

**U.S. Department of Interior
Bureau of Land Management
Roseburg District, Oregon**

**Powell's Bottle Commercial Thinning and Density Management
Decision Document**

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Preparation Date: February 7, 2008

**U.S. Department of Interior
Bureau of Land Management
Roseburg BLM District, Oregon**

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SECTION 1 – THE DECISION

Introduction

Powell's Bottle is a forest commercial thinning and density management project identified in the Upper Umpqua Watershed Plan (EA # OR -104-02-09) and its subsequent Decision Record (October 8, 2003). This decision is consistent with the Roseburg District Record of Decision and Resource Management Plan (ROD/RMP) adopted in June 1995 and the Upper Umpqua Watershed Plan. The implementation of this decision will meet the following objective from the Upper Umpqua Watershed Plan (pg. 2):

- For mid seral forests on BLM lands designated for commercial harvest needs (General Forest Management Areas, Connectivity/Diversity Block), maintain healthy growth rates and contribute timber for the local and regional economy while protecting certain forest components for wildlife.

- Accelerate and enhance the development of aquatic habitat characteristics such as instream structure, increased pools and gravels, and reduced bedrock dominated streams. Increase the access to spawning and rearing habitat for anadromous fish.

- For mid-seral forests on BLM lands designated for wildlife and fish needs, accelerate stand diversity and development of late-successional characteristics such as large crown ratios, larger lateral branches, multiple canopy layers, and a greater number of larger conifers while maintaining a healthy ecosystem.

Decision

It is my decision to authorize implementation of the Powell's Bottle Commercial Thinning and Density Management timber sale in Sections 3, 5, and 9 of T. 25 S., R. 7 W., and Section 33 of T. 24 S., R. 7W., W.M. following the project design features (PDFs) established in the Upper Umpqua Watershed Plan as adjusted in the Decision Record. This timber sale is located within the General Forest Management Area (GFMA) (22 acres), Riparian Reserve (RR) (16 acres), and Late-Successional Reserve (LSR) (65 acres) Land Use Allocations. The units that will be treated are second-growth forest stands that range in age from 38 - 55 years old. Powell's Bottle will provide approximately 1.842 MMBF of merchantable timber available for auction. This decision is subject to administrative remedy under 43 CFR § 5003.2 and 5003.3. The description of the action authorized by this decision is described below.

Timber Harvest

Four units (4), consisting of approximately 103 acres of mid-seral forest, aged 38-55 years, will have commercial thinning and density management treatments applied. The average size tree that will be harvested is 12.2 inches (8 inches- 36 inches) diameter breast height (DBH).

Treatment Prescription

Commercial thinning and density management will be used to reduce the number of trees in stands dominated by even-aged Douglas-fir. Trees will primarily be removed from the suppressed and intermediate canopy classes, although some co-dominant and dominant trees could be removed where necessary to meet specific density objectives. Some smaller shade tolerant trees such as western red cedar and western hemlock may have been marked to maintain the existing species diversity.

The harvest units are marked to retain approximately 80-100 square feet of basal area (moderate residual density) for both the commercial thinning and density management areas. The prescription for tree marking was designed to create variable spacing between the remaining trees. This was accomplished by occasionally leaving clumps of trees, clearing around larger dominant trees, and varying the spacing to select a tree of particular species and/or growth form. Trees selected for retention have at least a 30 percent live crown ratio so that live crown expansion and accelerated diameter growth will be more likely following treatment.

Existing snags were protected to the greatest extent possible by marking all snags greater than 8 inches DBH for retention.

Variable no-harvest buffers have been placed around non-fish bearing streams within the thinning units. No-harvest means that some trees may be felled in these areas to create or enhance habitat, but trees will not be commercially removed. The majority of the streams in the project area adjacent to thinning units are non-fish bearing intermittent or ephemeral streams. There is one fish bearing stream (Bottle Creek) adjacent to Unit 4. The project area includes fish bearing streams downstream of the harvest units along the haul route.

There are approximately 258 snags 8-19 inches DBH and 36 snags 20 inches DBH or greater pre-treatment. The need for recruitment of additional green trees as snags and coarse woody debris to meet criteria established in the project design features will be assessed within two years of the completion of harvest activities (pgs. 7-8).

Timber Cruising

This project will yield approximately 1.842 MMBF of timber available for auction.

A small amount of additional timber could potentially be included as modifications to this project. These additions will be limited to the removal of individual trees or small groups of trees that are blown down, injured from logging, are a safety hazard, or trees needed to facilitate the action. Historically, this addition has been less than ten percent of the total sale quantity.

Firewood

Firewood cutting and salvaging of logging debris (slash) will occur in cull decks and logging landings roads after the density management activities have been completed.

Timber Yarding

The action will require 67 acres of skyline cable yarding and 36 acres of ground-based yarding. Up to 10 acres of additional, incidental ground-based logging may be necessary (i.e. removal of guy line anchor trees, isolated portions of units, etc.) and will occur on gentle slopes (less than 35 percent), during the dry season.

Timber Hauling

There are three haul routes associated with Powell's Bottle timber sale (Appendix A). Approximately 7.08 miles of rocked roads and 1.25 miles of unsurfaced roads will be used for the hauling of timber, for a total of 8.33 miles. A total of 4.38 miles of existing roads will be renovated (brought back to its original design), 0.64 miles of existing roads will be improved to be utilized for wet-season haul, and 1.25 miles of existing roads will be renovated and used for dry-season haul. Approximately 0.18 miles of newly constructed, temporary roads and permanent spurs will be used for dry-season haul. The haul route has seven (7) perennial stream crossings. Three (3) crossings are over fish-bearing streams and four (4) crossings are over non-fish bearing streams.

Fuel Treatment

Slash within 50 feet of logging landings will be machine-piled and burned (under the direction of a written site specific prescription or "Burn Plan"). Portions of this project are within the Wildland Urban Interface boundaries identified in the Roseburg District Fire Management Plan. Although the majority of wildfires in the Roseburg District are human caused, these areas are behind locked gates and not accessible to the general public; therefore, additional fuels treatment is not necessary.

Road Activities

The action will include dry season and wet season logging activities and use existing roads to the greatest extent practical. Following the project design features described on pgs. 5-11, road construction, renovation, and decommissioning will be restricted to the dry season (normally May 15 to Oct. 15).

Construction

Approximately 0.18 miles of new natural surfaced temporary roads and permanent spurs will be constructed. Approximately 0.05 miles of it will be across private lands (Ford Foundation) for Unit 3 timber haul. The other 0.13 miles will be extensions of the 24-7-33.2 and -33.3 roads in Unit 1. Four landings will be constructed and rocked along 25-7-9.2 road, see Appendix A.

Renovation

Approximately 4.38 miles of existing roads will be renovated. Road renovation will consist of replacing or maintaining drainage structures (culverts and drainage ditches), reshaping the road surface, replenishing road surface with crushed rock where deficient, and brushing road shoulders. Road renovation will also consist of the realignment and repair of the washed-out stream crossing on the 24-7-32.2 road. The roads that will be renovated are numbered 24-7-32.2 segment A, B, part of D & E, 24-7-33.1, 24-7-33.2, 24-7-33.3, 24-7-28.0, & 25-7-9.2 and Spur 2.

Improvement

Approximately 0.64 miles of existing roads will be improved. Road improvement will consist of installing drainage structures (culverts and drainage ditches), adding new additional turnouts, surfacing natural surface road with crushed rock, and brushing road shoulders. The roads that will be improved are numbered 24-7-32.2 C and 25-7-9.2.

Culverts

A total of 12 new culverts will be installed and 14 culverts replaced on the 24-7-32.2 road. One existing culvert will be temporarily replaced on the 24-7-33.3 road, and then removed after operations are completed and the road is decommissioned (pg. 5).

Waste Area

Excess material from the realignment on the 24-7-32.2 stream crossing will be disposed of in the by-passed roadbed and on a landing in the SW1/4SW1/4, Section 33, T. 24 S., R. 7 W., W.M.

Decommissioning

Segment E and part of segment D of road number 24-7-32.2, as well as roads numbered 24-7-33.1, 24-7-33.2, 24-7-33.3, and spurs 1 and 2 will be blocked after water bars are installed and the road surface is mulched with logging slash where available, or with weed free straw when logging slash is not available. The last 350 feet of the 24-7-33.2 road, the 24-7-33.3 road, and the four landings in Unit 4 will also be sub-soiled.

These roads will be decommissioned in the manner described above upon completion of the harvest contract.

Compliance and Monitoring

Compliance with this decision will be ensured by frequent on the ground inspections by the Contracting Officer's Representative. Monitoring will be conducted as per the direction given in Appendix I of the RMP (pgs. 189-209).

SECTION 2 – PROJECT DESIGN FEATURES

The following project design features and best management practices are adopted as part of the implementation of this decision to reduce adverse environmental impacts. They are designed to avoid, minimize, or rectify impacts on resources. These measures will also help projects meet the objectives of the Aquatic Conservation Strategy.

Seasonal Restrictions

Seasonal restrictions will be applied based on Endangered Species Act (ESA) consultation criteria to minimize impacts to federally listed species, and in accordance with best management practices to reduce sedimentation impacts to aquatic species, and to reduce soil compaction in order to maintain soil productivity. These restrictions are described below.

Project Design Features to Minimize Effects to Wildlife Threatened & Endangered Species

Project design features for Powell's Bottle Commercial Thinning and Density Management were based on project design criteria from the following documents:

- Letter of Concurrence (LOC) regarding the *Reinitiation of consultation on Roseburg District Bureau of Land Management FY 2005-2008 Management Activities* (Ref. # 1-15-05-I-0511 [June 24, 2005]), and the
- *Upper Umpqua Watershed Plan Decision Record* (October 8, 2003).

➤ Bald Eagle

Disturbance

- There is a known bald eagle nest site (Powell Creek) located adjacent to the west boundary of Unit 2. Therefore, seasonal restrictions for all activities from January 1st through August 31st would be necessary within 0.25 miles of the bald eagle nest site. Hauling may occur on the 24-7-32.2 road, but trucks may not stop within the restriction buffer during the seasonal restriction period. Surveys to determine nesting status will begin after March 1st and will be completed by April 30th every year. If surveys have determined non-nesting status, the restrictions may be waived for the current calendar year. Waiver of the seasonal restriction is valid until January 1st of the following year.

Habitat

- Suitable habitat will not be removed or modified, therefore there are no concerns for nesting or roosting habitat for the bald eagle.

➤ Northern Spotted Owl

Disturbance

- There are no known spotted owl sites, activity centers, or unsurveyed suitable habitat within 65 yards of a unit boundary. Therefore, seasonal restrictions for spotted owls are not necessary for use of chainsaws or large equipment, unless protocol surveys locate nesting activity within 65 yards of a unit boundary. If an activity center is located within 65 yards of a unit boundary, seasonal restrictions would apply from March 1st thru June 30th, both days inclusive unless subsequent surveys have determined the nesting attempt has failed. Waiver of the seasonal restriction is valid until March 1st of the following year.

Habitat

Suitable Habitat

- No suitable spotted owl nesting, roosting, and foraging habitat will be removed or modified by this project.

Dispersal-only Habitat

- Approximately 103 acres of dispersal-only habitat will be degraded. The expected post-harvest canopy cover (based on stand average) for units will range

from 57-80 percent. In addition, within 100 yards of adjacent suitable habitat, the post-harvest canopy cover will range between 77-93 percent. Therefore, the minimum average canopy closure of 60 percent is expected to be maintained in thinned stands. Thus, these stands are expected to retain dispersal function because post-project stand average canopy cover will not fall below 60 percent.

➤ Marbled Murrelet

Disturbance

- This project is within the Marbled Murrelet Inland Management Zone 2 (within 36-50 miles of the coast) 1.3 mile Seasonal Restriction Corridor (Ref# 1-15-05-I-0596 [July 20, 2005]). There is one (1) known occupied site (Leonard Creek) adjacent to Unit 1. There is unsurveyed suitable habitat within 100 yards of Units 1, 2, and 3. Therefore, seasonal restrictions from April 1st thru August 5th and daily operating restrictions from August 6th thru September 15th, both days inclusive, are necessary for marbled murrelets north of Unit 1, west and southwest of Unit 2, and south and southeast of Unit 3.
- All four (4) units would require seasonal restrictions from April 1st thru August 5th and daily operating restrictions from August 6th thru September 15th, both days inclusive, for prescribed burning located within 0.25 miles the occupied murrelet site and unsurveyed suitable murrelet habitat.

Habitat

- In accordance with the Letters of Concurrence from the U.S. Fish & Wildlife Service for activities on the Roseburg District (Ref. # 1-15-05-I-0511 [June 24, 2005]), surveys for potential structure were conducted (Oct. 2006) following Residual Habitat Guidelines (pgs. 68-69, Plan Maintenance for FY2004, *Annual Program Summary & Monitoring Report – FY2005*). Six (6) trees meeting the criteria for potential structure for marbled murrelets were discovered within the original boundaries of the proposed units. The unit boundaries were adjusted to exclude these platform trees from within the proposed units. For the three (3) platform trees immediately adjacent to the southeast boundary of Unit 3, the interlocking canopies within at least half-site potential tree height of each of these trees will be maintained to retain local conditions of platform trees.
- There is suitable marbled murrelet habitat adjacent to the following unit boundaries: north of Unit 1, west and southwest of Unit 2, and south and southeast of Unit 3. The portion of these units within approximately 100 feet of suitable habitat will be treated with a lighter thinning prescription, maintaining interlocking canopies within at least half-site potential tree height from suitable habitat.

➤ Snags

Snags will be retained or created in the following manner in accordance with direction from the *Upper Umpqua Watershed Plan Decision Document* (pgs. 6-7; Oct. 8, 2003):

- Snags greater than 20 inches DBH and greater than 16 feet tall were located and counted on a stand-by-stand basis. Currently, there are 36 snags meeting the above criteria based on field surveys within the proposed unit boundaries.
- Tree marking was designed to protect existing snags to the extent possible.
- Those that pose a safety concern will be cut and left for coarse woody debris.
- Currently there are approximately 173 snags on south slopes and 121 snags on north slopes, ranging in size from 8 to 19 inches in diameter at breast height and an additional 16 snags on north slopes and 24 snags on south slopes greater than 20 inches DBH and greater than 16 feet tall.
- Within two years of the completion of harvest activities, if there are less than three snags per acre on north slopes and one snag per acre on south slopes, snags will be created on a per acre basis from the larger diameter class of existing live trees to meet the minimum interim needs. Trees damaged from the harvest will be preferentially selected for girdling and recruited as snags. Based on unit acres, approximately 72 and 93 snags will be required post-harvest on south and north slopes, respectively.

➤ Coarse Woody Debris

Coarse woody debris will be retained or created in the following manner in accordance with direction from the *Upper Umpqua Watershed Plan Decision Document* (pg. 7; Oct. 8, 2003):

- All existing coarse woody debris will be retained. Based on pre-harvest transect samples, there are approximately 2,426 average linear feet of coarse woody debris (ranging from 3 – 28+ inches at large end DBH) per acre.
- Within two years of the completion of harvest activities, up to two (2) trees per acre (approximately 206 trees) will be recruited as additional coarse woody debris. Trees that have fallen since the completion of harvest activities will be credited to recruitment of coarse woody debris. Trees damaged from the harvest will be preferentially selected for felling and recruitment as coarse woody debris.

Project Design Features to Minimize Erosion and Sedimentation Effects to Aquatic Species

- To protect aquatic resources within the treatment unit riparian areas, a variable width streamside no-harvest buffer has been established along all streams and wet areas. The variable buffer width is 10 to 60 feet from the outer edge of the active stream channel for all non-fish bearing streams. There are no fish bearing streams within the treatment units. The buffer width varies to include areas of instability, wide areas of riparian vegetation, or sensitive areas identified during site review. Variation in the non-fish bearing stream buffer was based on site level review of soils, hydrology, fisheries, vegetation, and riparian habitat:

- Soil was reviewed for the presence or absence of steep slopes, potential erosion, sedimentation, and soil displacement issues.
 - Hydrology was reviewed for overland and groundwater flow conditions (perennial, seasonal, ephemeral classification, wetlands, seeps, and springs).
 - Fisheries were reviewed for the influence of non-fish bearing streams on downstream aquatic habitat.
 - Vegetation was reviewed for diversity and crown characteristics (ground cover, vegetative composition, stream shading, etc).
 - Riparian habitat was reviewed for the presence of key habitat components (aspect, vegetative composition and structure, snags, downed wood, etc).
- A minimum of one (1) tree retention has been maintained along the stream bank for bank stability. Minimum buffer widths have been used primarily on first and second order ephemeral or highly interrupted intermittent streams. These streams lack riparian vegetation and riparian habitat components, and potential impact to downstream fisheries.
 - Management within the buffer could include selected felling and/or girdling of trees where doing so will benefit riparian habitat. Trees will not be commercially removed from this buffer area.
 - Stream channels and riparian habitat will be protected from logging damage by directionally felling trees that are within 100' of streams away from the streams and yarding logs away from or parallel to the streams.
 - Yarding corridors parallel to non-fish bearing streams will be at least 40 feet away from the edge of the active stream channel and will be avoided along swale bottoms.
 - Skyline yarding is required where cable logging is specified. This method will limit ground disturbance by requiring at least partial suspension during yarding. For all cable yarding, corridors will be approximately 15 feet in width or less.
 - Partial suspension when skyline yarding and waterbarring yarding trails that are excessively furrowed will reduce the risk of slope failure and limit erosion. Partial suspension lifts (i.e. suspends) the front end of the log during in-haul to the landing, thereby lessening the “plowing” action that disturbs the soil. In some limited, isolated areas partial suspension may not be physically possible due to terrain or lateral yarding. Excessive soil grooves that occur from “plowing” action will be hand waterbarred and filled with limbs or other organic debris.

Project Design Features to Minimize Effects of New Road Construction and Road Use

- New road/spur construction will be located on ridge tops and on a stable mid-slope that does not exceed 30 percent. This construction will be located away from streams and will not present sedimentation risks. These roads and spurs will be decommissioned where subsoiled in Units 1 and 4 (as described on pg. 5) upon completion of the harvest contract.

- All new road construction, renovation, and decommissioning will occur during dry periods of the year, generally between May 15 and the onset of regular fall rains or as determined by weather patterns.
- Erosion control measures (waterbarring, native plant seeding, mulching, straw bales, bioengineering, etc.) will be applied where needed on newly constructed roads, renovated roads, or decommissioned road and/or spurs.
- Prior to the wet season, all newly constructed and renovated roads not surfaced with rock will be decommissioned by water barring and blocking to traffic during the same dry season as constructed or renovated and prior to the onset of the wet season, generally October 15th. Bare cut and fill surfaces will be mulched with weed-free straw and seeded with native species (or a sterile hybrid mix if native seed is unavailable). Over-wintered roads not surfaced with rock (those needed during the following dry season) will also require mulching with weed-free straw.
- Following harvest, all natural surfaced roads/spurs will have logging slash placed using an excavator to cover at least at least 50 percent of the road area, in addition to being waterbarred and blocked.
- The repair of the washed-out 24-7-32.2 stream crossing will include dewatering (routing water within the channel around the work area to create a dry working environment) the channel during work when water is present, to reduce sediment input into the stream channel. It will include rock buttressing any newly excavated road cut slopes that expose seeps.
- All haul routes used during wet season hauling will be inspected prior to haul activities. The inspection will assess the current conditions of those roads as they pertain to the potential to transport sediment to streams. Where winter haul occurs along a rocked route with defined stream crossings, road design is currently adequate. Project design features that reduce sedimentation such as silt fences, gravel lifts, and weather dependant operation specifications will prevent sediment contribution to live streams. Activities will be suspended when conditions are such that meaningfully measurable stream-sedimentation will occur. The operating restrictions will be lifted when conditions improve or remediation measures are implemented.

Project Design Features to Maintain Soil Productivity

- Ground-based operations will only occur when soil moisture conditions limit effects to soil productivity (these conditions generally occur between May 15th and the onset of regular fall rains [typically October 15th]). The contract administrator and soil scientist will monitor soil moisture and compaction during unseasonably wet weather and will determine when operations may begin or need to be suspended. Moisture in the top ten inches of soil usually must be less than 20 percent for ground-based operations to occur. In some situations moisture levels would need to be considerably less than 20 percent. These situations include low slash levels, adverse skid/forwarder haul up 25 to 35 slopes, and harvester on slopes of 35 to 45 percent. After ground-based operations have begun,

certain topographic positions that normally dry slower (e.g. depressions, swale bottoms and north-facing slopes) may need to be avoided or yarded later.

- Ground based operations will be limited to slopes less than 35 percent. If a harvester is used, it will be allowed on short slope pitches of up to 150 feet between 35 and 45 percent when soil moisture conditions are dry enough to prevent rutting on those slopes.
- Skid trails created by prior entries will be reused to the extent practical. If harvester-forwarder and swing yarding trails are used, they will have an average spacing of at least fifty feet. Average skid trail spacing will be at least 150 feet. Forwarder, swing yarding, and skid trails will be designated.
- If harvesters are used, trees will be cut no further than twelve inches from the ground to maintain stump clearance for sub-soiling excavators. Harvesters will de-limb trees in the trails in front of their advance to cushion against compaction. If forwarders are used, operations will occur on branch and limb covered areas traversed by the harvesters.
- Detrimental compaction on new and old trails used in this harvest, landings, and log deck areas will occupy less than 10 percent of the ground-based portions of the units. Detrimental compaction is defined as compaction that increases soil bulk density by 15 percent or more or alters soil structure to platy or massive to a depth of four inches or more.
- To mitigate for detrimental soil compaction, approximately 1.5 miles of ground-based yarding trails, old skid trails, and approximately 0.2 mile of roadbed (24-7-33.2 & 33.3) will be sub-soiled. In addition, approximately 0.4 acre of areas used to deck logs adjacent to landings will be subsoiled. Sub-soiled trails and roadbeds will be mulched with logging slash where available or with weed free straw if logging slash is not available. At each position the excavator locates to perform sub-soiling, one bucketful of topsoil will be collected from the adjacent undisturbed area and will be scattered over the sub-soiled surface.
- Slash piles will be burned during the late fall to mid-spring season when the soil and duff layer moisture levels are high (ROD/RMP, pg. 140) and the large down logs have not dried. This practice will confine burn impacts to the soil underneath the piles and will lessen the depths of the impacts (i.e., loss of organic matter, and the change of soil physical properties, ecology and soil nutrients).

Project Design Features to Minimize Effects from Noxious Weeds

- Construction and logging equipment/machinery will be cleaned prior to moving into the proposed project area. Cleaning will remove weed seed and help control and prevent the spread of noxious weeds.
- Areas of ground disturbance will be mulched with logging slash. If logging slash is unavailable native grass seed or a suitable alternative (i.e., native straw, wood chips, etc.) would be applied following ground disturbance.

- Noxious weed infestations and results from ground disturbance mitigations within the project area will be monitored.

Miscellaneous Project Design Features

To prevent and report accidental spills of petroleum products or other hazardous material and provide for work site cleanup:

The operator will be required to comply with all applicable State and Federal laws and regulations concerning the storage, use and disposal of industrial chemicals and other hazardous materials. All equipment planned for in-stream work (e.g. culvert and/or ditch line upgrades) will be inspected for leaks beforehand. Accidental spills or discovery of the dumping of any hazardous materials will be reported to the Authorized Officer and the procedures outlined in the “Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan” will be followed. Hazardous materials (particularly petroleum products) will be stored in appropriate and compliant UL-Listed containers and located so that any accidental spill will be fully contained and will not escape to ground surfaces or drain into watercourses. Other hazardous materials such as corrosives and/or those incompatible with flammable storage shall be kept in appropriate separated containment. All construction materials and waste will be removed from the project area.

Cultural resources - A cultural resource inventory was completed (June 5, 2007). No cultural resources were identified. Stipulations will be placed in the contract to halt operations in the event of inadvertent discoveries of new cultural resource sites (e.g. historical or prehistorical ruins, graves, fossils, or artifacts)

Definitions

Coarse Woody Debris: Those portions of trees that has fallen to the ground at least 20” in diameter.

Road Construction: Work done that builds a new road or moves an old road to a new location.

Road Improvement: Work done to an existing road which improves it beyond its original design; adding new or additional culverts, turnouts, etc. (Standard Timber Sale Contract Stipulations, Section 102).

Road Renovation: Work done to an existing road which restores it to its original design; i.e. replacing culverts, grading the road, adding new rock to the existing rock road (Standard Timber Sale Contract Stipulations, Section 102).

Snag: Standing dead or partially dead trees at least 10 inches in diameter at breast height, and at least six feet tall (FEMAT, pg. IX-33).

Subsoiling: The practice that shatters soil compaction, thereby reducing the effects to soil productivity and improving water infiltration. This is accomplished by a device known as a winged subsoiler which is pulled by or attached to a crawler tractor, or mounted to the arm of an excavator.

SECTION 3 – THE DECISION RATIONALE

This decision implements the guidance provided in the Upper Umpqua Watershed Plan Decision signed October 8, 2003 for that portion of the plan covering the Powell's Bottle project area. It incorporates the "adjustments made" as described in the Upper Umpqua Watershed Plan decision (pgs. 3-9).

The project design features listed above will minimize soil compaction, limit erosion, protect slope stability, minimize effects to ESA listed wildlife species, protect air and water quality, and protect fish habitat, as well as protect other identified resource values. I have reviewed the resource information contained in Table 1 "Summary of Effects of the Action" (below) and in Appendices A-J (available upon request from the Swiftwater Field Office). This decision recognizes that impacts could occur to some of these resources; however, the impacts to resource values will not exceed those identified in the *Final - Roseburg District Proposed Resource Management Plan / Environmental Impact Statement* (PRMP/EIS, 1994). This decision provides timber commodities resulting from silvicultural treatments whose effects to the environment are within those anticipated and already analyzed in the RMP/EIS.

As a result of this decision, the commercial thinning and density management actions that will be undertaken to: (1) maintain healthy growth rates and contribute timber for the local and regional economy while protecting certain forest components for wildlife in stands on BLM LSR lands, and (2) accelerate stand diversity in mid-seral forests on BLM lands within the riparian area.

The moderate-residual density thinning will develop late-successional characteristics more quickly, including multiple canopy layers, large trees with large limbs, and increased vegetative diversity. In the long-term, the quality of dispersal habitat for the northern spotted owl will improve, as well as provide future nesting habitat for the northern spotted owl and marbled murrelet

My predecessor reviewed the public comments from the EA and provided additional time for interested parties to develop input and to participate in a field tour of the project area. This interactive participation resulted in substantive adjustments in the proposed action initially presented in the Upper Umpqua Watershed Plan EA. These adjustments were incorporated in the Upper Umpqua Watershed Plan Decision signed October 8, 2003 and subsequently in the project design features for this project.

Coho Salmon

On February 4, 2008, the National Marine Fisheries Service (NMFS) notified the OR/WA BLM that the Oregon Coast coho salmon was listed as threatened under the ESA. The BLM is required to consult with NMFS on any action that the BLM determines "may affect" the Oregon Coast coho salmon. There is no requirement for the BLM to consult with NMFS on actions that would have "no effect" on the listed species.

Prior to NMFS's determination, the Roseburg District made a determination that this project will result in a "may effect, not likely to adversely affect [NLAA]" in the Upper Umpqua Watershed Density Management Plan Biological Assessment (Sept. 30, 2005) prepared for consultation with NMFS.

A Letter of Concurrence was received from NOAA Fisheries for the Upper Umpqua Density Management Plan (NMFS No. 2007/08162) dated January 31, 2008 NOAA Fisheries concurred with the Roseburg District's conclusion that the proposed activities are *not likely to adversely affect* (NLAA) the Oregon Coast coho salmon.

Special Status Species

On July 26, 2007, the Oregon/Washington BLM revised its Special Status Species list and policy in IM-OR-2007-072. Updates to Oregon/Washington special status species include: the removal of the previous categories of Bureau Assessment and Bureau Tracking, the addition of the category of "Strategic Species", updates to the criteria for the creation of Bureau Sensitive species, and changes to the list of species that are Sensitive or Strategic.

Bureau Sensitive species will continue to be managed in compliance with BLM National Manual and OR/WA State Policy (BLM 6840) as they were prior to IM-OR-2007-072. Policies from BLM 6840 do not apply to Bureau Strategic species (IM-OR-2007-072). For Strategic species, analysis in NEPA documents is not required, but if sites are located, field units are required to collect occurrence data and enter it into the corporate database (i.e. GeoBOB).

Survey and Manage

This decision incorporates the *Final Supplement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standard and Guidelines* (USDA and USDA 2007). The 2007 *Record of Decision* addressed both the deficiencies in the 2004 Record of Decision set aside by the District Court in Northwest Ecosystem Alliance et al. v. Rey et al. and the decision of the United States Court of Appeals for the Ninth Circuit in Klamath Siskiyou Wildlands Center et al. v. Boody et al.

Consequently, the decision to eliminate Survey and Manage is effective on this project.

Aquatic Conservation Strategy (ACS)

In March 2007, the U.S. District Court, in Pacific Coast Federation of Fishermen's Association, et al. v. National Marine Fisheries Service, et al. and American Forest Resource Council, an Oregon nonprofit corporation, et. al. set aside the 2004 Final Supplemental Environmental Impact Statement for Aquatic Conservation Strategy (ACS FSEIS). The Upper Umpqua EA was written in 2003, according to the Northwest Forest Plan and prior to the 2004 ACS FSEIS. As such, the analysis within the Upper Umpqua EA addresses ACS in a manner consistent with the March 2007 ruling.

- Standards and Guidelines, in effect in 2003 (prior to the 2004 ACS FSEIS), were adhered to when developing the project objectives and project design features (ROD/S&G, pgs. C-2 through C-3, C-11 through C-61) for application at the site level.
- The Upper Umpqua Watershed Plan (2003) is a combined watershed and environmental analysis. This plan contains the sixth and seventh field watersheds considered during the planning of this project.

- Cumulative effects were considered in the Upper Umpqua Watershed Plan (pgs. 20, 27-28, 32-33, and E-14).
- The Upper Umpqua Watershed Plan analyzed ACS objectives and does not retard or prevent the attainment of ACS objectives (in effect in 2003). The Powell's Bottle project objective to accelerate stand diversity and development would maintain and restore the distribution, diversity, and complexity of watershed and landscape scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted. Appendix D of the Upper Umpqua Watershed Plan EA outlines how ACS objectives would be achieved or achievement of those objectives would not be precluded (pgs. D-1 through D-6).

I find the Powell's Bottle Commercial Thinning & Density Management complies with the ACS requirements set forth in the ROD/RMP (1994) and the subsequent District Court interpretations in the Pacific Coast Federation of Fisherman's Association (PCFFA) v. National Marine Fisheries Service (NMFS), 71 F. Supp. 2d 1063, 1069 (W.D. Wash. 1999).

SECTION 4 – PUBLIC INVOLVEMENT

For the Upper Umpqua Watershed Plan Environmental Assessment, comments were solicited from affected tribal governments, adjacent landowners and affected State and local government agencies. No comments were received from these sources. During the seventy-five day public review period for the Upper Umpqua Watershed Plan, comments were received from four individuals or organizations. As previously described in Section 3, comments and subsequent interaction with the public helped formulate the Upper Umpqua Watershed Plan decision (October 8, 2003) and is reflected in both that decision (pgs. 3-9) and in the project design features for this project as described here (April 20, 2007).

No comments or information have been received pertaining to the design of Powell's Bottle Commercial Thinning and Density Management project.

SECTION 5 – PROTEST PROCEDURES

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR § 5003 Administrative Remedies, protests of this decision may be filed with the authorized officer [Marci L. Todd] within 15 days of the publication date of the notice of decision/timber sale advertisement in *The News-Review*, Roseburg, Oregon.

43 CFR § 5003.3 subsection (b) states that: "Protests shall be filed with the authorized officer and shall contain a written statement of reasons for protesting the decision." This precludes the acceptance of electronic mail or facsimile protests. Only written and signed hard copies of protests that are delivered to the Roseburg District Office will be accepted. The protest must clearly and concisely state the reasons why this decision is believed to be in error.

Protests received more than 15 days after the publication of the notice of decision/timber sale advertisement are not timely filed and shall not be considered. Upon timely filing of a protest,

the authorized officer shall reconsider the decision to be implemented in light of the statement of reasons for the protest and other pertinent information available. The authorized officer shall, at the conclusion of a review, serve the decision in writing to the protesting party. Upon denial of a protest the authorized officer may proceed with the implementation of the decision.

For further information, contact Marci L. Todd, Field Manager, Swiftwater Field Office, Roseburg District, Bureau of Land Management, 777 NW Garden Valley Blvd; Roseburg, OR. 97470, (541) 440-4931.

Marci L. Todd, Field Manager
Swiftwater Field Office

Date

Table 1. Summary of Effects of the Action: Powell’s Bottle Commercial Thinning and Density Management.

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
Cultural Resources		
Cultural Resources.	Surveys were conducted (May 2007) for cultural resources and Section 106 responsibilities under the National Historic Preservation Act were completed, in accordance with the 1998 Oregon State Historic Preservation Office protocols. No cultural resources were identified.	There will be no impacts to cultural resources.
Botany & Noxious Weeds (refer to <i>Appendices B</i> for details)		
Federally threatened (FT) Kincaid’s lupine and the federally endangered (FE) rough popcorn flower.	Surveys were completed (June 2007) and no sites were discovered.	No impacts to these two federally listed plant species will occur since there are no known sites within the project area.
Survey & Manage (S&M) Species.	Powell’s Bottle Commercial Thinning and Density Management meets one of the exemption criteria for Survey and Manage from the October 11, 2006 U.S. District Court Order (refer to pgs. 11-12 for details).	The decision to exempt Survey and Manage is effective on this project.
State Director’s Sensitive Species List including Federally Listed Species Fungi, Non-vascular and Vascular Plants. (last updated Aug 2007)	Surveys were completed (June 2007) and no sites were discovered.	No impacts to BS botanical species will occur since there are no known sites within the project area.
State Director’s Strategic Species List of Fungi, Non-vascular and Vascular Plants. (last updated Aug 2007)	Surveys were completed (June 2007) and no Strategic Species were detected within the project area.	Districts are encouraged to collect occurrence data on BA/BT species but they will not be considered as Special Status Species for management purposes (IM-OR-2003-054, IM-OR-2007-072).
Noxious weeds: Himalayan blackberry and Scotch broom occur in the project area.	All roads in this sale have scattered patches of Himalayan blackberry (approx. 0.1 acre) and Scotch broom (approx. 5 acres).	The roads were treated both chemically and mechanically in FY2005. The project area will be monitored for treatment effectiveness and follow-up treatments will be conducted as necessary. The project design features

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
		will minimize the spread of noxious weeds.
Fisheries (refer to <i>Appendix F</i> for details)		
Oregon Coast Coho Salmon (On February 4, 2008, the National Marine Fisheries Service (NMFS) notified the OR/WA BLM that the Oregon Coast coho salmon was listed as threatened under the ESA)	Prior to NMFS’s determination, the Roseburg District made a determination that this project will result in a “may effect, not likely to adversely affect [NLAA]” in the Upper Umpqua Watershed Density Management Plan Biological Assessment (Sept. 30, 2005) prepared for consultation with NMFS. The Biological Assessment is currently under review by NMFS.	A Letter of Concurrence was received from NOAA Fisheries for the Upper Umpqua Density Management Plan (NMFS No. 2007/08162) dated January 31, 2008 which concurred with the Roseburg District's conclusion that the proposed activities are <i>not likely to adversely affect</i> (NLAA) the Oregon coast coho salmon.
Essential Fish Habitat (EFH) for Coho Salmon and Chinook salmon.	Conservation measures incorporated into the project design features will prevent adverse effects to essential fish habitat.	Project will not adversely affect essential fish habitat. Therefore, consultation with National Marine Fisheries Service is not required.
Bureau Sensitive.	Oregon Coast coho salmon are documented within the project area. Oregon Umpqua Chub are suspected downstream of the project area. The project area includes fish bearing streams downstream of the harvest units along the haul route.	Project design features will minimize soil erosion and sedimentation effects to aquatic species and aquatic habitat.
Strategic Species	Oregon Coast steelhead is documented within the project area.	Districts are encouraged to collect occurrence data on strategic species but they will not be considered as Special Status Species for management purposes (IM-OR-2003-054).
Hydrology (refer to <i>Appendix D and E</i> for details)		
Peak Flows within the Analytical Hydrologic Units (AHU).	Density management is not expected to have any measurable impact on peak flow within fish-bearing waters below the treatment areas. At the project level there may be increases in	No measurable change in peak flows.

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
	peak flows during smaller storm events (less than two-year interval) in small non-fish bearing streams.	
Sedimentation.	Project design features will minimize soil erosion and sedimentation effects to aquatic species and aquatic habitat. Sediment produced, as a result of haul, will be of such small magnitude that it will not be meaningfully measurable.	Sedimentation will be maintained below meaningfully measurable levels or haul will be suspended.
Soils (refer to <i>Appendix C</i> for details)		
Mass Wasting and Landslides.	There are approximately 2 acres of soils on steep slopes considered fragile due to slope gradient but suitable for forest management (FGR) within Units 1 and 2. The probability of landslides and mass wasting will slightly increase with harvest in these areas. In the short-term (within approximately ten years after harvest), the probability of landslides occurring on these slopes will remain low (less than 10 percent). Any landslides that might occur would likely be few in number and small in size (less than 0.1 acre in size). There is little to no potential for landslides initiating on these two acres to reach streams. Rock buttressing cutslopes at the repaired 24-7-32.2 stream crossing, where seeps might be present, will prevent mass movement there.	<p>The distribution of landslides in time and space would be within the range of natural variability for a mid-seral forest on FGR slopes with landslide potential when the project design features are followed.</p> <p>Effects of sediment in the streambed from small landslides would have a low probability of being detected more than a few hundred feet downstream from the landslide (during normal flow conditions) since small streams have low capacity for carrying sediment due to their small size and low flows.</p>
Soil Productivity.	By following project design features and subsequent sub-soiling as described above (pgs. 5 & 8-11), it is estimated that soil productivity would be maintained or slightly decreased in the short-term.	Sub-soiling will accelerate the recovery of soil-productivity.

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
Wildlife (refer to <i>Appendices G, H, I, and J</i> for details).		
In accordance with the Endangered Species Act, consultation with the U.S. Fish and Wildlife Service (USFWS) has been completed for the federally threatened (FT) northern spotted owl and marbled murrelet, and for spotted owl critical habitat and murrelet critical habitat.	A letter of concurrence from the USFWS for the re-initiation of consultation on Roseburg District Bureau of Land Management FY 2005-2008 Management Activities [Ref. # 1-15-05-I-0511] was received June 24, 2005. Project design features will be implemented in compliance with the letters of concurrence.	The USFWS concurred that this action is <i>not likely to adversely affect</i> the northern spotted owl, northern spotted owl critical habitat, marbled murrelet, and marbled murrelet critical habitat (pg. 30 [Ref. # 1-15-05-I-0511]).
Noise/Visual Disruption of Northern Spotted Owl nesting activities.	No noise/visual disruption effects to spotted owls will occur due to this action since there are no known spotted owl nests, activity centers, or unsurveyed suitable habitat within 65 yards of the harvest units.	No disruption effects to spotted owls will occur.
Northern Spotted Owl Habitat. There are five northern spotted owl sites (includes nine activity centers) that are located within 1.5 miles (<i>Coast Range provincial home range</i>) of the proposed harvest unit. There is no established 100-acre Known Owl Activity Centers (KOAC) associated with any of these owl sites.	Density management will degrade 103 acres of dispersal habitat but will not alter the ability of that stand to function as dispersal habitat. Since the treated stands will not be modified below 40 percent canopy cover, the stands will still function as dispersal habitat. No suitable habitat will be modified or removed.	Density management and commercial thinning of the mid-seral stands will improve the quality of dispersal habitat within 5-10 years. Density management within the Riparian Reserves will diversify the forest for spotted owl use by developing larger diameter trees with multiple canopy layers. Beneficial effects to dispersal habitat from commercial thin of 60 acres will persist until the upland portions of the stands undergo final harvest in the future. The USFWS concurs that this action <i>is not likely to adversely affect</i> spotted owls (pg. 19 [Ref. # 1-15-05-I-0511]).
Critical Habitat for the Northern Spotted Owl. This project is located within designated critical habitat unit OR-59 for the northern spotted owl.	Density management will degrade approximately 16.0 acres (1.3 percent of 1,189 acres) of dispersal habitat within designated Critical Habitat Unit OR-59. Thinning	Because the primary constituent elements present in dispersal habitat will persist post-treatment, the USFWS concurs that this action <i>is not likely to adversely affect</i> spotted

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
	<p>treatments will maintain canopy cover (stand average) above 60 percent. Therefore, the stand will continue to provide sufficient primary constituent elements to provide for spotted owl dispersal.</p> <p>No suitable habitat will be modified or removed.</p>	<p>owls (pg.28 [Ref. # 1-15-05-I-0511]).</p>
<p>Noise/Visual Disruption of Marbled Murrelet nesting activities. The project area is located approximately 36 miles from the coast, within Marbled Murrelet Inland Management Zone 2, 1.3-mile Seasonal Restriction Corridor.</p> <p>There is one known occupied site (Leonard Creek) adjacent to the north boundary of Unit 1.</p>	<p>There is unsurveyed suitable habitat within 100 yards north of Unit 1, west and southwest of Unit 2, south and southeast of Unit 3.</p> <p>All four (4) units would require seasonal restrictions for prescribed burning located within 0.25 miles of the occupied murrelet site and unsurveyed suitable murrelet habitat.</p>	<p>To avoid disturbance impacts to the marbled murrelet, seasonal restrictions from April 1st thru August 5th, and Daily Operating Restrictions (two hours after sunrise to two hours prior to sunset) from August 6th thru September 15th will be implemented within 100 yards of unsurveyed suitable habitat.</p> <p>The USFWS concurs that the density management activities <i>are not likely to adversely affect</i> marbled murrelets (pg. 16 [Ref. # 1-15-05-I-0511]).</p>
<p>Marbled Murrelet Habitat.</p>	<p>Suitable nesting habitat will not be removed within or adjacent to the project area.</p> <p>Within the stands prescribed for thinning treatment under this decision, surveys for trees with suitable platform structures were conducted (October 2006) following the Residual Habitat Guidelines.</p>	<p>Density management will facilitate the development of future nesting habitat by increasing tree and limb growth rates; fostering the development of nesting platforms. In addition, thinning younger trees from around the older, large limbed trees will allow greater access for nesting providing an opportunity for murrelets to occupy these stands earlier.</p> <p>The USFWS concurs that the density management activities <i>are not likely to</i></p>

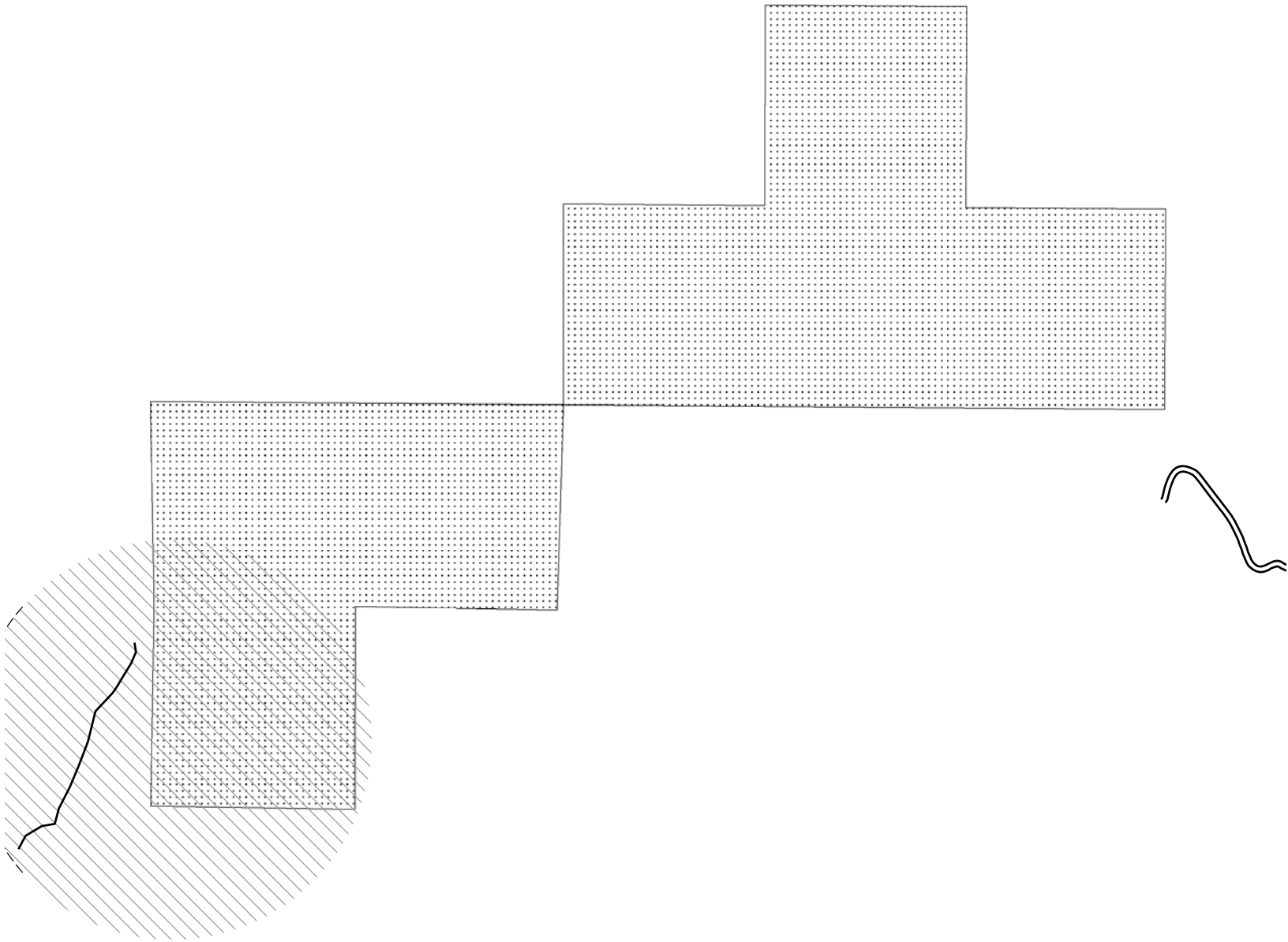
Context (What?)	Intensity (How Much?)	Reason for not being Significant.
		<i>adversely affect</i> marbled murrelets (pg. 10 [Ref. # 1-15-05-I-0511]).
<p>Critical Habitat for the Marbled Murrelet. This project is located within designated critical habitat unit OR-04-f for the marbled murrelet.</p>	<p>Within the stands prescribed for density management under this decision, surveys for trees with suitable platform structures were conducted (October 2006) following the Residual Habitat Guidelines.</p> <p>Density management will degrade 16.0 acres recruitment habitat within designated critical habitat. Thinning treatments will maintain canopy cover above 60 percent.</p> <p>No suitable habitat will be removed.</p>	<p>Based on compliance with the Guidelines for stands with potential murrelet nesting habitat, density management activities are not expected to measurably affect the primary constituent elements of critical habitat because the potential murrelet nesting structure will be excluded from the treatment area or protected within the treatment area.</p> <p>Thinning activities within critical habitat are intended to improve forest health conditions or facilitate the development of structural characteristics of unsuitable habitat, and is consistent with recovery actions described in the Marbled Murrelet Recovery Plan (recovery action 3.2.1.3).</p> <p>Because primary constituent elements will not be removed, the USFWS concurs that this action <i>is not likely to adversely affect</i> marbled murrelets (pg. 16 [Ref. # 1-15-05-I-0511]).</p>
<p>Survey & Manage (S&M) Species.</p>	<p>Powell's Bottle Commercial Thinning and Density Management meets one of the exemption criteria for Survey and Manage from the October 11, 2006 U.S. District Court Order (refer to pgs. 11-12 for details).</p>	<p>The decision to eliminate Survey and Manage is effective on this project.</p>
<p>Bald Eagle (Bureau Sensitive) There is a known bald eagle nest site (Powell Creek) located adjacent to the west boundary</p>	<p>Project design features will be implemented in compliance with the Letter of Concurrence (USFWS, Ref. # 1-15-05-I-0511). To mitigate</p>	<p>Prior to the federal delisting of the bald eagle, the USFWS concurred that this action <i>is not likely to adversely affect</i> the bald eagle</p>

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
of Unit 2.	<p>noise/visual disruption effects to bald eagles, seasonal restrictions would be necessary within 0.25 miles of the bald eagle nest site.</p> <p>No suitable habitat will be removed or modified.</p>	(pg. 30 [Ref. # 1-15-05-I-0511]).
Fisher (Bureau Sensitive)	The harvest units are adjacent to suitable natal and foraging habitat. The harvest units are expected to be used for travel between stands of suitable habitat. The nearest recorded fisher observation occurred in the year 2000 approximately 11.0 miles to the southwest of the proposed project area (ONHP 2007).	The action will not affect natal, foraging, or dispersal habitat in a measurable way.
Northwestern Pond Turtle (Bureau Sensitive)	Suitable habitat for the pond turtle is present along the Umpqua River, which is located within 800 meters of Units 1 and 4. Pond turtles have been documented in Bottle Creek and within the Umpqua River. Pond turtles may overwinter in the upland habitat within the project area.	The action will not affect pond or upland overwintering habitat in a measurable way.
Purple Martin (Bureau Sensitive).	The harvest unit does not contain suitable habitat (e.g. open areas with snags) for purple martins. Purple martins may forage over the canopy of the existing stand.	The action will not affect the forage opportunities or quality for purple martins in a measurable way.
Spotted Tail-dropper (Bureau Sensitive).	The harvest unit contains habitat suitable for the spotted tail-dropper (e.g. moist coniferous forest with a substantial hardwood component), but there are no known sites within the project area.	No impact to the spotted tail-dropper will occur since the post-treatment stand condition appears to fall within the range of suitability for this species and its con-specifics.
Townsend's Big-eared Bat and Fringed Myotis (Bureau Sensitive)	The harvest unit does not contain suitable habitat (e.g. late-successional forest associated with water; caves, rock crevices) for	The action will not affect the forage opportunities or quality for Townsend's big-eared bats in a measurable way.

Context (What?)	Intensity (How Much?)	Reason for not being Significant.
	Townsend's big-eared and Fringed myotis bat species. However, suitable habitat is adjacent to the project area. Therefore, these bat species are expected to forage over the Umpqua River, ponds, and streams associated with the proposed project area.	
White-tailed Kite (Bureau Sensitive)	The harvest units do not contain or are located immediately adjacent to suitable habitat (e.g. open grasslands, meadows, farmlands, etc.). However, suitable habitat is located less than 600 meters north and northwest of the proposed project area. There are no known nest sites, but kites have been observed in the area during the winter (E. Gayner, personal obs., 2007)	The action will not affect the forage opportunities for white-tailed kite in a measurable way.
Remaining Bureau Sensitive Species.	Evaluation of the remaining Bureau Sensitive wildlife species was completed in October 2007 and no known sites or concerns were identified (except for those species discussed above).	No impacts to the remaining Bureau Sensitive wildlife species will occur since there are no known sites within the project area.
Bureau Strategic Species.	There are no known detections of strategic species, including broadwhorl tightcoil, pristine springsnail, Klamath tail-dropper, Merlin, or Oregon giant earthworm, within or within close proximity to the project area (ONHP 2007).	Districts are encouraged to collect occurrence data on strategic species but they will not be considered as Special Status Species for management purposes (IM-OR-2003-054).

Figure 1. Powells Bottle Commercial Thinning and Density Management Units # 1 and 2

District	Township	Range	Section	Meridian
<i>ROSEBURG</i>	<i>24S</i> <i>25S</i>	<i>7W</i>	<i>33</i> <i>5</i>	<i>WILLAMETTE</i>















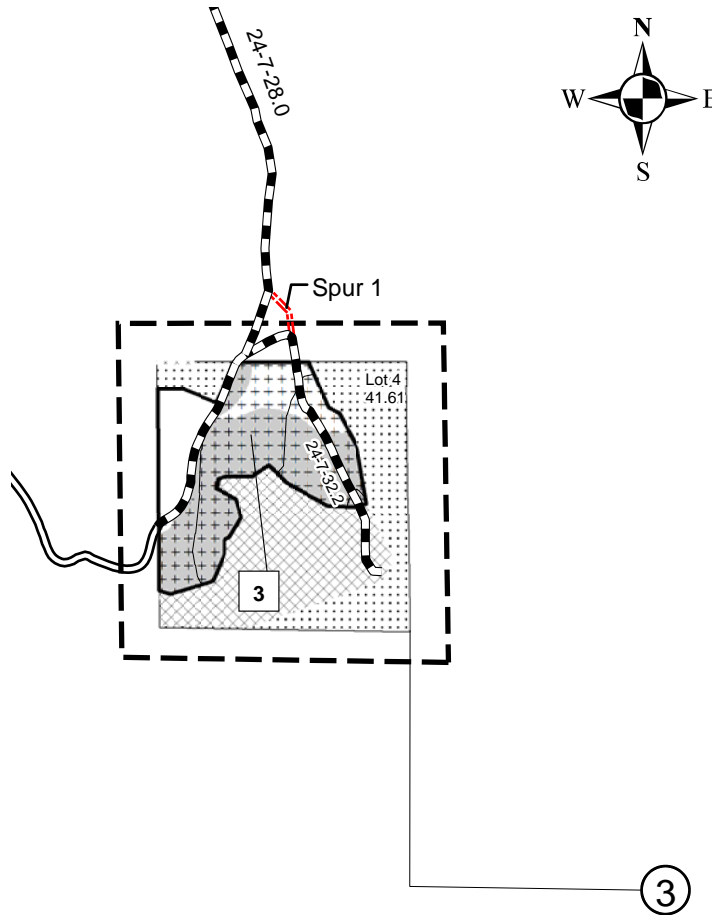
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|---|--|--|-------------------------------|
|  | Harvest Area - Cable Yarding |  | Existing Road |
|  | Harvest Area - Ground Based |  | Roads to be Constructed |
|  | Reserve Area |  | Roads to be Renovated |
|  | Marbled Murrelet Seasonally Restricted Operations Area |  | Boundary of Cutting Area |
|  | Bald Eagle Seasonally Restricted Operations Area |  | Boundary of Contract Area |
| | |  | Stream |
| | |  | Marbled Murrelet Habitat Area |

Figure 2. Powell's Bottle Commercial Thinning and Density Management Unit #3

District	Township	Range	Section	Meridian
ROSEBURG	25S	7W	3	WILLAMETTE



1,000 500 0 1,000 Feet

LEGEND

-  Harvest Area - Cable Yarding
-  Harvest Area - Ground Based
-  Reserve Area
-  Marbled Murrelet Seasonally Restricted Operations Area
-  Marbled Murrelet Habitat Area

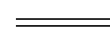





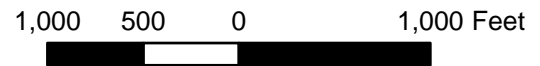
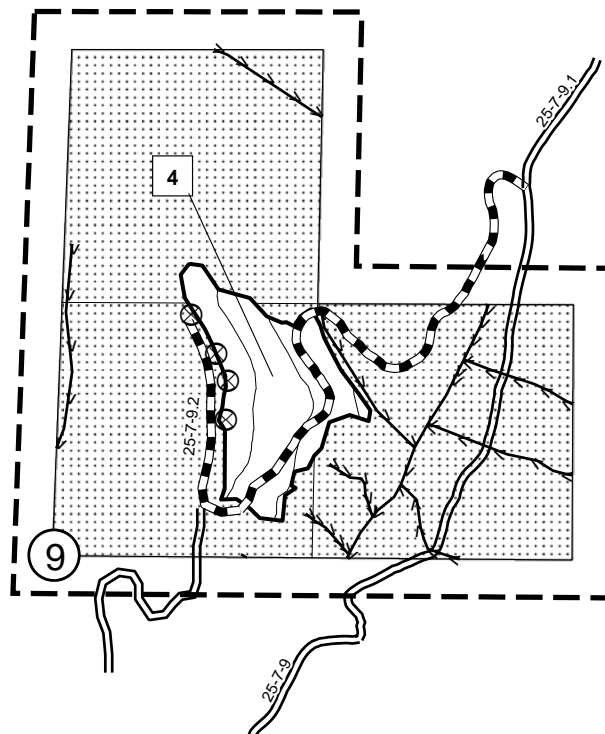
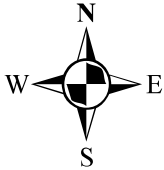




-  Existing Road
-  Road to be Constructed
-  Roads to be Renovated
-  Boundary of Cutting Area
-  Boundary of Contract Area
-  Stream

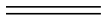




Figure 3. Powell's Bottle Commercial Thinning and Density Management Unit #4

District	Township	Range	Section	Meridian
ROSEBURG	25S	7W	9	WILLAMETTE



LEGEND

-  Harvest Area - Cable Yarding
-  Harvest Area - Ground Based
-  Reserve Area
-  Landings to be Constructed

-  Existing Road
-  Boundary of Cutting Area
-  Roads to be Renovated
-  Boundary of Contract Area
-  Stream