INTRODUCTION

The Environmental Assessment (EA) is a site specific analysis of potential environmental impacts which could result with the implementation of a proposed action. The EA assists the Agency in planning and in making a determination as to whether there would be any "significant" impacts resulting from proposed actions. This EA has been prepared for the Swiftwater Resource Area's proposed **FOGHORN CLEGHORN COMMERCIAL THINNING**. This proposal is in conformance with the *Roseburg District Record of Decision and Resources Management Plan* (RMP) dated June 2, 1995. This proposal is also in conformance 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) or otherwise known as the "Northwest Forest Plan" (NFP) 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. 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 adhered to. "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

A. Need for Action

The FSEIS and the RMP 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). The

Swiftwater Resource Area proposes to offer the **FOGHORN CLEGHORN COMMERCIAL THINNING** for auction in fiscal year 1999. This proposal would help meet the Swiftwater Resource Area's annual harvest commitment or probable sale quantity (PSQ). The RMP states that ... "Commercial thinning would be applied where practical and where research indicates there would be gains in timber production" (RMP, pg. 105). Silvicultural stand exams indicate that the stands would benefit from a thinning at this time.

B. Description of the Proposal

The proposal is to harvest timber in the Middle Smith Watershed located in Sections 3, 4, 5 and 8; T21S R7W, W.M. (see maps, Appendix A through C). A portion of the trees in this stand would be removed to provide additional growing space for the remaining trees (thinning). The proposed project area is approximately 30 road miles northwest of Drain and 40 air miles north northwest of Roseburg, Oregon. Approximately 400 acres were analyzed for potential harvest activities. This project is within the Matrix and Riparian Reserve Land Use Allocations and is in the Upper Smith River Key (Tier 1) Watershed. New 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 action alternatives, no action alternative and alternatives considered but eliminated.

C. Background (Watershed Analysis)

The Foghorn Cleghorn Commercial Thinning occurs across three drainages: Hard Slides (3,284 acres), Smith Front (1,291 acres) and Cleghorn Creek. (3,290 acres). These drainages are within the Middle Smith Watershed which covers approximately 49,032 acres (77 square miles). The Smith River watershed analysis (WA) (October 31, 1995) and the Upper Smith River Fifth Field WA (Second iteration, July 1998) were used in this analysis and is available for public review at the Roseburg District office.

The ROD 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 (ROD, pg. C-44). Any timber stands greater than approximately 80 years of age are considered late-successional habitat (ROD, pg. B-2). Because the Preferred Alternative in this EA proposes to commercially thin timber stands that are 30 to 40 years of age there would be no change in the amount or percentage of late-successional type forests on federal lands within the Upper Smith River Watershed. Currently 15,533 acres (28%) of the Federal ownership in the Upper Smith River Fifth Field watershed is in late-successional forest.

The Foghorn Cleghorn commercial thinning occurs within that portion of the matrix which has been designated by the RMP as a "General Forest Management Area" (GFMA). This Land Use Allocation is managed on a regeneration harvest cycle of 70 - 110 years.

D. Objectives

1. For the Matrix portion:
   a. “Produce a sustainable supply of timber and other forest commodities " (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.

2. For the Riparian Reserve portion:
   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 in order to comply with the ACS objective #8 of ‘restoring structural diversity of plant communities in riparian areas’.

3. Implement ecosystem management as outlined in the ROD and RMP.
   - avoid damage to riparian ecosystems and meet the objectives of the "Aquatic Conservation Strategy" (ROD, 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

The Swiftwater Area Manager will need to decide:
- if this analysis supports the signing of a FONSI.
- whether to proceed with the preferred alternative, modify the preferred alternative, choose another alternative or accept the no action alternative.

F. Issues considered but eliminated from Detailed Analysis

The following concerns were identified by the Interdisciplinary Team (IDT) during project design. They were eliminated from further analysis because: (1) project design features (PDF's) included in the preferred alternative would sufficiently mitigate 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 ("Issue Identification Summary") and addressed the Specialist's Reports in Appendix F.

1. Wildlife Concerns
   a. marbled murrelet nesting
   b. Possible presence of Red tree voles
   c. Maintaining a hardwood component

2. Soils Concerns
   a. Slope stability on steep slopes
   b. Soil compaction due to ground based logging

3. Hydrological Concerns
   Old log fill stream crossings in Unit 5C

4. Botanical Concern
   The spread of noxious weeds

"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. Farm Lands (prime or unique)
5. Floodplain
6. Native American Religious Concerns
7. Threatened or Endangered Species
8. Wastes, Hazardous or Solid
9. Water Quality, Drinking / Ground
10. Wetlands / Riparian Zones
11. Wild and Scenic Rivers
12. Wilderness

These resources or values (except for item #7) 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 to be 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 #7 is addressed in the Specialist's Reports (Appendix F).

G. Issues to be Analyzed

The following concern was identified by the ID Team as having sufficient concern to warrant more detailed analysis and will be addressed in section IV, "Environmental Consequences" (pg. 9-10) as a key issue.

Impacts to the fisheries resource

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the no action and action alternatives including the preferred (proposed) action alternative as well as any alternatives that were considered but eliminated from detailed study. As such these alternatives represent a range of reasonable potential actions. This section also discusses specific design features which would be implemented under the action alternatives. All action alternatives were designed to be in conformance with the ROD and RMP.

A. The No Action Alternative (Alternative 1)

There would be no entry for the harvesting of timber within the bounds of the project area under this alternative. Harvest would occur at another location within Matrix lands in order to meet harvest commitments.

B. The Action Alternatives

The ID Team considered two action alternatives:

Alternative 2 - Single Entry Commercial Thinning

Commercial thinning in the GFMA and Riparian Reserves (stand age 38 years) with a potential regeneration harvest on or after stand age 60 in the GFMA and possible stocking control in the Riparian Reserves. The prescription would call for a heavier thinning removal at this time.

Alternative 3 - Multiple Entry Commercial Thinning

Commercial thinning in the GFMA and Riparian Reserves (stand age 38 years) with a potential second commercial thinning in 15 years (stand age 55 years) and a final regeneration harvest on or after stand age 100 in GFMA. The need to control stocking in the Riparian Reserves would be evaluated at these entry points. This prescription would call for a lighter thinning removal at this time.

Features common to all alternatives

1. Thinning from below (i.e. removal beginning with the smallest diameter trees).
2. Subsoil all skidtrails that are used and all temporary spur roads
3. Retain all existing coarse woody debris and snags that do not pose a safety hazard
4. Retain all individual remnant old growth trees, except those within the road right-of-ways

5. Maintain a hardwood component
6. New permanent road construction would be offset by decommissioning existing permanent roads.
7. All uphill cable logging would have one-end suspension.

C. The Preferred Alternative

Alternative 3 was selected as the preferred (proposed action) alternative. The proposed action would harvest approximately 4.3 MMBF (million board feet) or 6420 CCF (hundred cubic feet) of Swiftwater Resource Area's FY 1997 harvest commitment of 23.0 MMBF. Harvest activities would occur on eight units for approximately 387 acres of commercial thinning (7 acres are road right-of-way clearcut). Other activities would include: road construction, road renovation and improvement, road decommissioning, subsoiling of previously compacted skid trails, and riparian enhancement (in-stream work to remove of old fill areas and provide fish passage on selected stream crossings).

Approximately 1.24 miles of road would be constructed. 0.32 miles would be **permanent road** that would become part of the transportation system and 0.92 miles would be **temporary road** which would be subsoiled after use and returned to the productive land base. Approximately 145 ft. of temporary road construction would occur within the Riparian Reserves. **Road renovation and improvement** would occur on approximately 11.2 miles public road and would consist of brushing (clearing road side brush), reshaping ditches and road surfaces, installing or replacing culverts and resurfacing with crushed rock.

Full road decommissioning (i.e. hydrologic obliteration) consisting of "closing and stabilizing ... to eliminate potential storm damage and the need for maintenance" (S&G, pg. B-31) is proposed on approximately 0.7 miles of public road. These roads would be removed from the transportation system and returned to the productive land base. The following road segments are proposed for decommissioning: 21-7-3.7A, and 21-7-10.1A.

Timber harvest would be designed to reduce the density of (thin) the forest stand to promote increased growth on the remaining trees and recover wood fiber that would ordinarily be lost through natural mortality. The proposed action would require a mix of skyline cable logging (approximately 157 acres or 40%), helicopter logging (approximately 116 acres or 30%) and ground based (tractor) logging (approximately 114 acres or 30%). **Firewood cutting** of logging debris (slash) could occur in landing cull decks and within 100' of roads on Federal ownership within the project. Landing slash might be burned for **fuels reduction**.

D. Project Design Features As Part Of The Proposed Action

This section describes project design features (PDF's) which would be incorporated in conjunction with proposed action alternative. PDF's are site specific measures, practices, restrictions, requirements or structures included in the design of the project in order to minimize

adverse environmental impacts. These are listed in the RMP (Appendix D) as "Best Management Practices" (BMP's) which are measures to protect water quality and soil productivity, and in the ROD as "Standards and Guidelines" that projects must comply with in order to meet the requirements of the ROD. The following PDF's are included with the proposed action:

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 ROD (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 Middle Smith watershed has been determined to be the equivalent of 200 ft. slope distance, therefore Riparian Reserve boundaries would be approximately 200 ft. slope distance from the edge of nonfish bearing streams and 400 ft. slope distance from the edge of fish bearing streams. All units, except Unit 4A, are adjacent to fish-bearing streams (Smith River and Cleghorn Creek).

   1) Silvicultural practices would be applied within the Riparian Reserve's "to control stocking . . . and acquire vegetation characteristics needed to attain Aquatic Conservation Strategy objectives" (RMP pg. 25). The objective is to accelerate tree growth to promote larger trees and canopies, and provide a future source of large woody debris for stream structure. Approximately 150 acres of Riparian Reserve's would be thinned for this purpose.

   2) Streambank stability and water temperature would be protected by a 20 - 50 ft. no-cut stream buffer.

   3) Riparian habitat would be protected from logging damage by directionally felling trees within 100' of streams and yarding logs away from or parallel to the streams (i.e. logs would not be yarded across streams). In areas where this is not possible, full suspension would be required.

   b. This project is in a **Key (Tier 1) Watershed** (ACS Component #2). An objective in Key Watersheds is to "Reduce existing system and nonsystem road mileage ..." (S&G's, pg. B-19). The decommissioning of two road segments would result in a net reduction of 0.4 miles in the watershed.

   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 part of the proposed action and would include road decommissioning (0.7 miles) to reduce the road density and effects, road maintenance (11.2 miles) to improve drainage and reduce sediment delivery to streams, silvicultural treatments in second growth stands within the Riparian Reserves to restore structural diversity, removal of six log fill stream crossings in unit 5C and the stream restored to natural contour (see Appendix D) and ten stream crossings would be upgraded to improve fish passage.

2. **To minimize the loss of soil productivity (i.e. limiting erosion, reducing soil compaction, protecting slope stability and protecting the duff layer):**

a. **Measures to limit erosion and sedimentation from roads** would consist of: (1) Maintaining or improving existing roads (Road No. 20-7-27.0; 21-7-3.0, 3.4, 3.8, 3.9, 4.0, 4.1 and 5.0) to fix drainage and erosion problems. This would consist of maintaining existing culverts, installing additional culverts, and surfacing the road with crushed rock. (2) Building, using and decommissioning temporary roads in the same operating season (i.e. no over-wintering of bare subgrade). When logging is completed, the roadbed would be subsoiled, water barred, blocked and seeded with native species or a sterile hybrid mix depending on availability. (3) Restricting road renovation and log hauling on unsurfaced roads 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). (4) Restricting in-stream work (i.e. culvert replacement and fill removal) during periods of low flow (between July 1 and September 15). These are the BMP's (RMP, pg. 136-7) designed to minimize sedimentation and protect water quality.

b. **Measures to limit erosion and sedimentation from logging** would consist of: (1) Requiring skyline yarding on portions of units 3A, 3B, 4A, 4B, 5A, 5B and 5C. 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 furrowing would be hand waterbarred. (2) Helicopter logging (portion of Unit 3A, 4A, 5A and 5B) where partial suspension would not be possible. Logs would be lifted vertically off the ground and flown to landing areas on existing roads. (3) Limiting ground based logging, including road right-of-way clearing (Units 3A, 3B, 4B, 5A, 5B, 5C and 5D) 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 (i.e., the dry season extending beyond Oct. 15). (4) All skid trails that might route or channel water would be water barred.

c. **Measures to limit soil compaction** would consist of: (1) 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. Machines would be limited in size and track width to reduce compaction and trail width. Existing skid trails would be used wherever possible. (2) Subsoiling of decommissioned roads, temporary spur roads and skidtrails that with a winged subsoiler to mitigate compaction damage. 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 isolated minor ground based logging would be necessary. Such proposals may be subject to Interdisciplinary review.

d. **Measures to protect slope stability** would consist of reserving areas that could potentially impact the meeting of ACS objectives from the project (see Appendix D).

3. **To protect the wildlife legacies:**

a. Future nesting and roosting habitat for cavity dwellers would be provided by reserving most existing hard or soft snags. Note: Any snag deemed as hazardous to worker safety could be felled at the discretion of the operator and the approval of the BLM Sales Administrator. Such trees would be reserved and left in place as CWD.

b. Existing CWD would be preserved for habitat of organisms that require this ecological niche (ROD C-40, para. B). This is in the form of blowdown trees and logs remaining from previous logging.

4. **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.

b. No falling and cable/tractor yarding 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. If the Sales Administrator determines that, based on local conditions, excessive damage would not occur this date could be adjusted.

c. Yarder size would be limited to match the size of the yarder to the size of the timber in order to minimize damage from an overly large yarder.

5. **To enhance stand diversity:**

   a. All Pacific yew trees would be reserved.
   b. All tree species that are present would continue to be represented.
   c. Snags would be reserved as described in paragraph 3 above.

6. **To prevent 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 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 prevent the spread of noxious weeds:**
   Logging equipment would be cleaned prior to entry on BLM lands to remove weed seeds (BLM Manual 9015 - Integrated Weed Management).

D. Alternatives Considered but Eliminated

An alternative (alternative 4) that would have treated the Riparian Reserves differently from the uplands, or not at all, was considered by the ID Team. It was eliminated because: (1) there are currently no discernable differences in vegetation characteristics between the Riparian Reserve and upland areas, (2) the desire to regulate the density of the Riparian Reserve to accelerate the attainment of old growth characteristics has been determined, and (3) the Riparian Reserve network is extensive and the time required to implement and monitor this alternative would have been prohibitive.

III. AFFECTED ENVIRONMENT

This section describes the existing environment and as such forms a baseline for comparison of the affects created by the alternatives under consideration. Appendix F (Background Reports) contains Specialist's Reports with supporting information for this analysis. This project lies within the Oregon Coast Range Physiographic Province. The affected environment for this province is described in the FSEIS on page 3&4-21.

A. Stand Description

The proposed project would occur in young Douglas-fir plantations that were established after regeneration timber harvests. All of these stands were logged in the mid to late 1950's using tractors and downhill logging systems. The old records are not extensive, but it appears that most units were broadcast burned for site preparation and planted with Douglas-fir seedlings. Some broadcast seeding was done in small areas in subsequent years where seedling survival was poor. The average total age of the stands is 38 years and is based on planting records and stand exams.

All of the stands where the proposed action would occur contain areas that are currently in or are approaching the stem exclusion stage of forest development (suppression mortality). These are fairly uniform stands of Douglas-fir, with a minor component of western hemlock, western red cedar and incense-cedar. Crown closure is nearly 100 percent within much of the proposed units. The understory condition is affected by the length of time since crown closure. Where crown closure is 100 percent the understory is nearly devoid of green vegetation and the forest floor contains dead twigs and leaves with scattered sword fern and Oregon grape. Where some light is still reaching the forest floor hardwoods and shrubs including chinkapin, big leaf maple, alder, vine maple, hazel and ocean spray are found. Sword fern, Oregon grape, and salal are also prevalent.

B. General Site Description

The local relief upslope **topography** is moderately dissected and the gradient on side draws generally increases with elevation. The majority of slopes within the proposed units are gentle and under 45%. There are areas where slopes exceed 70%. Included in the greater than 70% slope category are small areas of 100% slope and rock outcrop (primarily Unit 3A). Elevations range from 500 to 1400 feet above sea level. Relief differences within the units range from 100 feet in Unit 5D to 800 feet in Unit 3A. The proposed units are all somewhat south facing.

The **climate** is wet, characterized by mild winters and cool relatively dry summers. Annual precipitation averages 65 to 70 inches, occurring primarily as rainfall between October and March . There is typically a long, frost free season, with temperatures averaging about 70 degrees F in the summer and 40 degrees F in the winter.

The **soils** of this project have developed over the sandstones and siltstones of the Tyee Formation. Where slopes are greater than 60 percent the soils are typically shallow to moderately deep but in some areas deep and very deep soils are major components. The shallow (Umpcoos Series)-moderately deep (Digger and Bohannon Series) soil complexes have gravelly and very gravelly loam surfaces and subsoils. Cohesiveness tends to be quite low in the very gravelly soils making them prone to ravel and shallow slipouts. The project area was heavily impacted by ground based yarding in the 1950's. A high density of skid trails were left,

many of them bladed and many of them still severely compacted. In the southern part of Unit 5C two main east-west lateral trails cross the stream draws over log fill culverts. These crossings are in varying degrees of failure. An unsurfaced road sideslopes the northern part and is in a state of healing from an erosion standpoint. (see Soil's Report, Appendix F).

C. Affected Resources

Botanical - No special status plants, survey and manage species or protection buffer species were observed in the project area. There are some localized infestations of scotch broom, a noxious weed, in the project area.
Cultural Resources - No known cultural resources exist in the project area.

Fisheries and Hydrology - There are three major fish-bearing streams in the proposed project: Smith River, Cleghorn Creek and the North Fork of Cleghorn Creek. The proposed project would take place in a Tier 1 watershed (Upper Smith River), affecting the Riparian Reserves of Cleghorn Creek, it's tributaries and Smith River. Cutthroat trout, an endangered species, and Coho salmon and Steelhead trout, proposed as threatened species, inhabit and utilize all, or portions of, these streams. The Oregon Department of Environmental Quality (DEQ) identified Cleghorn Creek as being water quality limited for summer stream temperature in the 1996 303d list. Smith River has been included in the 1998 draft list.

Wildlife -The Northern spotted owl was surveyed for but not found on the project area. The project lies within the range of the Marbled murrelet. Section 5 has had surveys according to protocol, however, the remainder of the project area was not surveyed because it is not within suitable habitat. Big game as well as a variety of neotropical birds can be found through out the drainages.

IV. ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytical basis for the comparisons of the alternatives and describes the probable consequences (impacts, effects) of each alternative on selected resources. This section is organized by the effects on resources by the issues identified in section I paragraph G by the alternatives. Appendix F (Analysis File) contains Specialist's Reports with supporting information for this analysis as well as addresses the environmental consequences for those resources that were not considered as key issues to be analyzed in the main body of this EA. NOTE: The Biological Assessment for the Endangered Species Act consultation contains a detailed analysis of how this project complies with the Aquatic Conservation Strategy Objectives and is contained in the Analysis File (Appendix F). Some irreversible and irretrievable commitment of resources would result from the implementation of this project. Crushed rock from quarries would be committed to reconstruction of the road system.

A. No Action Alternative:

The stands would continue to grow and develop under continual competitive stress and differentiate in time through self (natural) thinning. There would be a loss in volume production to mortality, and the opportunity for future commercial thinnings would be more restrictive. When overly dense young managed stands are allowed to self thin and differentiate, it would be expected to take more time for large diameter trees to develop, with additional risk of stand damage as well. The level of competitive stress remains high for long periods of time and this weakens the stand in several ways. One is structural and damage from wind and snow loads is more likely because the trees have poorly developed stem and root strength. Another is the ability to fend off disease and insect attack. The risk that the stand will be damaged from fire may also be increased due to the build up of dead woody material and standing dead trees, and the close proximity of trees to one another.

Impacts to the fisheries resource

There would be no replacement of problem culverts and cross drains, subsoiling of the old compacted skid trails or removal of the stream crossings in Unit 5C. This would result in a net detrimental effect to fish and the aquatic environment due to a continual delivery of sediment (fines), primarily from the Rd. 21-7-5.0 and the skid trail crossings in Unit 5C. If unattended, it can be expected to result in a degraded condition (water quality, substrate) in the Smith River and Cleghorn Creek, and in the intermittent stream channels that are adjacent to the roads.

B. Alternative 2 - Single Entry Commercial Thinning

Impacts to the fisheries resource

This alternative could result in a short-term detrimental effect in the vicinity of the project, but also a long-term beneficial effect to fish and the aquatic environment, as many fish passage problems and road rutting and erosion problems would be corrected. This alternative may cause more detrimental effects than Alternative 3 because it would retain fewer trees and have a higher potential for blowdown. This alternative could potentially degrade the aquatic habitat due to: 1) increased sediment delivery to nearby streams from roads, 2) alteration to the timing and magnitude of base and peak flows. The primary existing and potential sources of sediment associated with this project are roads (cutbanks and road surfacing). Sediment delivery from sale units is not expected due to erosion-limiting logging practices (skyline cable and helicopter yarding) and the protective buffer zones between the units and the adjacent streams. This impact would also be largely mitigated by decommissioning existing roads and not allowing temporary roads to overwinter.

C. Alternative 3 - Multiple Entry Commercial Thinning (Preferred Alternative)

Impacts to the fisheries resource

The impacts to the fisheries resource would be the same under this alternative as in Alternative 2 above, except that this alternative represents a more conservative cutting approach (i.e. less trees would be cut), resulting in a lesser disturbance from yarding and a lower blowdown potential than Alternative 2.

IV. 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. The required ESA consultation was accomplished with the **US Fish and Wildlife Service** (USF&WS) and the Biological Opinion (BO) was received on March 25, 1996. The USF&WS concluded that the proposed action is " . . . not likely to jeopardize the continued existence of the spotted owl or murrelet or adversely modify designated or proposed critical habitat for either species" and an "Incidental Take Statement" was issued. "Incidental Take is 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 . . . " (BO, pg. 18). The USF&WS has stipulated terms and conditions for the Incidental Take having to do with seasonal restrictions for the northern spotted owl and the marbled murrelet. The BLM-Roseburg's Biological Assessment (BA) for Endangered Species consultation was submitted to **The National Marine Fisheries Service** (NMFS). The BA was a "likely to adversely affect" for Umpqua River cutthroat trout and Oregon Coast steelhead trout. The Level 1 Team concurred with this determination. A BO has not been received from 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) is pending.

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) via the Summer 1996 Roseburg District Project Planning Update. No comments were received.

2. This project was included in the Roseburg District Planning Update (Summer 1996) going to 52 addressees. 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 has been 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
Dan Cressy	Soils
Darrel Green	Project Engineer
Alan James	Project Lead / Silviculture
Jim Luse	EA Coordinator / EA Preparer
Evan Olson	Botany
Don Rivard	Fisheries
Ed Rumbold	Hydrology
Steve Weber	Presale Forester
Joe Witt	Wildlife