditions would remain in a simplified condition, and migratory passage for anadromous and resident species would not be restored.

**ALTERNATIVE 2**

Timber harvest and landing

Untreated stream buffers would maintain the effective shade zone on all project section streams thus maintaining the current stream temperature conditions. They would also provide protection to over-steepened and/or unstable stream banks and headwalls. No yarding is proposed across any streams. The large sections of retained trees (untreated buffer) and the moderate to dense understory around all streams would greatly minimize the risk of sedimentation due to yarding activities by filtering out any sediment from the harvest section. The thinned upland Riparian Reserves and untreated buffers would retain adequate supplies of future large woody debris material.

Spur road and landing design features are likely to minimize the risk of sedimentation to project section streams and downstream listed fish habitat (i.e. spring Chinook habitat).

Log haul operation

Log haul operations during the winter would produce a short-term (<3 years) increase in sedimentation because existing roads route sediment/flow via ditchlines to cross drains and streams. Some surface erosion occurs from nearly all roads especially during the winter months. Erosion over paved road surface is usually minimal and would have an insignificant effect on water quality and listed fish habitat.

In the McGowan Creek drainage, Road 16-2-27 is a paved road adjacent to spring Chinook habitat for most of its length. Direct sediment delivery is expected to be extremely low and would have an insignificant effect on listed fish habitat. Winter log haul on the remaining project area

roads (gravel) would have a minor increase in direct and indirect sediment delivery to streams. This is mainly due to the lack of stream connection, well vegetated ditchlines, and adequate cross drainage throughout the entire haul route. In addition, upgrading most of the secondary roads with additional rock surface, adding relief culverts, upgrading stream crossing culverts, and maintaining existing roads during the haul period would greatly reduce sediment production derived from log haul operations.

In the Parsons Creek drainage, County Road 1966 is a paved road which lies adjacent to spring Chinook habitat. Due to its hardened surface, the effects of log haul operations are expected to be insignificant to listed fish habitat. The remaining log haul route is over gravel surfaced roads. Based on helicopter landing locations, log haul operations within Section 5 and portions of section 31 would likely occur over roads 16-2-10 and 16-2-7.2. Approximately 68 percent of the projected timber volume would be transported over these roads. Road 16-2-10 has a higher potential for direct sediment delivery to streams as it includes a large amount of stream crossings; greater than 21 percent of road surface drains directly into streams. Road 16-2-7.2 had a much lower direct delivery, less than 10 percent. Both road segments have adequate cross drainage prior to stream crossings, but lacks sufficient rock surfacing. Prior to log haul operations, these road segments would be upgraded with additional rock surfacing which would greatly reduce the potential road surface erosion, and therefore minimize sedimentation to project section streams. However, based on the high potential for sediment delivery, the overall effect to resident and listed fish habitat is expected to be a short-term (<3 years) increase in sedimentation of low magnitude to project section streams and potentially listed fish habitat.

Road Decommissioning

Due to design features, the action alternatives are not expected to impact listed fish habitat which is located over 3 miles from the project site. Decommissioning road 16-2-7.2 and 18-2-18 would have a long-term benefit to resident and listed fish habitat. The removal high risk road/stream crossings and the decommissioning of the stream adjacent road bed would greatly reduce the potential for catastrophic road fill failure and subsequent sedimentation to downstream fish habitat. Design features would minimize adverse effects to downstream fish habitat; however, some sedimentation is likely to occur over the short-term (<1 year) and impact only a small segment of the stream (<500').

Culvert Replacements and Road Improvements (Rd. 16-2-27 & 16-2-18.1)

Existing stream-crossings and road surface condition are a chronic source of fine sediment delivery to nearby fish bearing habitat. Fish are less able to respond to chronic disturbances, which deposit fine sediments on or within spawning gravels, and result in lowered rates of survival or growth for eggs and alevins. Replacing rusted, damaged, undersized culverts and improving road surface conditions throughout these drainages would greatly reduce this chronic source of fine sediment and subsequent degradation of resident and listed fish habitat. Replacement culverts would be sized to accommodate 100-year storm events, which would reduce the risk of catastrophic failure during major flood events.

Due to the proximity of these major stream crossings to mainstem McGowan and Parsons Creek, a short-term (<1 year) but a discernible impact may occur to listed and non-listed fish habitat. Cross drain replacement is expected to have only minor impact on the nearby stream channels. It is estimated that removing and replacing culverts would most likely result in downstream sediment input of approximately 1 cubic yard or less on perennial streams and ¼ yard or less on ephemeral streams.

Replacement of fish passage barriers throughout these drainages would restore fish passage to approximately 6 miles of suitable upstream habitat for migrating anadromous and resident fish species.

The addition of cross drain culverts would reduce the risk of catastrophic crossing failures and direct sediment delivery to stream channels.

Aquatic Habitat Restoration

Aquatic restoration in the mainstem and selected tributaries throughout both drainages would immediately increase the volume of large woody debris within the stream channel, floodplain, and streambanks. This increase would directly affect that amount of habitat complexity and cover available for fish and other aquatic-dependent species within these drainages. Impacts to soils, riparian vegetation, and channel and streambank would occur with the use of heavy equipment in the channel and the pulling logs through the riparian area. Short-term increases in sedimentation and turbidity levels would be experienced within and downstream of the project site. Implementation of design features would lessen the short-term and long-term impacts to aquatic and terrestrial species within and outside of the project area.

Large diameter, long length logs and/or trees are targeted for use, which are expected to stabilize at, or near their location for a long period. These large "key" logs or trees would trap and retain organic debris and spawning substrates within the system. In addition, a reduction in water velocity, creation of pools, and an increase in aquatic habitat complexity are expected to occur over time. Populations of aquatic species would benefit from the changes in the channel complexity and available habitat, and thus increase the productive capacity of these stream systems.

Cumulative Effects

This alternative would likely result in a long-term increase in large woody debris levels in streams and Riparian Reserves. Increasing the immediate and future supply of large woody debris to streams would help restore the sediment regime, deposition of gravels, and formation of deeper pools and off-channel habitat. There would be no alteration of stream temperatures, but nutrient inputs or litterfall that would be retained longer within system with the placement of large wood and boulder structures. Primary production is expected to increase which would have an affect on the productive capacity of the watershed. The physical integrity of the aquatic system would be improved by the replacement of undersized and failing culverts. The total removal of high risk road-stream crossings and the replacement of fish passage barriers would improve the spatial and temporal connectivity within the watershed for resident and anadromous fish species and other aquatic-dependent species.

**ALTERNATIVE 3**

Under this alternative, effects would be the same as Alternative 2.

## 3.4 WILDLIFE

### 3.4.1 AFFECTED ENVIRONMENT

Down Logs (Key Habitat)

Down logs are an essential habitat feature for many wildlife species and their prey, including several BLM Special Status Species that could occur in the project area. They often provide key breeding or refuge habitat, and travel corridors, in otherwise suboptimal stand conditions. They are especially important to low mobility species with small home ranges (e.g., invertebrates, small mammals, and amphibians.

Stand exam data indicate much of the project upland and riparian areas contain well distributed down logs in a variety of decay classes and diameters. The highest concentrations were seen in Riparian Reserves.

Snags (Key Habitat)
Snags are an essential habitat feature for snag dependent species and their prey. They are especially important to primary and secondary cavity nesting birds (songbirds, woodpeckers, owls) and roosting bats. Based on field review (for snags greater than 12 inches in diameter), the project area contains a greater snag quality, amounts, and distribution than are present in most 50-80 year old managed stands in the watershed. Stand exam data show roughly 5 snags per acre in proposed harvest areas. Many of these snags are in lower decay classes and/or smaller diameters; whereas the greatest value to wildlife is usually in larger and/or higher decay classes. Snags are present mostly as scattered single features, with only occasional clumped pockets. Greater overall numbers are present in root rot and riparian areas.

Bald Eagle (Threatened)
Suitable nesting habitat for bald eagles in the area is usually located within 1.5 miles of an aquatic forage resource in a lake, river, or major tributary. No suitable nesting habitat exists in or near the project due to lack of proximity to such forage areas. Winter roosting habitat in western Oregon is typically mature conifer forests protected from high winds and inclement weather, with a rich food source nearby. Winter roost habitat exists outside of and near the project area and would not be modified or disturbed by project actions due to seasonal restrictions. This species is not analyzed further in this document.

Northern Spotted Owl (Threatened)
*Habitat:* Suitable nesting habitat for spotted owls is generally conifer forests greater than 80 years old with mature to late-seral characteristics such as a dense, multi-story canopy, large down logs and snags, and an open understory. Approximately 40 acres of nesting habitat exists adjacent to proposed harvest areas and would not be treated under any alternative.

Dispersal habitat is generally 40-80 year old stands with at least 40% canopy cover. The quality and function of dispersal habitat can be further distinguished between stands that provide mostly for roosting versus those that also provide for foraging. Roosting stands allow owls to move across large landscapes or within their individual site territory. Owls can enter and exit these stands for roosting but little foraging occurs due to stand characteristics such as high tree densities, high brush, smaller tree diameters, little/no coarse wood, and little room to fly through the understory.

Compared to roosting habitat, foraging stands can generally be described as those with at a greater average canopy cover, some snags or down logs, relatively low brush, less dense stocking with larger trees, a more complex stand structure, and ample room to freely move through the mid-understory canopy.

Distinctions between these two types of dispersal habitat are important because the quality, amount, and orientation of forage habitat are essential to successful pair occupation and reproduction at a site. Roosting habitat alone does not typically provide enough support to sustain pair occupation or successful reproduction. Approximately 665 acres of dispersal habitat exists within proposed harvest areas; roughly half of these acres are also foraging habitat.
The project area is not within a designated Critical Habitat Unit.

*Site Histories:* Three established owl nest sites are located within 0.6 mile of proposed harvest units. These sites have been surveyed at least three times a year since located, except for Buck Mountain in 2003. Buck Mountain site surveys detected single owls one year and pairs three years from 1992-1996, and no detections since 1997. Only one nest attempt occurred there in 1992. Putnam Creek site surveys detected single owls four years and pairs four years from 1992-2001 and no detections since 2001. No known nest attempts have occurred at the site. Parsons Creek site surveys detected pairs nine years and single owls four years since 1990. Nesting has been attempted in five years, including 2003 and 2004.

*Provincial Home Range (PHR) Habitat and Individual Sites:* The USFWS established provincial home ranges (PHRs) of 1.2 miles around spotted owl sites in the Cascade Ranges as a consistent area to measure the habitat condition of a site and consult on proposed actions that could affect habitat or reproduction. When PHRs contain less than 40% nesting habitat, they are considered "at risk" for successful reproduction (see Table 5). In some situations, younger forage habitat may mitigate the effects of low amounts of nesting habitat to allow resident pairs to successfully reproduce. There are no established standards for determining the likelihood of nesting or occupancy when PHR nesting habitat is less than 40%. When available, survey data often provide the best assessment of site occupation or reproduction.

Based solely on the amounts of nesting habitat within their PHRs, all three nearby sites are at risk for reproduction. Existing PHR nesting habit at the Buck Mountain site is at 4%. However, the low amount of nesting and consistent survey data showing no owl detections since 1997 indicate a low probability of nesting, or even occupation. The Putnam Creek site nesting habitat is at 13%. However, 150-200 acres of additional mature to late seral habitat on BLM lands near the site center (just outside the PHR) probably have contributed to it being occupied in the past and result in a determination that the site is still suitable for occupation and nesting. The Parsons Creek site PHR nesting habitat is at 3%. Survey data indicate nearby private lands are contributing nesting habitat and that it has been regularly occupied with recent nesting attempts, the site is considered suitable for occupation or nesting in the future.

**Table 5: Spotted Owl Sites Near Project Area – PHR Habitat Existing and in Proposed Harvest Areas (Federal Lands)**

| | **Existing PHR Habitat- Acres (% PHR)** | | | **Proposed Harvest of PHR Habitat -Acres** | | |
|---|---|---|---|---|---|---|
| | **Alternative 1 (No Action)** | | | **Alternative 2** | **Alternative 3** | |
| | | | | ***Thinning (degrade habitat)*** | ***Thinning (degrade habitat)*** | ***Regeneration (remove habitat)*** |
| **Site** | **Dispersal/ Forage** | **Nesting** | **Total** | **Dispersal/ Forage** | **Dispersal/ Forage** | **Dispersal/ Forage** |
| **Buck Mountain** | 1003 (35%) | 114 (4%) | 1117 (39%) | 205 | 160 | 45 |
| **Parsons Creek** | 977 (34%) | 80 (3%) | 1057 (37%) | 320 | 68 | 252 |
| **Putnam Creek** | 225 (8%) | 387 (13%) | 612 (21%) | 95 | 85 | 10 |
| | | | ***TOTALS*** | 620 | 313 | 307 |
| | | | | Only dispersal/forage habitat would be modified by proposed harvest alternatives. Roughly 3/4 of the total dispersal acres are also foraging habitat. Amounts of forage habitat vary within individual site PHRs. | | |

Fringed Myotis Bat (Special Status Species)*

This bat roosts in a variety of substrates in coniferous forests, including rock crevices, snags, tall stumps, and the bark or crevices of large live trees. Roost behavior occurs in different substrates at different times of the day or year and consists of maternity areas, winter hibernacula, and daily rest. No suitable rock crevices were seen in the project area. In the project area, any tree maternity or winter hibernation roosts would probably be in large live trees ($\geq$ 20 inch diameter ) and large,

* **BLM Special Status Species**
BLM Special Status species were discussed because their habitats are present and they could reasonably be expected to occur in the project. Pre-project surveys are not required for these species and none were conducted. Existing BLM data shows no known locations of these species in or near the project area.

moderately decayed snags (≥ 20 inch diameter, decay class 2-3); both which are present in the project area based on stand exam data and field exam.
Telemetry data on bat species other than fringed myotis from 1999-2003 identified 17 roosts within the project area, and 18 in nearby recent harvest areas – all were in snags, live trees, and stumps. Some of these features could be used by fringed myotis in the future.

Northern Goshawk (Special Status Species)*
Northern goshawks prefer to nest in mature to late-seral age stands with late-seral characteristics such as large trees, dense canopies, down logs and snags, open understory, low brush layer, and ample flying room. Most nests located on the Eugene District have been in lower quality mid seral stands as young as 50 years old that have only some of these characteristics; however, the local importance of such stands, including their likelihood of facilitating successful reproduction, is unknown. Goshawks forage in nesting habitat stands as well as younger stands with ample flying room and low brush. Approximately 375 acres of low to moderate quality mid-seral nesting habitat exists in the project area. The likelihood the project area could be used for foraging is increased due to the presence of mature and late-seral nesting habitat nearby. Pairs are generally intolerant of disturbance during the nest period of March-August.

Harlequin Duck (Special Status Species)*
Terrestrial nesting habitat exists near approximately one mile of project area streams based on key indicators such as: 3rd-5th order size, low to moderate gradients with some down logs, boulders, forested near-stream nesting habitat, and lack of excessive human disturbance. Harlequins nest up to 150' away from a stream, although average distances are probably much less. Individuals can be very intolerant of disturbance to nesting from April-mid July.

Oregon Slender Salamander (Special Status Species)*
Key habitat indicators for this species are moist, cool, high canopy cover, coniferous forests with large well decayed (≥ 20 inch diameter, decay class 3-5) down logs and stumps, bark piles at the base of snags, and uncompacted soil. Smaller down logs may also be used when they are locally concentrated

Stand exam data and field review indicate habitat exists in about half of the uplands and most of the Riparian Reserves. The best habitat is present in and near Riparian Reserves, north aspects and moist portions of uplands, and wherever there are high concentrations of suitable down logs, or wood piles at the base of snags. This salamander has a small home range, very poor mobility, and is generally intolerant of habitat changes.

Cascade Torrent Salamander(Special Status Species)*
Cascade torrent salamanders prefer springs, seeps, and cold, small moderate to high gradient headwater streams with pebble to cobble size substrates, and low amounts of silt and embedded fines. Many seeps and roughly half of the 1st – 3rd order headwater streams in the project area (5 of 10 miles) are habitat for the species. Most stream habitat seen was of moderate to low quality based on GIS data and field review. Individuals use terrestrial areas near streams, especially above headwalls, for some parts of their life history (e.g., dispersal). Many headwater basins have already experienced adverse effects to aquatic or terrestrial habitat due to clear cut harvest on adjacent private lands.

Crater Lake Tightcoil (Survey and Manage)
The project section is potential habitat within the range and elevation requiring survey and management for the species. However, all action alternatives would include thinning no closer than 75 feet and regeneration harvest no closer than 200 feet from expected habitat near aquatic features. This would adequately manage species habitat and individuals and therefore no surveys were necessary or conducted.

Red Tree Vole (Survey and Manage)
The project was evaluated for the need to survey according to the Survey Protocol, v. 2.1. Sections having sufficient structure to "trigger" surveys were withdrawn from harvest consideration and remaining proposed harvest sections do not meet minimum habitat requirements for surveys. Within proposed harvest sections the stand diameters are sufficient to trigger surveys (criteria 1). However, the amount of remnant or predominate trees is well below two trees per acre (criteria 2), and the amount and orientation of stand level-and individual dominant tree structures- sufficient to provide persistence-quality habitat are not present (criteria 2). This results in no need to survey proposed harvest sections.

### 3.4.2 ENVIRONMENTAL CONSEQUENCES

## No Action Alternative

Snags and Down Wood
Existing snags and down logs would not be removed or their value as wildlife habitat degraded due to changes in surrounding conditions. Snag and down log recruitment over the next several decades would mostly be in smaller pieces due to density induced mortality.

Northern Spotted Owl
Northern spotted owl habitat would not be modified by this alternative and local sites would not experience short or long term adverse effects to successful occupation or reproduction. Attainment of suitable nesting characteristics in thinned sections would occur at a slower rate compared to the action alternatives.

Other Special Status Species
No short term adverse affects to individuals, reproduction, or their habitats would occur. Benefit from accelerated tree growth and recruitment of larger down wood would occur at a slower rate compared to the action alternatives.

**ALTERNATIVE 2**
Down Logs
Overall the quality of down logs, as well as the amounts and types of species using them, would be reduced by thinning harvest. Thinning in uplands and portions of the Riparian Reserves would alter stand microclimate variables such as solar exposure, air temperature, wind, and humidity, and thereby reduce the subsequent value and longevity of down logs as wildlife habitat in both treated and adjacent un-treated sections (due to changes in their moisture and decay rate). The intensity and duration of effects are difficult to predict due to the uncertainty on the ability of species to access habitats once stand conditions change. Site-specific variables such as steep terrain, north aspects, and a high rate of understory vegetation growth would provide some mitigation of harvest effects.
Effects to stand and microclimate variables would be short term and likely begin to recover in 10 to 20 years as canopy closure increases. However, some wildlife species may be displaced during this period. Harvest design features would generally minimize disturbance to down logs, however, some might be physically damaged in thinned sections from yarding corridors and skid trails.

Snags
Overall the quality, amount, and distribution of snags would be reduced by thinning harvest. The types and amounts of wildlife species use would be both positively and negatively affected. Most snags would be retained intact when operationally feasible, although some would be cut for safety reasons or inadvertently knocked over during felling and yarding. Older decay class snags are the most likely to be damaged by harvest actions. Changes to stand microclimate and the subsequent reduced value and longevity of snags as wildlife habitat for many species would result for the same reasons as described for down logs. However, some snags may experience beneficial

changes in their wildlife value due to increased solar exposure (e.g., roosting sections for bats) or wildlife access.

Cumulative Effects to all Coarse Wood

In future years, thinning would reduce the amount of density induced recruitment of small diameter coarse wood and increase the natural/disease recruitment of large diameter pieces that are more valuable, and often limiting, for wildlife species.

Northern Spotted Owl

No suitable nesting habitat would be treated or disturbed. Thinning would degrade about 665 acres of dispersal habitat by reducing canopy closure from 80-90% to 50-60%. All but 45 of these acres are within the Provincial Home Range (PHR) of at least one of the nearby owl sites (see Table 4). Stands would still function as minimal quality dispersal habitat, but would not become minimal quality foraging habitat at least until canopy closure and structure recovers in 10-20 years. However, thinning would accelerate the rates of tree growth and development of nesting habitat (e.g., larger trees), eventually improving PHR habitats. The future availability of matrix uplands for nesting is uncertain since these lands are subject to regeneration harvest at 80 years of age.

At the Buck Mountain site, thinning harvest would affect less than 20% of existing PHR dispersal habitat; with roughly one third of these acres being foraging habitat. Since the chance of pair occupation and nesting are low at the site, adverse affects to nesting behavior are possible but unlikely.

At the Putnam Creek site, thinning harvest would affect less than 10% of existing PHR dispersal habitat; with only 15 of these acres being foraging habitat. Proposed actions are not expected to adversely affect the site due to the low quality and amount of dispersal/forage habitat affected by harvest and the availability of mature-late seral habitat in and near its PHR sufficient to maintain occupation and reproduction.

There is a reasonable potential for pair occupation and nesting to occur at the Parsons Creek site in a given year based on its known nesting history and high amounts of forage habitat. Thinning of 320 acres would degrade about 30 % of the present PHR dispersal habitat. All of the affected acres are foraging habitat contiguous with its known nest core and other suitable nesting habitat, and are providing key support for successful site occupation and reproduction. Based on the amount of habitat that would be degraded by thinning, its proximity to nest sections, its role in supporting foraging and successful reproduction, and the current low amount of nesting PHR habitat, harvest actions would likely adversely affect occupation or successful reproduction at least until habitat begins to recover in 10-20 years.
Seasonal operating restrictions would ensure nesting is not precluded or disturbed by project actions at the Parsons Creek and Putnam Creek sites during the entire nest period of March 1 – September 30.

Reasonably foreseeable actions that could occur on BLM lands in the watershed would likely be thinning harvest of similar habitats and result in similar effects to owl habitat at the project and landscape levels. Any corresponding effects to individual sites are not known at this time. Non-federal lands in the watershed currently provide some dispersal habitat and negligible amounts of nesting habitat. It is likely that these private lands would continue to be harvested prior to becoming suitable nesting habitat.

Fringed myotis

In the short term, retention of most existing snags and dominant live trees would physically reserve this habitat for fringed myotis in the thinning sections. However, direct impacts to snags due to changes in surrounding microclimate conditions could adversely affect their quality as

roost habitat. However, some impacts to snags may be beneficial (e.g., those that become favorably warmer due to increased solar exposure). Project actions could disturb winter hibernacula or maternity roosts from September through May and daily roosting from spring through fall.

Goshawk

Approximately 225 acres (out of the 375 habitat acres that exist in the project area) of nesting habitat for goshawks would be degraded though the reduction of canopy closures below current levels. Retained trees would remain structurally suitable for nesting and could be used for nesting as soon as surrounding stand conditions sufficiently recover in 5-20 years post harvest (depending on the amount of brush and rate of canopy closure). Thinning would eventually improve nesting and foraging habitat due to removing densely stocked understory trees and accelerating growth of dominant trees. Project actions have the potential to preclude or disturb nesting behavior when harvest occurs during the nesting season.

Cascade Torrent Salamander

No entry buffers of 75-100 feet would protect water quality and all stream habitats for the species. Headwall terrestrial habitats would experience localized short term impacts due to changes in canopy and microclimate. Such effects would be seen until canopy conditions recover in 10-15 years.

Harlequin Duck

Suitable nesting streams would have a no-entry 100 foot or greater buffer which would result in no effect to terrestrial habitat where harlequins would likely nest. The chance of individuals nesting near proposed harvest sections is low due to downstream conditions and the low amount of habitat. However, noise or line-of-sight disturbance to nesting is possible due to project actions occurring during the nesting season (March – July).

Oregon slender salamander

In the short term, retention of existing downed logs and snags would reserve most habitats for the species. However, depending on localized conditions, direct impacts to coarse wood and overall stand conditions due to changes in surrounding microclimates would adversely affect their quality as habitat. Individuals may be displaced, and local numbers reduced during the first 10-20 years after harvest.

Cumulative Effects for Non-T & E Special Status Species

Reasonably foreseeable actions that could occur on BLM lands in the watershed would likely be thinning harvest of similar habitats and result in similar effects to non-T & E special status species at the project level. For most species, cumulative landscape level effects are not known due to lack of specific information on individuals or local habitats (e.g., coarse wood, headwater streams) Overall, non-federal lands in the watershed mostly contribute some short term low quality habitat for goshawks and harlequin ducks, but little high quality or ongoing habitat for these or other non-T&E special status species. These lands are often sinks, or barriers to landscape movements of salamanders. Habitats are generally not expected to improve at all time scales on non-federal lands due to typical management actions.

**ALTERNATIVE 3**

Down Logs

Impacts to the thinning areas would be the same as Alternative 2. Within regeneration harvested (upland) sections, many existing down logs would be damaged or removed by logging; and most would experience a reduction in their value as habitat due to changes in microclimate variables and decay rates (effectively removing the habitat for some wildlife species).

Down logs in Riparian Reserves adjacent to regeneration harvest would experience some changes in their value as wildlife habitat due to microclimate edge effects. The distance, intensity, and duration of effects to Riparian Reserve logs due to nearby regeneration harvest are difficult to predict due to variability in down log size and decay class, and influence of local conditions. However, effects to the microclimate are expected for at least 50-150 feet into both treated and untreated Riparian Reserves

Snags

In regeneration harvest areas, the amount of wildlife species use, and the quality, amount, and distribution of snags would be reduced. Many snags would be felled or inadvertently knocked over due to harvest actions. Remaining snags would probably not be suitable for most species currently using them. However, new species (e.g., bats, woodpeckers, some songbirds) could begin to use these snags after harvest

Down Log and Snag Creation in Regeneration Harvest Sections

Consistent with RMP standards, 240 linear feet of down logs and 3.4 snags (20 inch diameter average for both) per acre would be created after harvest. Down log creation would reduce some short term effects by creating additional cover and enhance future conditions by providing a "pulse" of usable down logs. However, coarse wood would not be available for most wildlife habitat needs until it has sufficiently decayed (estimated 10-50 years, depending on coarse wood characteristics, local conditions, and wildlife species using).

Northern Spotted Owl

Effects of degrading dispersal habitat in about 330 acres of thinning would be the same as Alternative 2. However, regeneration harvest would also remove (vs. degrade in Alternative 2) about 335 acres of dispersal habitat, most of which are foraging habitat. Treated sections would not function as dispersal or forage habitat after harvest, would not recover to dispersal habitat for at least 40 years, or to present forage conditions for at least 60 years.

Most thinning and all regeneration harvest acres would be within the PHR of at least one of the nearby owl sites. Since the amount of dispersal habitat removed by proposed regeneration harvest acres within the site PHRs would be low (45 and 10 acres respectively), effects to the Buck Mountain and Putnam Creek sites would be similar to Alternative 2.

At the Parsons Creek site 320 acres of site PHR dispersal habitat would also be affected. However, Alternative 3 would remove roughly 250 acres of dispersal habitat due to regeneration harvest (vs. degrading this habitat in Alternative 2). The site would be adversely affected for successful occupation or reproduction for at least 40-60 years.

Fringed Myotis Bat

More snags and live tree roosting habitat would be affected in the regeneration harvest areas due to increased impacts from logging. Some types of snag and live tree roosting habitats would remain post-harvest. Snag creation would ultimately provide some mitigation of harvest effects and improve future stand conditions but not until they sufficiently decay (estimated 10-40 years).

Goshawk

These sections would recover to low quality nesting habitat in approximately 50 years (versus 5-20 years in thinned sections).

Cascade Torrent Salamander

Effects to water quality would be similar to Alternative 2. However, effects to terrestrial habitats, especially headwall basins, would be greater and more prolonged due to greater tree removal and longer recovery time (roughly 20-30 years) and cumulative effects associated with recent and potential future private land clearcut harvests in headwater basins.

Harlequin Duck
All effects are the same as those described for Alternative 2.

Oregon slender salamander
In regeneration harvested upland sections, approximately 200 acres would be impacted even though many down logs would remain after harvest. Changes to microclimates, moisture, and decay rate of down logs would result in habitat being mostly unusable by individuals, and decrease the chance of persistence of individuals in harvest sections. Adverse effects to down logs would continue to increase for the first 15-30 years post-harvest as they become drier. Habitat could recover to near pre-harvest conditions in an estimated 30-50 years, depending on coarse wood conditions.

In thinned Riparian Reserves, down logs would probably remain habitat if within 100 feet of streams. However, about half of the riparian logs would experience some adverse changes in habitat quality due to edge effects from regeneration harvest and/or thinning harvest.

Created down logs would provide only slight immediate mitigation from regeneration harvest (as cover) and would not become habitat for the species until they have sufficiently decayed in an estimated 20-30 years post harvest.

## 3.5 SOILS

### 3.5.1 AFFECTED ENVIRONMENT

Soils in the project section are dominated by moderately deep and deep, well drained, gently sloping to very steep cobbly loams, stony loams, gravelly loams and clay loams that formed in material weathered from basic igneous rocks or tuffaceous rock. The most prevalent upland soil series' that occur in the harvest sections include Kinney cobbly loam, Blachly clay loam, and Klickitat stony loam.

Soil quality is fairly intact in section 7. Few excavated skid roads are evident and residual compaction is not pervasive. Soil process and function have not been adversely impacted by past harvest activities.

In section 5, the heavily trafficked sections from earlier harvest(s) show strong evidence of reduced soil quality and impaired productivity. Scarification and severe compaction is most evident within the circular root rot pocket on the north side of Rd. 16-2-5. Severe residual compaction exceeds 28 inches. The loss of infiltration characteristics and organic integrity may have resulted in conditions that reduced the number and viability of fungal populations while enhancing root rot pathogens in this section.

All sections proposed for treatment are classified as having either intermediate or high soil resiliency. These soil types can sustain substantial vegetative manipulation and still maintain nutrient capital, inherent physical and chemical capabilities, hydrologic function, and natural rates of erosion. Deep, high productivity and resiliency soils dominate sections 7 and 31. In general, terrain and soil types are more variable in section 5 where the upper slopes and west aspect are occupied by moderately deep, coarse textured soils classified as intermediate resiliency.

Unit boundaries have been adjusted to exclude sites with sensitive, low resiliency soils from all harvest and/or road building activities. These sites are avoided because there is minimal opportunity for manipulating vegetation without impairing inherent properties and function and/or accelerating erosion.

### 3.5.2 ENVIRONMENTAL CONSEQUENCES

**NO ACTION ALTERNATIVE**

Under Alternative 1, no additional soil compaction or displacement would occur beyond what currently exists since there would be no harvest or road building activities. Soil porosity would not be restored along existing road segments targeted for tillage under the proposed action.

**ALTERNATIVE 2**

Cable Yarding

Approximately 380 acres of the project section would be cable yarded. Direct effects of cable yarding would be displacement of surface soil and organic matter, and discontinuous localized compaction within yarding corridors. Landing sections would incur deeper, more severe compaction. Soil porosity is an essential component of site productivity. Soils with good porosity create favorable conditions for root growth, water movement and nutrient uptake by roots (Childs et al., 1989) and mychorrizal growth (Amaranthus et al., 1996).

Cable yarding typically impacts about three percent of the harvested section. Soil displacement and discontinuous compaction tends to be confined to a narrow strip less than four feet wide. After operations, bare soil exposure and light compaction would occupy about 10 acres of the total cable portions, a level within the District Standard for achieving insignificant growth loss effect. Full vegetative recovery within corridors is expected in less than 10 years. The no-harvest stream buffers would act as filter strips to interrupt the transport connection between soils detached on the upland and streams before cover is established. Multiple design features are used to decrease the amount of soil disturbance and mitigate the potential for prolonged erosion. (Refer to Design Features in 2.4).

Ground-based Yarding

Ground based yarding is only planned where suitable soils occur and slopes are less than 35 percent (only 18 acres of the total project section). These systems have the potential for greater soil impacts than cable systems because trails are wider and compaction extends deeper. After harvest, approximately 10% of the ground-based sections (2 acres) would be occupied by skid trails and landings. The residual effect of un-treated compaction within skid trails can persist for 30 to 50 years or longer depending upon depth of excavation and number of trips. Project design features would reduce the extent of compaction and the duration of indirect growth loss effects. After harvest, all skid trails with severe compaction would be tilled. Tillage with an excavator would restore infiltration and hasten vegetative recovery on those acres. No long-term effects to soil productivity are anticipated.

Helicopter Yarding

Helicopter yarding is planned for about 275 acres or 42 percent of the total project section. This logging system would result in negligible displacement of surface soils or compaction within the harvest sections (less than 1 acre total).

Road construction and decommissioning

Construction of approximately ½ mile of new road would result in the loss of topsoil and severe to moderate compaction on less than 1.5 acres of productive forested land. Most roads are planned on gradual grades and tillable soils. Although not totally restoring soil function, tillage would improve infiltration and mitigate the potential for prolonged erosion. Existing roads 16-2-7.2, 15-1-31 and Spur Q would also be tilled after harvest activities. Root growth in the loosened soil sections would be better distributed and more vigorous, resulting in an accelerated improvement of soil structure and recovery back to a forested condition as compared to leaving untreated compacted surfaces. Some reduction in site productivity is still anticipated on these acres throughout the next rotation largely due to the removal of topsoil.

Proposed road decommissioning would result in a net decrease of approximately 1 mile of compacted road surface within the watershed.

Fuels Treatment

Pile and burn causes the most detrimental change in soil properties due to the depth and magnitude of heating, and the duration of the burn. The magnitude of the change in soil structural properties increases as the amount of heat increases and radiates downward. One hundred percent of the soil directly beneath burn piles is expected to incur detrimental soil damage due to deep burning. Burn duration would be shortened since pile size would be controlled, and the larger diameter fuels, would be excluded from the piles. This material would provide soil organic additions in the future. The deep damaging burns would cover about 5 percent of the burned section, corresponding to the extent of the piles themselves. Long term soil productivity would be reduced on this portion for as long as 100 years, depending on the characteristics of the individual piles.

**ALTERNATIVE 3**

Effects to soils would be similar to Alternative 2. Except for effects due to ground based yarding. Under alternative 3, however, the extent and the intensity of the direct effects would be greater due to more trips for more volume transported. Compaction and displacement effects could reach 5 percent of the treated acreage. The sectionl extent of severe compaction would increase with larger landing size. These effects would intensify depending on how much acreage/volume is harvested during the winter months when soil moistures are high.

## 3.6 FUELS

### 3.6.1 AFFECTED ENVIRONMENT

Currently the stands are best represented by fuel model 8 (light timber litter) and model 5 (moderate brush) with some small isolated pockets of fuel model 10 (heavy timber litter and understory). Fires carried by surface fuels made up of litter and grasses characterize fuel model 5. Under fuel model 8, fires are slow burning ground fires with low flame lengths. Fuel model 10 fires burn in surface and ground fuels with greater intensity due to higher fuel loadings. Crowning, spotting and tree torching is frequent within this fuel type. Recent fire history records reveal no fires occurring in Sections 31 and 5 within the last 70 years and one large arson fire was recorded in 1937 that burned a portion of unit 7A.

### 3.6.2 ENVIRONMENTAL CONSEQUENCES

**NO ACTION ALTERNATIVE**

Under the no action alternative, the project section would remain Fuel Model 5 or 8 in the short term if no outside disturbance occurs and eventually transition to a Fuel Model 10 as tree mortality occurs in the long term.

**ALTERNATIVE 2**

After thinning operations the fuel bed would not be uniform or continuous slash throughout the harvest unit, resulting in a Fuel Model (FM) 11 condition. Fuel Model 11 under the site conditions of this project yields low to moderate fire behavior except under severe weather conditions. After regeneration harvest, slash will be moderately heavy and uniform resulting in a Fuel Model 12. However, Model 11 fuels will behave like Model 12 fuels, if a fire occurs while the slash is in a ‘red slash’ condition, usually 1 and no more than 2 years after harvest. Crown spacing after all treatments will make the occurrence of a crown fire under even severe weather conditions unlikely. The residual slash will be moved and compacted by the yarding operations resulting in openings in the fuel bed, buried slash, slash concentrations and a portion of the slash

will be brought to and sorted on landings as cull material. Skid trails and yarding corridors often have light fuels with large sections of bare soil creating fire breaks within the unit but also tend to have concentrations of fuel directly adjacent to them which would burn at higher intensities.

Roads within the project section may be utilized for multiple small landings, normally associated with commercial thinning operations, fuel concentrations will occur adjacent to these roadways. Landing piles will vary in size depending on site-specific operational factors resulting in varying quantities of unmerchantable material that actually reaches each landing. As the slash breaks down the live fuels will begin to dominate with the site becoming a Fuel Model 5 within 7-10 years.

Within the helicopter logging sections, the fuels within sections harvested using a helicopter in both regeneration and commercial thinning sections would be deeper and more uniform than sections harvested by cable or ground based equipment. This occurs because there is less movement and compaction of the slash bed when helicopter yarding is used. This would result in a fuel bed that would burn like a Fuel Model 12 in both the regeneration harvest and commercial thinning sections. However in the thinned sections, fuel loadings would be less and fuel loadings should only persist for 2-3 years. After which, decomposition of the needles and fine fuels would cause a transition to a Fuel Model 11. As the slash breaks down the live fuels would begin to dominate the site, transitioning to a Fuel Model 5 within 7-10 years.

**ALTERNATIVE 3**

Effects are similar to those described in Alternative 2.

### 3.7 UNAFFECTED RESOURCES

The following are either not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, solid or hazardous wastes, Wild and Scenic Rivers, or Wilderness.

### 3.8 ENVIRONMENTAL JUSTICE

To comply with Executive Order 12898 of February 11, 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, the Bureau of Land Management, Eugene District, will ensure that the public, including minority communities and low income communities, have adequate access to public information relating to human health or environmental planning, regulations, and enforcement as required by law. The District has not identified any environmental effects, including human health, economic and social effects of Federal actions, including effects on minority populations, low-income populations, and Native American tribes, in this analysis.

### 3.9 CULTURAL RESOURCES

Surveys will be conducted in the spring of 2006. If sites are found the appropriate mitigations would be taken to preserve sites.

## 5.0 LIST OF AGENCIES AND PERSONS CONSULTED

This environmental assessment is being mailed to the following members of the public or organizations that have requested to be on the mailing list:

| | |
|---|---|
| John Bianco<br>Oregon DEQ<br>Jim Goodpasture<br>Pam Hewitt<br>Charles & Reida Kimmel<br>Lane County Land Management<br>Carol Logan, Kalapooya Sacred Circle Alliance<br>Oregon Dept of Fish & Wildlife<br>Oregon Dept of Forestry<br>Oregon Natural Resources Council<br>The Pacific Rivers Council<br>John Poynter<br>Leroy Pruitt<br>Neal Miller | Roseburg Forest Products Co.<br>Peter Saraceno<br>Sierra Club - Many Rivers Group<br>Swanson Group<br>Craig Tupper<br>Jan Wroncy<br>Kris and John Ward<br>Robert P Davison<br>Tom Stave, U of O Library<br>John Muir Project<br>James Johnston<br>Molly Widmer<br>David Simone<br>Bart Pratt<br>Rich Wright |

A summary was sent to those receiving the "Eugene BLM Planning and Project Focus, June 2005 (approximately 250 mailings; a complete listing is available at the Eugene District Office).

# 6.0 CONSULTATION

**ESA Affects Determination/Rationale**

The chosen action alternative would be consulted on in the Willamette Province FY 2007-2008 Batched Habitat Modification Biological Assessment for Effects to Northern Spotted Owls and Northern Bald Eagles, and would conform to the guidance in this document, including application of biological opinion Reasonable and Prudent Measures to minimize disturbance to spotted owls and their progeny.

BLM will consult with the National Oceanic and Atmospheric Administration (NOAA) fisheries on the effect of the proposed action on listed fish species (i.e. spring Chinook).

## 6.1 ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires Federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) under the Act. The action alternatives, as described and analyzed in this environmental assessment (EA) would have “No Effect” on waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

# 7.0 LIST OF PREPARERS

**THE INTERDISCIPLINARY TEAM**

| Name | Title | Resource/Discipline |
|---|---|---|
| Mike Blow | Wildlife Biologist | Wildlife |
| Cheshire Mayrsohn | Botanist | Botany |
| Rudy Wiedenbeck | Soil Scientist | Soils |
| Dave Reed | Fuels Specialist | Fuels |
| Mike Sabin | Engineer | Engineering |
| Chuck Vostal | Fisheries Biologist | Fisheries |
| Kris Ward | Hydrologist | Hydrology |
| Roger Wilson | Forester | Logging Design |
| Jill Williams | Forester | Silviculture |
| Christie Hardenbrook | Environmental Specialist | Team Lead/NEPA |

# 8.0 REFERENCES

Huntington, Charles W. 2000. A Supplemental Assessment of the Mohawk Watershed. Clearwater Biostudies Inc. Canby, Oregon.

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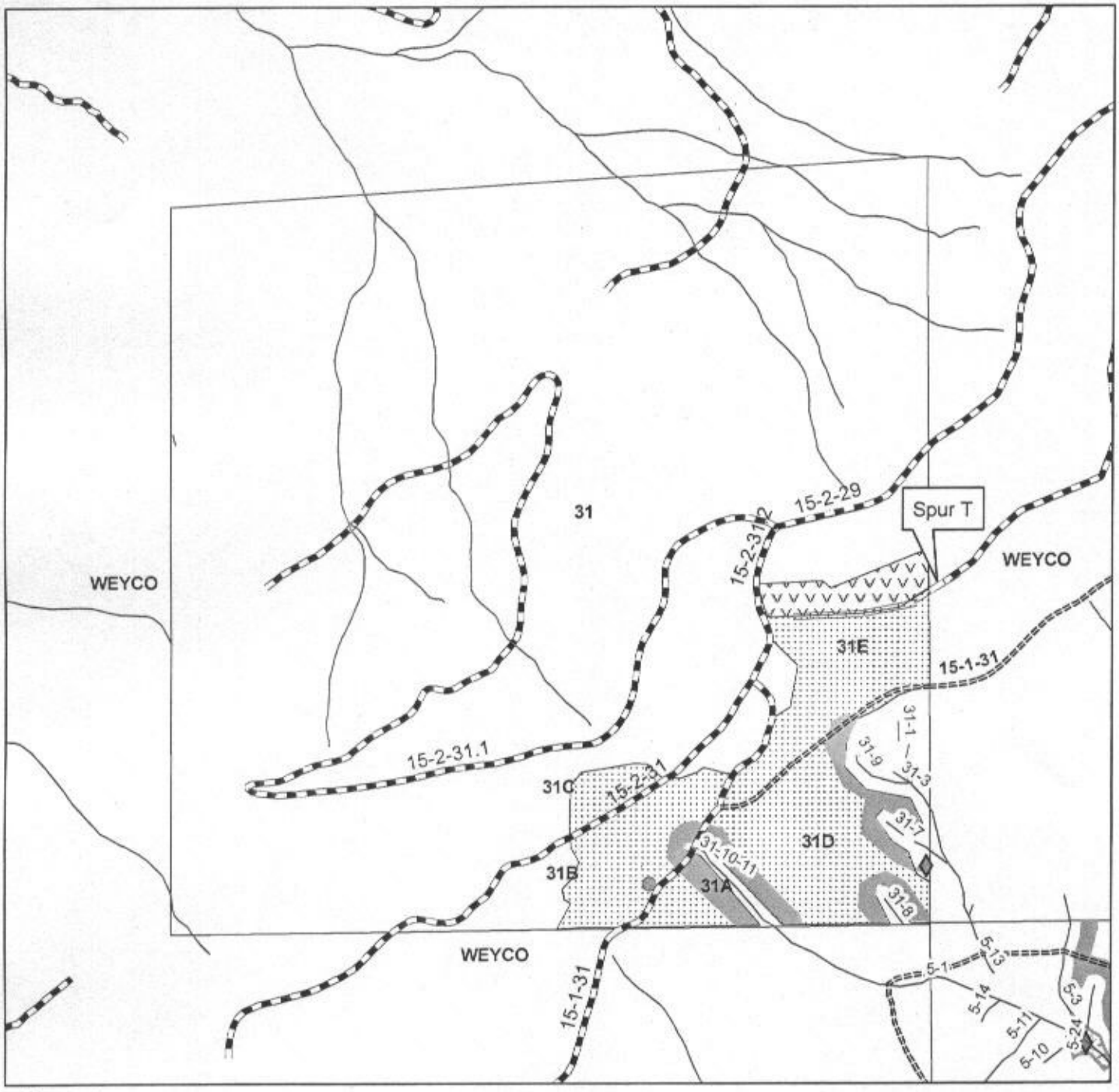
USDI BLM. 2005. Aquatic Habitat Surveys. Fish presence/absence surveys. Unpublished Report. Eugene District. Eugene, OR.




**Legend**

- Streams
- existing_dirt_road
- rocked roads
- seep
- Tractor_Yard
- stream numbers
- Cable_Yard
- Wetland points
- Section lines
- wetlands
- Spur_Road
- Riparian Reserve Thin
- stream_numbers

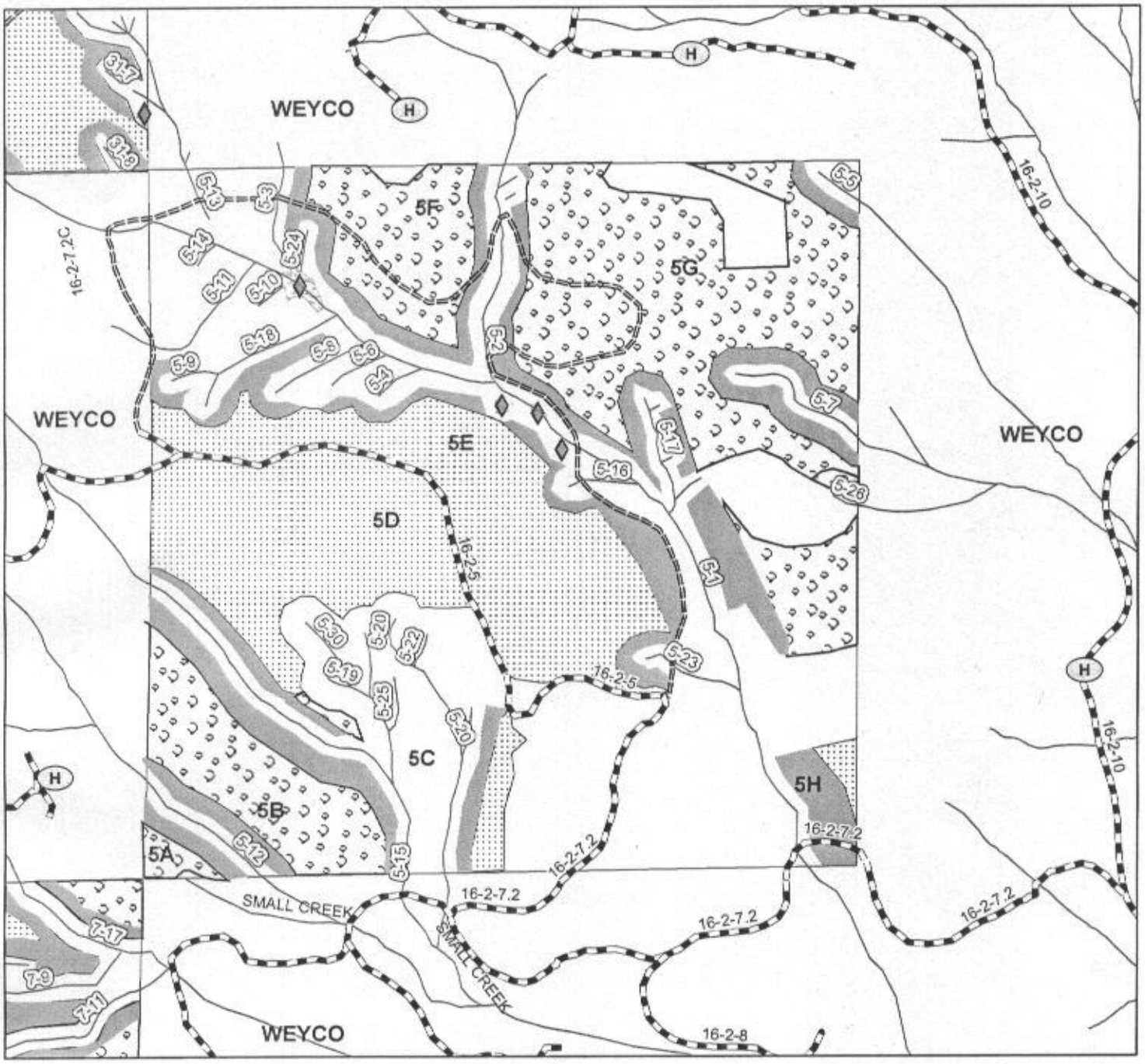
## Parsons Complex
## 15-2W-31
## Alternative 2 & 3

| | |
|---|---|
| Thin | - 74 acres |
| Riparian Reserve Thin | - 14 acres |
| Total | 88 acres |

April 14, 2006

0 500 1,000 2,000 Feet

1" = 1000'




Legend

- rocked roads
- existing_dirt_road
- stream numbers
- streams
- Riparian Reserve thin
- helicopter_Alt3
- cable_Alt3
- wetlands
- Wetland points
- Section lines
- Helicopter landings

**Parsons Complex**
**16-2W-5**
**Alternatives 2 & 3**

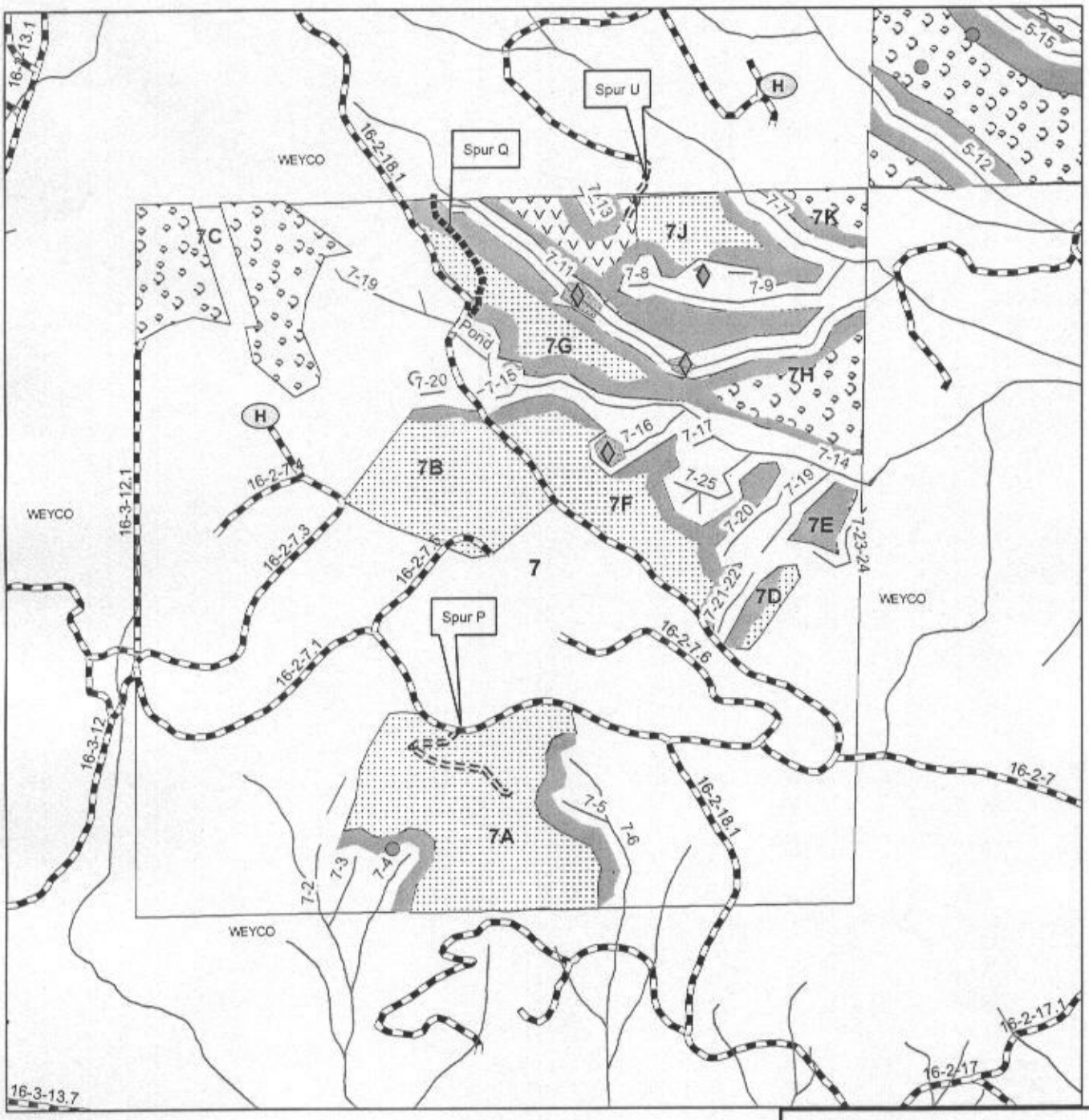
| | |
|---|---|
| **Alternative 2** | |
| **Thin** | **292 acres** |
| **Riparian Thin** | **83 acres** |
| **Alternative 3** | |
| **Regeneration harvest** | **292 acres** |
| **Riparian Reserve thin** | **83 acres** |
| | **375 acres** |

0 500 1,000 2,000 Feet

**1" = 1000'**

**April 17, 2006**

N




**Alternative 2**
**Thinning Harvest - 151 acres**
**Riparian Reserve Thin - 64 acres**

**Alternative 3**
**Thinning Harvest -107 acres**
**Riparian Reserve -56 acres**
**Area 7 A**
**Regeneration Harvest - 44 acres**
**Riparian Reserve thin -8 acres**

**Total acres 215**

**Legend**

- Spur_Road
- streams
- rocked roads
- wetlands
- existing_dirt_road
- seep
- Wetland points
- Tractor_Yard
- Riparian Reserve thin
- Helicopter_Alt 3
- cable_Alt 3
- Section lines
- H Helicopter landings
- stream_numbers

# Parsons Complex
# 16-2W-7
# Alternative 2 & 3

0 500 1,000 2,000 Feet

1" = 1000'

April 17, 2006

# UNITED STATES DEPARTMENT OF INTERIOR
# BUREAU OF LAND MANAGEMENT
# EUGENE DISTRICT OFFICE

**Finding of No Significant Impact**
**For the McGowan/Parsons Project**
**Environmental Assessment No. OR-090-06-03**

Determination:

On the basis of the information contained in the Environmental Assessment (OR-090-EA-06-03), 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 not already addressed in the Record of Decision 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 & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001, and the Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (March 2004), 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.

_____ _____

Field Manager, Upper Willamette Resource Area Date