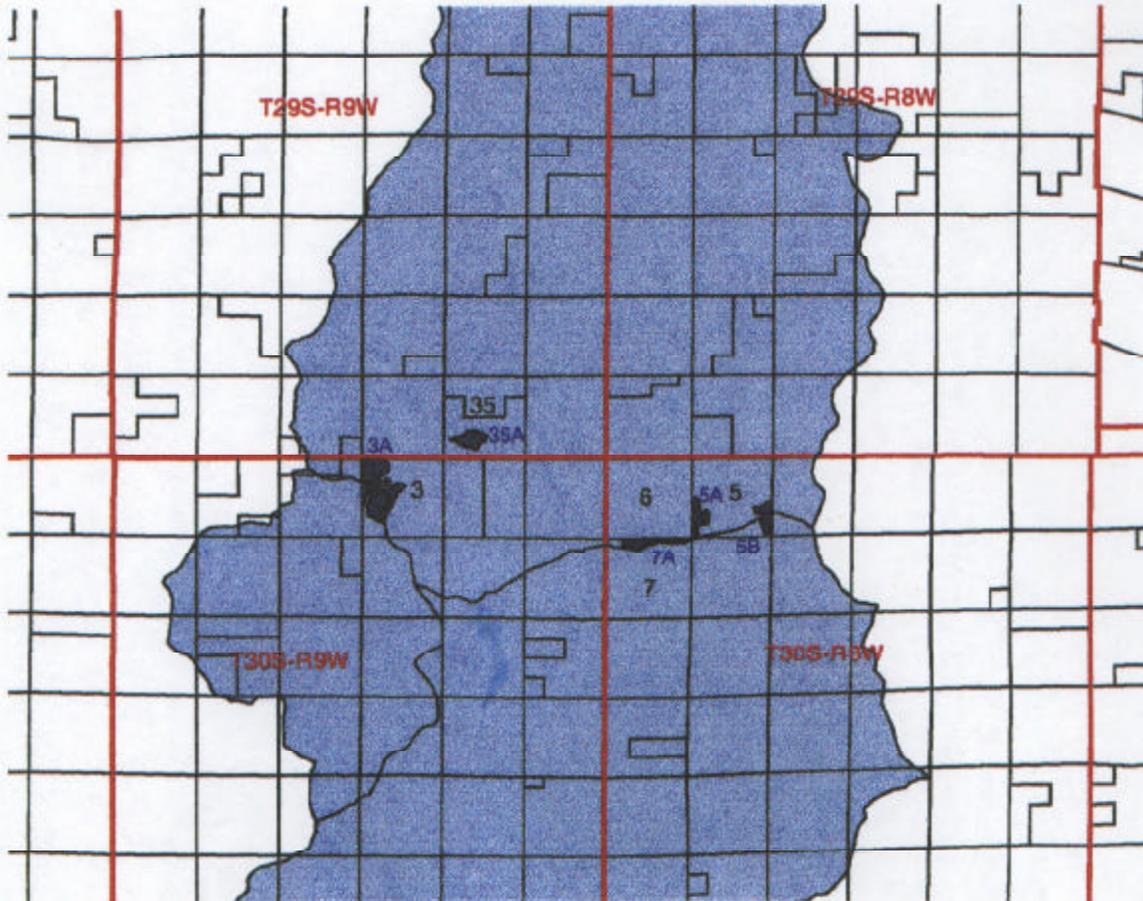
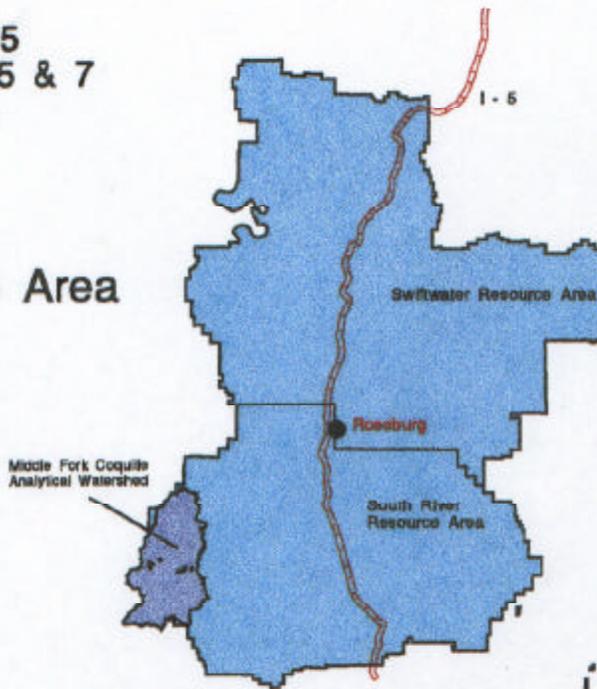


Signal Tree / Burma Commercial Thinning Vicinity Map

T29S, R9W, Section 35
T30S, R8W, Sections 5 & 7
T30S, R9W, Section 3

South River Resource Area

EA #105-97-10



September 12, 1997

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Chapter 1

PURPOSE AND NEED FOR ACTION

The South River Resource Area of the Roseburg District of the Bureau of Land Management (BLM), proposes a commercial thinning of approximately 250 acres in T29S R9W, T30S R8W, and T30S R9W (reference vicinity map, front cover) within the Middle Fork Coquille Analytical Watershed. The thinning is located in the General Forest Management Area (GFMA) of the Matrix land use allocation as described in the Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Standards and Guidelines (S&G) for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (April 13, 1994). The ROD states that most timber harvest and other silvicultural activities would be conducted in that portion of the Matrix with suitable forest lands. The thinning is designed to control stand density and maintain stand vigor.

The purpose of this Environmental Assessment (EA) is to complete site specific analysis of the potential environmental impacts which could result with the implementation of the proposed action. The analysis assists in the determination of the "significance" of the impacts and whether an Environmental Impact Statement (EIS) is necessary.

I. Decision To Be Made

What site specific project design features would be necessary to meet Roseburg District Record of Decision and Resource Management Plan (ROD/RMP) requirements and meet the Director's overall objective of maintaining "Healthy Ecosystems"?

II. Permits, Licenses, Laws, Requirements, Policies, & Other Related Considerations

1. Under the Endangered Species Act (ESA), the action requires consultation with the United States Fish and Wildlife Service (USFWS) for potential effects on the northern spotted owl (NSO).
2. The State Historic Preservation Office (SHPO) will be contacted for concurrence with the evaluation for the project as it relates to the National Historic Preservation Act.
3. The Pacific Yew Final Environmental Impact Statement and Record of Decision (Sept. 1993, p. 5) states that the decision will be implemented only when there is a demand for Pacific yew from federal lands for taxol. There has been no demand for the taxol from federal lands since 1993. All Pacific yew would be tallied as the sale is cruised and all yew would be reserved from harvest.
4. The proposed project is within the Coastal Zone Management Area, and there are no registered water rights within one mile downstream of the project area.

5. The interim guidance for management of the red tree vole would be followed, and no site specific surveys are required.
6. None of the proposed units are within 1/4 mile of the R-5 zoned lands designated for Rural Interface objectives.

III. Scoping

The areas proposed for thinning were selected following a screening process which looked at potential commercial thinning units with minimal acres in Riparian Reserves. Watershed Analysis is not complete for the Middle Fork Coquille watershed, therefore no activity could occur in the Riparian Reserves.

The proposed harvest meets the requirement to retain 15% of federal lands in fifth field watersheds (20-200 sq. miles), as late-successional forest (ROD/RMP, p. 34). There would be no harvest of late successional forest.

IV. Concerns/Issue

The Interdisciplinary Team (IDT) brought forward concerns related to resources that had the potential of being affected by the proposed action. Concerns were mitigated through project design and application of Best Management Practices (BMP) listed in the ROD/RMP (Appendix D), thus no issues remained. The Critical Elements of the Human Environment were considered and are summarized in Appendix D.

Chapter 2

DISCUSSION OF ALTERNATIVES

I. Alternative 1-Proposed

All units could involve; thinning (from below), leave islands and openings. In thinned areas, the objective would be to maintain a stand density of 80-110 trees per acre, and a resultant relative density within the optimum growth zone for Douglas-fir. This would maintain low mortality, and good crown ratio and diameter growth. Crown closure after thinning would exceed 50%. Unit prescriptions vary based on existing stand conditions. Units 35A, 3A, 5A, and 7A would be ground based harvested in the dry season. Unit 5B would be ground based (dry season) and cable harvested with one end suspension. Unit 5B would require approximately 500 feet of permanent ridgetop road for the cable portion. Cable harvest could be done at any time exclusive of the bark slippage period. To avoid damage to leave trees, no felling, bucking, or yarding activities would occur between April 15 and July 15 due to bark slippage. Appendix B presents a unit-by-unit description.

II. Alternative 2-No Action

No thinning would occur in these stands at this time. No decommissioning of jeep roads, and skid trails within units, would occur. No road building would occur.

Chapter 3

AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION

This chapter summarizes the site specific resources prior to project implementation, that could potentially be affected by the project and the potential impacts for each. Each discussion will include recommended mitigation.

I. Alternative 1-Proposed Action

A. Special Status Species

Federally Threatened or Endangered-

The bald eagle, marbled murrelet, peregrine falcon and Columbian white-tailed deer are not expected to occur in the project area. The proposed units are outside of known territories, habitat zones or suitable habitat for these species.

Federally Threatened Northern Spotted Owl (NSO)-

All proposed units are comprised of stands which provide the structure used by NSO for foraging and dispersal activities. Thinning the units as per the guidelines (Appendix B), would result in minimal loss of functionality for dispersal habitat in the short term and would have a net benefit for NSO and other late seral species in the long term by promoting growth of residual trees and encouraging establishment of a second canopy layer.

The ROD identifies Riparian Reserves and connectivity blocks as providing connectivity for organisms using late seral habitat. A preliminary analysis of the Middle Fork Coquille subbasin, indicates that in its present condition, the subbasin is not fully providing for connectivity, since only 35% of the Riparian Reserve and 43% of the designated connectivity block in the area are currently functioning as late seral habitat. However, Matrix also provides for connectivity. Thinning the proposed units in Matrix, would accelerate the development of late seral habitat characteristics, and increase the functionality of the overall watershed for connectivity.

The proposed project is outside any known NSO territory, and thus there would be no direct impacts to any known site. Foraging by owls could improve as the forest system develops over time.

There is one Critical Habitat Unit (CHU) in the vicinity of the proposed project, in which three proposed units are located. Currently this CHU contains adequate numbers of reproductively successful pairs of NSO and is functioning for dispersal. The ability of this CHU to provide dispersal habitat would decrease slightly in the short term and increase as tree growth increases and the secondary canopy develops. Biodiversity of vegetative species should increase and thus increase site quality for foraging owls.

Del Norte Salamander (Survey & Manage)-

The proposed units are within 20-25 miles of the known range of the salamander. However, there is no known suitable habitat within the proposed unit boundaries, thus the species and suitable habitat would not be affected.

Bureau Sensitive Bat Species-

All of the units contain some large green trees, large down woody debris, and snags which could be utilized by these species. Retaining this structure would maintain existing roosting habitat. Opening the stand canopy, would result in an increase in the vegetative diversity and increase the available insect population, and thus foraging quality.

Other Special Status Species-

No special status mollusk species have been located in the project area, but suitable habitat does exist within the project area. The key habitat features are not expected to be affected by the proposed action and the changes to the mollusk populations are expected to be minimal.

Several other special status wildlife species are expected to be present in the project area. As a general rule, the Forest Plan adequately provides for the continued existence of these species. Special considerations may be made during planning in order to apply appropriate management when species are found.

No other Bureau Sensitive or State listed species have been located in the proposed sale units. Alterations in stand structure resulting from the thinning are generally beneficial to most species as a result of increased diversity of structure and vegetation. Late seral species should benefit in the long term from the proposed treatment.

Fish Species-

Federally Proposed Endangered Species-

The Oregon Coast steelhead has been "proposed" for listing by the NMFS as a threatened species. This proposal is a "may affect not likely to adversely affect" action on the steelhead. The proposed action was evaluated for the impact on habitat components important to steelhead. The action would not appreciably reduce the survival or recovery of the steelhead within this watershed, thus the species would not

be jeopardized. Formal conferencing is complete, and NMFS concurs with the evaluation.

Other Sensitive Fish Species-

The NMFS has determined that the Oregon Coast coho salmon Evolutionary Significant Unit (ESU) does not warrant listing at this time. It will be considered as a candidate species in three years, or earlier if warranted by new information (Federal Register, Tuesday, May 6, 1997, Vol. 62, No. 87, Rules and Regulations).

There would be no direct impacts to the fisheries resource from the proposed project since neither species is present in the project area and no activity would occur in Riparian Reserves. These species are located in the Middle Fork Coquille watershed and downstream of the project, therefore there is the potential for indirect and cumulative impacts (discussed in the Water Resources/Riparian section of this document). These impacts are not anticipated due to suitable project design, application of BMP and mitigation.

Special Status Plant Species-

Each of the sites of the following species is mapped (reference Botany Survey Report- EA file):

Bensoniella oregona (Unit 3A) is a Bureau Sensitive and Survey and Manage plant. It is recommended that there be no disturbance in streams, seeps and meadows in order to maintain soil moisture at levels necessary to sustain populations.

Sarcosoma mexicana (Units 3A, 35A, 5B) is a Protection Buffer and Survey and Manage species. At the counsel of Tom O'Dell, Regional Mycologist (reference Botany Survey Report- EA file), the following recommendations were made.

Designate two areas within the unit that would protect the area from ground and fire disturbance. All other *Sarcosoma* sites would be mitigated by:

1. directional falling of timber away from the site
2. maintain coarse woody debris
3. no broadcast burning
4. use existing designated skid roads where possible
5. clumping retention trees.

Bauxbaumia viridis (Units 3A, 5A, 5B, 7A) is a Protection Buffer species. The following recommendations would assist in maintaining the species viability:

1. maintain decay class 3, 4, and 5 logs
2. aggregate trees to maintain greater than 70% closed-canopy to shade known sites (ROD/S&G, p. C-27).

Helvella compressa (Unit 5B) is a Survey and Manage species. Recommended mitigation is the same as for the *Sarcosoma*.

Other Survey and Manage species not requiring specific surveys (survey strategy 3 & 4, ROD/S&G, p. C-5 & 6) were found and documented, and will be included in a database for future reference. The objective of these surveys is to acquire additional information and to determine necessary levels of protection. These species are listed in the Botany Survey Report (EA-file).

B. Vegetation/Timber Resources

All units are approximately 50 year old closed canopy stands, with some larger residual Douglas-fir and grand fir. Western hemlock and Port-Orford cedar (POC) is also scattered throughout the stands. There are three POC seed trees in Unit 5A. There is Pacific yew in Unit 7A. Thinning would remove smaller diameter trees. All hardwoods greater than 8" diameter at breast height (dbh) would be reserved from harvest. Adjacent conifers may need to be cut to reduce over-topping in order to maintain these hardwoods in the stand. All snags and residual old-growth would be retained. Douglas-fir would be favored for retention over grand fir.

Port-Orford cedar (and occasionally Pacific yew) is affected by a pathogen, *Phytophthora lateralis*, which causes root disease (see Silviculturist report-EA file). Roadside surveys for dead and dying POC that may indicate the presence of *P. lateralis* have been done for the project area. Generally, the upper portions of the Signal Tree area are diseased and the Burma area is free of the disease. No POC was seen along the Signal Tree access road up to the road into the proposed Unit 35A. Healthy POC was observed along the road on the north side of this unit. Beyond the unit, the road side POC were diseased. The disease is also found along the Signal Tree access road to the proposed Unit 3A. No POC was observed along the road through the unit, though there is both healthy and diseased POC within the proposed unit.

All management activities in this proposed sale should conform to the Port-Orford Cedar Management Guidelines. Spread of the disease has been through transport of infested soil by logging equipment and vehicles. It is also transmitted by surface water in streams or ditches. POC is present in all proposed units. It is both diseased and healthy in Units 35A and 3A. All thinning operations in these units should be restricted to the dry season to prevent further spread of the disease. The POC in Units 5A and 7A is apparently healthy. Restrict thinning operations (including hauling) in these units to the dry season. Merchantable POC, except for the seed trees, within 50 feet below the road in Unit 5A would be removed to prevent possible spread of the disease. Non-merchantable POC would be removed at a later time in order to be more effective in preventing spread of the disease. A more detailed survey of infected and healthy POC locations should be made when conducting sale layout and marking. The existing dirt road through Unit 5A should be rocked (on BLM). If all 5 units are sold as one sale, Units 5A, 5B, and 7A should be harvested first as they are free of POC

root disease. Units 3A and 35A should be harvested last to avoid running contaminated equipment over disease free areas. Unit 3A should be harvested before Unit 35A since there appears to be little infection there. Management considerations for POC would also limit infection of Pacific yew.

C. Soils

Timber harvest and road construction (temporary and permanent) would result in some localized soils impacts of; compaction, surface erosion and productivity loss. Ground based activities should focus on maintaining less than 1% productivity loss (Appendix C lists some BMP (not all inclusive) which would be applied to meet this objective). Natural surface roads, including skid trails and jeep roads, that would not be used for harvest, and are not currently functioning as commercial timber land, should be tilled prior to harvest.

D. Water Resources/Riparian

Field observations in the proposed project area have noted lack of regular road maintenance resulting in; contribution of sediment directly into stream channels, lack of adequate culverts, and downcutting in the ditchlines. Renovation would occur along portions of the haul routes.

Except for a 500 foot permanent spur, road construction is temporary, and existing skid roads or jeep roads would be utilized where possible. These temporary roads would be used and fully decommissioned during the same dry season. There is no road construction in Riparian Reserves and there would be no yarding through or use of existing skid roads or jeep roads in Riparian Reserves.

There would be no direct impacts to hydrology or fisheries resources with this proposed action. Potential indirect impacts from road building could include increased sedimentation and extension of the stream network due to ditches (Wemple 1994, Wemple, et. al 1996). Potential cumulative impacts from road building could also include increased peak flow, disrupting natural ground water flow, and changing timing and delivery rate of water to the stream channels (Jones and Grant 1996). However, the above impacts should be minimal for the proposed 500 feet of permanent road to access Unit 5B. Because this spur is ridgetop construction, the natural ground water flow, and the timing and delivery rate of water to the stream channels should not be disrupted. There would probably not be a ditch along this road because of its location, so it should not contribute to an extension of the stream network. Because of the minimal amount of proposed permanent road, and the decommissioning of existing skid trails and jeep roads in the area, there should be no significant impacts from the proposed road construction.

There could also be beneficial impacts of reducing road density, decreasing sedimentation, increasing infiltration, and restoring the natural timing and delivery of water to the stream channels below these roads, by fully decommissioning jeep roads and skid trails that are currently within the proposed units.

Portions of each proposed unit are within the Transient Snow Zone (TSZ) (see Hydrology/Fisheries/Soils Report-EA file). The Hydrologic Recovery Procedure (HRP) is a reference for cumulative effects within the TSZ. The HRP model assumes that a site is hydrologically recovered when crown closure reaches 70%. All of the proposed units would have greater than 50% crown closure following treatment. The ORGANON growth model indicates that all stands would recover to greater than 70% crown closure within 5 years. Because of the good vegetative condition of the compartments, all of the compartments are currently hydrologically recovered. The fact that the proposed units would still have over 50% crown closure following treatment, and no large openings would be created (which could increase snow accumulation or allow higher windspeeds and turbulence), thinning the proposed units should not result in significant increases in peak flows from rain-on-snow events.

The Riparian Reserves should protect the morphology of the stream channels adjacent to harvest units, prevent increases in stream temperature, filter sediment from adjacent harvest units, and provide a source of large woody debris (LWD). Draws and ephemeral streams that did not show a definable channel or evidence of annual scour and deposition, and therefore did not require a Riparian Reserve, would be protected by retention trees. With the protection provided from the Riparian Reserves and the use of BMP, downstream water users should not be impacted from the proposed activities.

E. Cultural Resources

No cultural resources were found in the proposed project area. State Historic Preservation Office (SHPO) concurrence is pending. Project implementation would not occur until SHPO concurrence is received.

F. Recreation

There are no Visual Resource Management (VRM) or recreation conflicts.

II. Alternative 2-No Action

Should the proposed sale units remain undisturbed, there would be a slow increase in understory mortality which could result in single-layered canopies formed by the interlocking crowns of the largest trees. The results of canopy closure would result in a stand with a simplified ecosystem consisting primarily of a few tree species of similar size and age. These stands are growing at high densities. Mortality caused by suppression and crowding among trees is not likely to provide large snags or logs on the forest floor because mortality occurs only in the smaller trees. Small mammal populations would be restricted to those which can subsist on conifer cones seasonally. The foraging quality of these stands would generally decline over the next few decades until openings begin to form in the older stand and develop other seral stages. Dispersing owls would continue to utilize these stands though the next few

decades, but would not find them very productive. Foraging and roosting opportunities for spotted owls in the proposed units should decrease slightly in the short term without artificial thinning. This would result in a relatively small loss of quality in the CHU overall. As the stands age, crowns become short and susceptible to wind damage, insects and disease. As the live crown ratio drops to less than 30%, the ability of the trees to respond to increased light and moisture availability, decreases. Future treatment options are reduced by failing to thin, and substantially delays development of late successional structure. Eventually, the habitat quality of the stands would gradually improve, providing foraging and nesting structure and slightly improving the general quality of the CHU.

In the near future, bat species would continue to utilize the stands in the sale area for roosting and foraging to the current extent. No increase in bat use is expected until the structure of the stand begins to become more open and decadent.

Any Bureau sensitive or State listed species that may currently utilize these stands would probably experience a slow decline in habitat quality or productivity in proportion to the general decline in diversity and moisture level which occurs over time in closed canopy stands of this type. Normal stand progression does include a period with crowded stands of this type, however, and some wildlife species may have developed adaptations which allow them to exploit this stand structure to their advantage. Small species of accipiters and songbirds are known to be found frequently in this seral stage. The no action alternative would allow these few species to live in the stands for a longer time, while limiting the usefulness of the ecosystem for other species. The system would depend on natural succession to create openings and other diversity in the stands, thereby increasing their value as habitat for other wildlife species.

No roads would be built. Timber harvest would take place in another location within Matrix lands to meet the District timber harvest commitment, which is one of the multiple use objectives. No increase in peak flow above current levels would occur from timber harvest and road building within this watershed. Roads identified as water quality problems would not be renovated or decommissioned. There would be no change in road density. The HRP and equivalent clearcut area (ECA) in the watershed would continue to improve. There would be no direct impacts to fisheries resources under this alternative. Indirect and cumulative impacts would include continued sedimentation from the existing road system.

Single storied conifer stands such as these would not develop into multi-storied stands without disturbance. Though seedlings of shade-tolerant conifers are present in some stands, growth and development is limited. Grand fir, Port-Orford cedar, or western hemlock could exist in the understory. Regeneration of Douglas-fir would not occur without the creation of openings in the stand.

Based on ORGANON (see table on p. 5-Silviculturist Report-EA file), these unthinned stands would contain more trees per acre but of a smaller diameter than thinned stands. Relative densities remain very high. The live crowns would continue to recede and suppression

mortality of the smaller trees would continue.

There would be little impact on Port-Orford cedar and the spread of the root disease. No thinning of Port-Orford cedar would occur, so the transmission of the disease by root grafts could occur. The dirt road in unit 5A would not be rocked and its dirt surface and runoff could cause infection of roadside cedar, including the seed trees.

III. Monitoring

Monitoring would be done in accordance with the ROD/RMP, Appendix I (p. 84, 190-191, & 195-198).

Chapter 4

LIST OF AGENCIES/PERSONS CONTACTED AND PREPARERS

This project was included in the Roseburg BLM Project Planning Update (Winter 1996-97). The notice of decision would be published in the News Review if the decision is made to implement the project.

I. Agencies & Persons Contacted:

Adjacent Landowners & Down-stream Water Users (reference letters in EA file)
 Coquille Indian Tribe
 Cow Creek Band of Umpqua Indians
 National Marine Fisheries Service
 State Historic Preservation Office
 US Fish and Wildlife Service

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

Division of State Lands
 Douglas County Board of Commissioners
 Oregon Department of Environmental Quality
 Oregon Department of Fish and Wildlife
 Oregon Department of Forestry
 Oregon Land Conservation & Development
 US Environmental Protection Agency
 Umpqua Regional Council of Governments
 Umpqua Watersheds
 Ronald S. Yockim

III. List of Preparers:

| | | |
|------------------|---|---------------------------------------|
| Sigrid Barron | Environmental Coordinator | ID Team Leader |
| Kevin Carson | Silviculturist | Project Lead |
| Bill Adams | Fuels Management Specialist | Pacific Yew and Rural Urban Interface |
| Gary Basham | Special Status Plant Coord. & Natural Resource Specialist | Special Status Plants |
| Don Scheleen | Archaeologist | Cultural Resources |
| Dave Fehringer | Forester | Forestry |
| Dennis Hutchison | Soil Scientist | Soils |
| Rob Hurt | Fisheries Biologist | Fisheries |
| Todd Kuck | Natural Resource Specialist | Hydrology |
| Dave Mathweg | Outdoor Recreation Planner & Recreation | Planning & VRM |
| Nancy Duncan | Wildlife Biologist | Wildlife/T & E Species |
| John Royce | Sup. Multi-Resource Specialist | Management Representative |

Agencies/Persons Contacted & Preparers

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Wemple, Beverley C., J. A. Jones, and G. E. Grant, 1996. Channel Network Extension by Logging Roads in Two Basins, Western Cascades, Oregon. *Water Resources Bulletin*, Vol. 32, No. 6.

APPENDIX A

MAPS

Signal Tree/Burma Thinning

T29S R9W

T29S R8W



T30S R9W

T30S R8W

APPENDIX B

MARKING GUIDELINES & UNIT-BY-UNIT DESCRIPTION

Marking Guidelines

1. Reserve all hardwoods > 8" by painting. To preserve these in the stand, open up on two sides by removing adjacent conifers.
2. Reserve all large snags by painting leave trees around. Size of leave area depends on the height of the snag.
3. Reserve all down woody debris in the contract (do not yard), protect where possible by clumping reserve trees around. *Bauxbaumia* logs would be maintained by painting a 20' buffer.
4. Reserve all residual old-growth.
5. To obtain a variable spacing and make it easy for markers, larger trees can be opened up more than smaller trees.
6. For Port-Orford cedar, use 50' as a spacing guideline between adjacent POC. An alternative is to clump POC, with the clumps 100' apart. This will lessen the chance of root grafting and disease transmission. Widen the spacing around the POC to approximately 25'.
7. For Douglas-fir plus trees, clear around by approximately 25'. Crown of the plus tree should be in the open.

Unit Descriptions

Unit 3A - 113 acres

1. Protection buffer or Survey and Manage species found: *Sarcosoma mexicana*, *Bensoniella oregona*, & *Bauxbaumia viridis*
2. Riparian reserves are 180' no disturbance areas.
3. No felling bucking, or yarding prior to July 15 for bark slippage.
4. Utilize ground based harvest system in dry season. Skid roads should be at least 200' apart and pre-designated prior to falling. Till all skid roads same season after use. Existing skid roads not used for harvest should be decommissioned prior to harvest.
5. Truck roads would be temporary. Use and decommission the same season after use.
6. Port-Orford cedar is present in the unit. It is both diseased and healthy. Restrict all thinning operations to the dry season to prevent spread of the disease.
7. Old pre-commercial thinning plots from 1970 within the unit. Control plot would be maintained along with the 50' buffer. Thinned plot would receive the same thinning treatment as the surrounding area.

Unit 35A - 37 acres

1. Protection buffer or Survey and Manage species found: *Sarcosoma mexicana*.
2. No riparian reserves in this unit.
3. No felling bucking, or yarding prior to July 15 for bark slippage.
4. Utilize ground based harvest system in dry season. Skid roads should be at least 200' apart and pre-designated prior to falling. Till all skid roads same season after use.
5. Port-Orford cedar is present in the unit. It is both diseased and healthy. Restrict all thinning operations to the dry season to prevent spread of the disease.
6. Douglas-fir plus trees located in this unit.

Unit 5A - 34 acres

1. Protection buffer or Survey and Manage species found: *Bauxbaumia viridis*.
2. Riparian reserves are 180' no disturbance areas.
3. No felling bucking, or yarding prior to July 15 for bark slippage.
4. Utilize ground based harvest system in dry season. Skid roads should be at least 200' apart and pre-designated prior to falling. Till all skid roads same season after use.
5. Truck roads would be temporary. Use and decommission the same season after use.
6. Rock the existing dirt road through the SW portion of the unit.
7. Port-Orford cedar is present in the unit. It is apparently healthy. Restrict all thinning operations to the dry season to prevent spread of the disease to this area.

8. There are 4 POC seed trees in the unit. Open up approximately a 25' radius around these trees.
9. Old pre-commercial thinning plots from 1970 within the unit. Control plot would be maintained along with the buffer of 50'. Thinned plot would receive the same thinning treatment as the surrounding unit.
10. All residual old growth would be retained.
11. Root rot in center of unit would be treated by removing infected trees and immediately adjacent healthy trees. This should prevent spread by root grafts to surrounding healthy trees.

Unit 5B - 29 acres

1. Protection buffer or Survey and Manage species found: *Helvella compressa*, *Bauxbaumia viridis* & *Sarcosoma mexicana*.
2. No riparian reserves in this unit.
3. No felling bucking, or yarding from April 15 to July 15 for bark slippage.
4. Harvest systems would utilize both ground based and cable logging. Restrict ground based harvest system to dry season. Skid roads should be at least 200' apart and pre-designated prior to falling. Till all skid roads same season after use. Ground based would be potentially in NE quarter. South of ridge, short pitch N of proposed road, and west area below existing road would be cable logged. Cable logging could be done at any time, except for bark slippage period. Utilize one end suspension.
5. Road on ridge from east boundary would be permanent (approx. 500').
6. Port-Orford cedar is present in the unit.
7. There are two Douglas-fir Plus trees in the unit.

Unit 7A - 39 acres

1. Protection buffer or Survey and Manage species found: *Bauxbaumia viridis*
2. No riparian reserves in this unit.
3. No felling bucking, or yarding prior to July 15 for bark slippage.
4. Utilize ground based harvest system in dry season. Skid roads should be at least 200' apart and pre-designated prior to falling. Till all skid roads same season after use.
5. Port-Orford cedar and Pacific yew are present in the unit. POC is apparently healthy. Restrict all thinning operations to the dry season to prevent spread of the disease to this area.
6. All residual old growth would be retained.

APPENDIX C

BMP for MAINTAINING LESS THAN 1% PRODUCTIVITY LOSS DUE TO GROUND BASED HARVEST (not all inclusive)

1. Use existing skid trails as much as possible instead of creating new trails.
2. Keep approximately 200 feet of spacing between skid trails.
3. Predesignate skid trails and fall to lead.
4. Operate ground based equipment on slopes less than 35%.
5. Stay out of wet areas and draws.
6. Existing skid trails that are not currently functioning as productive timber land and which would not be used for this harvest should be tilled prior to this harvest.
7. All jeep trails, skid roads and natural surface truck roads should be constructed, used, and fully decommissioned in the same dry season.
8. Use a properly designed self-drafting subsoiler as the tillage implement.
9. After roads/trails are tilled make sure to restrict access so vehicular traffic would not damage the tilled area.
10. Ground based harvesting and natural surface road activities should occur only during the dry season.

APPENDIX D

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order.

These resources or values are either not present or would not be affected by the proposed actions or alternative, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

| ELEMENT | NOT PRESENT | NOT AFFECTED | IN TEXT | INITIALS | TITLE |
|---|-------------|--------------|---------|-----------|--------------------------------------|
| Air Quality | | ✓ | | WPA | Fuels Management Spec. |
| Areas of Critical Environmental Concern | X | | | SS | Env. Assess. Coord. |
| Cultural Resources | | | ✓ | DKS | Archaeologist |
| Farm Lands (prime or unique) | ✓ | | | WEN | SOIL SCIENTIST |
| Floodplains | | ✓ | | DEH | SOIL SCIENTIST |
| Native American Religious Concerns | | X | | SS | Env. Assess. Coord. |
| Threatened or Endangered Wildlife Species | ✓ | | | REN ND | FISH BIOLOGIST Wildlife Biologist |
| Threatened or Endangered Plant Species | ✓ | | | PLW | Natural Resource Specialist |
| Wastes, Hazardous or Solid | | ✓ | | TAV | Environ. Protection Spec. |
| Water Quality Drinking/Ground | | | ✓ | R | NATURAL RESOURCE SPECIALIST |
| Wetlands/Riparian Zones | | ✓ | | REN | SOIL SCIENTIST |
| Wild & Scenic Rivers | ✓ | | | DAM | Outdoor Rec. Planner |
| Wilderness | X | | | SS | Env Assess Coord. |
| Visual Resource Management | | ✓ | | DPM | Outdoor Rec. Planner |