

INTRODUCTION

The Environmental Assessment (EA) is a site specific analysis of potential environmental impacts that could result with the implementation of a proposed action. The EA assists the Agency in planning and in making a determination as to whether any "significant" impacts could result from proposed actions. This EA has been prepared for the Swiftwater Resource Area's proposed **CHRISTOPHER FOLLY REGENERATION HARVEST**. This proposal is in conformance with the *Roseburg District Proposed Resources Management Plan / Environmental Impact Statement (PRMP/EIS)* dated October 1994 and its associated *Record of Decision and Resources Management Plan (RMP)* dated June 2, 1995. The RMP is supported by and 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)* dated April 13, 1994 otherwise known as the "Northwest Forest Plan" (NFP). The ROD establishes management direction consisting of ". . . extensive standards and guidelines including land allocations, that comprise a comprehensive ecosystem management strategy" (ROD pg. 1).

The project described in this EA will undergo formal public review. After the completion of public review a "Finding of No Significant Impact" (FONSI) would be signed as appropriate. A signed FONSI would find that no "significant" environmental impact (effect) would occur with the implementation of the proposed actions beyond those already addressed in the FSEIS when the project design features specified in this EA are followed. "Significance" has a strict National Environmental Protection Act (NEPA) definition and is found in regulation 40 CFR 1508.27. The FONSI documents the application of this definition of significance to the proposed action.

A Decision Document would be completed after public review to document the decision and reflect any changes as the result of public review, 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* and constitute a decision document with authority to proceed with 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, a general description and background of the proposal, the issues to be analyzed, and issues eliminated from detailed analysis in this EA.

A. Need for Action

The RMP and the ROD respond to dual needs: ". . . the need for a healthy forest ecosystem with habitat that will support populations of native species and includes protection for riparian areas and waters . . . and the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies . . ."

(RMP pg. 15, ROD, pg. 26). The Swiftwater Field Office proposes to offer the **CHRISTOPHER FOLLY REGENERATION HARVEST** for auction in fiscal year 1998 or later. This proposal would help meet the Swiftwater Field Office's annual harvest commitment or allowable sale quantity (ASQ).

B. Description of the Proposal

The proposal is to harvest timber in the Canton Creek Watershed located in Sections 23 through 27, and 35; T25S R1W, W.M. (see maps, Appendix A through C). The proposed project area is approximately 22 road miles northeast of Glide and 31 air miles south northeast of Roseburg, Oregon. Approximately 250 acres were analyzed for potential harvest activities. This project is within the Matrix Land Use Allocation (LUA) in what the RMP classifies as the "General Forest Management Area" (GFMA); i.e. lands available for timber harvest and "Connectivity" i.e. lands that are available for timber harvest and provide connectivity between Late-Successional Reserves. This project is not in Riparian Reserves, however, it is in a Key (Tier 1) Watershed.

The Matrix LUA is one of the seven allocations specified in the ROD. "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. New temporary road construction and renovation or improvement of existing roads would also occur. Section II (pg. 4) of this EA provides a more detailed description of the Proposed Action Alternative.

C. Background (Watershed Analysis)

The Canton Creek Watershed Analysis (WSA) was used in this analysis and is available for public review at the Roseburg District office. The watershed analysis contains maps showing land ownership patterns, roads and streams, and the spatial arrangement of stands by age and seral condition. Current landscape patterns include natural stands that are the result of fire, managed stands established following timber harvest, and non-forested rock outcrops. The Watershed Analysis identified water quality, fisheries and special status animal species as key concerns.

The Christopher Folley Regeneration Harvest project occurs within the Lower Canton Creek subwatershed. This subwatershed is within the Canton Creek Watershed Analysis Unit (WAU) which covers approximately 40,570 acres (60 square miles); Within the Canton Creek WAU approximately 9,800 acres (24%) are privately owned. The remaining land is administered by the federal government of which about 17,700 acres (44%) are managed by the Roseburg BLM District; and about 13,000 acres (32%) are managed by the Umpqua National Forest. Of the

Federal lands within the WAU about 29,700 acres (97%) are to be managed as reserves and 1060 acres (3%) are managed as Matrix (WSA, pg. 10). Of this total approximately 508 acres (<2%) are available for regeneration harvests (WSA, pg. 13). This timber sale would remove approximately 215 acres of this type.

The RMP (pg. 34) requires that late-successional forests be retained in watersheds that comprise 15% or less late-successional forests on Federal lands in fifth field watersheds, i.e., watersheds between 20 and 200 square miles. Any timber stands greater than approximately 80 years of age are considered late-successional habitat (S&G, pg. B-2). For the Canton Creek WAU, analysis of current forest inventories shows that of the 30,783 acres of Federal ownership, approximately 20,818 acres (68%) are late-successional forests (80 years or older) of which 11,170 acres (36%) are greater than 196 years (Old Growth).

Four of the units are within a connectivity/diversity block (Section 15 and 23). The RMP (pg. 34) requires that 25 - 30% of each block be maintained in late-successional forest. This block contains 1279 acres. This project would remove 65 acres of late-successional forest from this block leaving 599 acres of late-successional forest (47% of the block) post harvest.

D. Objectives

1. For the Matrix:
"Produce a sustainable supply of timber and other forest commodities" (RMP pg. 33) and meet District ASQ goals (GFMA). "Provide connectivity . . . between late-successional reserves" (RMP, pg. 33) (Connectivity).
2. For the Key Watershed:
Reduce existing road mileage and pursue watershed restoration to conserve watershed conditions for at-risk anadromous salmonids and resident fish species.
3. Practice ecosystem management as outlined in the ROD and RMP.
 - avoid damage to riparian ecosystems and meet the objectives of the "Aquatic Conservation Strategy" (S&G, pg. B-11; 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)

E. Decisions to be Made to Meet Proposal Objectives

1. The Decision Maker (the Swiftwater Area Manager) will need to decide:
 - if this analysis supports the signing of a FONSI.
 - whether to select the Proposed Action Alternative, modify the Proposed Action Alternative, choose another alternative, or accept the No Action Alternative.
2. Consultation with the National Marine Fisheries Service (NMFS) will need to be done for the Cutthroat trout (and Coho salmon if listed). This project may have to be altered as the result of these consultations (See section V, para. A).

F. Issues Considered but Eliminated from Detailed Analysis

The Interdisciplinary (ID) Team identified the following concerns during project design. They were eliminated from further analysis because: (1) project design features (PDF's) were included in the Proposed Action Alternative to lessen the anticipated environmental impacts of specific activities, or (2) the concern was not considered as a key issue warranting detailed analysis, or (3) the impacts are within the limits addressed in the ROD/RMP. Section II, paragraph D (pg. 5) provides a list of specific PDF's incorporated into the preferred alternative to deal with these issues. These issues are summarized in Appendix D ("Scoping Summary") and addressed in the Specialist's Reports in Appendix F.

1. Hydrology

Project is in Key Watershed that requires no net increase in road density

2. Soils

Slope stability concerns on 23D, 23C, 25A, 25B, 26B, 27A and 35AB.

3. Wildlife

Owl core areas in the vicinity of proposed sale units.

"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. Native American Religious Concerns
8. Threatened or Endangered Species
9. Wastes, Hazardous or Solid

10. Water Quality, Drinking / Ground
11. Wetlands / Riparian Zones
12. Wild and Scenic Rivers
13. Wilderness

These resources or values (except item #8) were not identified as issues to be analyzed because: (1) the resource or value does not exist in the analysis area, (2) no site specific impacts were identified, or (3) the impacts were considered sufficiently mitigated through adherence to the S&G's 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 #8 is addressed in the Specialist's Reports (Appendix F).

G. Issues to be Analyzed

The ID Team identified the following concerns as having sufficient potential affect to warrant more detailed analysis and will be addressed in Section IV, "Environmental Consequences" (pg. 11-13) as a key issue.

1. **Water Quality** - Canton Creek has been shown to be water quality limited in the area of sedimentation, temperature, habitat degradation, and nonpoint source for sediment and nutrients and is also in a Key Watershed that must maintain high quality water.
2. **Slope stability** - Slope stability concerns were noted that could impact water quality.

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the No Action and Proposed Action alternatives, and any alternatives considered but eliminated from detailed study. These alternatives represent a range of reasonable potential actions. This section also discusses specific design features that would be implemented under the action alternatives. All action alternatives were designed to be in conformance with the RMP.

A. The No Action Alternative

The No Action Alternative is required by NEPA to provide 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. Selection of this alternative would not constitute a decision to reallocate lands to non-commodity uses. Future harvesting in this area would not be precluded and could be analyzed under another EA.

B. The Action Alternatives

The ID Team considered two action alternatives:

Alternative A - No Roads

Units would be harvested with a mix of cable and tractor yarding to the existing roads. Where cable yarding is not possible, helicopter yarding would be used.

Alternative B (Proposed Action) - Temporary Roads

Units would be cable logged to existing and temporary roads and helicopter logged where this is not possible.

C. The Proposed Action Alternative

Implementation of the Proposed Action Alternative would result in the harvest of approximately 10.7 MMBF (million board feet) or 15,970 CCF (hundred cubic feet) of the Swiftwater R.A.'s harvest commitment of 23.0 MMBF. 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, or which are a safety hazard, and trees needed to facilitate the proposed action (ex. removal of guyline and tailhold trees). In most cases these trees would be left on site as CWD and snags. Harvest activities would occur on 12 units for 215 acres of regeneration harvest. Other activities would include: temporary road construction, road renovation and improvement, subsoiling of previously compacted skid trails, site preparation with fire (slash burning) and replanting with young seedlings.

Approximately 0.1 miles of **temporary road** would be constructed on public land.

Approximately 3.0 miles of government and private road would have **road renovation** (restoring the road to its original design) and 13.9 miles of government and private road would have **road improvement** (improving the road beyond its original design). This would consist of installing drainage structures (culverts and ditches), reshaping the subgrade and surfacing with crushed rock.

Timber harvest would consist of regeneration harvest. **Regeneration harvest** is designed to open the forest canopy to allow the re-establishment of a new forest stand with early seral stage vegetation (even-aged). The technique of modified even aged management and reserve seed tree harvest (RMP, pg. 150) would be used. The traditional silvicultural system is modified to include biological legacies. This legacy consists of retaining a remnant of older aged, large (>20") green trees and snags (reserve trees), and coarse woody debris (CWD). CWD are trees, or portions of trees, that have fallen or have been cut and left in the unit for present and future wildlife habitat components (RMP, pg. 146) and to maintain site productivity. The proposed action would require a mix of skyline cable logging, approximately 64 acres or 30%; helicopter logging, approximately 85 acres or 40%; and ground based (tractor) logging, approximately 66 acres or 30%. Helicopter landing locations are expected to be a minimum of one-half acre in size and no larger than one acre. **Firewood cutting and salvaging** of logging debris (slash) could occur in landing cull decks. The firewood permit would address specific stipulations.

Subsoiling would occur on previously compacted skid trails used under this action as well as any new trails created.

The **prescribed burning of slash** (burning under the direction of a written site specific "Burn Plan") would occur in the proposed units to prepare the site for tree planting. Approximately 215 acres would be burned. Burning would be by a combination of broadcast burning (approximately

56 - 85 ac.), machine and/or hand pile and burn (approximately 115 - 171 ac.) and cover slash concentrations and burn (approximately 41 - 75 ac.) (see Appendix C). **Fire trails** would be constructed by hand around the perimeters of the units to be broadcast burned.

D. Project Design Features as part of the Proposed Action

This section describes the project design features (PDF's) which would be incorporated in the implementation of the action alternatives. PDF's are site specific measures, restrictions, requirements or structures included in the design of a project to reduce adverse environmental impacts. These are listed in the RMP (Appendix D, pg. 129) as "Best Management Practices" (BMP's) and in the ROD as "Standards and Guidelines" (S&G's). BMP's are measures designed to protect water quality and soil productivity. S&G's are "... the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained." (S&G, pg. A-6). The proposed action includes the following PDF's:

1. **To meet the components of the "Aquatic Conservation Strategy (ACS)" (S&G's, pg. B-12):**

a. **Riparian Reserves** (Component #1) would be established. Riparian Reserves consist of permanently flowing (perennial) and seasonally flowing (intermittent) streams, the extent of unstable and potentially unstable areas and wetlands . The S&G's (pg. C-30) and RMP (pg. 24) specify 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 nonfish bearing streams. Data has been analyzed from District inventory plots and the height of a site potential tree for the Canton Creek watershed has been determined to be the equivalent of 160 ft. slope distance. Therefore, Riparian Reserve boundaries would be approximately 160 ft. slope distance from the edge of nonfish bearing streams and 320 ft. from fish bearing streams in the project area. There is one fish-bearing stream (Canton Creek) in the project area adjacent to Unit 25A.

- 1) Trees within 100' of the Riparian Reserve boundaries would be directionally felled and yarded away from, or parallel to, the Riparian Reserve to protect the reserve from logging damage. No logging or road building would take place within the Riparian Reserves.
- 2) All **wetlands** less than one acre would receive protection to the edge of the riparian vegetation. No logging would be allowed through the wetland. Trees designated for harvest, within 100' of the wetland, would be felled and yarded away from the wetland to protect this habitat. Two such wet areas were found within the project area (Units 23C and 26B) and were included within the Riparian Reserve.

b. This project is in a **Key (Tier 1) Watershed** (ACS Component #2). An objective is to "Reduce existing system and nonsystem road mileage ... (S&G's, pg. B-19). The **full decommissioning** of roads # 24-1-11.0A, 24-1-12.1A, and 24-1-24.0A&B (3.7 mi.)

was analyzed in the "Canton Creek Restoration EA" (Decision Record - 2/27/98). This work is planned for accomplishment beginning in the 1998 construction season. Full decommissioning consists of "closing and stabilizing ... to eliminate potential storm damage and the need for maintenance" (S&G, pg. B-31) as well as pulling culverts and subsoiling the roadbed.

- c. **Watershed Analysis** (ACS Component #3) as been completed for this watershed (see pg. 2).
 - d. **Watershed Restoration** (ACS Component #4) would be accomplished as described in para. b above.
2. **To minimize the loss of soil productivity (i.e. reducing soil compaction, limiting erosion, protecting the duff layer and protecting slope stability):**
- a. **Permanent roads** (Road No. 25-1-22.1, 23.0, 23.3, 24.0, 25.0,25.1, 26.0, 26.1, 26.3, 36.4 and 25 ½-1E-32.0) would have roadside brushing, road grading, existing culverts maintained or replaced and additional culverts added, drainage and erosion problems repaired and spot surfacing with crushed rock to reduce sedimentation. **Temporary roads** would be built, used and decommissioned the same operating season. Decommissioning (S&G, pg. B-31) would consist of subsoiling the roadbed with a self drafting winged subsoiler, water barring, blocking and seeded with native or sterile hybrid mix (if available). Road renovation and log hauling on unsurfaced roads would be limited to the dry season (normally May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation. This season could be adjusted if conditions are such that no environmental damage would occur (ex. the dry season extending beyond Oct. 15). These are BMP's (RMP, pg. 136-7) designed to minimize sedimentation and protect water quality.
 - b. **Skyline yarding** would be required were cable logging is specified. This method limits ground disturbance by requiring 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 damage would be hand waterbarred. **Helicopter yarding** would be done in areas where road access is inadequate for cable yarding. Logs would be lifted vertically off the ground and flown to landing areas on existing roads.
 - c. Ground based logging, including road right-of-way clearing, would be limited to the dry season (May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation if resource damage would occur. This season could be adjusted if conditions are such that no resource damage would occur (e.g., the dry season extending beyond Oct. 15). Ground based activities would be confined to designated

skid trails as identified in the logging plan. New trails would be limited to slopes less than 35% and with skid trail spacings averaging at least 150 feet apart. Machines would be limited in size and track width to reduce compaction and trail width. Existing compacted skid trails would be used wherever possible. All skid trails that are used would be tilled with a winged subsoiler. Subsoiling is a practice that ameliorates soil compaction and improves water infiltration by pulling a device known as a "winged subsoiler" with a crawler tractor. Existing skidtrails, from previous entries, would also be tilled where practical (e.g., tilling saturated or very rocky soils or skid trails with advanced reproduction would not benefit soil productivity and therefore would not be practical). The Authorized Officer (Contract Administrator) may decide that additional isolated minor ground based logging would be necessary. Such proposals would be subject to Interdisciplinary review.

- d. CWD reserved according to ROD guidelines would also be a source of organic material that can become incorporated into the soil structure (See para. 3b, below).
 - e. All **fire trails** that might route or channel water would be water barred to limit erosion.
 - f. The **prescribed burning** of slash would be accomplished during the late fall to mid-spring season when the soil and duff layer (soil surface layer of fine organic material) moisture levels are high and the large CWD has not dried. This practice would protect the soil duff layer and the CWD from being totally consumed by fire. Category 1 soils (soils especially sensitive to fire) would be avoided.
 - g. **Machine piling** would require the use of low pressure tracked type excavators and would be limited to slopes less than 30 percent under dry soil conditions and use existing trails as much possible. The equipment would be required to only make a single pass across a traveled path for most of the area involved and travel over slash to the maximum extent possible. Subsoiling would need be done where determined as necessary by the Soil Scientist.
3. **To provide wildlife legacies:**
- a. Future nesting and roosting habitat for **cavity dwellers** would be provided by reserving most existing hard or soft snags (at least 20" in diameter and 20 ft. in height) sufficient to meet the population needs of 40% of potential population (RMP pg. 64). This has been determined to be 1.2 snags per acre. Where this quantity is lacking, additional green trees would be reserved for future snag recruitment. Note: Any snag deemed as hazardous to worker safety could be felled at the discretion of the operator and the Authorized Officer. Such trees would be reserved and left in place as CWD.
 - b. **Wildlife habitat values** would be maintained through the retention of six to eight large (greater than 20") green conifer trees per acre and occasional hardwoods as a biological legacy (RMP Appendix E, pg. 150). Twelve to eighteen trees per acre would be

retained in the Connectivity portion (Units 23A through D). At least 120 linear feet of CWD per acre (at least 16" in diameter and 16 ft. in length) would be preserved for the habitat of organisms that require this ecological niche (S&G, C-40, para. B). Where CWD is lacking in the above quantities, extra green trees would be reserved for future CWD recruitment (RMP pg. 65).

4. To protect air quality:

All slash burning 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 Federal Clean Air Act. The federal Clean Air Act is designed to reduce air pollution, protect human health and preserve the Nation's air resources. The Oregon Department of Environmental Quality is responsible for implementing the Federal Clean Air Act, and the resulting Oregon Smoke Management Plan that requires the Oregon State Department of Forestry to manage the amount of smoke released into the airshed as the result of slash and field burning.

5. To protect and enhance stand diversity:

a. All Pacific yew trees would be reserved.

b. Small hardwood pockets and wet areas (< one ac.) would be retained.

c. All tree species currently represented in the stand would continue to be represented in the stand after the harvest. Large "wolf" trees (large, full crowned, limby trees) would be retained for non-vascular plant legacy attributes. Mature and healthy sugar pines would be particularly selected for retention.

d. Snags and CWD would be reserved as described in paragraph three above.

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 and not drain into riparian areas. All landing trash and logging materials would be removed. Accidental spills or discovery of dumping of 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 prevent the spread of noxious weeds:

Stipulations would be incorporated into the logging contract to prevent and/or control the spread of noxious weeds by requiring the cleaning of all equipment prior to entry on BLM lands (BLM Manual 9015 - Integrated Weed Management).

8. To protect Special Status Plants (SSP):

Four found *Buxbaumia viridis* (protection buffer) sites and one *Nephroma occultum* (Survey and Manage) site would be protected with a 160 ft. Radius buffer to maintain the site.

E. Alternatives Considered but Eliminated

No other alternatives were considered by the ID Team. Additional roading for Alternative B that would have resulted in permanent roads and additional road decommissioning were considered as part of this action but were rejected by the ID Team.

III. AFFECTED ENVIRONMENT

This section describes the existing environment and forms a baseline for comparison of the effects created by the alternatives under consideration. Appendix F (Analysis File) contains Specialist's Reports with supporting information for this analysis.

This project lies within the Oregon Western Cascades Physiographic Province. The affected environment for this province is described in the FSEIS on page 3&4-19.

A. Stand Description

The natural stands contain a diversity of species, age, size, and condition. Douglas-fir is the predominant large conifer, with sugar pine, incense-cedar, western red cedar, western hemlock and white fir the most common associates. Large, conifers with dead and broken tops and decay are often remnant since the last fire and found intermixed with the most recent cohort. Large snags and down logs are common structural components in the oldest stands, their quantity and arrangement dependant on the intensity and time since the last major fire. A dense shrub layer of primarily ocean spray and hazel, and scattered patches of conifer regeneration often develop where there are openings in the canopy. Openings can occur when large trees fall over, from small landslides, and low intensity surface fires.

Common hardwoods include madrone, bigleaf maple, dogwood and chinkapin. Shrubs include vine maple, hazel, ocean spray, slick leaf ceanothus and rhododendron. Swordfern, salal, and Oregon grape are common on the forest floor. Many of these species, as well as thistle, scotch broom and black berry, can invade clear cuts and other disturbed areas, and at least in the short-term exclude or delay conifer regeneration.

Areas harvested have been successfully regenerated with Douglas-fir. Slash was burned on many of the units prior to planting to create planting spots and hinder the invasion of competing vegetation. Plantations less than 5 years in age typically have a large brush component that can out grow the planted conifers. Except where soils are shallow or excessively drained the planted conifers over top the brush in about 10 years. At this time there are no plantation failures in this area.

B. General Site Description

The general **topography** is mountainous terrain composed of steep/very steep uplands with hard competent rock underlying shallow to very deep soils broken in a stair step fashion by gentler ground of deeper soils. The proposed units are predominantly north to east facing, although other aspects are represented. Slopes mostly range from nearly flat (5%) to very steep (90%). Elevations range from 1500 to 3300 feet above sea level.

The **climate** is wet, characterized by mild winters and relatively dry summers. Yearly precipitation in the form of rain and snow ranges from about 54 inches at the lower elevations to more than 80 inches at some of the higher elevations. Precipitation occurs primarily between October and March as rain, with about 90 percent of the watershed in the transient snow zone. An ephemeral snow pack is common and can persist for months at the higher elevations in winter. At the lower elevations rain on snow events are a concern because of the potential for overloading the drainage system. Temperatures average 70 degrees F in the summer and 40 degrees F in the winter.

The **soils** in this area are developed from volcanic and volcanoclastic rocks consisting of massive beds of dacitic and andesitic ash-flow tuff and lesser amounts of flow rock of andesitic and basaltic composition. Bedrock outcrops are common on the inner gorges of stream channels and along ridge tops. The soils on the steeper slopes most commonly are loamy and have gravelly to extremely gravelly textural modifiers. In places rock outcrop is a major component and creates extremely steep pitches in slope. On the gentler slopes both clayey and loamy textures are common. Approximately one quarter of the area within the units has soils which are capped by coarse gravel with very little or no fine earth mixed in. These caps vary from three to twelve inches thick and commonly occur in steep/very steep rocky areas and the gentler ground immediately below these rocky areas. The steep/very steep slopes of the units of this sale generally have indicators of mild to moderate creep but lack tension cracks and other signs of failure in progress. The exception is activity along the outer margins (toe) of the hummocky bench of Unit 23D. The very steep scarp separating Units 23C and 23D has had relatively recent failures and looks unstable. All of the units in sections 23 and 24 have, to varying degrees, old skid trails from salvage or highgrading operations. Unit 23C was impacted the greatest. (See Scoping Summary, Appendix D and Soil's Report, Appendix F)

C. Affected Resources

Botanical - No threatened or endangered (T&E) species (either federal or state) were observed in the project area. The Special Status Plants (SSP) observed in the project area include Buxbaumia viridis, a Protection Buffer moss and Nephroma occultum, a Survey and Manage (S&M) lichen. At this time scotch broom is the only known noxious weed in the project area.

Cultural Resources - No known cultural resources exist in the project area, however site 35DO518 is located adjacent to unit 24A and B and outside potential operations.

Fisheries - None of the units are adjacent to fish bearing streams except unit 25A, which is adjacent to Canton Creek. Scaredman and Hipower Creeks have been surveyed for habitat using ODF&W protocol. These streams are steep and quickly become non-fish bearing. They do, however, serve as important contributors of cool water and gravel. Both streams have good shade and gravel, and fair amounts of Larger Woody Debris (LWD). Canton Creek has also been surveyed.

The importance of Canton Creek to steelhead has been recognized for some time, as Canton Creek has been closed to all fishing since the early 1970's. A juvenile fish outmigrant trap was operated on Canton Creek for four weeks in the spring of 1997. During this four week period, more steelhead and cutthroat trout were captured in Canton Creek than either Rock Creek or Little River, even though the Rock Creek and Little River traps were operated for almost twice as long. It should be noted that the trap efficiencies in Canton Creek were higher than in the other traps, and a full season of trapping is required before definite conclusions can be drawn. However, the large numbers of steelhead and cutthroat captured in a relatively short period of time do suggest that Canton Creek is an important watershed for both steelhead and cutthroat. Canton Creek also has numerous large holding pools that are important for over-summer survival of summer run steelhead. Large cutthroat have also been observed in these holding pools.

Hydrology - The proposed project is located predominately within the Canton Creek Analytical Watershed (AWS), a Tier-1, Key Watershed. All proposed units are located within the Canton Creek Subwatershed, however, the units are scattered in six drainages: Coon Creek, Scaredman Creek, Lower Canton Creek, Hipower Creek, Bloody Point and Camp Creek and minor acreage (~3 acres) is located in the Middle North Umpqua AWS. The Department of Environmental Quality (DEQ) conducted an assessment of nonpoint source (NPS) pollution related water quality conditions. The results of the assessment were published in 1988 (*1988 Oregon Statewide Assessment of Nonpoint Sources [NPS] of Water Pollution*). The report identified pollution type and severity. Canton Creek was rated as a moderate problem by observation for sedimentation and a severe problem for nutrients and structure with data. The tributaries that flow into Canton Creek were not identified in the NPS assessment. The Department of Environmental Quality 1994/1996 303d List of Water Quality Limited Water Bodies (July, 1996) under Section 303(d)(1) of the Clean Water Act listed the Water Body Parameters of Habitat Modification, Sediment, and Temperature (summer) for Canton Creek (mouth to Pass Creek) not expected to meet surface water quality standards.

Wildlife -Thirty two nonfish special status species are known or are suspected to occur in the Canton Creek Watershed (see Table 14, Wildlife Specialist Report, Appendix F).

IV. ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytical basis for the comparisons of the alternatives. The probable consequences (impacts, effects) each alternative would have on selected resource(s) are

described. This section is organized by the alternatives and the effects on resources by the key issues identified in section I paragraph G as well as the direct, indirect and cumulative impacts on the other resource values. The environmental consequences for these resources are more fully analyzed in Appendix F (Analysis File). This Appendix contains Specialist's Reports and the supporting information for this analysis. The EIS and FSEIS analyzes the environmental consequences in a broader and more detailed context. This EA does not attempt to reanalyze all possible impacts that have already been analyzed in these umbrella documents but rather to identify the particular site specific impacts that could reasonably occur. NOTE: A detailed analysis "Compliance with Aquatic Conservation Strategy Objectives" is contained in the Analysis File (Appendix F).

Implementation of this project would result in the irreversible or irretrievable commitment of resources in the loss of old growth forest, if this area is managed on an 80 to 150 year rotation. An irretrievable commitment of the use of fossil fuels, would result in either of the alternatives.

A. No Action Alternative:

This alternative would not meet the RMP (pg. 15) objective of producing forest commodities that would contribute to the local economy for this particular project.

Changes in stand structure and species composition would result from natural processes including growth, fire, windthrow, disease and insects, and landslides. The area would naturally regenerate following disturbance events. The potential for wood volume production is reduced because the time required for stand establishment is increased and there are usually considerably fewer merchantable trees allocated to the available growing space.

Botanical - There would be no change to this resource.

Fisheries - Under this alternative, no change from the existing condition is anticipated. The existing shade would be maintained, thereby maintaining stream temperatures. No new roads, temporary or permanent would be built, nor would there be any road renovation. There would be no indirect effects to the fisheries resources as a result of alterations to the hydrologic cycle.

Hydrology (Key Issue: Water Quality)

There would be no change in the current condition.

Soils (Key Issue: Slope Stability)

The soils related risks and impacts identified for the action alternatives would not occur. Drainage improvements on existing roads that would have been used for haul and improvement of the 25-1-26.1 which has drainage problems and sidecast failure risks would not occur.

Wildlife - Habitat conditions would not be improved for any species -- nor would they be harmed.

B. Proposed Action Alternatives:

The following paragraph discusses the direct impacts (i.e. impacts caused by the action at the same time and place) and indirect impacts (i.e. impacts caused by the action but occur later in time and farther removed in distance) of the proposed action.

Botanical - Loss of canopy cover might reduce diversity in the area. Roads could reduce potential habitat. Both of these impacts would be in the short-term as well as long-term.

Fisheries - Both action alternatives have full ROD prescribed Riparian Reserves on all streams. The Forest Ecosystem Management Assessment Team (FEMAT) report determined that the Riparian Reserves were adequate to maintain certain fish habitat creating mechanisms from the effects of harvest (exclusive of road building). Specifically, the Riparian Reserves protect bank stability, LWD recruitment, shade, and water quality (FEMAT, p. V-26). There would also be a certain amount of road improvements associated with the sale. Road improvements involve improving the drainage to reduce the drainage density and rocking the road surface to reduce sedimentation. This is expected to have a positive effect on the aquatic system.

Hydrology (Key Issue: Water Quality)

The greatest direct impact would be on the reduction of the watershed considered hydrologically recovered (i.e. lands are considered fully recovered at stand age 40). After harvest, the reduction of hydrologic recovery for age class >40% would result in a 0-5% reduction in the hydrologic recovery for the drainages, a 1% reduction for the Canton Creek Subwatershed and no change in the hydrologic recovery for the AWS (see Specialist Report, Appendix F). However, the hydrologic recovery percents do not take into account any partial recovery and may represent a lower potential recovery than may actually exist due to regrowth of regenerating stands of various ages.

Sediment sources could be potentially available from the temporary road construction. This availability of sediment would exist from the time of construction to reclamation / revegetation. Generally, revegetation is rapid during the first year adding protection from erosion but gradually declining after that. Temporary spur roads would be same season use roads. During this time period, when conditions are generally dry, road surface erosion potential for sediment delivery to streams is low (Little River Watershed Analysis, 1995).

Soils (Key Issue: Slope Stability)

A risk assessment was done to determine if any of the potentially unstable areas meet the requirement for riparian reservation. Considerations were given for potential for failure and impact to water quality (see soils report, Appendix F). The very steep scarp on the northern edge of Unit 23C and the toe of the bench of Unit 23D were determined to be unstable and the ID team dropped these areas from the proposed units. A very steep area in Unit 35AB met the criteria and was reserved. The others can be harvested within the standards and guides of the RMP. The adopted project design features which help reduce harvest related impacts to

slope stability are helicopter yarding in Units 23A, 25A, 25B, 27A, and 35AB, dry season uphill skyline yarding with as much suspension as possible in Unit 26B, and retention tree placement in these units. The absence of broadcast burning on these slopes would also be beneficial.

The proposed temporary dry season spur in Unit 26B on 30 to 50 percent cross slopes would not be a big negative factor for slope stability if disturbance widths are kept narrow and drainage is not concentrated onto small areas of the steep/very steep slope below.

The RMP (p. 62) guidelines for ground based activity in Units 23B, 23C, 24A, 24B and 26B can be met if the best management practices on page 131 of the RMP are followed.

Wildlife - The action alternatives would have similar impacts to all species of concern -- loss of, or gain in habitat (see Table 2, Wildlife Specialist's Report, Appendix F). The removal of 217 acres of late successional and old growth habitat would have a direct impact on the provincial home range of two spotted owl sites and the removal of 17 ac of suitable habitat from designated critical habitat for the NSO (OR-25).

C. Cumulative Impacts Analysis

The following paragraph discusses the cumulative impacts (i.e. the incremental impacts of the action when added to other past, present and foreseeable future actions).

Botanical - Loss of diversity within the road prism due to road construction would be long-term unless roads are decommissioned.

Fisheries - NMFS Biological Opinion (March 18, 1997) on the RMP concluded that “[g]radual improvements in habitat conditions for salmonids are expected on these lands as a result of LRMP [Lands and Resource Management Plan] and RMP implementation.”

Hydrology (Key Issue: Water Quality)

Over the longer time frame (10 yr/2005 projection), the drainages would have recoveries of 50 to 86%. Furthermore, the Canton Creek Subwatershed (>40 years) hydrologic recovery may reach about 61% and the Canton Creek Watershed would reach about 65%. The Canton Creek Watershed Analysis identified a Desired Future Condition (DFC) of 60 to 75% for the watershed. The projection to 2005 may indicate that the proposed harvested acres would still permit the DFC to be realized for the subwatershed and analytical watershed, as based on hydrologic recoveries provided by the Canton Creek Watershed Analysis.

Soils (Key Issue: Slope Stability)

Cumulative impacts to the watershed in terms of water quality would be expected to change little in the absence of large slides impacting streams due to the incorporation of Best Management Practices and Project Design Features. The risk of such slides occurring is not considered significant for this action. Site productivity for the units in sections 23 and 24 can

ultimately be enhanced with good execution of best management practices for ground based activity. This would have a small favorable effect on site productivity cumulative impacts.

Wildlife - The removal of suitable spotted owl habitat and suitable dispersal habitat continues to degrade the ability of this watershed to support viable spotted owl core areas. This sale reduces available habitat at 0309A and 4019 by 6 and 9 percent, respectively. Harvest on Federal and private lands have reduced available habitat to 34 and 40 percent of the provincial home ranges (owl sites 0309A and 4019, respectively).

V. CONTACTS, CONSULTATIONS, AND PREPARERS

A. Agencies, Organizations, and Persons Consulted

The Agency is required by law to consult with the following federal and state agencies (40 CFR 1502.25):

1. **Threatened and Endangered 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 Biological Opinion (BO) was received from the **US Fish and Wildlife Service** (USF&WS) on February 13, 1998. The BO concluded the proposed action is ". . . not likely to jeopardize the continued existence of the bald eagle, white-tailed deer, spotted owl or murrelet or adversely modify designated critical habitat for spotted owl or murrelets" and an "Incidental Take (i.e., "any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency . . .") Statement" was issued. The USF&WS has stipulated terms and conditions for the Incidental Take having to do with seasonal restrictions for the Northern spotted owl. The BLM - Roseburg's Biological Assessment for Endangered Species consultation has been submitted to the **National Marine Fisheries Service** (NMFS). The Biological Assessment was a "may affect" for coastal cutthroat trout and coho salmon. A BO has not been received from the NMFS.
2. **Cultural Resources Section 106 Consultation** - Consultation as required under section 106 of the National Historic Preservation Act with the **State Historical Preservation Office** (SHPO) was completed on October 20, 1997 with a "No Effect" determination.

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. Two letters were also sent to **adjacent or nearby landowners**. No comments were received.
2. This project was included in the Roseburg District Planning Update (Summer 1997) going to approximately 200 addressees requesting **public scoping**. No comments were received.

3. A 30-day **public comment period** will be established for review of this EA. A “Notice Of Availability” will be published in the Roseburg 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 Roseburg News Review. Notification will also be provided to certain State, County and local governments (See Appendix G - Public Contact).

C. List of Preparers

Lyle Andrews	Engineering
Isaac Barner	Cultural Resources
Kevin Cleary	Fuels Management
Dan Couch	Watershed Analysis
Dan Cressy	Soils
Dave Erickson	Recreation / VRM
Chris Foster	Wildlife
Dick Greathouse	Project Lead
Darrel Green	Project Engineer
Al James	Silviculture
Fred Larew	Lands
Jim Luse	EA Coordinator / EA Preparer
Trudy Rhoades-Flock	Hydrology
Elijah Waters	Fisheries
Steve Weber	Presale Forester
Ron Wickline	Botany

References Cited

- Biological Opinion and Conference Opinion - Implementation of Land Management Plans (USFS) and Resource Management Plans (BLM) (NMFS, March 18, 1997)
- BLM - Instruction Memorandum No. OR-97-009, "Interim Guidance for Survey and Manage Component 2 Species: Red Tree Vole", Nov. 4, 1996
- BLM Manual 9015 - Integrated Weed Management, Dec. 2, 1992
- Canton Creek Restoration Environmental Analysis (EA # OR-104-98-01), Feb. 27, 1998
- Department of Environmental Quality, 1988. 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution, Oregon State Department of Environmental Quality, Portland, Oregon.
- ESA Section 7 Consultation on FY98 Timber Sales on the Roseburg BLM District, Umpqua River Basin (NMFS, September 26, 1997)
- 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) (Feb. 1994)
- Forest Ecosystem Management: An Ecological, Economic, and Social Assessment, Report of the Forest Ecosystem Management Assessment Team [FEMAT] (July 1993)
- Late Successional Reserve Assessment Oregon Coast Province - Southern Portion (RO267, RO268) (Oct. 1996)
- 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) (April 13, 1994)
- Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan (FY 1998)
- Roseburg District Record of Decision and Resources Management Plan (RMP) (June 2, 1995)
- USDA/USDI, 1995. Little River Watershed Analysis, September 1995. Aquatics Ecosystems. Umpqua National Forest and Roseburg Bureau of Land Management.
- USDI, 1995. Canton Creek Watershed Analysis, May 12, 1995. Roseburg District Bureau of Land Management.
- Western Oregon Transportation Management Plan (BLM - Oregon State Office, June 1996)
Other references as cited in the individual Specialist's Reports (Appendix F - Analysis File)