

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

Environmental Assessment for the Swiftwater Field Office

**FY 2002 Commercial Thinning Harvest (East)
East Fork and Relativity Timber Sales**

EA No. OR - 104 - 02 - 01

The Swiftwater Field Office proposes to do a commercial thinning harvest on approximately 350 acres of second growth forest located in the Rock Creek Watershed located in Sections 29 and 30, T25S R1W; and Sections 11, 13, 15, 21, 23, 25 and 27; T25S R2W; W.M. This project is within the Matrix and Riparian Reserves Land Use Allocations and is designed to help meet the Roseburg District's annual harvest commitment and to enhance late-successional characteristics in the Riparian Reserve.

Acronyms Used:

ACS	-	Aquatic Conservation Strategy
BA	-	Biological Assessment
BLM	-	Bureau of Land Management
CWD	-	Coarse Woody Debris
EA	-	Environmental Assessment
FONSI	-	Finding Of No Significant Impact
ID Team	-	Interdisciplinary Team
LUA	-	Land Use Allocation
NEPA	-	National Environmental Protection Act
NFP	-	Northwest Forest Plan
NMFS	-	National Marine Fisheries Service
NSO	-	Northern Spotted Owl
PDF	-	Project Design Features
RMP	-	Resources Management Plan
RMZ	-	Riparian Management Zone
ROD	-	Record Of Decision (used only to refer to the NFP ROD)
T&E	-	Threatened or Endangered

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INTRODUCTION

This Environmental Assessment (EA) has been prepared for the Swiftwater Field Office's proposed **FY 2002 COMMERCIAL THINNING (EAST) Projects (East Fork and Relativity Timber Sales)**. The EA is a site specific analysis of potential environmental impacts that could result with the implementation of a proposed action or alternative. The EA assists the Agency in project planning and ensuring compliance with the National Environmental Policy Act (NEPA) and in making a determination as to whether any "significant" impacts could result from analyzed actions. "Significance" as defined by NEPA is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or "Finding of No Significant Impact" (FONSI). The FONSI is a document that briefly presents the reasons why implementation of the proposed action will not result in "significant" environmental impacts (effects) beyond those already addressed in the Roseburg District's *Final Environmental Impact Statement* (FEIS).

A Decision Document would be completed after the FONSI is signed to document the decision, however, Forest Management Regulation 43 CFR 5003.2 states that "[w]hen a decision is made to conduct an advertised timber sale, the notice of such sale shall constitute the decision document." This notice would be placed in *The News-Review*, a daily newspaper of general circulation in Roseburg, Oregon and constitute a decision document with authority to implement the proposed action.

I. PURPOSE OF AND NEED FOR ACTION

This section provides a general overview of the proposed action. Included are: the need for the action, purpose of the action, a general description and objectives of the proposal, and conformance with existing land use plans.

I. Need for Action

The BLM has a need to implement the *Roseburg District Record of Decision and Resources Management Plan* (RMP). The RMP "responds to dual needs: the need for forest habitat and the need for forest products" (RMP, pg. 15). "The need for forest products . . . is . . . for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies . . . on a predictable and long-term basis". The BLM also needs to offer for sale "Commercial thinnings . . . after developing stands reach a combination of stem diameter and surplus volume to permit an entry that is economical" (RMP, pg. 149). Silvicultural stand exams indicate that the stands identified in this project would benefit from a thinning at this time.

The RMP employs the strategy known as "ecosystem management". "Ecosystem management emphasizes the complete ecosystem instead of individual components and looks at sustainable systems and products that people want and need. It seeks a balance between maintenance and restoration of natural systems and sustainable yield of resources" (RMP, pg. 18). The NFP (ROD, pg. 6) divides the federal landbase into seven land use allocations (LUA) or categories.

This project is within the "Matrix" LUA. "Stands in the matrix can be managed for timber and other commodity production, and to perform an important role in maintaining biodiversity" (S&G, pg. B-6) by providing for biological legacies (snags, large woody debris and retention trees) that bridge past and future forests. The RMP further classifies the Matrix into two categories: the "General Forest Management Area" (GFMA); which are lands available for timber harvest and "Connectivity / Diversity Blocks" which are lands that are available for timber harvest and also provide connectivity between Late-Successional Reserves and Riparian Reserve. This project is in both of these categories. This project is also in the "Riparian Reserves" LUA. The "Riparian Reserves are areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis." (ROD, pg. 7). Much of the Riparian Reserve consists of homogeneous second growth trees resulting from past harvest. Silvicultural practices are needed to reintroduce complexity and accelerate old growth characteristics within the Riparian Reserve to ". . . acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy [ACS] objectives" (RMP, pg. 25).

These needs would be met by actions consistent with the following objectives:

1. For the Matrix portion:
 - a. "Produce a sustainable supply of timber and other forest commodities " and "Provide connectivity . . . between late-successional reserves" (RMP, pg. 33).
 - b. Improve stand health by reducing the excess stocking in the forest stand to increase the growth and vigor of the remaining individual trees (RMP, pg. 149).
2. For the Riparian Reserve portion:
 - a. ". . . protect the health of the aquatic system and its dependent species; . . . [and] . . . also provide incidental benefits to upland species" (ROD, pg. 7).
 - b. Accelerate the development of large conifers of various form and structure for large trees and future recruitment of coarse woody debris (CWD) within the Riparian Reserve and meet the Aquatic Conservation Strategy objective of 'restoring structural diversity of plant communities in riparian areas' (RMP, pg. 20).
3. Implement ecosystem management as outlined in the RMP.
 - Avoid damage to riparian ecosystems and meet the objectives of the "Aquatic Conservation Strategy" (RMP pg. 19).
 - "Provide habitat for a variety of organisms associated with both late successional and younger forests." (RMP pg. 33).
 - Maintain "ecologically valuable structural components such as down logs, snags and large trees" (RMP pg. 33).
 - Improve and/or maintain soil productivity (RMP pg. 35).
 - "Maintain or enhance the fisheries potential of the streams . . . " (RMP pg. 40).
 - Protect, manage and conserve all special status and Supplemental Environmental Impact Statement special attention species habitat (RMP pg. 41).
 - "Improve existing culverts, bridges, and other stream crossings determined to pose a substantial risk to riparian conditions." (RMP, pg. 73).

B. Purpose of Action

The purpose of the action described in this EA is to provide a sustainable supply of timber to the local economy. This would be met by offering the **East Fork and Relativity Timber Sales** for auction in fiscal year 2003 or later. This proposal would help meet the Roseburg District's annual harvest commitment or allowable sale quantity. It is also the purpose of this project to accelerate the development of mature forest characteristics (large trees, down woody debris and snags) within the Riparian Reserve areas through density management..

C. Description of the Proposal

The Swiftwater Field Office of the Bureau of Land Management (BLM) proposes to harvest timber in the Rock Creek Watershed located in Sections 29, and 30; T25S R1W; and Sections 11, 15, 21, 23, and 27; T25S R2W; W.M. (see maps, Appendix A through C). Approximately 725 acres are analyzed for potential harvest activities and density management within the Riparian Reserve. New road construction and renovation of existing roads would also occur. Section II (pg. 5) of this EA provides a more detailed description of the Proposed Action Alternative.

D. Conformance with Existing Land Use Plans

The Proposed Action and all alternatives were developed to be in conformance with the *Final - Roseburg District Proposed Resource Management Plan / Environmental Impact Statement* (PRMP/EIS) dated October 1994 and its associated *Roseburg District Record of Decision and Resources Management Plan* (RMP) dated June 2, 1995. The RMP was written to be consistent with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl* (FSEIS); dated Feb. 1994 and its associated *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD) and *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl* (S&G's) dated April 13, 1994; generally referred to as the "Northwest Forest Plan" (NFP).

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the No Action and two Action alternatives, and any alternatives considered but eliminated from detailed analysis. These alternatives represent a range of reasonable potential actions that would meet the Purpose and Need. This section also discusses specific design features that would be implemented under the action alternatives.

A. The No Action Alternative (Alternative A)

The No Action Alternative is required by NEPA and provides a baseline for the comparison of the alternatives. This alternative represents the existing condition. If this alternative were selected there would be no harvesting of timber within the bounds of the project area. Harvest would, however, occur at another location within Matrix lands in order to meet harvest commitments identified in the RMP (pg. 7 and 60). Selection of this alternative would not constitute a decision to reallocate these lands to non-commodity uses. Future harvesting in this area would not be precluded and could be analyzed under a subsequent EA. There would be no entry into Riparian Reserves for the purpose of enhancing conditions of late-successional forest ecosystems and applying silvicultural practices to meet ACS objectives at this time.

B. The Action Alternatives (Alternatives B and C)

Two action alternatives were considered:

Alternative B - No timber harvest within the Riparian Reserves

Alternative C - Density management within the Riparian Reserves (Proposed Alternative)

TABLE 1. Comparison of Alternatives

Alternative B	Alternative C
321 acres of commercial thinning harvest on eight units.	321 acres of commercial thinning harvest on eight units
No density management	Approximately 30 acres of density management harvest on five units.
Approximately 1.0 miles (six spurs) of temporary road construction (five acres of road right-of-way clearcut).	Same as Alternative B
skyline cable and helicopter logging	Same as Alternative B
Road decommissioning	Same as Alternative B
6.3 MCF (4.2 MMBF)	6.7 MCF (4.5 MMBF)

Features common to both action alternatives

1. Thinning from below (i.e. removal of the smaller diameter trees to promote the growth of the larger dominant and co-dominant trees).
2. All the Project Design Feature's (PDC's) described in paragraph D below.
3. Retain all individual remnant mature and old-growth trees and snags, except those within the road rights-of-way and snags felled for safety considerations.
4. Maintain a hardwood component (RMP, pg. 151-152).
5. Treatment within a Riparian Management Zone (see pg. 7) to restore riparian habitat.
6. Pile and burn all landing slash.

C. The Proposed Action Alternative

Implementation of the Proposed Action Alternative would result in the harvest of approximately 6.7 MCF (thousand cubic feet) or 4.50 MMBF (million board feet) of the Roseburg District's FY 2003 harvest commitment of 7.0 MMCF (45 MMBF). Harvest activities would occur on eight units for 351 acres including and five acres of road right-of-way clearcut. A small amount of additional timber could potentially be included as a modification to this project. These additions would be limited to 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 Proposed Action (ex. guyline and tailhold trees, cable yarding corridor trees, trees around helicopter landings, or trees within the road construction prism). Historically this addition has been less than 10% of the estimated sale quantity. Other activities would include: temporary road construction, road renovation, subsoiling of previously compacted skid trails, road decommissioning, and fuel hazard reduction with fire (burning of landing piles). An undetermined number of trees would need to be felled prior to the signing of a Decision Document for sampling purposes. This is considered a separate action and was analyzed under the *3-P Fall, Buck and Scale Sampling EA* (EA# OR-100-00-06).

Roads and Road Renovation. Approximately 1.0 miles (six spurs) of new **road construction** would occur on government land. These roads would be built, used and decommissioned the same season. Approximately 4.7 miles of BLM and 2.0 miles of private road would have **road renovation** (restoring the road back to its original design) for a total of 6.7 miles. This would consist of replacing or maintaining drainage structures (culverts and ditches), reshaping the road surface, and brushing the road shoulders. **Full decommissioning** - "roads determined through an interdisciplinary process to have no future need . . ." (TMO, pg. 18) would occur on approximately 0.2 miles of BLM road (see pg. 7, para. 1d).

Timber harvest practices would consist of a combination of commercial thinning and density management. **Commercial thinning** is designed to reduce the density of the forest stand in order to maintain stand vigor and increase wood quality, to promote increased growth on the remaining trees and recover wood fiber that would ordinarily be lost through natural mortality (RMP, pg. 149; Silvicultural Prescription, pg. 1). **Density Management harvest** (in the Riparian Reserves) is designed to accelerate the attainment of mature and old growth forest characteristics by encouraging the development of larger trees more quickly through reducing the stocking of the forest stand around selected trees in order to accelerate the growth of the remaining trees. Other trees would be left quite dense to promote mortality for stand diversity (RMP, pg. 103). Approximately 30 acres of Riparian Reserve's would be thinned for this purpose. A noncommercial aspect (falling and girdling trees) would occur within the Riparian Reserve (See page 6). The Proposed Action would require a mix of skyline cable logging (approximately 245 acres or 70%), helicopter logging (approximately 80 acres or 23%) and ground based (tractor) logging (approximately 25 acres or 7%). The Authorized Officer (Contract Administrator) may determine that additional isolated minor ground based logging would be necessary (ex. removal of guyline anchor trees, isolated portions of units, etc.). Up to ten acres were assumed in the analysis. Helicopter landing locations are expected to be a one-half to one acre in size. Trees that are determined to be a hazard to flight operations could be cut with the approval of the Authorized Officer.

Firewood cutting and salvaging of logging debris (slash) could occur in landing cull decks and near roads. The **burning of landing cull decks and slash piles** could occur as a means of reducing fire hazard. **Subsoiling** or other appropriate treatment (ex. waterbarring, ripping) would occur on selected skid trails, haul roads and landings compacted from previous entries as well as trails and landings that would be created for this entry (see Section C2(c)).

D. Project Design Features and Management Practices as part of the Action Alternatives

This section describes Project Design Features (PDF's) and management practices that would be incorporated as part of the action alternatives to avoid or reduce environmental harm. PDF's are site specific measures, restrictions, requirements or physical structures included in the design of a project in order to reduce adverse environmental impacts. The RMP (Appendix D, pg. 129) lists "Best Management Practices (measures designed to protect water quality and soil productivity) and "management actions/direction" (". . . the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained." [pg. 19]). Mitigating measures (measures designed to avoid, minimize or rectify impacts on resources [40 CFR 1508.20]) may also be incorporated with the implementation of the action alternatives.

1. To meet the objectives of the "Aquatic Conservation Strategy (ACS)" (RMP, pg. 19):

a. **Riparian Reserves (Component #1)** were established. Riparian Reserves consist of (1) lands incorporating permanently flowing (perennial) and seasonally flowing (intermittent) streams, (2) the extent of unstable and potentially unstable areas that may directly impact streams, and (3) wetlands. The RMP (pg. 24) specifies Riparian Reserve widths equal to the height of two site potential trees on each side of fish bearing streams and one site potential tree on each side of perennial or intermittent non-fish bearing streams and wetlands greater than an acre. Data has been analyzed from District inventory plots and the height of a site potential tree for the Rock Creek watershed has been determined to be the equivalent of 180 ft. therefore, Riparian Reserve boundaries would be approximately 180 ft. slope distance from the edge of non-fish bearing streams and 360 ft. from fish bearing streams in the project area (Rock Creek WA, pg. 8-1). Four wet areas less than an acre were found within the project area (Units 11A, 15C and 21B). There are six fish bearing streams in the project area adjacent to Units. There is one fish-bearing stream (Unnamed Tributary to East Fork of Rock Creek) adjacent to East Fork Unit 30A and five fish-bearing streams (Rock Creek, East Fork Rock Creek, Woodstock Creek, Miller Creek, and Double D Creek) adjacent to Relativity Units 11A, 15C, and 21B .

1). Streambank stability and water temperature would be maintained under Alternative C by establishing a Riparian Management Zone (RMZ). This zone consists of a strip least a 40 ft. wide along intermittent non-fish bearing streams and 100 ft. wide along fish bearing streams as well as incorporation of any areas of instability to buffer effects from logging. No density management would occur within the RMZ other than twelve trees per acre would be girdled or felled (see Key Issue, pg. 18). Approximately 12 acres are contained within the RMZ.

2). Density management would be applied within the Riparian Reserves (Alternative C) of Units 11A, 15C, 21B, 23A and 23B "to control stocking . . . and acquire vegetation characteristics needed to attain Aquatic Conservation Strategy objectives" (RMP pg. 25). The objective is to develop late seral forest structure and enhance existing diversity by accelerating tree growth to promote larger trees and canopies, and provide a future source of large woody debris for stream structure. Approximately 30 acres of the Riparian Reserve outside the RMZ would be thinned for this purpose. This would result in a change from approximately 200 merchantable stems per acre before thinning to 50 to 80 stems per acre after thinning.

3). Riparian habitat would be protected by: (1) Treating the Riparian Reserve to restore riparian features (snag creation and falling trees to provide a source of interim down woody debris). (2) Requiring the directional felling trees outside of the RMZ that are within 100' of streams away from the streams and yarding logs away from or parallel to the streams (i.e. logs would not be yarded across streams unless fully suspended through the RMZ). (3) Not building roads within the Riparian Reserves. No logging would occur within the Riparian Reserve (Alternative B).

4). Wetlands less than one acre would be protected from harvest and provided a one-tree buffer. Trees designated for harvest, within 100' of the wetland, would be felled and yarded away from the wetland to protect this habitat.

5). One area of potentially unstable ground at the head of a stream in Unit 21B would be included in the no-cut Riparian Reserve (Alternative B) or variable no-yard stream buffer (Alternative C).

b. **Key Watersheds (ACS Component #2)** were established "as refugia . . . for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species [RMP, pg. 20]." This project is not in a Key Watershed.

c. **Watershed Analysis (ACS Component #3)** for the Rock Creek Watershed was used in this analysis and is available for public review at the Roseburg District office.

d. **Watershed Restoration (ACS Component #4)** would be accomplished primarily through the treatment of Riparian Reserves as described in paragraph 1a above. This particular project includes the full decommissioning of unnumbered roads within Unit 21B (approximately 800 ft.) and Unit 11C (approximately 200 ft.).

2. To minimize soil erosion as a source of sedimentation to streams and to minimize soil productivity loss from soil compaction, loss of slope stability or loss of soil duff layer:

a. **Measures to limit soil erosion and sedimentation from roads** would consist of: (1) Maintaining existing roads (Road No. 25-2-11.0, Segment B, 11.1, Segment A; 11.4, Segment A; 16.0, Segment A; 16.3, Segments A and B; 19.3, Segment A; 21.0, Segments A, B, C, D, and E; 28.1, Segment B; and 27.1, Segments A and B [see Appendix B]) to fix drainage and erosion problems. This would consist of maintaining existing culverts, installing additional culverts, outsloping, stabilizing at-risk fills and cuts, and surfacing roads with crushed rock

where deficient. (2) Accomplishing in-stream work (i.e. culvert replacement and fill removal) during periods of low flow (between July 1 and September 15). (3) Locating all new spur roads out of the Riparian Reserves. (4) Restricting road renovation and log hauling on unsurfaced roads to the dry season (normally May 15 to Oct. 15). If unacceptable resource damage could occur, operations during the dry season could be suspended during periods of heavy precipitation or not authorized if the wet season extends beyond May 15. This season could be adjusted if unseasonable conditions occur (e.g. an extended dry season or wet season). (5) Prior to any winter haul on surfaced roads, the stream crossings along the haul route would be evaluated for the need for turbidity reducing measures (ex., placement of straw bales and/or silt fences). If needed, these structures would be put in place prior to haul. (6) Not over-wintering bare erodible subgrades. This would be done by building, using and decommissioning roads, i.e. installing necessary drainage features, blocking and seeding and mulching bare cut and fill surfaces with native species or a sterile hybrid mix depending on availability at the end of the operating season. (7) Decommissioning all new construction when logging is completed, i.e. the roadbed would be water barred, cut slopes and fills seeded with native species or a sterile hybrid mix depending on availability and access blocked. These BMP's (RMP, pg. 136-7) are designed to minimize sedimentation and protect water quality.

b. **Measures to limit soil erosion and sedimentation from logging** would consist of: (1) requiring skyline yarding where cable logging is specified. This method limits ground disturbance by requiring at least partial suspension during yarding (i.e., the use of a logging system that "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 furrowing would be assessed by the soil scientist and where determined to be excessive, hand waterbarring would be prescribed. (2) Dry season logging would be required in Units 15C, and 21B. Ground based logging would be limited to the dry season as described above.

c. **Measures to limit soil compaction and loss of organic material** (RMP, pg. 37) would consist of: (1) limiting ground based logging to the dry season (May 15 to Oct. 15) when soils are least compactable. These dates are subject to adjustment based on localized seasonal weather variation. (2) Confining ground based activities to designated skid trails as identified in an approved logging plan. New trails would be limited to slopes less than 35% and with skidtrail spacings averaging at least 150 feet apart. (3) Evaluating the need for amelioration after completion of ground-based operations by the soil scientist in accordance with RMP criteria. All main trails would be ameliorated after completion of current entry or would be documented with a plan for deferred amelioration at final harvest. Amelioration could be deferred if unacceptable damage to residual trees would occur. Secondary trails (trails that have less than 50 percent exposed mineral soil) would be handled in the same manner as main trails if evaluation shows compaction is extensive. Amelioration would include subsoiling and returning organic debris to the subsoiled surface. Subsoiling is a practice that shatters soil compaction, thereby reducing the effects to soil productivity and improving water infiltration. Any subsoiling of trails for this entry would be done with a winged subsoiler mounted to the arm of a small excavator. Machines would be limited in size and track width to reduce compaction and trail width.

d. **Measures to protect slope stability** would consist of: (1) Removing from harvest consideration those areas that exhibit potential slope instability and that could ultimately impact aquatic values such as fisheries (see Appendix D). (2) Locating new roads in stable locations with proper drainage structures. (3) Dry season yarding (where required) with one-end suspension in Relativity and helicopter yarding in East Fork.

3. To provide wildlife habitat components:

a. Future nesting and roosting habitat for cavity dwellers would be provided by reserving existing hard or soft snags at least 20" in diameter and 15 ft. in height (PRMP/EIS, Appendices 226) where possible. Any snag deemed as hazardous to worker safety could be felled at the discretion of the operator and the Sales Administrator. Such trees would be reserved and left in place as CWD. Past experience has been that less than 5% of snags need to be felled for this reason. Remnant mature or old-growth trees remaining from the previous stand would be reserved where possible.

b. Most existing CWD (at least 16" in diameter and 16 ft. in length) would be reserved (RMP, pg. 38). This has been created by blowdown trees and logs remaining from previous logging.

4. To protect air quality:

Any burning of landing piles would have an approved "Burn Plan" and be conducted under the requirements of the Oregon Smoke Management Plan and done in a manner consistent with the requirements of the Clean Air Act.

5. To protect and enhance stand diversity:

a. Mature and old growth (RMP, pg. 112) remnant trees in the thinning units would be retained to the greatest extent possible as well as occasional defective (diseased) and deformed trees (trees with broken or multiple tops, and trees with ramicorn branches (steeply angled branches) or large branch clusters) that could provide future snags and nesting habitat. Approximately 1.6 mature or old-growth remnant trees per acre (East Fork) and 0.4 mature or old-growth remnant trees per acre (Relativity) were found in the proposed units.

b. Snags and CWD would be reserved as described in paragraph three above. Snags would be protected from logging damage by clumping trees around them and directionally falling trees away from the snags. Approximately 3.0 snags per acre (East Fork) and 0.2 snags per acre (Relativity) were found in the proposed units.

6. To prevent and report accidental spills of petroleum products or other hazardous materials:

Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill would be contained. All landing and work site trash and logging materials would be removed. All equipment planned for instream work would be inspected beforehand for leaks. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the Sale Administrator and the procedures outlined in the "Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan" would be followed.

7. To contain and/or reduce the spread of noxious weeds:

Stipulations would be incorporated into the logging contract to prevent and/or control the spread of noxious weeds. This would include the cleaning of logging equipment prior to entry on BLM lands (BLM Manual 9015 - Integrated Weed Management). Roadside brushing of scotch broom would be accomplished prior to seed set.

8. To protect the residual stand and promote stand health:

a. As much as possible, trees that would most likely survive logging and overall improve the stand condition and health would be selected for retention. The stand would be thinned from below (i.e. removal of the smallest diameter trees first) which would remove suppressed trees and smaller trees that would result in less stand damage during falling.

b. Felling and yarding would be done in a manner to protect the residual stand. No falling and yarding in the cable areas would be permitted from April 15 through July 15 when the sap is up in the trees and damage due to bark slippage could occur. This date could be adjusted based on local conditions (e.g. earlier or later than normal loose bark period).

c. Yarding systems would be designed to match yarder and cable size to the size of the timber in order to minimize damage from an overly large yarding system. Corridors for yarding would be pre-designated and approved by the Sale Administrator.

9. To protect Special Status and SEIS Special Attention Plants and Animals:

a. Special Attention (Survey and Manage) plant and animal sites would be protected where required, according to established management recommendations (RMP, pg. 42). Nine active red tree vole sites were found through protocol surveys, including 19 active nest trees. Active sites would be protected by minimum ten-acre buffers established according to management recommendations (IM-OR-2000-086). A total of 87 acres of red tree vole habitat would be reserved out of which up to 22 acres could be removed from within the units.

b. If, during implementation of the proposed action, any Special Status (threatened or endangered, proposed threatened or endangered, candidate, State listed, Bureau sensitive or Bureau assessment) species are found, evaluation for the appropriate type of mitigation needed for each species would be done. Stipulations would be placed in the contract to halt operations if any of these Special Status plants or animals are found to allow time to determine adequate protective measures before operations could resume.

c. Seasonal restrictions to prohibit logging during the nesting season (March 1 to September 30) would be applied to Relativity units 15C and 27D and East Fork unit 29A which are adjacent to a northern spotted owl (NSO) activity centers. This restriction could be waived by the biologist if surveys indicate the activity center is not occupied, or if nesting has not been attempted or has failed.

10. To protect cultural resources:

Stipulations would be placed in the contract to halt operations and evaluate the appropriate type of mitigation needed to provide adequate protection; if any objects of cultural value (e.g. historical or prehistorical ruins, graves, fossils or artifacts) are found during the implementation of the proposed action.

D. Alternatives Considered but Eliminated

An alternative was considered to helicopter log all or portions of Units 11A and 15C to avoid the need to open up existing roads or to construct additional temporary spurs. This alternative was rejected because the cost would not be economical and the problems that helicopter logging would solve were not considered of such magnitude as to justify the extra cost.

III. AFFECTED ENVIRONMENT

This section describes the existing environment and forms a baseline for comparison of the effects created by the alternatives under consideration. This section does not attempt to describe in detail every resource within the proposed project area that could be impacted but only those resources which could be substantially impacted. Appendix F (Analysis File) contains data and supporting information that provides the basis for describing the affected environment.

This project lies within the Oregon Western Cascades Physiographic Province. The FSEIS describes the affected environment for this province on page 3&4-19. The Roseburg District Proposed Resource Management Plan/Environmental Impact Statement (PRMP/EIS, pp. 3-3 through 3-71) provides a detailed description of BLM administered lands on the Roseburg District. A further description can also be found in the Rock Creek Watershed Analysis.

A. General Setting

Stand Description - The stands originated after logging (40-50 years ago) from natural regeneration and planted trees. The predominant conifer species is Douglas-fir. Other conifer species in association include incense-cedar, western hemlock, western red cedar, grand fir and sugar pine. Hardwoods including madrone, chinkapin, big leaf maple and red alder are also found in these stands. Salal, Oregon grape and sword ferns are common on the forest floor. The plant association best describing these areas is a western hemlock or white fir over salal and Oregon grape. Stand exams in this area indicate there are about 5,500 cubic feet wood volume/acre in standing trees and about 3,100 cubic feet wood volume/acre in coarse woody debris. The Silvicultural Prescription (Appendix F) provides site specific descriptions of the stands proposed for thinning.

Site Description - This project occurs within four subwatersheds: Rocky (6789 acres), East Fork (14,245 acres), Mill Pond (11,720 acres) and Lower Rock Creek. (12,810 acres). These drainages are within the Rock Creek Fifth-Field Watershed which covers approximately 62,670 acres (98 square miles). Current landscape patterns include natural stands that are the result of fire and managed stands established following timber harvest.

B. Affected Resources

The affected area was surveyed for the resources listed below according to established protocols: **Botany (Special Status and Survey and Manage species (SSP/S&M))** - No Special Status or Survey and Manage Plants were observed in the project area. There are some localized infestations of Scotch broom, a noxious weed, in the project area. This is confined mostly to roadsides. The Rock Creek fifth-field has had extensive treatment over the past several years that has reduced a heavy occurrence of Scotch broom to a medium to low level of occurrence.

Cultural Resources - No cultural resources were found in the project area.

Fisheries - There are seven fish-bearing streams in the proposed project area: Rock Creek, Woodstock Creek, Miller Creek, Double D Creek, the East Fork of Rock Creek, Cougar Creek and an unnamed tributary to the East Fork of Rock Creek (See Figure 1: Rock Creek Fifth-Field Watershed). According to the Rock Creek WA (pg. 8-1), Coho salmon (*Oncorhynchus kisutch*), Coastal Cutthroat trout (*Oncorhynchus clarki*), Oregon Coast Steelhead trout (*Oncorhynchus mykiss*), Oregon Coast Chinook salmon (*Oncorhynchus tshawytscha*), and Pacific Lamprey

(*Lampetra tridentata*) are present in the watershed. The Oregon Coast Coho has been designated as a threatened species under the Endangered Species Act. The Oregon Department of Fish and Wildlife (ODFW, 1993 and 1994) has conducted stream habitat surveys for the Rock Creek fifth-field watershed. Data is available for East Fork Rock Creek (Reach 3 & 4), Rock Creek (Reach 2), Woodstock Creek (Reach 1) and Miller Creek (Reach 1) and was used in this analysis. These surveys generally show that streams within the watershed are in fair to good condition.

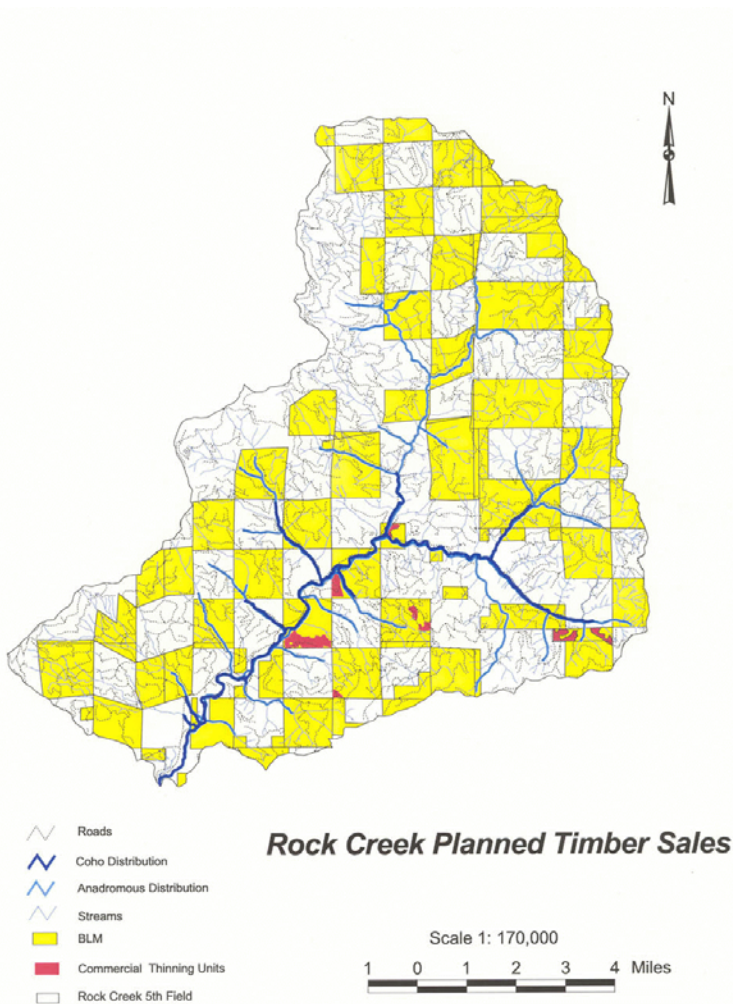


Figure 1: Rock Creek Fifth-Field Watershed - Fish Distribution

Fish presence surveys were conducted for all stream crossings on the proposed haul routes during the summer of 2002. The stream crossings detected as fish-bearing were the bridge crossings over Rock Creek and East Fork Rock Creek, the two furthest downstream culverts on

Woodstock Creek and furthest downstream culvert on Double D Creek, and two tributaries to East Fork Rock Creek. The presence of Coho Salmon was confirmed for these stream crossings, with the exception of the two tributaries to East Fork Rock Creek.

According to data from ODFW Aquatic Habitat Surveys and project site reviews, Rock Creek and the lower portion of East Fork Rock Creek would contain primarily migratory and spawning habitat with some rearing habitat. The larger tributaries (Mace, Double D, Cougar, etc.) to these creeks would be primarily rearing and spawning habitat. The lower order (1st and 2nd) perennial streams and upper reaches of the larger order tributaries contain primarily rearing habitat with some spawning. Physical variation in habitat utilization would depend on stream flow conditions and stream gradient. Seasonal variation in life-cycle stage would consist on coho migration in October to December and spawning from October to January. Coho may rear up to two years prior to outmigration.

All bridge crossings are on paved roads, with the exception of Rock Creek bridge crossing at the terminus of the 25-2-20.1 road to Rock Creek Rd.; however this crossing is on rock road and in good condition. All culvert stream crossings on Woodstock Creek are in good condition. The culvert crossing on Double D Creek is in fair condition with a 1.5 meter step at the outfall into a 2 meter deep plunge pool. The two fish-bearing culvert crossings on the 11.0 road were assessed as juvenile fish barriers (non-coho) in poor condition. As part of road maintenance activities, both the 11.0 road culverts and the Double D Creek culvert would be replaced with fish passage culverts prior to haul activities associated with this proposal.

Hydrology - The proposed project is located within the Rock Creek fifth-field watershed. Beneficial Uses of Water consists primarily of domestic water supply, irrigation and livestock watering, resident fish and aquatic life, and salmonid spawning and rearing. Rock Creek, from its mouth to the Northeast Fork, has been identified by the Oregon Department of Environmental Quality (DEQ) as 303(d) water quality limited for summer temperature (Oregon DEQ, 1998). The characteristics of climate (e.g. precipitation type and timing), elevation, and geomorphology all contribute to the way a watershed moves and stores water. Average annual precipitation amounts of 56 to over 80 inches occur primarily between October and March across the watershed. Precipitation occurs primarily as rain at lower elevations (< 2,000 feet). The Transient Snow Zone is defined as areas between 2,000 to 5,000 foot elevation that may alternately receive snow or rain. Portions of the proposed timber sale (Units 21B [part], 23A, 23B, 27D, 29A, and 30A) are located within the Transient Snow Zone (see pg. 18).

Soils and Geology - Soils were formed over volcanic rock (primarily tuffs and andesitic/basaltic flows) and sedimentary rock (primarily sandstones and siltstones) derived from this volcanic material. This complex volcanic geology and variable weathering of rock can result in highly variable slope stability even within short distances. Much of the terrain within the Relativity units is attributable to ancient slump-earth flows resulting in dissected stair-stepping terrain of steep to extremely steep scarps (60 to greater than 90 percent slope) and broad, gentle to moderately sloped, often undulating benches. The East Fork units are on steep to extremely steep, dissected mountain slopes. Superficial dry ravel caused by extremely gravelly surfaces is common on these slopes.

Slope stability is of general concern on slopes greater than 70 percent. Approximately one fifth (About 75 acres) of the project area is on slopes greater than 70 percent. Approximately 40 percent of this area, (30 acres) has been determined from inventory to be potentially unstable and has been given the Timber Production Capability Classification (TPCC) of FGR (portions of Units 15B, 21B, 23B and 29A). The FGR soils are fragile due to slope gradient but suitable for timber production with mitigation. These low cohesion soils have the potential for shallow-seated debris avalanches, especially in those areas with soil depths greater than 20 inches to bedrock. Field observations indicate varying degrees of soil creep on these FGR slopes, however no tension cracks or actively failing ground were discovered. The few landslides that have occurred since the last tree removal have been small (less than 0.1 acres) based on aerial photo interpretation and field observations. Most of the FGR slopes are situated above broad benches away from streams. Approximately 45 acres with slopes greater than 70 percent (mostly in Unit 30A) are dominated by shallow soils and rock outcrop and have lower potential than the FGR slopes for debris avalanches as evidenced by the lack of harvest-related landslides during the life of the current stand, the straightness of the conifer boles (an indication that soil creep is not occurring) and the lack of harvest-related landslides on the clearcut adjacent to Unit 30A. The very deep, clayey soils on slump-earth flow topography in the southern part of Unit 21B have a TPCC classification of FPR (potential for deep-seated mass movement but suitable for forest management because of the slow rate of movement). The very steep toe of one slump occurs above a small wet area and head of a first order stream. In Relativity Units 11A, 15C and 21B, there are four small wet areas totaling less than one acre that have soils with seasonably high water tables, ponded water and hydrophitic vegetation.

About 90 percent of the Relativity sale area had past ground-based yarding leaving areas of dense patterns of skid trail and old natural surfaced haul roads that are not part of the current transportation system. A network of skid trails (most notable in Unit 21B) were cut into some steep slopes with a tractor blade, removing most to all topsoil in the cut portions. These trails have variable amounts of residual compaction (light to heavy). Nearly all of them are currently stable to erosion. There are no past yarding impacts (cable or ground-based) in East Fork.

About 18 miles of existing rock road would access the units. Where wet season haul could occur (12 miles of road) the quality of rock is good (mostly a six inch lift of very hard basalt gravel over six inches of pit run rock). The tread surface is holding up well with little track deformation under past haul and recent heavy equipment traffic. Approximately 30 percent of the volume of the road surfacing consists of fines (predominantly sands and silts) that are potentially transportable as sediment. Most of these fines are not exposed at the surface and therefore not readily available as a source of sediment under the current administrative and public use. The ditches are, with few exceptions, well vegetated and stable to erosion and are effective sediment filters. Approximately four miles of existing rock roads would only be used for dry season haul. Of this, 1.3 miles (25-2-11.0 road) is oil-sealed hard basalt that occurs within 200 feet of the East Fork of Rock Creek. It has held up well with very little track deformation from recent wet season haul by Seneca. About 2.2 miles of existing natural surfaced roads access the units. A fill failure exists at the head of a first order stream crossing on the natural surfaced 25-2-16.3 and the first 300 feet of the 24-2-21.0 road which accesses Unit 15C is a source of sediment to Miller and Rock Creek. A half mile segment of the 24-2-11.2 that accesses East Fork crosses a first order stream and is a source of sediment to the first order stream.

Wildlife - Federally Threatened and Endangered (T&E) species known to occur in the Roseburg District include the northern spotted owl (*Strix occidentalis caurina*), marbled murrelet (*Brachyramphus marmoratus*), bald eagle (*Haliaeetus leucocephalus*), Columbian white-tailed deer (*Odocoileus virginianus*), Canada lynx (*Lynx canadensis*) and Fender's blue butterfly (*Icaricia icarioides fenderi*). The sale area is within the 1.2 mile home range of three spotted owl Master Sites: Miller Creek, Pond View, and Mace Mountain; and is within the 0.25 mile disturbance zone of two spotted owl sites, Pond View and Mace Mountain. These sites are protected with a Residual Habitat Area (a known and protected owl activity center as of January 1, 1994). There are 14 acres of nesting and foraging habitat and 104 acres of dispersal habitat for the NSO within the project area. This project contains 104 acres within Critical Habitat Unit CHU OR-27 and OR-25. Critical Habitat is defined as a specific geographical area specified by the US Fish and Wildlife Service (FWS) in Recovery Plans as containing habitat essential for the conservation of a Threatened and Endangered species. This sale occurs more than 50 miles from the Coast, and therefore is not considered to contain suitable marbled murrelet habitat. There are no known bald eagle nests which could be affected by disturbance above ambient noise levels within 0.25 miles of any of the project areas. The remaining T&E species do not occur in the project area (See Summary of Wildlife Concerns for Environmental Analysis, Appendix F).

Special Status Species are summarized in the Analysis File (Appendix F). Survey and Manage Species: One hundred and eighty-one (181) acres of suitable red tree vole habitat are contained within the proposed sale units. Nine active red tree vole sites were found through protocol surveys, including 19 active nest trees. Two inactive sites, including two nest trees were also found during surveys.

IV. ENVIRONMENTAL CONSEQUENCES

This section provides the analytical basis for the comparisons of the alternatives. The reasonably foreseeable environmental consequences (impacts, effects) to the human environment that each alternative would have on selected resources are described. Impacts can be positive or negative. This section is organized by the alternatives and the effects on any key issue identified in Appendix D, as well as the selected resources. Analysis considers the direct impacts (effects caused by the action and occurring at the same place and time), indirect impacts (effects caused by the action but occurring later in time and farther removed in distance but are reasonably foreseeable) and cumulative impacts (effects of the action when added to other past, present and reasonably foreseeable future actions) on the resource values. Short-term generally refers to the time of the action up to the first year after the action but may be as long as ten years. Long-term may be a year or more but generally more than ten years.

The Roseburg RMP/EIS analyzes the environmental consequences in a broader context. This EA does not attempt to reanalyze impacts that have already been analyzed in these documents but rather to identify the particular site specific impacts that could reasonably occur. Environmental effects to the "Critical Elements of the Human Environment" are analyzed in Appendix D and E.

When encountering a gap in information, the question implicit in the Council on Environmental Quality regulations on incomplete and unavailable information was posed: Is this information "essential to a reasoned choice among the alternatives" (40 CFR 1502.22(a))? While additional information would

often add precision to estimates or better specify a relationship, the basic data and central relationships are sufficiently well established that any new information would not likely reverse or nullify understood relationships. Although new information would be welcome, no missing information was determined as essential for the decision maker to make a reasoned choice among the alternatives.

A. No Action Alternative

This alternative would not meet the Purpose and Need of the RMP (pg. 15) or this EA (pg. 1) objective of producing forest commodities that would contribute to the local economy. Restoration of past disturbance would not occur. Road conditions would remain unchanged. Only normal programmed maintenance would be performed. There would be no entry into the Riparian Reserves for the purpose of enhancing conditions of late-successional forest ecosystems and applying silvicultural practices to meet ACS objectives.

Stands continue to differentiate in time through growth and mortality. Organon (Hann 1995) output indicates that trees are under competitive stress at this time. By age 80 years crowns are averaging about 30% of tree height (crown ratio), mean diameters are around 16 inches, and heights of the tallest trees are over 170 feet. By age 120 the stands are extremely dense and composed of trees with crown ratios averaging less than 25%. Tall skinny trees are susceptible to wind throw and more likely to break under snow loads. Trees that have developed over long periods of competitive stress are more likely to be killed by insects and disease (Waring 1985, Smith, 1962). Stands left in this condition are slow to respond to improved growing conditions and never attain potential growth rates. (Oliver, 1990; Smith, 1962). When this process occurs in managed stands of Douglas-fir down wood and snags are made up predominantly of the smaller trees. Accumulations of dead wood consisting of small trees increases fire intensity and rate of spread. The risk of stand damage from fire is increased (Waring, 1985; Graham, 1999). The Silvicultural Prescription (Appendix F) provides a more detailed stand description.

Water Quality and Hydrologic Processes - There would be no direct impacts to hydrology or water quality as a result of the no action alternative. Vegetation within the Riparian Reserve would continue to slowly develop over time to provide increased shade, bank stability, and large woody debris recruitment. However, without density management, old-growth characteristics within the Riparian Reserves will take much longer to develop. As stated above, an overly dense stand increases the risk of a higher severity wildfire. A high severity wildfire would affect a much larger area and would cause far greater impacts to the watershed than the proposed action.

Soil Productivity and Sedimentation - Road construction, renovation, harvest, and haul-related impacts to the soil, and mitigation of existing sedimentation sources as described previously (pg. 14) would not occur. Road-related short-term sedimentation into streams corresponding to winter haul and first season flush periods associated with the action alternative would not occur. All compaction and soil displacement from past ground-based operations would continue to heal very slowly due to natural processes.

The probability of harvest-related landslides would be low (less than 10 percent) on the FGR and FPR slopes of Units 15A, 21B, 23B and 29A and in Unit 30A. This assessment is based on the low level of landslide activity that is not road-related under young stand canopies within the project area and under clearcut in a large unit adjacent to Unit 30A (aerial photo history and field

observations). The Oregon Department of Forestry storm impacts and landslide study (Oregon Department of Forestry, 1999) indicated that failures were least likely in stands in the 31 to 100 year age class. The assessment is also based on indicators of potential instability seen in the field. The likely size of any landslide occurring under the no action alternative would be small (less than 0.1 acre) based on the lack of evidence of larger in-unit landslides having occurred under a clearcut/wildfire regime and subsequent second growth canopies. The likelihood of any landslide reaching a stream would be very low since almost all slopes of potential instability (FGR and FPR) are situated above gentle to moderate slopes away from any streams.

Fisheries Habitat - Current temperature, sediment inputs, woody debris and hydrologic processes would continue to function at existing rates and levels. Fish species and populations would remain relatively unchanged. There would be no associated direct impacts under this alternative because the environment would not be affected by activities of the proposed action. The riparian habitat adjacent to the aquatic environment on both fish bearing and non-fish bearing stream eco-tones, consists primarily of a dense mid-seral monotone of Douglas-fir. Although these stands would continue to mature and develop late successional characteristics over time, due to the dense forest monotone these stands would develop conditions described in the “stands section” above. The primary effect to the riparian resource would be the effect on the size and structure of the coarse and large woody components. Road maintenance activities would occur over time based on request by permittee or on an as-needed basis. Fish barrier culverts would be replaced according to District-wide prioritization.

Wildlife Habitat - The direct impacts would not occur under this alternative. Wildlife populations and diversity would be expected to remain static. The stand would progress naturally as a Douglas-fir dominated stand.

The indirect impacts would include increased canopy closure which could cause a reduction in habitat for some species. The canopy closure would result in competitive mortality, thereby creating snags and CWD as habitat for some species. Existing structural features (i.e., snow breaks, forked tops, decay, etc.) would be maintained, fostering the creation of nesting habitat. Dispersal capabilities of the stand would continue to increase.

B. Action Alternatives

Unless otherwise noted, the analysis in this section applies to both action alternatives.

Some irreversible and irretrievable commitment of resources would result from the implementation of this project. An irreversible commitment is a commitment that cannot be reversed whereas an irretrievable commitment is a commitment that is lost for a period of time. An irreversible commitment of petroleum fuels for road building, logging and timber hauling as well as the loss of rock from quarries for crushed rock used in the renovation of the road system would result from the proposed action. An irretrievable loss of soil productivity would occur due to the construction of two acres of road. Although these roads would be decommissioned following use they would effectively remain part of the transportation system until final harvest.

Stands - Stand health would be maintained by providing favorable growing conditions. Large diameter conifers with large live crowns develop the stem and root strength to withstand strong winds. Stand diversity would be enhanced by favoring a variety of tree species in an uneven spatial distribution. Scattered large green conifers and snags, large hardwoods, and coarse woody debris would be retained. Future stands would continue to produce wood volume while preserving a biological legacy in large green conifers and hardwoods, large snags, and down logs. Diversity would be enhanced by allowing varying levels of light to reach the forest floor which promotes various shrubs and forbs. The Riparian Reserves would be managed consistent with the guidance in the South Cascades Late Successional Reserve Assessment (LSRA, 1998).

Key Issue: How do we treat the Riparian Reserve?

The NFP and the Roseburg District RMP provides for entry into the Riparian Reserve for the purpose of meeting the objectives of the Aquatic Conservation Strategy, particularly to move the forest stands away from a homogeneous Douglas-fir monoculture resulting from past management (S&G's, B-31; RMP, pg. 25) towards forests that would have a greater diversity of vegetation. Density management has been conducted in past projects to accomplish these objectives while maintaining a 30 ft. no cut buffer to maintain stream bank stability. During the issue identification phase for this project, a comment was received from the public indicating a desire for, or consideration of, a restoration alternative that would permit only limited entry into the Riparian Reserve to accomplish riparian (ACS) objectives. This option was reviewed by the ID Team and a 40 ft. minimum (non-fish bearing) and 100 ft. minimum (fish bearing) streamside Riparian Management Zone was established based on site review by the Area hydrologist, soil scientist, and fisheries biologist and information taken from the FEMAT Report's evaluation of riparian processes as a function of distance from stream channels. Additional scientific literature indicates that buffer strips of 30 meters (98 feet) or greater on fish-bearing streams prevented adverse sedimentation impacts from logging on salmonid eggs and alevins development (Moring, 1982); generally provide the same level of shading as that of an old-growth forest (Beschta *et al*, 1987); and were adequate to maintain macroinvertebrate diversity at pre-harvest levels (Belt *et al*, 1992). Approximately twelve trees per acre would be felled or girdled within the Riparian Reserve but not removed. Alternative C would commercially remove trees from the remaining portions of the Riparian Reserve whereas Alternative B would not.

Water Quality and Hydrologic Processes - Under both alternatives limited management activities would occur within the Riparian Management Zone (RMZ) where long-term positive benefits to aquatic resources can be achieved. Some minor short-term localized direct impacts such as reduction in shade and sedimentation released from felling trees adjacent to streams could occur, however water quality would not be affected. Beneficial Uses of Water in the Rock Creek Watershed and the 303(d) listed section of Rock Creek (summer temperature) would not be affected by either alternative. No change in stream temperature, water pH, dissolved oxygen, or other chemical or physical parameters is likely to occur under the action alternatives due to the buffering effect of the 40 - 100 ft. no-yarding RMZ (Alternative C) or the full RMP Riparian Reserve (Alternative B) along all streambanks.

Indirect impacts of the action alternatives could result in a small but temporary increase in water yield and summer low flows. Any increase, however, is expected to be within the range of natural variability. Increases in soil moisture, resulting from less interception and evapotranspiration from reduced vegetative cover, would likely be consumed by the stimulated growth of the residual stand (Satterlund and Adams, 1992; p. 253). Minor increases in summer flow resulting from excess soil moisture not taken up by the residual stand would benefit riparian areas which are often moisture limited during the summer. A hydrologic effect known as the Transient Snow Zone (TSZ) effect is the effect from a warm rain-on-melting snow event that contributes to increased peak flows due in part to openings created within the TSZ. Since the proposed thinning only involves a small percentage (< 1 %) of the Rock Creek Watershed, and an even smaller percentage of the TSZ with partial cuts resulting in small (less than ½ acre) openings, no measurable increase in peak flows as a result of rain-on-snow events are expected.

Soil Productivity - Actions that could potentially impact the soils resource include: 1) losses to soil productivity due to compaction, and 2) within unit harvest related debris avalanches.

Direct impacts would result from road building and logging activities. Spur construction accessing Units 15C and 21B would consist of widening existing trails or new construction where no trail previously existed. This construction would cover about one acre of undisturbed land, an irretrievable loss to soil productivity since they would not be subsoiled and would be expected to be used in future entries. The total amount of yarding effects on soil productivity would vary depending upon the actual mix of skyline and ground-based operations in the Relativity sale. About 25 acres were identified as having potential for ground-based logging. Skyline logging would add small amounts of light, superficial **compaction** on less than one percent of the skyline yarded ground (Sampson Butte and Coon Creek monitoring). Ground-based tractor yarding would use designated skid trails covering about five to seven percent of the ground. Some of this trail coverage would overlap old existing trails with residual compaction. New compaction would be substantial enough (moderate to heavy over most of the trail lengths) to negatively affect the growth of adjacent trees. Based on post-operation evaluation by the soil scientist, tilling compaction, in accordance with RMP requirements, may be prescribed or necessary amelioration could be deferred to final harvest with a documented plan. Subsoiling would be done using a subsoiler attached to the arm of an excavator. This method, minimizes damage to the boles and roots of conifers and pulls organic debris back over the tilled trails. There would be opportunity to subsoil old skid trails and roads not needed for current operations in Units 11A and 21B. Down woody debris would be left on site in accordance with RMP guidelines. This would benefit long-term soil productivity by leaving a nutrient reservoir and a medium for growth of organisms beneficial to the soil.

Both action alternatives would result in the indirect impact of a slight short-term (ten years) increase in the probability of harvest-related **debris avalanches** on the FGR and FPR slopes that would be thinned. This would be due to a temporary decrease in canopy interception of precipitation and a decrease in root strength. The increase in risk would be hard to quantify. Although the probability of debris avalanches would increase, it would still be in the low range (<10 percent) as under the no action alternative and would be expected to be within the range of natural variation. The mitigation of dry season yarding with at least one-end suspension would help keep the risk low. The potential effects to fisheries are discussed on page 20.

Fisheries Habitat - Actions potentially affecting the fisheries habitat include: 1) density management within the Riparian Reserves, and 2) stream sedimentation due to road construction and timber hauling and harvest related landslides.

Density management would take place within the Riparian Reserves. This activity is specifically prescribed to enhance the Riparian Reserve and adjacent aquatic environment. No direct impacts or indirect impacts are anticipated from management activities outside the RMZ to the fisheries habitat. Direct and/or indirect impacts from management activities within the RMZ (see Key Issue discussion, previous page) through sedimentation and a reduction in shade from trees being felled adjacent to streams are not anticipated to effect the stream channel. These impacts would be minimal since at most only twelve trees per acre would be treated by girdling or felling and left in place. No trees would be felled into the streams and impacts from the felling and girdling are expected to benefit the riparian area through course woody debris accumulation. Long-term impacts from density management activities within the Riparian Reserve would occur through development of late-successional conditions (increase in course woody debris, litter fall, root strength, shading and associated microclimate conditions). The short-term impacts within the RMZ would be inconsequential whereas the long-term impacts would enhance the riparian resources within the project area.

Research has shown that the greatest potential for unmitigated stream **sedimentation** is from road construction (Gibbons and Salo, 1973); however, in-stream sedimentation from the proposed project is expected to be negligible for the following reasons: 1) construction would be on stable locations at and just below ridge tops on gentle to moderate slopes (10 to 40 percent), 2) spur locations are away from streams, and 3) waterbarring and blocking to traffic of all in-unit, natural surfaced roads and spurs during the same dry season as logging. Any sediment from these segments would filter onto the forest floor before reaching streams and not impact the fisheries habitat. The improvement of drainage, and the rocking of some segments deficient of rock on the existing roads would also reduce chronic erosion and lessen the potential of erosion due to culvert failure. These standard road maintenance practices would significantly reduce road-related sediment delivery to adjacent streams.

Impacts of sedimentation from the haul road activity to the aquatic environment was considered, however is difficult to quantify or measure (Brown, 1985). Direct impacts to the aquatic environment are expected from wet season haul road activities on the 25-2-16.0 road for harvest activities on Units 23 A&B and the 26-2-28.0 and 33.1 roads for Unit 27D. However, any sedimentation resulting from the haul road activity would not be measurable and is not expected to be above existing background levels within the stream channels and therefore, would not have an affect on habitat for coho salmon, as well as habitat for cutthroat and steelhead trout. No direct or indirect impacts of any consequence are expected from the dry season haul road activities. Any sediment expected to reach streams as a result of haul would be mitigated though the following: 1) All segments of naturally surfaced roads (both existing and newly constructed) would have dry season haul and would be, with one exception, away from streams. These segments would be waterbarred and blocked to traffic during the same season as use. These features would result in virtually no sediment to streams. The one exception (the private 25-2-16.3 road) crosses the head of a first-order stream. This stream segment is non-fish bearing and would not have impact to fisheries. 2) Based on a study (Burroughs, 1990) ten inches of 1.5 inch

minus gravel reduces the impacts of forest-road sedimentation by 99%. The rocked portions of the proposed haul roads are in good condition. Over two-thirds of these rocked portions are rocked with 12 inches of gravel with at least the top six inches being high quality basalt. Twelve percent has good quality basalt of lesser thickness but is sealed with oil. Both conditions result in few fines available for sediment transport. All rocked segments within 200 feet of third order or higher streams (3.5 miles of road) or crossing these higher order streams (eight crossings) are of the two conditions described above. 3) Nearly 80% of the proposed project area would involve dry season haul. Dry season haul on rocked roads generates considerably less sediment than wet season haul. 4) For the wet season haul portion all culvert crossings would be inspected prior to haul for implementation of PDF's that would lessen sedimentation concerns (i.e., use of hay bales, sediment curtains, etc.). The road grade and slope on the 16.0 road in particular would be specifically redesigned by outsloping to the forest floor before the crossing to avert sedimentation concerns at the furthest downstream culvert crossing. 5) The first order streams (all non-fish bearing) where crossings occur have sediment filtering capacities. Fourteen out of the twenty-two wet season haul route stream crossings are on first order streams. 6) A study by Luce and Black in the Oregon Coast Range on soils similar to those of the affected environment showed substantial reductions in sediment delivery (about 80 percent) where well vegetated or armored (covered with rock fragments) ditch lines of rocked roads were left ungraded. With few exceptions, the haul route ditch lines are well vegetated or armored and would remain ungraded.

In the absence of indirect harvest-related landslides, there would be virtually no sediment originating from thinned stands reaching streams under either action alternative (Sampson Butte and Coon Creek monitoring observations). There is only one site where a harvest-related debris avalanche could reach a stream - the very steep toe of a slump overlooking a small wet area that is the head of an intermittent stream in Unit 21B (see map, Appendix C). The variable width buffer was extended about 100 feet to incorporate this feature under Alternative C. Any harvest-related debris avalanche occurring and then impacting this wet area and stream is highly unlikely. This assessment is based on the low probability of occurrence, the likely small size of a potential slide and the breaking effect of uncut Riparian Reserve or buffer. The slump is part of a larger slump-earth flow system. Cutting of the trees would not have any effect on any future deep-seated movement of this dormant system.

Some pathways for short-term soil displacement and potential sediment delivery may occur as a result of localized soil disturbance from felling, cable yarding, and ground based equipment operations. The few yarding trails that could pose sedimentation risks would be waterbarred with slash pulled into them. The RMZ as described above, is intended to function as a stream protection buffer to limit potential impacts from harvest activities. The 40 foot minimum buffer would be sufficient to maintain bank stability because the majority of the contribution of root strength in maintaining streambank integrity occurs within a distance of one-half the crown diameter (FEMAT, 1993; p. V-26). The RMZ should provide an adequate filter strip and minimize delivery of sediment to streams in the short-term. In the long-term, large wood contributed to the riparian reserve as a result of density management has the potential to create additional capacity for sediment storage.

Wildlife - Impacts to T&E species by thinning activities would occur within 0.25 miles of two known spotted owl activity centers (Pond View and Mace Mountain) and could potentially affect nesting behavior through disturbance. Thinning activities would modify 14 acres of nesting, roosting, and foraging habitat and 104 acres of critical habitat for the NSO. Thinning would also modify 181 acres of dispersal habitat. As the stand grows and crown closure re-occurs, it will return to functioning dispersal habitat.

Impacts to SEIS Special Attention Species from thinning activities would modify 181 acres of red tree vole habitat, potentially affecting dispersal. As the stand grows and crown closure re-occurs, red tree vole habitat would be enhanced.

C. Cumulative Impacts Analysis

The following paragraphs discuss the cumulative impacts of the action. These impacts are described for federal lands in the FSEIS beginning on page 3&4-4 and throughout the chapter based on the resource affected. The Rock Creek Watershed Analysis provides baseline information with which to assess potential future cumulative impacts. Unless otherwise noted, these effects are described in the context of the fifth-field watershed scale. There has been a continued conversion of late seral and old-growth habitat on private, industrial forest lands to early seral stages. Current management strategies on most of this private land would preclude the development of older seral conditions in the future.

Botany (Special Status and Survey and Manage species (SSP/S&M)) - This action would result in ground disturbance to 25 acres that could potentially increase disturbed areas to noxious weed infestations. PDF's in place would limit any cumulative increase to noxious weed infestations to treatable amounts.

Fisheries - The proposed project contains a Riparian Management Zone designed to minimize any adverse impacts to the aquatic environment. The proposed non-commercial thinning of the Riparian Management Zone and the density management activities within the rest of the Riparian Reserve consists of enhancement measures that are designed to restore aquatic conservation strategy features over a period of decades. Other relevant management activities likely to occur within the Rock Creek fifth-field watershed include both Federal and Private timber harvest and silvicultural treatments. Approximately 85% of the watershed (52,946 acres) is managed for timber production (Rock Creek Watershed Analysis). These activities would comply with federal and state laws governing water quality and fisheries habitat, therefore, additional adverse impacts are not anticipated.

Hydrology - The proposed project would affect less than one percent of the Rock Creek watershed. Thinning activities are designed to improve forest health and encourage the development of late-successional characteristics in Riparian Reserves. The long-term cumulative effects of upland and Riparian Reserve treatments under this and other future federal projects would promote late-successional characteristics including the long-term recruitment of coarse

woody material. As Riparian Reserves attain late-successional characteristics, improvements in riparian health, riparian vegetation, instream wood amounts, small channel capacity to store water and sediment, summer low flows, stream temperatures, and the delivery of upland nutrients to streams and hyporheic zones may occur.

Fine sediment delivery due to BLM roads would decrease over time because of road renovations throughout the watershed. Peak flows may be influenced by rain on snow events from reduced stand densities on private and BLM administered lands. However, the limited size, spatial scattering, and lower harvest intensity of treatment areas on BLM lands along with road drainage improvements would help to mitigate these effects. Any sediment added to the streams as a result of the action alternatives would be indistinguishable from background levels and therefore add very little to the cumulative impacts of sedimentation at the fifth-field scale and would be within the range of natural variation.

Soils - Ground-based harvest operations (both federal and private) were widespread in the Rock Creek watershed in the 1950's through 1970's. "Loggers' choice" ground-based logging had a considerable effect (estimated to be between 15 to 30 percent reduction where ground-based logging occurred) on long-term soil productivity through compaction, erosion and soil displacement. Other management practices such as road construction and broadcast burns along with landslides have added to the cumulative impacts to soil productivity. This project would add one acre of new ground disturbance due to temporary spur construction and up to five acres of additional compaction due to new trails. Tillage would reduce the amount of this compaction. Soil productivity losses on harvested lands are restored very slowly over time through natural processes. A limited amount of amelioration of past ground-based yarding impacts and road decommissioning would take place under this action as well as future timber sales or restoration projects. The net cumulative effect of amelioration and natural recovery would be that of maintaining or improving long-term soil productivity in the Rock Creek watershed on BLM managed lands despite periodic short-term decreases at the project level scale. The SEIS stated that the Matrix lands would have the highest management induced disturbance and the lowest probability of the land use allocations of maintaining long-term soil productivity. Even so, it concluded, "Implementation of appropriate soil management prescriptions and best management practices should prevent unacceptable degradation of the soil resource and related long-term productivity" (SEIS 3&4-112).

Wildlife - The loss of habitat on private land is expected to continue as the land is managed on a rotation of approximately 60-80 years. NSO dispersal habitat on this land is likely to be maintained, but at some lower level. This continued loss and decline in habitat would cause the land to function solely for early and mid-seral species. There would be no change in the amount or percentage of late-successional type forests on federal lands within the Rock Creek Watershed, because the Proposed Action would commercially thin timber stands that are 30 to 40 years of age. Thinning these mid-seral stands would accelerate growth and late-seral characteristics and improve habitat. Thinning within the Riparian Reserve would allow late-seral characteristics to develop in the in the long-term.

V. CONTACTS, CONSULTATIONS, AND PREPARERS

A. Agencies, Organizations, and Persons Consulted

The Agency is required by law to consult with certain federal and state agencies (40 CFR 1502.25).

1. **Threatened and Endangered (T&E) Species Section 7 Consultation** - The Endangered Species Act of 1973 (ESA) requires consultation to ensure that any action that an Agency authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat.

a. The Roseburg District's Biological Assessment (BA) *FY 2003-2008 Programmatic Assessments for Disturbance Activities and Management Activities Which Remove Habitat* is currently in draft. It is anticipated that a final will be submitted to the **US Fish and Wildlife Service** (FWS) in November 2002. The BA made the determination that this project would result in a "not likely to adversely affect" for the spotted owl, murrelet, or bald eagle. A Biological Opinion is expected in January 2003.

b. Based on this analysis, the PDC's and additional mitigation measures for the proposed timber harvest activities would eliminate associated impacts to the OC coho and steelhead trout. The BLM road maintenance and aquatic and riparian habitat projects (fish-bearing culverts) activities within the proposed project area are covered under the **National Marine Fisheries Service** (NMFS) *Programmatic Biological and Conference Opinion* issued October 18, 2002 which made the determination that these activities are ". . . not likely to jeopardize the continued existence of . . . OC coho salmon, or OC steelhead trout." In addition, the proposed activities were analyzed for, and determined to adversely affect Essential Fisheries Habitat. The above referenced activities would be in accordance with all PDC's, Terms and Conditions, and EFH Conservation Recommendations within the BO.

2. **Cultural Resources Section 106 Consultation** - National Historic Preservation Act (Section 106) responsibilities under the 1997 National Programmatic Agreement and the 1998 Oregon Protocol has been completed. No consultation with the **State Historical Preservation Office** was required.

B. Public Notification

1. Notification was provided to affected **Tribal Governments** (Confederated Tribes of the Coos, Lower Umpqua and Siuslaw; Grande Ronde; Siletz; and the Cow Creek Band of Umpqua Indians). No comments were received.

2. A letter was sent to four **adjacent landowners**. No comments were received (see Appendix G - Public Contact).

3. The **general public** was notified via the *Roseburg District Planning Update* (Winter 2001) going to approximately 150 addressees. These addressees consist of members of the public that have expressed interest in Roseburg District BLM projects. Two letters were sent to groups or individuals that have expressed past interest in BLM projects. Comments were received from Umpqua Watersheds, Inc. (see Appendix D - Issue Identification Summary).
4. Notification will also be provided to certain **State, County and local government** offices (see Appendix G - Public Contact).
5. A 30-day **public comment period** will be established for review of this EA. A Notice Of Availability will be published in *The News-Review*. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in *The News-Review*.

C. List of Preparers

Isaac Barner	Cultural Resources
Bruce Baumann	Layout Forester (Relativity)
Liz Berger	Wildlife
Kevin Cleary	Fuels Management
A.C. Clough	Fisheries
Dan Cressy	Soils
Dan Dammann	Hydrology
Dick Greathouse	Layout Forester (East Fork)
Gary Hill	Engineer (East Fork)
Craig Holt	Pre-Sale Forester
Mike Howard	Engineer (Relativity)
Al James	Silviculture
Fred Larew	Lands
Jim Luse	Environmental Coordinator / EA Preparer
Ron Murphy	Recreation / VRM
Ron Wickline	Botany

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- Other references as cited in the Analysis File (Appendix F).

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 alternatives, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.



Element	Responsible Position	Not Present	Not Affected	In Text	Initials	Date
Air Quality	Fuels Management Specialist		✓		K.C.	11/4/02
Areas of Critical Environmental Concern	Environmental Specialist	✓			JSL	11/4/02
Cultural Resources	Archeologist		✓		IMB	11/6/02
Environmental Justice	Environmental Specialist		✓		JSL	11/4/02
Farm Lands (prime or unique)	Soil Scientist	✓			DCC	11/4/02
Flood Plains	Hydrologist		✓		DD	11/4/02
Invasive, Nonnative Species	Botanist			✓	RW	11/4/02
Native American Religious Concerns	Environmental Specialist		✓		JSL	11/4/02
Threatened or Endangered Species (fish)	Fisheries Biologist			✓		
Threatened or Endangered Species (plants)	Botanist	✓			RW	11/4/02
Threatened or Endangered Species (wildlife)	Wildlife Biologist			✓	EG	11/4/02
Hazardous/Solid Wastes	Area Hazardous Materials Coordinator	✓			LB	11/4/02
Water Quality Drinking/Ground Water	Hydrologist		✓		DD	11/4/02
Wetlands/Riparian Zones	Hydrologist			✓	DD	11/4/02
Wild and Scenic Rivers	Recreation Planner	✓			RJM	11/4/02
Wilderness	Recreation Planner	✓			RJM	11/4/02

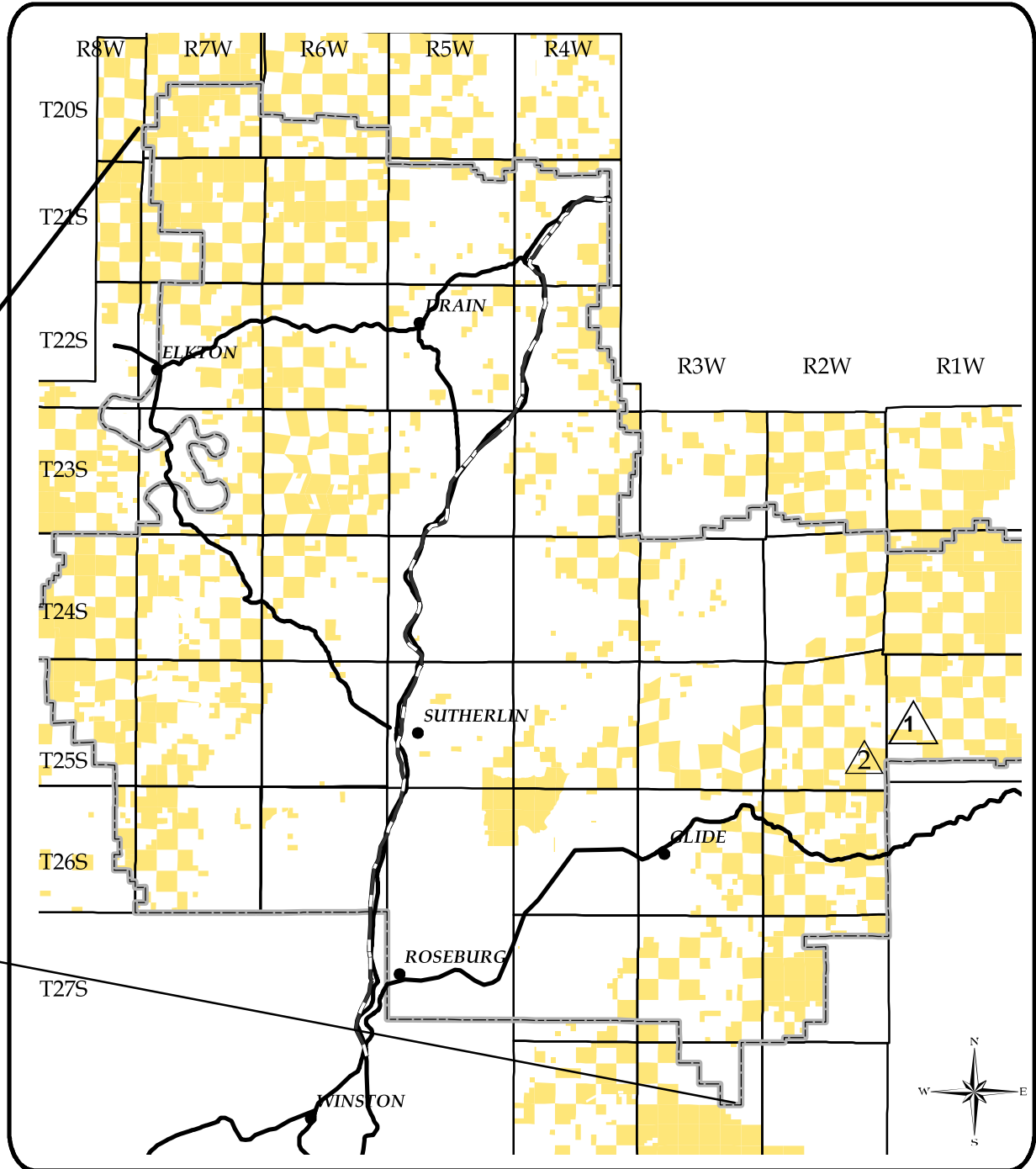
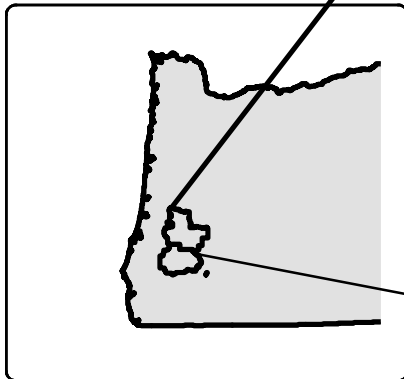
Appendix A Vicinity Map

F 2002 Commercial Thinnings

Legend

-  BLM Lands
-  Swiftwater Resource Area Boundary
-  Interstate 5
-  Major Oregon Highways
-  Towns

-  East Fork Commercial Thinning
-  Relativity Commercial Thinning



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Appendix B

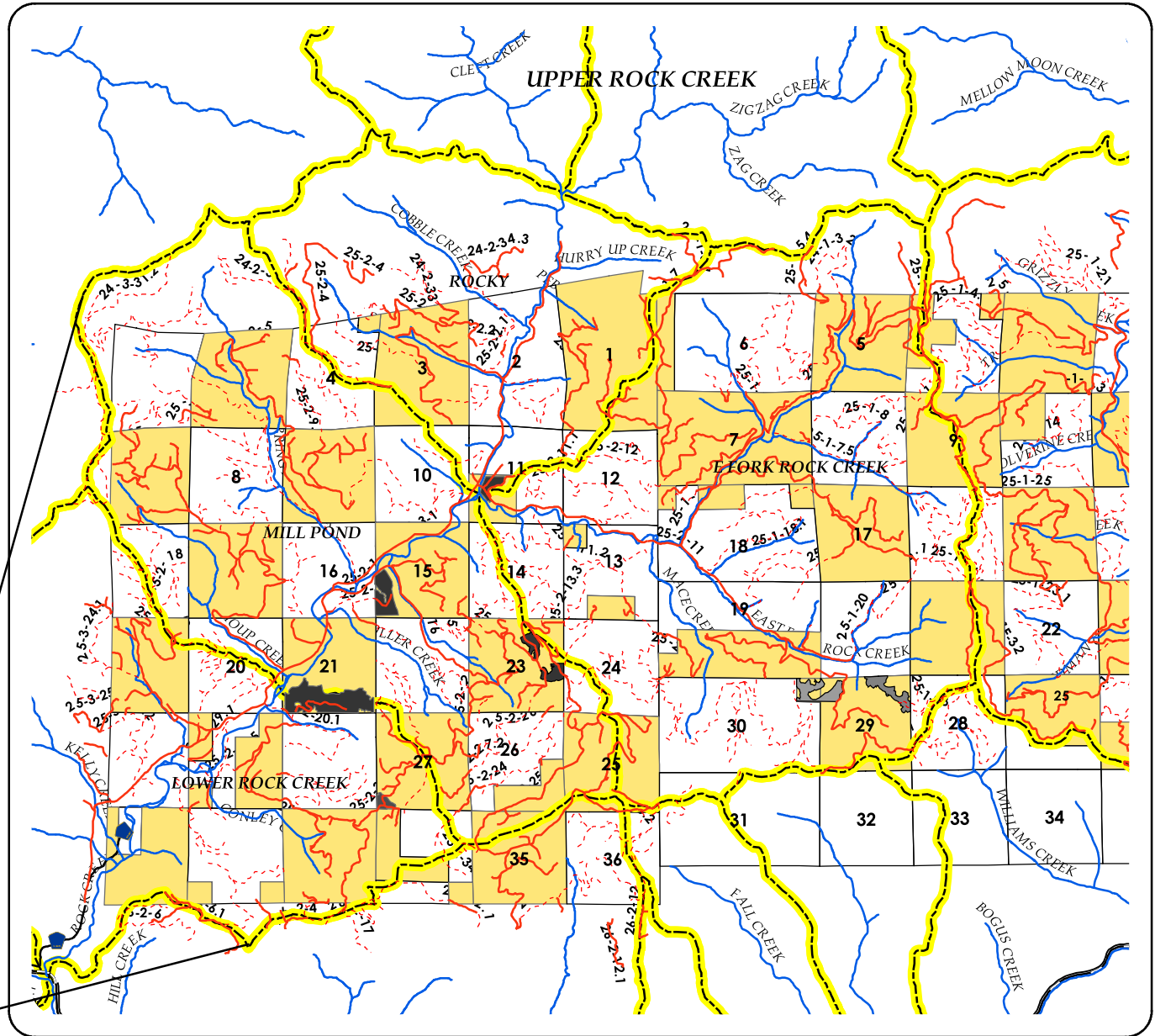
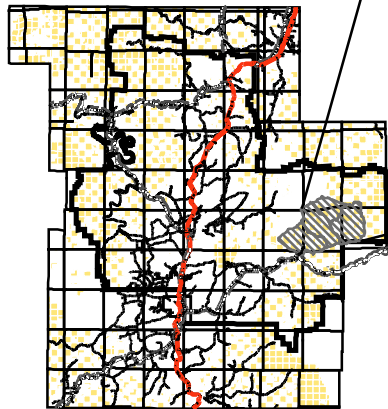
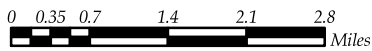
Tract Map

FY 2002 Thinnings
East Fork CT
Relativity CT

Legend

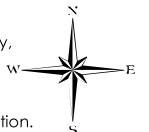
- Relativity CT
- East Fork CT
- OWN_DSGTN**
 - County Roads
 - Interstate 5
 - State Highways
- Roads**
 - BLM Roads
 - Private Roads
 - Major Streams
 - Watershed Boundaries
- Ownership**
 - BLM
 - Private

1 inch equals 1.7 miles



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APPENDIX C

INDIVIDUAL UNIT DESCRIPTION

Project Summary Table (Alternative C)

EA Unit	Project Area	Acres	Yarding System (ac.)			Fuel Treat.	Remarks
			Aerial	Cable	Ground		
29A	2	37	37			P&BL	East Fork
30A	1	45	45			"	"
11A	1	21 (DM - 9)		OES (21)		"	Relativity
15C	2	54 (DM - 12)		OES (52)	ROW (2)	"	"
21B	5	139 (DM - 1)		OES (136)	ROW (3)	"	"
23A	3	19 (DM - 3)		OES (19)		"	"
23B	4	22 (DM - 5)		OES (16)	DST (6)	"	"
27D	6	14			DST (14)	"	"
Total		351	82	244	25		

Yarding System

OES = Cable Yard, One End Suspension Required
 ROW = Ground Based, Yarding of Road Right of Way Timber
 DST = Ground Based, Designated Skid Trails Required

Fuel Treatment

P&BL = Pile and Burn Landings

Directions to the Project Areas

Follow State Highway 138 east from Roseburg approximately 17 miles to the Rock Creek Access Road (Idleld).

East Fork

Proceed north on the Rock Creek Road (BLM Road # 26-3-1.0) approximately eight miles to the junction of the East Fork Road (BLM Road # 25-2-11.0). Proceed east on the 11.0 road approximately four miles to 25-1-19.0 road. See Appendix B or BLM transportation map for directions to specific units.

Relativity

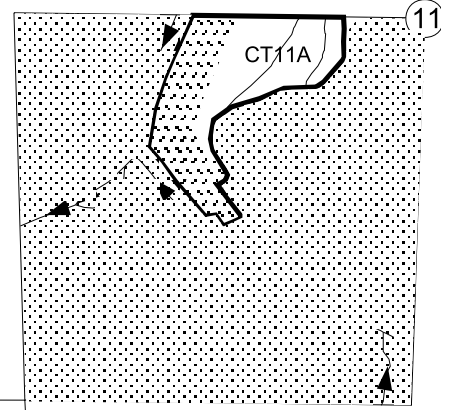
Proceed north on the Rock Creek Road (BLM Road # 26-3-1.0) approximately 3.5 miles to the junction of Road # 25-2-20.1. Follow the Appendix B map for direct to specific units. See Appendix B or BLM transportation map for directions to specific units.

Units are marked with boundary posters and blazed and painted trees.



Appendix C





Relativity Thinning

T 25 S R 2 W Secs 11 & 15



Scale: 4" = 1 Mi.

-  Harvest Area
-  Harvest Area - Ground Based
-  Reserve Area
-  Streams

-  Existing Road
-  Temporary Road to be Constructed
-  Riparian Management Zone
-  Density Management

Appendix C

Relativity Thinning

T 25 S R 2 W Secs 21, 23 & 27



Harvest Area



Harvest Area - Ground Based



Reserve Area



Streams



Existing Road



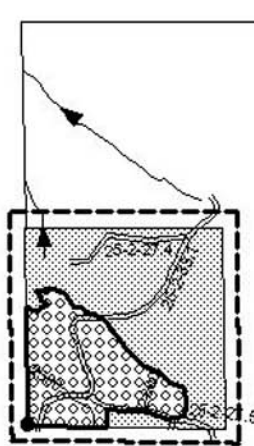
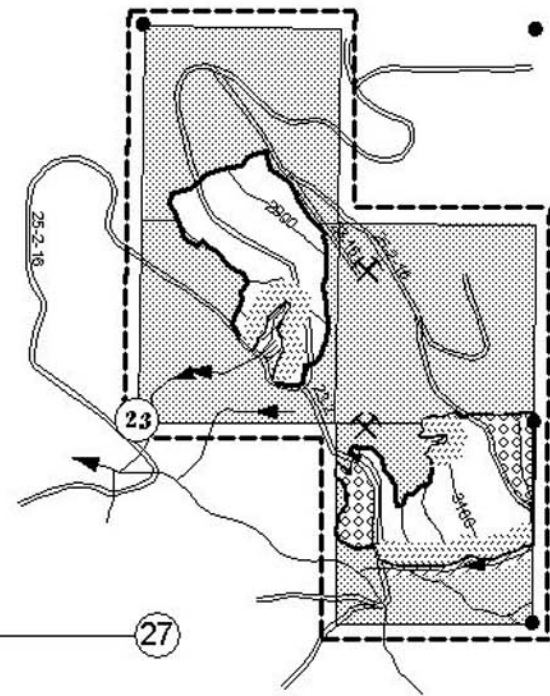
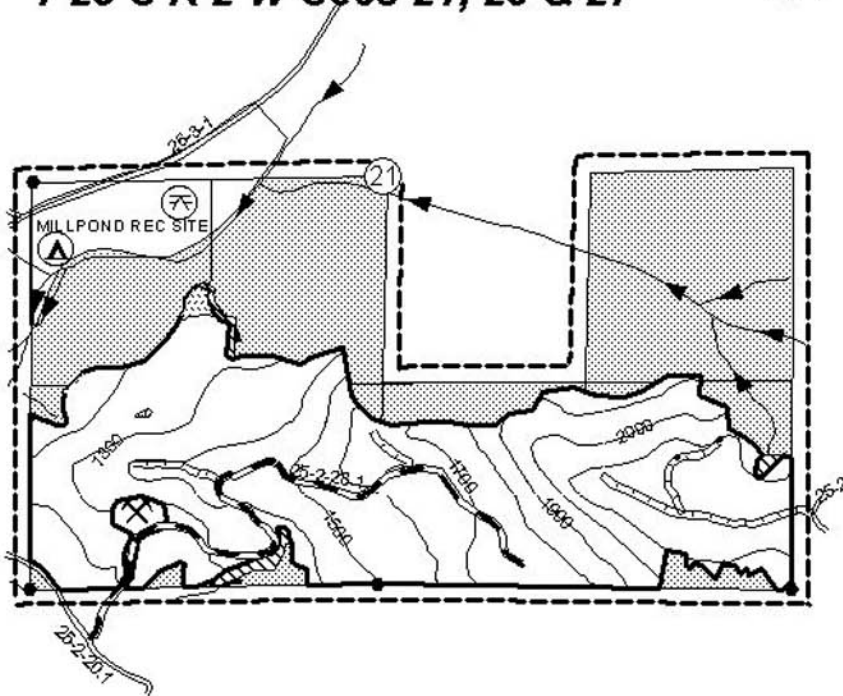
Temporary Road to be Constructed



Riparian Management Zone



Density Management

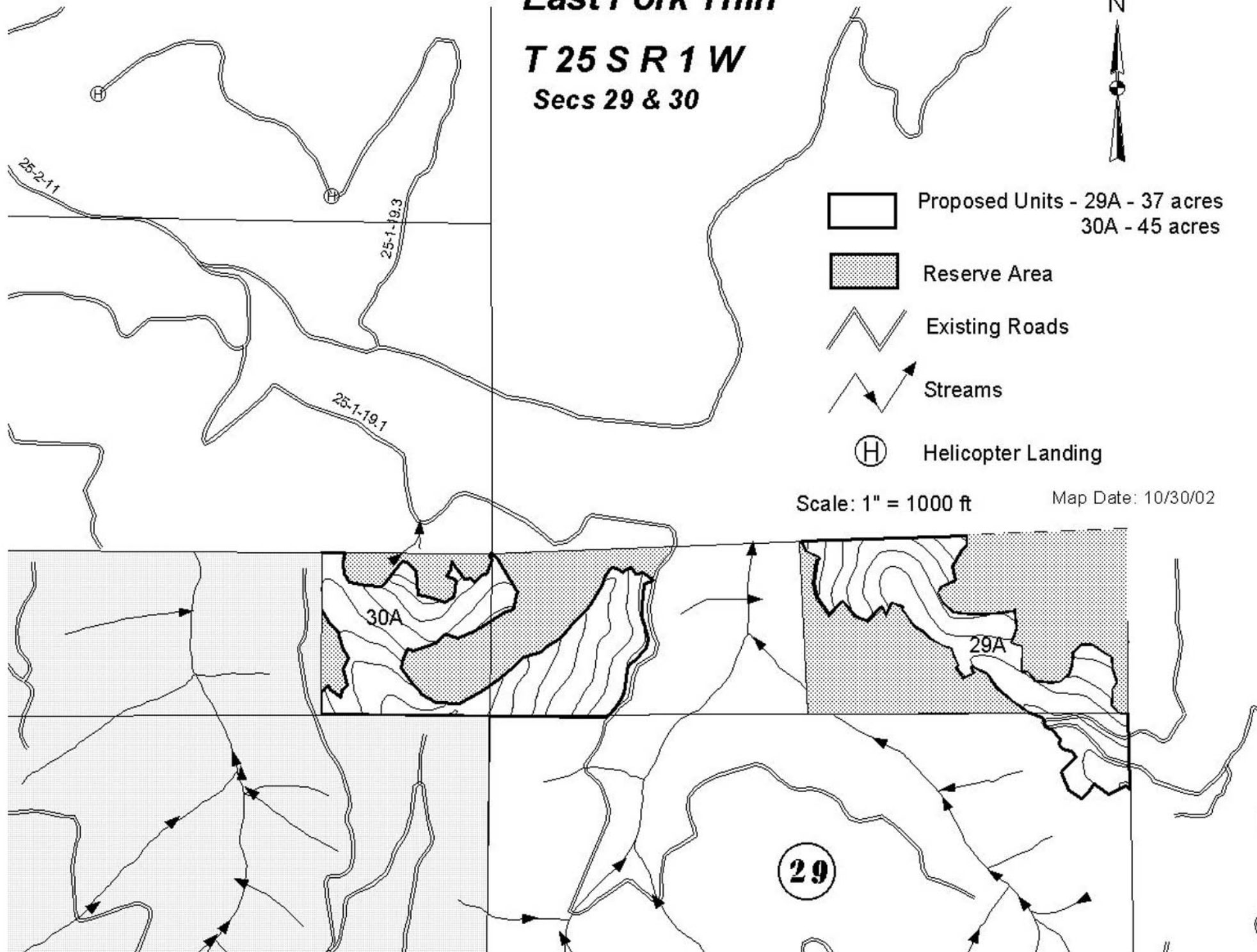


Scale: 4" = 1 Mi.

East Fork Thin

T 25 S R 1 W

Secs 29 & 30



25-2-11

25-1-19.3

25-1-19.1

30A

29A

29

APPENDIX D

ISSUE IDENTIFICATION SUMMARY

This appendix summarizes the issues that were identified pertinent to this project. No further analysis was deemed necessary in that the mitigation called for were considered adequate to remove the issue from needing to be analyzed in the main body of the EA.

A. Issues Identified During Project Design

The following issues were identified during project design. These issues arose from Specialist input as well as public comments that were received. A given issue can be eliminated from further analysis for one or more of the following reasons: (1) it is beyond the scope of this analysis, (2) the impacts were anticipated and analyzed in the FEIS, (3) Project Design Feature's (PDF's) included in the preferred alternative would be adopted to mitigate the anticipated environmental impacts of specific activities, and (4) the issue does not meet the objectives and purpose of the project. Section II, paragraph C (pg. 6) provides a list of specific PDF's incorporated into the preferred alternative to deal with these issues.

East Fork

Issue	Project Design Feature
Unit 29A has five acres classified as FGR and therefore prone to potential slope instability. (Soils)	Dry-season operations with full suspension (helicopter) would lessen this concern.

Relativity

Issue	Project Design Feature
1. Existing road in west part of Unit 21B has residual compaction. (Soils)	Subsoil existing road.
2. Old slump earthflow above wet area in Unit 21B. (Soils)	Extend the buffer around wetland in Unit 21B an additional 100 ft. to protect steep toe of old slump earthflow.
3. Units 15A, 21B, and 23B have 25 acres classified as FGR and therefore have slope stability concerns. (Soils)	Dry-season operations with partial suspension would lessen this concern.
4. Unit 15C and 27A are affected by adjacent NSO core areas. (Wildlife)	Survey core areas and if owl is nesting apply seasonal restrictions to units.
5. Portions of Units 15C and 21B are in VRM II which does not permit changing natural character of the forest. (Recreation)	None required. A 40% reduction of crown cover would not alter the natural character of the forest.

Public Issues:

Comments were received from two entities. Most of the issues identified were also noted by the ID Team. Some of the issues were outside the scope of this analysis. The main focus of these Issues are summarized as follows:

- 1. If any mature or old-growth (OG) trees have to be logged incidentally the EA should disclose this. Protect existing snags.**

Mature and OG remnants and snags would be preserved to the maximum extent possible. Snags would be protected by surrounding them with retention trees. The numbers of remnant trees that would need to be removed are not known at this time but will be disclosed in the Decision Document.

- 2. The EA should consider a restoration alternative for the Riparian Reserves.**

A restoration alternative was considered in this EA and considerable staff effort was invested in designing this alternative.

- 3. Section 25 and 29 are near the Williamson Creek RARE II Roadless Area (USFS). Please respect your portion of the roadless area by proposing no new roads in these sections.**

The Williamson Creek Roadless Area does not fall within lands under the Roseburg District RMP therefore there is no obligation to manage these sections as a roadless area.

- 4. The EA should fully disclose and analyze all impacts to recreation. Do not log any mature trees in the vicinity of these sites.**

Potential impacts to the Mill Pond and Rock Creek Campgrounds were addressed in the Recreation Planner's Report (2/13/02) in Appendix F. Unit 15C is 2300' from the Rock Creek Campground and 21B is about 500' from the Millpond Campground. These are second growth stands. No mature trees near the campgrounds are planned to be removed. The cutting prescription would not violate Visual Resource Management guidelines for these units (see Recreation VRM Report, Appendix F).

A comment was made about the Millpond HAZMAT site. Unit 21B is 2300' away from this site and would have no impact. Both areas are VRM 2 (no restrictions for thinning).

B. Issues Specified by Regulation

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These are elements of the human environment subject to requirements specified in statute, regulation, or Executive Order. These elements are as follows:

1. Air Quality
2. Areas of Critical Environmental Concern (ACEC)
3. Cultural Resources
4. Environmental Justice
5. Farm Lands (prime or unique)
6. Floodplains
7. Invasive, Nonnative Species
8. Native American Religious Concerns
9. Threatened or Endangered Species
10. Wastes, Hazardous or Solid
11. Water Quality, Drinking / Ground
12. Wetlands / Riparian Zones
13. Wild and Scenic Rivers
14. Wilderness

These resources or values (except item #9) were not identified as issues to be analyzed in detail because: (1) the resource or value does not exist in the analysis area, or (2) no site specific impacts were identified, or (3) the impacts were considered sufficiently mitigated through adherence to the NFP S&G's and RMP Management Actions/Direction therefore eliminating the element as an issue of concern. These issues are also briefly discussed in Appendix E ("Critical Elements of the Human Environment"). Item #9 is addressed in the Biological Assessment which is prepared for consultation required by the Endangered Species Act.

The RMP has been determined to be consistent with the standards and guidelines for healthy lands (43 CFR 4180.1) at the land use plan scale and associated time lines.

Executive Order 13212 provides that all decisions made by the Bureau of Land Management will take into consideration adverse impacts on the President's National Energy Policy. This project would not have a direct or indirect adverse impact on energy development, production, supply, and/or distribution and therefore would not adversely affect the President's National Energy Policy.

C. Issues to be Analyzed

How do we treat the Riparian Reserve?

This issue was identified as having sufficient potential affect to warrant more detailed analysis and is addressed as a key issue (pg. 18).

APPENDIX E

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Element	Relevant Authority	Environmental Effect
Air Quality	The Clean Air Act (as amended)	Minimal -Dust particles may be released into airshed as a result of road construction /renovation and timber hauling.
Areas of Critical Environmental Concern	Federal Land Policy and Management Act of 1976 (FLPMA)	None - Project area is not within or near a designated or candidate ACEC.
Cultural Resources	National Historic Preservation Act (as amended)	"No Effect" - See Cultural Report 10/30/01.
Environmental Justice	E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	The proposed project areas are not known to be used by, or disproportionately used by, Native Americans, minorities or low-income populations for specific cultural activities, or at greater rates than the general population. According to 2000 Census data approximately six percent of the population of Douglas County was classified as minority status (<i>Oregonian</i> , Pg. A-12; March 15, 2001). It is estimated that approximately 15% of the county is below the poverty level (Frewing-Runyon, 1999).
Farm Lands (prime or unique)	Surface Mining Control and Reclamation Act of 1977	None - "No discernable effects are anticipated" (PRMP pg. 1-7)
Floodplains	E.O. 11988, as amended, Floodplain Management, 5/24/77	None - Project is not within 100 yr. floodplain.
Native American Religious Concerns	American Indian Religious Freedom Act of 1978	None - No concerns were noted as the result of public contact.

Element	Relevant Authority	Environmental Effect
Threatened or Endangered Species	<p>Endangered Species Act of 1973 (as amended)</p> <p>The Pacific Coast Recovery Plan for the American Peregrine Falcon, 1982</p> <p>Columbian White-tailed Deer Recovery Plan, 1983</p> <p>Recovery Plan for the Pacific Bald Eagle, 1986</p> <p>Recovery Plan for the Marbled Murrelet, 1997</p>	<p>(Botanical) - No T&E species noted (Specialist Report 3/01/02)</p> <p>(Terrestrial) - “not likely to adversely affect spotted owl, murrelets and their critical habitat” (Draft BA 11/02)</p> <p>(Aquatic) - “may effect, not likely to adversely affect” for coho salmon and steelhead trout (BO 10/18/02).</p> <p>T&E species not specifically mentioned do not exist in the analysis area.</p>
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976 Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended	None - Applicable HazMat policies would be in effect.
Water Quality, Drinking / Ground	Safe Drinking Water Act (1974) as amended Clean Water Act of 1977	None - Project is not within a municipal watershed or near a domestic water source (Valid Existing Rights Clearance Report, Appendix F).
Wetlands/Riparian Zones	E.O. 11990, Protection of Wetlands, 5/24/77	None - "The selected alternative [of the FEIS] complies with [E.O. 11990]..."(ROD p. 51, para.7)
Wild and Scenic Rivers	Wild and Scenic Rivers Act (as amended) The North Umpqua Wild and Scenic River Plan (July 1992)	None - Project is not within the North Umpqua Scenic River corridor.
Wilderness	Federal Land Policy and Management Act of 1976 Wilderness Act of 1964	None - "There are no lands in the Roseburg District which are eligible as Wilderness Study Areas." (RMP pg. 54)

OTHER RESOURCES CONSIDERED

Resource	Environmental Effect / Concerns
Land Use (Leases, Grazing etc.)	None - Project has no conflicting land uses (Specialist's Report 1/3/02). Roads are encumbered under Right-of-Way Agreement #R-540 (Weyerhaeuser Co.), #R617 (Roseburg Resources) and # R-645A (Seneca Jones), (Valid Existing Rights Clearance Report (Appendix F)).
Minerals	None - Project has no mining claims (Specialist's Report 1/04/02).
Recreation	Minimal short-term impacts - "... temporary road blockages during the felling and logging operations". "Units 15C and 21B could both have direct impacts to recreation users in the Mill Pond and Rock Creek Recreation Sites." (Specialist's Report 2/13/02).
Visual	None - All units are within VRM IV (no visual restraints) except small portions of Units 15C and 21 B are within VRM II (retain existing character of the landscapes - activities may be seen but should not attract the attention of the casual observer). (Specialist Report 2/13/02)
Other (Adjacent Landowners)	None - No small adjacent landowners or registered domestic water users are in the vicinity of these sales.