CEDAR HOUSE TIMBER SALE
ENVIRONMENTAL ASSESSMENT
EA: OR125-97-15

Umpqua Resource Area
Coos Bay District
Bureau of Land Management

Prepared this 29th day of July, 1998 by:

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CHAPTER I. Purpose of and Need for Action

The Coos Bay District of the Bureau of Land Management (BLM), proposes to harvest timber in the Umpqua Resource Area in T. 21 S., R. 08 W., Section 33, Willamette Meridian. The proposed timber sale is located within the USGS Hydrological Unit code 1710030304, 5th field watershed. The proposed sale would be a regeneration harvest of approximately 111 acres (see maps in Appendix I). The action should attain the following management objectives:

- Help offer economic opportunities for year-round, high-wage, high-skill jobs by producing a predictable and sustainable level of timber harvest;

- Maintain the biodiversity and long-term health of the forest ecosystem through compliance with the Standards and Guidelines (S&G) contained in the Record of Decision (ROD) for 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* (Interagency, 1994), Northwest Forest Plan (NWFP), and also the Record of Decision for the Coos Bay District Resource Management Plan.

- Help meet the Coos Bay District's harvest commitment from the General Forest Management Area (GFMA), for FY98.

This Environmental Analysis (EA) is tiered to the *Coos Bay District Resource Management Plan* (RMP) and its *Record of Decision* (ROD) (BLM, May 1995) and conforms with the Northwest Forest Plan and its ROD. An analysis file containing additional information such as Interdisciplinary (ID) Team notes, and Resource Staff Input used by the ID Team to analyze impacts and alternatives is hereby incorporated by reference.

Proposal

The BLM is considering the harvest of approximately 111 acres of timber from this sale in fiscal year 1998. The proposed timber sale would be a regeneration harvest from six stands of timber. The unharvested acreage in the stands would consist of Riparian Reserves retained in accordance with the ROD guidelines. Cable logging systems, with one end log suspension, would be used to harvest the timber on Unit 1. Helicopter yarding would be used on Units 2, 3, 4, 5a, and 5b.

Northwest Forest Plan Considerations

The proposed sale area is located in the Paradise Creek and Lower Middle Umpqua subwatersheds within the GFMA land allocation (designated as "Matrix" lands in the Northwest Forest Plan). Approximately 75% of the project is located within a Tier 1 Key Watershed, Paradise Creek, in the USGS Hydrologic Unit code 1710030304, 5th field watershed. Regeneration harvests are consistent with the GFMA land allocation provided a watershed analysis has been completed, and all Standards and Guidelines for GFMA lands are applied. Watershed analysis for the Paradise Creek and the Lower Middle Umpqua subwatersheds have been completed.

A timber harvest in the USGS Hydrologic Unit code 1710030304 meets the ROD requirement for a 5th field watershed by currently having over 15 percent of the federal ownership in late-successional forest. Boundary widths for all Riparian Reserves are proposed to be established in strict accordance with the Standards and Guidelines contained in the ROD. Seasonally flowing or intermittent streams that did not receive the Riparian Reserves boundary widths were found to either lack a definable channel or display no evidence of annual scour.

Scoping

The primary purpose of scoping is to identify the agencies and public's concerns relating to a proposed project and define the issues and alternatives that are examined in detail in this EA. The general public was notified of the planned EA through publication of the District's semi-annual *Planning Update* and letters to adjacent landowners, agencies, and interested parties on the District mailing list for timber related EA's. The District received two responses, one from the Many Rivers Group of the Sierra Club and one from Umpqua Watersheds, Inc.

Identified Issues

Through the scoping process, issues were identified by the public, BLM Coos Bay District resource staff, and by the Umpqua Resource Area specialists who formed the ID Team for this project. None of the issues were controversial enough to create conflicts that would suggest different actions or mitigation from the Proposed Action. Therefore, the only alternatives considered under this EA were the Proposed Action and the No Action alternatives as required under Sec. 102(2)(E) of the National Environmental Policy Act. The resolution of some issues identified below were incorporated into the Proposed Action.

Potential issues identified, but eliminated from further analysis:

1. Issue: The continued transformation of this watershed to young tree plantations is adding to the high water run-off problem.
   Resolution: (See Chapter IV Environmental Consequences, Hydrology Section)

2. Issue: Unstable or potentially unstable soils should be retained as Riparian Reserves (RR) as outlined in the President's Forest Plan.
   Resolution: The Riparian Reserves (approximately 75 acres) and Timber Production Capability Classification (TPCC) ground that is designated as Fragile Non-Suitable Woodlands (FGNW) (approximately 22 acres) is withdrawn to comply with the Aquatic Conservation Strategy (ACS) and to limit yarding and new road construction through fragile sites.

3. Issue: Since this area is in the habitat of the endangered Umpqua Cutthroat Trout we must comply with the ACS by not further degrading the watershed-in any way-in any amount.
   Resolution: By applying the Northwest Forest Plan ROD Riparian Reserve standards and guidelines, riparian-dependent resources can be "maintained" at existing condition levels and "restored" through time and meet ACS objectives.

4. Issue: Loss of soil productivity: The project could result in compacted and eroded soils, loss of nutrients, and loss of down woody debris.
   Resolution: There will be negligible soil compaction. Five units are to be helicopter yarded, and one unit cable yarded. There will also be negligible soil erosion and loss of soil nutrients unless significant landsliding were to occur following logging, and this is not expected.

   Some down CWD would probably be lost during the project; however, all Class 3, 4, and 5 down logs would be retained and 120 linear feet per acre of Class 1 and 2 down logs would be left.

5. Issue: Erosion: Timber harvest is contemplated on steep slopes. Such logging results in increased chance of mass-wasting and erosion. Please use best available science in analyzing increased risk of mudslides.
   Resolution: It is true that logging on extremely steep slopes probably increases the chance of landsliding, but only when very low return frequency storm events hit the area. Landsliding is a natural part of this ecosystem, and is largely responsible for much of the landscape transformation that has taken place in the Oregon Coast Range.

There is no field validated landslide hazard model available for our District. Our experience in this area with cable logging and road construction has not produced significant landslide activity. There will be no new road construction on the proposed sale. With the buffering effect of the Riparian Reserves, sediment is not expected to reach stream channels and downstream fish bearing streams.

6. Issue: Economics: Timber harvest has economic effects other than timber jobs and stumpage value. Please use best available science to analyze the value of the uncut forest on the local economy in terms of employment, earnings, and growth.
   Resolution: The economic issues were analyzed under the Final Supplemental Environmental Impact Statement (FSEIS)(pp. 3&4-260 to 319) and addressed in the Coos Bay District RMP (pp. 4-124 to 137).

7. Issue: Loss of wildlife habitat: Timber harvest increases habitat for non-old growth and edge species and selects against old-growth dependent species. Please analyze the expected and cumulative effects of the proposed action on old-growth dependent species.
   Resolution: Under the NWFP a certain amount of timber harvest was prescribed for GFMA lands on the district that would result in the loss of wildlife habitat. Effects at a broad scale were previously analyzed in the Final Supplemental Environmental Impact Statement (FSEIS) for the NWFP. Expected and cumulative effects of the proposed action are addressed in the Environmental Consequences Section of this document.

8. Issue: Port-Orford-cedar root rot: Port-Orford-cedar root-rot is prevalent in the District and is spread primarily by roads and logging activity. Please perform site-specific analysis of the effects of the proposed action and mitigation efforts specifically with regard to Port-Orford-cedar root rot as mandated by the Port-Orford-cedar Management Guidelines.
   Resolution: (See Chapter III - Affected Environment, Vegetation).

9. Issue: Loss of bio-diversity: The Proposed action can result in a loss of bio-diversity in all life kingdoms. Please analyze the current conditions for vertebrate and invertebrate animals, vascular and non-vascular plants, and other non-plant non-animal species such as fungi, bacteria, and microbes.
   Resolution: The Coos Bay District Proposed Resource Management Plan Environmental Impact Statement (Volume 1) described biological diversity for Coos Bay District lands and the effects that the District's Resource Management Plan would have on it.

   Current conditions for animals, plants, fungi, etc. were analyzed at a landscape level in the FSEIS for the NWFP. Current conditions for these species in the vicinity of the proposed action are addressed in Affected Environment Section of this document.

10. Issue: Increased risk of fire: Resetting the vegetative trajectory results in greater risk of hotter fires. Please analyze the increased short and long-term fire risks associated with the proposed action.
    Resolution: Within the proposed timber sale area fire has been the dominant event and played a major role in plant succession. Following harvest the short-term fire hazard will be reduced by the use of prescribed broadcast and/or spot burning. These fuels treatments will reduce the overall hazard and risk to an acceptable management level by reducing those fuels that are primarily responsible for fire ignition and spread.

11. Issue: Public safety: Increased fire and mudslide risk are just the tip of the public safety issues associated with the proposed action. Please analyze all the public safety risks associated with the proposed action.
    Resolution: The use of prescribed fire is intended to reduce fuels that aid wildfire ignition and spread and provide for good site preparation to improve an areas plantability. In addition, the Oregon Department of Forestry establishes Regulated Use and Industrial Fire Precaution Levels that will be followed. According to the Coos Bay District's

RMP/EIS there are no rural/urban interface areas that would be threatened by any increased fire risk resulting from the proposed action.

Even if significant landsliding (as debris torrents) were to occur, it is highly unlikely that the soil/rock material would reach Hwy 38. There are no residences below these units that would be impacted by mudslides in the proposed area. No other public safety issues have been identified.

12. Issue: Loss of visual quality: Clearcuts negatively affect factors such as quality of life and tourism which have strong positive effects on the economy. Please analyze the effects of the proposed action on the local and regional economies.

Resolution: The majority of the proposed sale area is located in a basin that is not visible from Hwy. 38, Paradise Creek road, or neighboring forest roads. Units 1 and 2 are located facing the Umpqua River, but are out of view of Hwy. 38 due to the gentle slope and surrounding residual timber stands in the adjacent area. The proposed sale area primarily receives use from hunters and some minor forest product users. Economic issues have been analyzed in the District Resource Management Plan (RMP) and FSEIS.

13. Issue: Decreased water quality: Clearcuts (especially on steep slopes) negatively affect water quality, increase sedimentation, and increase water temperature and sun exposure. Please analyze these effects in detail.

Resolution: The Cedar House timber sale will have no new road construction occurring, therefore impacts to water quality, particularly increased sedimentation will be minimized.

Cedar Creek, and in fact none of the other Paradise Creek tributaries monitored for water temperature, had summer time water temperatures elevated above state standards for cold water biota. The Riparian Reserve widths installed will effectively maintain existing water temperature regimes. Most streams are provided with a large measure of topographic shading due to their aspect within this drainage.

14. Issue: Decreased air quality: Slash-burning negatively affects air quality. Increased brush may increase pollen counts. Please analyze air quality effects of the proposed action in detail.

Resolution: Any prescribed burning would comply with the guidelines established by the Oregon Smoke Management Plan (OSMP) and the Visibility Protection Plan. Any increased pollen counts would be off-set by removal (logging and rehab) of existing species.

15. Issue: Negative effects on fisheries: By negatively affecting water quality and removing nutrients from the ecosystem, clearcuts negatively affect fisheries. Please analyze these effects in detail paying particular attention to the effects on threatened, endangered, and indicator species of anadromous and fresh-water species.

Resolution: There will be very minimal, and most probably, an unmeasurable impact on water quality and therefore minimal negative affects to the fishery or other aquatic species due to water quality degradation.

Much of the nutrient/organic matter input to streams comes directly from streamside riparian vegetation in the form of falling leaves, needles, twigs, and branches. Riparian Reserves along streams within the proposed sale area will provide nutrients to the ecosystem. There will be little to no negative effects on resident or "special status" fisheries.

16. Issue: Negative effects on threatened and endangered species: Please analyze the effects of the proposed action on all threatened and endangered species of local concern, particularly spotted owl, marbled murrelet, wolverine, coho salmon, bull trout.

Resolution: The Aquatic Conservation Strategy objectives will be met and riparian-dependent resources, including threatened or endangered aquatic species, can be "maintained" at existing condition levels and "restored" through time.

Effects of timber harvest on threatened and endangered species were analyzed in the FSEIS for the NWFP. The wolverine and bull trout do not occur in vicinity of the proposed action. Effects on threatened and endangered species of local concern are addressed in the Environmental Consequences Section of this document.

17. Issue: Roads: The Coos Bay District has extremely high road densities (both open and closed). Please analyze the effects of the proposed action on road densities as measured in aggregate (including all non-fully-decommissioned roads). How will the District reduce aggregate road densities through the proposed action?

Resolution: One of the key factors in selecting the harvest system was the poor accessability of units to good yarding locations, amount of road renovation, and new construction that would be required to harvest this sale. There would be no new road construction in this sale. The majority of the proposed sale will be logged by helicopter. Units 2, 3, 4, 5a, and 5b would be yarded by helicopter and logs flown to a newly constructed helicopter landing area located on a ridge on the 22-08-10.1 road. This landing would consist of 2 decking areas and 1 log landing that are approximately 2.2 acres combined. The Cedar Creek Ridge road (22-08-10.1) would have renovation completed on 3.35 miles.

18. Issue: Site-specific analysis: Please perform detailed site-specific analysis of all the above significant issues using best-available science.

Resolution: This is part of the ID Team process and will be incorporated into the EA.

19. Issue: Long and short-term monitoring: Please establish protocols that conform to best-available science for monitoring all of the effects of the proposed action.

Resolution: (See Chapter II, Design Features and Management Requirements, Monitoring)

20. Issue: Long and short-term cumulative effects: Please analyze the long and short-term cumulative effects of the proposed action on all the above listed environmental factors and any other significant issues which are raised during scoping.

Resolution: (See Chapter IV, Environmental Consequences, Cumulative Effects)

21. Issue: Commitment to public input: The Coos Bay BLM has shown a strong resistance to considering public input as required by NEPA. The Coos Bay BLM also tends to fail to inform the interested public when decisions are made and become effective. Commenters have had numerous problems getting notification on Beyers-Deadhorse and Sandy-Remote projects in this District. Please commit to informing the public in a timely fashion as the project progresses.

Resolution: This is not an environmental issue that can be addressed in the EA. However, the Coos Bay District has a commitment to allow for public input in the NEPA process. For example, the Beyer's Deadhorse decision was re-advertised to allow more time for concerned citizens to protest the decision. In addition EAs are now being put on the BLM web site (http://www.or.blm.gov/coosbay) to reach more publics. Various requester names/addresses have also been added to the District's mailing list for Notice of Sale instructions.

CHAPTER II - Alternatives Including the Proposed Action

Alternative 1 - No Action

Under this alternative, the project area would not be harvested at this time, but may be harvested in the future. Another project area in the GFMA would be proposed for harvest to meet the target volume identified in the Coos Bay District RMP ROD. (RMP ROD, Appendix E, p. E-9)

Alternative 2 - Proposed Action

Under this alternative, the proposed action would be accomplished with a regeneration timber sale that would consist of five units, totaling approximately 111 acres, harvesting mature trees from six stands. The gross area of the six stands is approximately 184 acres. The unharvested acreage would consist of approximately 75 acres of Riparian Reserve. Within the harvest boundary there would be scattered and clumped green trees retained in accordance with the ROD guidelines. Snags would be retained when safety concerns do not conflict.

Harvest Systems

A Cable logging system would be used to harvest the timber on Unit 1. This would require constructing 2 landings on the Cedar Creek Ridge Road (22-08-10.1) which is a ridgetop location above Unit 1.

Units 2, 3, 4, 5a, and 5b would be yarded by helicopter and logs flown to a newly constructed helicopter landing area located on a ridge on the 22-08-10.1 road. This landing would consist of 2 decking areas and 1 log landing that are approximately 2.2 acres combined. The Cedar Creek Ridge road (22-08-10.1) will have 3.35 miles of road renovation completed as part of this sale.

Site preparation

Require directional falling away from all unit boundaries.

Following harvest, all units would require slashing competitive brush species, including but not limited to vine maple, rhododedron, huckleberry, salmonberry, poison oak, etc. Hardwoods less than 4 inch in diameter would be slashed with the exception of single stem Oak trees which would not be slashed. Undesirable conifer reproduction (damaged and suppressed) would be slashed within the logging units.

Prior to prescribed broadcast burning in Units 1 and 2, hand pullback of all slashed brush species (regardless of diameter or length), and logging slash ½ to 4 inch in diameter and greater than 3 feet in length that is within 10 feet of identified Coarse Woody Debris (CWD) and snags would be required.

Units 1 and 2 would receive a prescribed broadcast burn using aerial or hand ignition. These units would be burned during spring-like conditions.

Hand piling of all cut brush (regardless of diameter and length), and hardwood and logging slash 1/2" to 4" in diameter and greater than 3' in length, would be required on Units 3, 4, 5a, and 5b. Handpiles would be covered with black polyethylene plastic and burned in winter like conditions under conditions authorized by the Oregon Smoke Management Plan.

In Units 4, 5a, and 5b, the residual understory conifer will be examined after logging by the Umpqua Resource Area Silviculturist to determine if the remaining conifers meet target stocking

levels. The authorized officer will then direct the purchaser to thin specific areas and remove damaged reproduction to attain desired stocking levels. These potential thinning areas would be small diameter non-merchantable patches within the harvest units. This potential thinning would occur following site preparation.

Design Features and Management Requirements

The following design features and management directives would apply to Alternative 2 (the Proposed Action).

- Road renovation and landing construction would be required in the dry season when activity would lead to the least amount of soil erosion or stream sedimentation. Road renovation would consist of brushing, ditch cleaning, and the cleaning out of culverts and catch basins. Two landings would be constructed to accommodate cable yarding on Unit 1 and one helicopter landing (approximately 2.2 acres) would be constructed to accommodate helicopter yarding. Landing construction would involve tree cutting and removal, stump removal, and basic leveling to provide for an efficient landing and provide for adequate drainage. Best Management Practices (BMP) would be used for the construction of landings and road improvement.

- Maintenance of the existing roads would be accomplished during the life of the sale to minimize the disruption of the hydrologic flow. Bare soil areas from landing construction and culvert replacement would be seeded with the District approved seed mix.

- Uphill cable yarding, with one end log suspension, would be used on Unit 1. Lift trees may be required to achieve desired suspension. If lift trees are selected from outside the unit boundary, trees would be collared and protected from damage. Any damaged lift trees within the Riparian Reserve would be left on site.

- In accordance with the recommended level of green tree retention in the Coos Bay District RMP ROD (ROD p. 22) 7 green conifer wildlife trees and 1 bigleaf maple (10"d.b.h. and larger single stem tree) per acre would be retained as scattered individual or clumped trees. All oak trees within the sale would be retained. Tree species would be retained in the approximate percentages represented in the stand prior to harvest in order to ensure biodiversity.

- CWD would be retained on the units in accordance with the S&G's in the Coos Bay District ROD and guidance from the Regional Ecosystem Office. All Class 3, 4, and 5 down logs would be retained. The purchaser would be responsible for leaving a minimum average of 120 linear feet per acre across each unit of Class 1 and 2 down logs representing the species mix of the stand. Logs retained would be a minimum of 16 feet in length with a minimum diameter of 16 inches at the large end. In an effort to reduce the effect of prescribed burning on CWD and snags, manual pullback of slash ranging in size from 0.5 inch to 3 inch, a distance of 10' from identified Class 1 and 2 logs and all snags would be required. When feasible, existing CWD present on the proposed helicopter landing site would be moved outside the clearing limits into the adjacent stand in an attempt to retain habitat function.

- Existing snags would be retained across the units with the exception of those that are deemed to be possible safety hazards during logging or site preparation activity. Any snags felled or knocked over would remain on site as CWD.

- In accordance with the Coos Bay District RMP ROD, timber would be retained as Riparian Reserves to protect perennial fish-bearing and non fish-bearing streams, and intermittent streams. No harvest would occur in the Riparian Reserves provided for these areas. A distance of two site-potential tree heights (400 foot slope distance for the Paradise Creek and Lower Middle Umpqua subwatersheds) will be established on each side of the fish-bearing streams as Riparian Reserves. Riparian Reserves for the non-fish bearing perennial streams and intermittent streams would extend a distance from the stream edges equal to the

slope distance of one site-potential tree. Section E of the Analysis File contains a determination of the interim riparian reserve widths.

- The units would be reforested in the winter following site preparation with Douglas-fir. Other species, such as western hemlock and western redcedar would be planted as a minor component. Stand maintenance, if required, would be accomplished using manual brush control.

- Implementation monitoring would be accomplished in the form of: road improvement inspections, logging inspections, snag surveys, green tree retention inspections, down log surveys, site preparation and planting inspections, and stocking surveys.

- All trucks, logging equipment, and road construction equipment that enter the project from outside our local area shall be washed in order to limit the spread and prevent the introduction of more noxious weeds to the District.

- A standard special provision would be included in the contract to protect any T & E species found on the site after the contract award.

Alternatives Considered but Eliminated from Further Analysis

Use of Cable Yarding System on Entire Sale - This alternative was considered but eliminated from further analysis because of the associated impact that would result from road construction and impacts to other resources. The Paradise Creek subwatershed has been designated as a Tier 1 Key Watershed.

The NWFP mandates that there be no net increase of roads within Tier 1 Key Watersheds. To access the 4 units within the Paradise Creek subwatershed, it would require approximately 1.0 miles of new road construction and approximately 3.5 miles additional road renovation. Road building was not feasible on some of the steep Fragile Non-suitable Woodlands areas (FGNW). Two units would require yarding through younger commercial thinning age stands, some of these on private ground, causing residual stand damage, and encountering numerous blind leads for cable yarding.

Chapter III - Affected Environment

Forest Stand Condition

The Bureau of Land Management, Coos Bay District has redefined the Districts' 5th field watersheds. They now correspond to the USGS Hydrologic Units. The new 5th field for this project area is No. 1710030304 and contains the Lower Umpqua Frontal (1994), Paradise Creek, a Tier 1 Key Watershed (1995) and the western portions of Upper Middle Umpqua Frontal (1997) and will be called the Middle Umpqua Frontal. The BLM manages 36% of the "304" Middle Umpqua Frontal 5th Field watershed. The Northwest Forest Plan land use allocations (LUA) for BLM lands include Late Successional Reserves (LSR), Connectivity/Diversity (CON), General Forest Management Areas (GFMA) and Riparian Reserves (RR). Acreage for each LUA are as follows: LSR- 28% (6,348), CON-3% (743 acres) and GFMA - 20% (4,581 acres) and RR- 49% (11,262 acres). At the present time, 34% of the existing BLM forested stands are over 80 years old and occur in LSR's and Riparian Reserves ("304" 5th Field Watershed ACS Module, July 9, 1998).

Physical and Geographic Characteristics

The project area is located in the Umpqua Resource Area in T. 21 S., R. 08 W., Section 33, Willamette Meridian; in the USGS Hydrologic Unit code 1710030304 watershed. The elevation of the units range from 650 to 1380 feet, and the aspect is variable. The topography varies from gentle to steep. (See maps in Appendix I).

Soils

There are six units in this proposed timber sale. Soils in Units 1 and 2 are Honeygrove - Preacher-Digger on 35 to 60% and 10 to 35% slopes (14-57-66/XW). Honeygrove and Preacher soils are deep, well drained fine, and fine loamy soils that are highly productive for timber. The Digger soils are moderately deep (20 -40") rocky soils that usually occur on steeper slopes. They are moderately productive.

Units 3, 4, 5a, and 5b have Digger - Jason - Preacher soils on 60 to 80% and 35 to 60% slopes. Jason soils are shallow (10-20"), rocky soils over fractured or soft sedimentary bedrock of the Tyee geologic formation. Jason soils typically occur on steep to extremely steep slopes, ie. 60 to 80%+. There is also considerable Rockland (R) in Unit 3. Rockland consists of soils less than 10" deep with considerable rock outcrop. It has low timber productivity.

The steepest and most fragile soils in the basin within Units 3 and 4 have been removed from the timber base by the districts Timber Production Capability Classification (TPCC) system. Much of the rest of the most fragile and landslide prone areas are in Riparian Reserve areas and are thus also withdrawn from timber harvest.

Units 1 and 2 are on moderate to gentle slopes. Unit 1 is the only unit proposed for conventional cable yarding while Units 2, 3, 4, 5a, and 5b are proposed for helicopter yarding. This is appropriate as these are steep, fragile units mapped as FGR2 in the districts TPCC.

Vegetation, including T & E Species

Timber: The approximate birth date of this stand is 1770. The timber overstory consists of scattered, decadent, old-growth and mature Douglas-fir, with western hemlock, western redcedar, and grand fir intermixed. There is a lesser component of red alder, bigleaf maple, Pacific dogwood, and some chinquapin. The structure is basically a two-stage stand with a suppressed, overstocked understory of Douglas-fir that has seeded in after the 1951 Vincent Creek fire. Tree species composition, diameters, and heights vary widely within these stands, based in part on aspect, topographic position, and disturbance history. A large percentage of the mature timber has considerable defect, including (*Fomes pini*) and large fire scars. The timber stand has moderate exposure to wind and has suffered some isolated blowdown in the past.

Large snags and CWD of various decay classes are represented and distributed throughout the stand. The Riparian Reserves are also host to numerous snags and CWD. No populations of Port-Orford-cedar (POC) are known to exist in or near this proposed project area and it is considered to be outside the natural range of POC.

Understory: Ridgetops, rock outcrops, and most of the south and southwesterly aspects are host to a much drier vegetation type including rhododendron, salal, ocean spray, hazel, vine maple, evergreen huckleberry, bear grass, Oregon grape, and poison oak (primarily western hemlock/rhododendron-salal association). Predictably, areas with low conifer stocking levels are host to higher densities of brush. Many of the slopes are dominated by swordfern understory (western hemlock/swordfern association) where the canopy closure is more continuous. Other species found in the proposed sale area include red huckleberry, bracken fern, and wild rose. Riparian areas have a mix of salmonberry and vine maple, red alder, and some bigleaf maple.

Special Status Vegetation: A population of Cusick's checkermallow *(Sidalcea cusickii*) has been documented in Section 33. Habitat for the checkermallow, which is a BLM Tracking species, is open slopes in forests. Aerial photos indicate some grassy balds/ rock outcrops that may be habitat for this and other special status plants. A Survey Strategy One species, compressed elfin saddle (*Helvella compressa)*, is documented about four miles away. It's habitat is riparian and low elevation forests. Although there may be habitat for this species, Survey Strategy One does not require a survey before ground disturbance. There are no other known occurrences of special status or survey and manage plants in this area. There may be habitat for giant gel cup (*Sarcosoma mexicana*), a protection buffer species, which grows in late successional and old growth forests. This species has been found in other locations in the Umpqua Resource Area.

Other surveys that have been done in this area were in conjunction with proposed timber sales, including Cedar Cr. Thinning and House Cr. Thinning. A population of checkermallow was found in Cedar Cr. Thinning.

Noxious Weeds: Moderate amounts of scotch broom is present throughout the northern portion of the Umpqua Resource Area, this proposed sale area, and along neighboring road systems. This noxious weed is found primarily along roadside settings in this portion of the Resource Area, but is also located within plantations at varying levels of intensity.

Aquatic Resources and Fisheries, including T & E Species

Special Status Species - Fish

The Cedar House timber sale falls within the range of three special status fish species: the Umpqua River cutthroat trout, Oregon coast steelhead trout, and coastal coho salmon.

The Umpqua River cutthroat trout was listed by the National Marine Fisheries Service (NMFS) in August 1996 as an endangered species under the Federal Endangered Species Act (ESA). A District Biological Assessment (BA) that includes the Cedar House timber sale was submitted to NMFS in July 1998. The proposed action was determined to “not likely to adversely affect” the Endangered cutthroat trout and a letter of concurrence is currently pending.

In April 1997 NMFS decided to base coastal coho salmon recovery on the success of Oregon's Coastal Salmon Restoration Initiative (CSRI) in lieu of an ESA listing. This species still has a "special status" designation (Federal "candidate") which could lead to an immediate emergency listing if NMFS determines that the CSRI is not leading toward species recovery. It is BLM policy is to treat "special status" species as though they were a listed species and to conduct informal conferencing with NMFS on actions that may affect "special status" species or their habitats.

The Oregon coast steelhead trout has been petitioned for listing as a threatened or endangered species under the ESA. In August 1997 NMFS chose to delay for 6 months the decision to list this species. It is still considered a "proposed" species. Project level conferencing on BLM management actions affecting the Oregon coast steelhead trout was included in the July 1998 District Biological Assessment submission to NMFS. The proposed action was determined to “not likely to adversely affect” the Endangered cutthroat trout and a letter of concurrence is currently pending.

Fisheries and Aquatic Resources

Four of the six units of the Cedar House timber sale are located in the Cedar Creek drainage. Cedar Creek is a fourth order fish bearing tributary of Paradise Creek located in the Paradise Creek Subwatershed. Units 3, 4, 5a, and 5b are situated in the headwaters, with a small portion of the eastern end of Unit 4 falling over the ridge in the headwaters of the adjacent House Creek. Units 1 and 2 are positioned approximately 0.5 miles to the southwest in the headwaters of Stony Brook Creek, an Umpqua River frontal tributary in the Lower Middle Umpqua subwatershed.

The Paradise Creek watershed analysis indicates that coho salmon, winter steelhead, and sea-run cutthroat trout made up the anadromous portion of the historical fishery in the lower reaches of Cedar Creek. Units 3, 4, 5a, and 5b in upper Cedar Creek are well above the present upper most access of anadromous fish. Anadromous fish access to the upper reaches of Cedar Creek has been documented as being limited since at least the 1969 habitat survey. Resident cutthroat trout can be found throughout the mainstem where in-stream habitat is suitable. Two surveys have documented the upstream extent of cutthroat trout in Cedar Creek. The 1996 ODFW habitat survey noted fish presence in the mainstem to the 1.14 mile mark, while a BLM survey from the early 1970's noted fish to the confluence of the two main tributaries at the 1.46 mile mark.

The BLM observations were confirmed during a 1996 spawning survey. This survey observed cutthroat trout to the confluence at the 1.46 mile mark, however suitable habitat at winter flows was observed a short distance up each of the main forks from the same 1.46 mile mark. Only a portion of Unit #5a is adjacent to a known resident cutthroat trout reach of Cedar Creek.

The watershed analysis for Paradise Creek indicated that 4 general habitat surveys have been conducted in the Paradise Creek watershed over 40 years (1945-1985). The 1969 survey was the first to specifically address fishery habitat in main stem Cedar Creek. By 1969, the Cedar Creek drainage had incurred approximately 15 years of timber management. The survey noted impacts to the aquatic system by recording large amounts of in-stream silt from logging roads, and the presence of debris jams, especially in the lower reaches of the stream, that were barriers to fish movements.

The 1996 ODFW Stream habitat survey stopped at the confluence just below the Cedar House sale area. This survey showed that main stem Cedar Creek, downstream from the Cedar House sale units had good numbers of large woody debris pieces and volume, and that most of it was found in the upper two thirds of the survey reach. Much of this wood was fire scarred and had cut ends and was left from the early logging. Most of the quality pool habitats were found in the upper one-half of the survey and were associated with the concentrations of large woody debris. Gravel dominated the substrate type in the upper reaches. The lower one third of the survey reach consisted of a sloping bedrock substrate with little woody debris and few pool habitats. The log jams, first noted in the lower reaches 27 years earlier, were gone. What remains in this lower third of the stream is shallow, sloping, bedrock cascades that are impassable to fish, and provides very little fishery habitat.

Units 1 and 2 are included in the Lower Middle Umpqua Watershed Analysis (formerly the Lower Umpqua Frontal). They are both within the upper headwater of a small Umpqua River frontal tributary. They are on a small BLM parcel on Stony Brook Creek. Stony Brook Creek is in private ownership the rest of its way to the Umpqua River. No fish species are found in these small tributaries and no specific fishery recommendation for Stony Brook Creek or these small tributaries was identified in this watershed analysis.

Unit 2 is approximately 2 acres in size and does include a Riparian Reserve. This unit will be logged by helicopter. Unit 1 contains 2 small, non-fish bearing headwater tributaries of Stony Brook Creek. These small streams will be given interim ROD Riparian Reserve widths.

Riparian Habitat

No extensive riparian habitat inventories have been conducted in this drainage. The Paradise Creek Watershed Analysis took a cursory look at riparian vegetation composition and age structure to classify them as to their functionality. It assumed that riparian tree species greater than 80 years old provided the structural components that lead to a properly functioning stream system. This is the condition of most of the riparian tree species in Riparian Reserves of Units 3, 4, 5a, and 5b.

Riparian habitat of lower Cedar Creek has been impacted by past forest management and subsequent stream cleaning. An old road/skid trail, which provided access for logging activity goes up the creek for approximately one mile on the floodplain. Red alder trees and understory shrubs dominated by salmonberry make up the majority of the riparian vegetation of Cedar Creek and it's tributaries to the 1.46 mile confluence. Large conifer trees are not available to contribute to the stream/riparian habitat to this point. This reach is considered not properly functioning.

Above this confluence and adjacent to Units 3, 4, 5a, and 5b, the riparian habitat has had little direct logging influence and is in a near natural state. A portion of the left fork has been logged and contains some of the similar hardwood/shrub mix of the lower Cedar Creek, however, there is a significant contribution from large conifer on the un-logged side of the stream. This tributary is considered functioning at risk, but with an upward trend.

The riparian habitat of the right fork is dominated by an overstory of large, mature, Douglas-fir, cedars, and hemlock with big-leaf maple and red alder closer to the streamside. The understory is composed of shrubs dominated by vine maple, red and evergreen huckleberry, and salmonberry component.

This fork has a steep gradient with many downed conifer trees in and overhanging the stream. The watershed analysis found very little historical landslides in the upper reaches of this stream. This tributary system is in properly functioning condition.

Hydrology

The hydrology of the area is driven by precipitation in the form of rain. The area may occasionally receive snow, but the quantity and duration of the snow does not normally produce rain-on-snow events. The peak flows, low flows, annual flows and groundwater levels are all dependent on the amount, intensity and distribution of rainfall. The close correlation between precipitation and runoff indicates that this system rapidly translates rainfall into runoff due to: a high drainage density, low bedrock permeability, coarse textured, shallow soils, high precipitation totals, and steep slopes. Units 1 and 2 are drained to the south by 1st order tributaries of Stony Brook Creek, which is a frontal drainage to the Umpqua River. Units 3, 4, 5a and 5b all are drained by 1st or 2nd order tributaries to Cedar Creek, which is a tributary to Paradise Creek. All of these tributaries are high gradient, step/pool, debris torrent systems that have been surveyed for the presence of fish and the inception point of each of the channels has been identified on the ground to determine the starting point of the riparian reserve.

The reserve widths will be one or two site potential tree heights (200 or 400 feet) depending on the presence or absence of fish. These channels do not have an inner gorge or an active flood plain and the distance dominated by riparian vegetation is also less than a site potential tree height. Therefore, the 200 or 400 foot riparian reserve widths are applied on each side of the stream channel in accordance with the Coos Bay District RMP.

Wildlife, including T & E Species

Wildlife Species

Northern Spotted Owl

None of the sale units are within a 0.25 mile (disturbance) or 1.5 miles (habitat) of a spotted owl site center. Protocol monitoring for the sale units has been completed. No spotted owls were seen or heard in the units during any monitoring work. The sale units do not occur in a spotted owl Critical Habitat Unit. All of the units have some suitable spotted owl habitat although the amount of suitable habitat varies by unit. Much of the remaining area in the units that is not suitable spotted owl habitat is dispersal habitat for this species.

Marbled Murrelet

None of the sale units are within a 0.25 mile of an occupied marbled murrelet. Protocol monitoring for the murrelet has been completed. No murrelets were seen or heard in the units or adjacent habitat during any monitoring work. It was determined that there is no suitable unsurveyed habitat within a 0.25 miles of the units, since the units were monitored to protocol. The sale units do not occur in a murrelet Critical Habitat Unit. All of the units have some suitable murrelet habitat although the amount of suitable habitat varies by unit.

Bald Eagle

There are no bald eagle nests or roosts within a 0.25 mile or 0.50 mile (line of sight) of any of the units. Also there are no foraging perches in the units or their vicinity. Some potential bald eagle habitat is present in the sale area.

Other Special Status Species

Other Special Status Species that could occur in the sale units include some of the species listed in Appendix C of the Coos Bay District Record of Decision and Resource Management Plan. Of the species in Appendix C, those that are known to occur, or that could potentially occur, in the sale units or their vicinity are: Northern pygmy owl, Northern saw-whet owl, Allen's hummingbird, pileated woodpecker, Pacific Western big-eared bat, fringed myotis, long-eared bat, long-legged myotis, silver-haired bat, Yuma myotis, white-footed vole, Western gray squirrel,

marten, Southern torrent salamander, clouded salamander, Western toad, Northern red-legged frog, sharptail snake and common kingsnake. Surveys were not conducted for these species in the sale area. None of these species were seen during the field review of the sale units although many excavations typical of pileated woodpeckers were found in snags in several of the units indicating their presence. The Northern pygmy owl was heard in Units 4, and the area that is now Units 5a and 5b, during spotted owl monitoring work. There is some habitat in the sale units for Special Status Species listed in Appendix C that could potentially occur in the area.

Survey and Manage Wildlife Species

Of the Survey and Manage wildlife species listed in Table C-3 of the ROD, the only species that could potentially occur in the sale units or their vicinity is the red tree vole. Since more than 10% of the (USGS Hydrological Unit 1710030304) Middle Umpqua Frontal 5th field watershed is in federal ownership, a habitat condition analysis was completed using a Coos Bay District GIS habitat map. Based on this analysis site specific surveys were not required since current habitat conditions exceed the 40% minimum habitat threshold for the red tree vole.

ROD Protection Buffer Species

Of the Protection Buffer Species designated in the ROD, the only species that could occur in the sale units or their vicinity are bat species previously mentioned under the Other Special Status Species section above. Surveys for these species were not required for this project as there are no caves, mines, or abandoned wooden bridges or buildings in the vicinity.

Other Wildlife Species

Appendix T of the Final Coos Bay District Proposed Resource Management Plan Environmental Impact Statement Volume II (U.S.D.I. BLM. 1994) provides a complete list of wildlife species for the Coos Bay District. Many of the amphibians, reptiles, birds and mammals listed in Appendix T that were not discussed under the above sections could occur in the sale units or their vicinity since there is habitat present for them.

No amphibian species were seen during unit field review. The only reptile seen in the units was the garter snake. Bird species seen or heard in the sale area during field review include red-breasted nuthatch, Stellar's jay, common raven, winter wren, chestnut-backed chickadee, a hummingbird, band-tailed pigeon, ruffed grouse, woodpeckers and common nighthawk. No mammals were seen but black-tailed deer and elk scat and trails, black bear scat and mountain beaver burrows were all found during the unit review work.

Wildlife Habitat

Within the area of the proposed action there are several general wildlife habitat types. These include old growth, mature, and young conifer forest habitat. Other habitat types include mixed mature and young conifer forest and shrub communities. There is very little old growth conifer forest present but it is a very minor component in some units. The old growth and mature conifer forest type and the mixed mature and young conifer forest type meet the ROD definition for late-successional forest.

Special habitat types present include seeps and rock outcrops. Seep areas occur in Units 1, 3 and 4. The seep in Unit 3 has several large down logs present within the area. Several open rock outcrops occur in Units 3 and 4. The areas are covered mostly with grass and have shrubs and small trees on their edges. In the southeast part of Unit 4, there is a rock outcrop under a forest canopy that has a few small crevices in it and a lot of down logs in the vicinity.

None of the units had any large areas where concentrations of snags were present. A few small groups of snags were found in Units 1 and 4. Generally the snags that are present occur individually within the units. Pre-sale monitoring for snags has been completed for all of Unit 1 and most of Unit 4. In Unit 1 there are currently 1.4 Class 1 and 2 snags per acre (hard snags) and 2.0 total snags per acre. For the area surveyed in Unit 4 there are 0.8 Class 1 and 2 snags per acre (hard snags) and 2.4 total snags per acre. There has not been any pre-sale snag monitoring in the other units.

For Units 1, 2, 5a and 5b there were no areas with heavy concentrations of down log habitat. In general for these units individual down logs were found scattered throughout the area. Units 3 and 4 did have some areas with concentrations of down log habitat. Other down log habitat was also found in Units 3 and 4 scattered throughout their area as single logs or a few together. There has not been any pre-sale monitoring of down logs.

Chapter IV - Environmental Consequences

This chapter describes the scientific and analytical basis for the comparisons of the alternatives, and the probable consequences as they relate to the alternatives.

The environmental consequences for both alternatives are outlined in the following table listing the Critical Elements required to be addressed by the National Environmental Policy Act.

Critical Element Evaluation of Each Alternative

Critical Element	No Action	Proposed Action
Air Quality	No	No
Area of Critical Environmental Concerns	No	No
Cultural Resources	No	No
Farm Lands	No	No
Floodplain	No	No
Native American Religious Concerns[1]	No	No
Noxious Weeds[1]	No	No
Threatened or Endangered Species (wildlife)[2]	No	No
Threatened or Endangered Species (botanical)[1]	No	No
Threatened or Endangered Species (fish)[1]	No	No
Wastes; Solid or Hazardous[1]	No	No
Water Quality; Drinking/Ground	No	No
Wetlands/Riparian Reserve	No	No
Wild and Scenic Rivers	No	No
Wilderness	No	No

1 On-site evaluations have been conducted and documented in the Analysis File by the District Archaeologist, Resource Area Botanist, District Hazardous Materials Coordinator, and the Resource Area Noxious Weed Coordinator.

2 The proposed sale units have been monitored for northern spotted owl and marbled murrelet according to established protocol. The monitoring to date has shown no activity in the proposed sale area by either of these species. The required consultation with the U.S. Fish and Wildlife Service has been completed for this sale. See the Wildlife Section under Environmental Consequences for more detail.

Alternative 1 - No Action

The proposed stands of timber would not be harvested at this time; therefore the environment described in Chapter III would not be altered. Timber volume would be proposed for harvest from other locations on BLM administered lands in order to meet the objectives of the Coos Bay District RMP and Northwest Forest Plan.

Alternative 2 - Proposed Action

Forest Stand Condition

Within the Middle Umpqua Frontal 5th field watershed (Hydrologic Unit code 1710030304), Luts Breakout and Sagaview timber sales have been sold for a reduction of 157 acres. With Alternative II proposed harvest of 318 acres the total reduction in late-successional forest would be 475 acres. Additionally, Proposed Timber Sales, Cedar House and Sawyer Bridge, Fiscal Year 1998 and 2000 respectively, would reduce late successional habitat 154 acres. The late-successional forest remaining is 6484 acres out of a federal ownership of 22,934 acres or 39% in the 5th field watershed ("304" 5th Field Watershed ACS Module, July 9,1998). This is well above the 15% required by the guidelines for retention of late-successional stands within 5th field watersheds.

Soils

There should be minimal impacts on soils as a result of implementing the proposed action. Very little soil erosion from the bared soil areas from helicopter landing construction can be expected. The newly bared areas should be seeded, mulched, and fertilized, unless rocked. Increased landsliding could occur on the steep slopes following logging depending on storm events. There are no residences below these sale units, and it is not likely that debris torrents could reach Hwy. 38 even if they were to occur.

Vegetation, including T & E Species

In the short term, the proposed project would change the overall structure of the vegetation within the units, but no major long term impacts or loss of species is anticipated. The removal of standing timber would result in increased heat and light to reach the forest floor, which will initially be shaded by the brush followed by conifer regeneration. The humus layer on the forest floor would be somewhat disturbed due to felling and yarding of timber, slash disposal by broadcast burning, and burning handpiles. Removing the overstory canopy would be detrimental to some plants favoring shade and would benefit those species favoring light. Burning could have a short-term effect on some of the vegetation, however, forests in this region have a history of natural fires and other disturbances and most species are adapted to these changes.

Attempts would be made to limit the potential spread of noxious weed seed source by washing equipment before it showed up on the project site.

Aquatic Resources, including T & E Species

By applying the interim Riparian Reserve widths to streams in this timber sale, direct measurable impacts to threatened or endangered fish species and aquatic and fishery habitats can be avoided. Applying ROD Riparian Reserve widths to these streams would ensure that the NWFP ROD Aquatic Conservation Strategy objectives would be met and that this timber harvest action would not retard or prevent the attainment of these objectives.

Helicopter logging units 2, 3, 4, 5a, and 5b means that no new roads would be built to or across these units on steep slopes. There would be no risk of future road failures or increases in stream sedimentation above natural background levels. Helicopter landing construction on the 22-08-10.1 road would contribute negligible impacts to the aquatic environment especially when compared with the impacts that would be encountered if road construction was planned for the entire sale. Timber harvest activities would expose insignificant amounts of mineral soil and little or no soil would leave these sites. Because of the buffering effect of undisturbed Riparian Reserves, sediment is not expected to reach stream channels and downstream fish bearing reaches of Cedar Creek. The Riparian Reserves would also maintain stream reaches in their present functioning condition as identified in

the watershed analysis. No measurable impacts are expected to the aquatic and fishery habitat, or water quality of Cedar Creek from this action.

Unit 1 has two minor stream channels in the lower half of the unit. These short stream reaches would be given interim Riparian Reserves widths. This Riparian Reserve would be adequate to protect aquatic habitat and water quality of Stony Brook Creek.

Aquatic Conservation Strategy Objectives

ACS Objective #1 - *Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.*

Twenty-three percent of the acres in this timber sale fall in the Butler Creek Subwatershed and 77% of the acres fall in the Paradise Creek Subwatershed. Both of these subwatersheds contain approximately 30% scattered public ownership. On the 5th field watershed scale, the proposed action affects 0.4% of all BLM lands within the watershed ("304" ACS Module, 1998).

Landscape scale watershed features in both subwatersheds have been significantly altered through past management practices on both private and public lands. The proposed action will have no further negative effect on the distribution, diversity, and complexity of watershed and landscape-scale features such as the drainage system, mineral substrate availability and movements, stored nutrients, downed logs, and log jams as they relate to the associated aquatic system. The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths, low impact helicopter logging, no new road construction and very limited surface disturbances will, to the extent possible for scattered federal lands, ensure that an adequate amount of these and other landscape-scale features will persist on site to maintain a functioning aquatic/riparian system and it's associated species, populations, and communities.

ACS Objective #2 - *Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.*

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from the proposed action will ensure that when periodic natural hillslope and stream channel processes, such as landslides, slumps, debris avalanches, and debris torrents occur, they contribute significantly to proper stream functions (e.g. debris and substrate routing, nutrient retention). A proper functioning stream system from headwall A-type channels to the valley bottom C-type channels is essential for the connectivity of upslope areas to headwater tributaries to floodplains to wetlands and forming intact refugia.
The maintenance of large physical constraints, such as logs and boulders, will be provided by undisturbed Riparian Reserves and available for entry into the stream channel. This material will then be transported by episodic storm events to downstream reaches as habitat structure for species, populations, and communities.

ACS Objective #3 - *Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.*

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will ensure that large physical constraints, such as logs, root wads, and boulders and cobble/gravel, will be available for future entry into the stream channel. This material will then be distributed downstream by episodic storm events. These large objects will contribute to the hydrologic characteristic of the stream channel by forming a diversity of shorelines features, streambanks, channel bottom roughness and habitat structure for species, populations, and communities.

ACS Objective #4 - *Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and*

chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will ensure that the water quality of Cedar Creek will not be impaired by timber harvest actions. One season water temperature monitoring of lower Cedar Creek conducted prior to watershed analysis, established a summertime low flow baseline maximum water temperature of approximately 59°F. No loss of streambank/channel shading is expected because of the vegetative structure provided by the Riparian Reserves. Baseline ambient water temperature, where the stream leaves the sale unit boundary, is not expected to increase as a result of the proposed action.

Only approximately 2.2 acres of surface disturbance will occur as a result of the construction of 2 ridgetop landings and a ridgetop helicopter log drop/decking area. Very little soil will be lost from these sites and none of it is expected to reach or enter any stream.

There will be no water quality degradation as a result of the proposed action. The present riparian, aquatic, and wetland ecosystems dependent on a high quality upstream water source will be supported. The proposed action and mitigating measures will maintain high enough water quality to support the present biological, physical, and chemical integrity of the system and benefit survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

ACS Objective #5 - *Maintain and restore the sediment regime under which the aquatic system evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.*

It is recognized that sediment delivery, storage, and transport are essential functions of stream systems and contribute to the maintenance of riparian and aquatic ecosystems. Under natural conditions these mechanisms are driven primarily by infrequent high intensity storm events, although higher frequency less intense storm events also contribute.

Much of the Cedar Creek drainage had undergone intensive forest management (logging, road building) prior to the mid-80's. Most accelerated sediment production/input as a result of poor road building or timber harvest practices has already occurred. Roads and forest lands are starting to stabilize and human caused catastrophic sediment input events are becoming less frequent.
The sediment regime may be shifting more to near normal regarding input and transport, however storage capability has been reduced, and will remain so in the near future due to management caused reductions in channel constraints (stream cleaning) that reduce flow velocities and drop out sediment/substrate.

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will ensure that sources of large channel constraints are presently maintained and restored in the future. Maintaining mature forest characteristics of the Riparian Reserve will provide large woody debris to the stream channel in order to load the system with material which supplies barren downstream reaches during episodic storm events.

No new roads will be constructed and only 2.2 acres of ridgetop surface disturbance will occur due to the construction of the helicopter log landing/deck. Sediment is not expected to leave these disturbed sites due to re-vegetative efforts and no sediment is expected to reach streams.

ACS Objective #6 - *Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.*

Streamflows, (peak, high, and low flows) are directly related to and influenced by the size of a precipitation event. The greater the amount of water going into a system, the larger the potential streamflow. The quantity of water and the rate at which it reaches the channel and passes through the system during a particular storm event is influenced by storm and watershed size, vegetation cover and topographic features. The proposed action will influence only the vegetation cover. The establishment of Northwest Forest Plan Record of Decision (ROD)

Riparian Reserve widths resulting from this proposed action will help ensure that in-stream flows of Cedar Creek will not be impacted by timber harvest actions. A mixed understory vegetative component dominated by 30-40 year old Douglas-fir will be assessed after logging to determine if thinning of the residual understory is feasible. This vegetation, as well as the mature forest characteristics of the Riparian Reserve vegetation will likely help maintain in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats. Maintaining mature forest characteristics of the Riparian Reserve will provide large woody debris to the stream channel for sediment and nutrient storage and future downstream wood

ACS Objective #7 *- Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.*

Streamflows, (peak, high, and low flows) are directly related to and influenced by the size of a precipitation event. The greater the amount of water going into a system, the larger the potential streamflow. The quantity of water and the rate at which it reaches the channel and passes through the system during a particular storm event is influenced by storm and watershed size, vegetation cover and topographic features.

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will help maintain the present and future influence that forest vegetation has on the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands both onsite and downstream in the watershed.

ACS Objective #8 *- Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amount and distributions of coarse woody debris sufficient to sustain physical complexity and stability*

The establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will maintain the current established species composition and structural diversity of plant communities in riparian areas and any associated wetland.

The mature forest characteristics and species composition (100-220 year old Douglas-fir and mixed conifer/hardwood forest) of the established Riparian Reserves will maintain present levels, and provide adequate future levels, of summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amount and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

ACS Objective #9 - *Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.*

It is felt that the establishment of Northwest Forest Plan Record of Decision (ROD) Riparian Reserve widths resulting from this proposed action will maintain sufficient on-site habitat, and structural diversity to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species within the boundaries of the proposed timber sale.

Hydrology

The Proposed Action would affect the hydrology of the tributaries within the project area. Increases in the annual yield, low flows, and the spring and fall peak flows are expected due to the increase in the amount of water available because of the removal of vegetation and the corresponding reduction in foliage interception and evapotranspiration losses. However, the increase in spring and fall peaks are still smaller than the peaks that typically occur during large winter storms.

Any increase in flow is not expected to produce sediment from channel downcutting due to the bedrock control of these systems. There is also little if any increase anticipated in the amount of sediment chronically delivered directly to the tributaries due to the limited routing of sediment through the Riparian Reserves. All road improvement and renovation would meet the design features and management directives listed in Chapter II.

Some short term sediment delivery may result from road improvement and renovation but this may also be offset by correcting and drainage problems on existing roads and/or culvert replacements. It should be noted that any sediment resulting from this project would be insignificant in comparison to a mass failure, which is the most likely mechanism to deliver a large quantity of sediment and debris to the tributaries.

Wildlife, including T & E Species

Northern Spotted Owl

Under the proposed action up to 111 acres of spotted owl dispersal and/or suitable habitat would be removed; however, the NWFP and the Coos Bay District ROD RMP provide for a combination of Late-Successional Reserves, Riparian Reserves, and Connectivity Blocks all of which is designed to maintain viable spotted owl populations. There are no known spotted owl sites present within a 1.5 mile radius of the units so harvest would not affect any spotted owl sites. The habitat blocks the units occur within are of insufficient size and quality to support a spotted owl pair.

Marbled Murrelet

Harvest of the proposed sale units would eliminate up to 111 acres of suitable habitat for the marbled murrelet. The actual number of acres of suitable habitat that would be lost is really about 60-80% of this since there are several young conifer stands present in the units that are not suitable habitat. Under the NWFP and the Coos Bay District RMP ROD habitat retained in the Late Successional Reserves, Riparian Reserves, Connectivity Blocks and reserves for occupied sites in the GFMA are expected to provide sufficient nesting habitat to maintain viable murrelet populations at the landscape level. The sale area was surveyed to protocol for the murrelet. There were no murrelet detections recorded during the monitoring work.

It was determined that the area is not occupied by murrelets, hence this species should not be affected by the harvest. Units 1 and 2 are within 1 mile of suitable unsurveyed murrelet habitat.

Although no restrictions would be required for prescribed broadcast burning, reasonable efforts would be made to limit the impacts to the neighboring unsurveyed habitat west of the sale area to include the following: 1) Avoid flying within 500 feet AGL of habitat except if suppression is required, 2) Attempt to burn when smoke dispersal is away from the area (on shore flows are primarily southwesterly at the time this would be burned).

Bald Eagle

Under the proposed action, some potential bald eagle habitat would be removed from the sale area; however, under the NWFP and the Coos Bay District RMP ROD the provisions of the Pacific Bald Eagle Recovery Plan would continue to be implemented. These provisions include the regulation of timber harvest up to 0.5 miles from bald eagle nests or roosts and retention of nest, roost and perch trees. The NWFP assumed that compliance with the Pacific Bald Eagle Recovery Plan would assure the viability of this species.

The sale area is in the vicinity of the Umpqua River which has been regularly surveyed for eagles for many years. There are no known nests, roosts, or perch trees within 0.5 miles of any of the sale units and the proposed action is consistent with the Pacific Bald Eagle Recovery Plan. There should be no effect to the bald eagle.

Other Special Status Species

The proposed action would result in the removal of habitat for some Special Status Species that are associated with late-successional forests. Snags that serve as habitat for the Northern pygmy owl, Northern saw-whet owl, pileated woodpecker, silver-haired bat, fringed myotis, long-eared bat, long-legged myotis and Yuma myotis would be potentially lost either during felling and yarding or post sale burn operations. Down log habitat for the clouded salamander could also possibly be lost during project operations. The affect to these species would be to at least reduce their populations in the sale area. Using green trees to buffer existing snags and down logs in the units and retaining additional green trees could partially offset the loss of these features during harvest and burning operations but it probably would not completely mitigate the loss. Habitat for these species at the landscape scale is provided for in the NWFP.

Retention of interim Riparian Reserves widths adjacent to the units should protect the white-footed vole, Southern torrent salamander, Western toad, Northern red-legged frog, sharptail snake, common kingsnake and Western gray

squirrel from the direct affects of harvest if they occur in the vicinity. These species are either directly associated with the riparian zones within the Riparian Reserves and/or are more likely to use the hardwood forest stands within them.

Survey and Manage Wildlife Species

Harvest of the proposed timber sale units would remove approximately 111 acres of existing or potential habitat for the red tree vole; however, the Late-Successional Reserves designated in the NWFP are expected to provide sufficient habitat to maintain well-distributed red tree vole populations and assure it's viability on the landscape. The harvest of the proposed sale units would likely affect the red tree vole by eliminating some habitat. This would at least reduce red tree vole populations in the sale area but it would not affect the long-term viability of the species.

ROD Protection Buffer Species

The only ROD Protection Buffer Species that could potentially occur in the sale area are the bat species previously discussed under the Other Special Status Species heading above.

Other Wildlife Species

Habitat for a wide variety of other wildlife species that are not Special Status Species, Survey and Manage Species or ROD Protection Buffer Species, but are associated with late-successional forest habitat may be affected. These species include several species of migratory birds, salamanders, small mammals such as voles, shrews and squirrels, woodpeckers and bats. Timber harvest would remove some habitat for these species and could cause direct mortality to some of them.

Migratory birds and/or their nests could be destroyed if harvest occurs during the spring and summer nesting season for these species. Where it is feasible, this impact could be mitigated by conducting harvest operations in the fall and winter months. Tree squirrels and tree voles could also be impacted by felling of trees during harvest. Snag habitat for woodpeckers, bats, chestnut-backed chickadee and Northern flying squirrel and down log habitat for salamanders and small mammals such as mice, voles and woodrats could be lost or damaged during cutting and yarding operations or when burn projects occur. The affect to these species would be to at least reduce their populations in the sale area. Using green trees to buffer existing snags and concentrations of down logs in the units could partially offset the loss of these features during harvest and burning operations, but it probably would not completely mitigate the loss. Habitats for these species at the landscape scale were provided for in the NWFP.

Wildlife Habitat

Regeneration harvest would remove habitat for late-successional species on approximately 111 acres; however, the actual amount of late-successional forest habitat removed would be less than this since generally the amount of late-successional forest habitat within them is about 60-80% of the total area.

Units 1 and 2 occur in a block of late-successional forest habitat that is about 41 acres and cutting these units would remove about 15 acres from this block (about 36%). Units 3, 4, 5a and 5b occur in a separate and distinct block of late successional forest habitat north of Units 1 and 2. This block of habitat is about 188 acres and cutting these units would remove 75 acres (40%). Harvest would also result in the loss of stand structural complexity and a reduction in the refuge and connectivity functions that the units currently provide. These changes would affect species associated with late-successional forests. Populations for some of these species would decline at least within the sale area; however, the loss of habitat for late-successional forest wildlife species from GFMA lands is consistent with the NWFP. Habitat for late-successional species was provided through the designation of Late-Successional Reserves, Riparian Reserves, spotted owl 100 acre cores, reserves for occupied murrelet sites and reserves for Survey and Manage and Protection Buffer Species. Analysis provided in the Final Supplemental Environmental Impact Statement for the NWFP indicates that the loss of late-successional forest habitat from GFMA lands is not expected to affect the viability of species associated with this habitat.

Under the proposed action, the number and quality of snags would decline as a result of harvest operations and post sale burning actions on approximately 111 acres. Some snags not protected within green tree retention patches are likely to be knocked over during tree felling and yarding. Others would be cut during the operation because they pose a safety threat to workers. Snags would be exposed to further risk during post harvest burn

operations. Potential losses would be greatest in units where broadcast burning is used whereas losses in units that are hand piled and burned should be minimal. During broadcast burning snags could be damaged by having their roots destroyed, bark charred or the snag could be partially or entirely consumed by the fire. The degree to which snags would be lost during broadcast burning is unclear since this would vary depending on weather, topography, fuel loads and the position of the snag in the unit. However in units where broadcast burning would occur, there would be hand pullback of all slashed brush and much of the logging slash within 10 feet of snags which should help protect this component. Buffering existing snags with green retention trees would help minimize snag losses. The loss of snags in the sale area would affect species dependent on this resource such as cavity-nesting birds. Populations of these species would likely decline within the area as this habitat is lost.

Under the proposed action down log habitat could decline as a result of harvest operations and post sale burning actions on approximately 111 acres. Some down logs not protected by green tree retention patches could be damaged as trees are felled on top of them causing them to break up. They could also be broken up during yarding operations or have bark removed or their position in the unit could be altered. These impacts could degrade a Class 1 or 2 log to the point that they become functionally Class 3 logs. Down logs would be exposed to further risk of damage during post sale burning depending on the season of burning. Potential losses would be greatest for broadcast burn units and much lower in units where hand piling and burning are used to complete site preparation.

During broadcast burning operations many down logs would be subjected to the direct influence of fire. This may char or consume the bark of down logs or the litter adjacent to them, cause fire hardening of the log or partially or completely consume them. Down logs subjected to fire could be greatly altered and their value as wildlife habitat degraded or eliminated. However in units where broadcast burning would occur, there would be hand pullback of all slashed brush and much of the logging slash within 10 feet of identified CWD which may help protect this component. Also buffering identified CWD with green retention trees could help minimize CWD losses during burn operations. The loss of CWD in the sale area would affect species dependent on this resource. Populations of these species could decline within the area as this habitat is lost.

The proposed harvest units have a significant amount of defect found in many of the mature trees. There is a possibility that the purchaser may leave an excess of CWD on site after yarding due to the economics of yarding unmerchantable material. This is more likely to occur on the units yarded by helicopter, due to the increased yarding costs associated with this type of harvest system. This could result in well over the 120 feet per acre of Class 1 and 2 CWD that would normally be left on site after harvest.

Cultural Resources and Native American Religious Concerns

There are no anticipated specific, direct, or indirect effects on cultural resources or Native American religious concerns from the proposed regeneration harvest of these six units. Cultural resources are not known to exist in these units. The proposal is not likely to expose, damage, or destroy any cultural resources. If any cultural resources are encountered during the project, all work in the vicinity would stop and the District Archaeologist must be notified immediately.

Solid and Hazardous Waste

Proposed Action is subject to provisions of Oregon Forest Practice Act section pertaining to Petroleum Product Precautions (OAR 629-57-3600) and Oregon DE Spills and Releases Rules (OAR 340-108). BLM Administrators shall monitor and report any spills utilizing District.

Air Quality

Daily, prescribed burning activities in each unit would be conducted in accordance with the Oregon Department of Forestry's Smoke Management Plan. Any winter burning in units may result in the accumulation of smoke in nearby, low-lying areas due to cool night time temperatures and little or no daytime winds. Any spring burning would result in the best dispersal of the smoke due to onshore winds through the Coast Range Mountains and less accumulation of residual smoke into nearby low lying areas because of better dispersal of the initial smoke column.

Cumulative Effects

Alternative 1 - No Action

If the No Action alternative is selected, timber would be proposed for harvest from other locations on BLM administered lands in order to meet the objectives of the Coos Bay District RMP and Northwest Forest Plan. If this alternative is selected, there would be no impact to this specific site. The cumulative effects cannot be analyzed for an alternative location for the project.

Alternative 2 - Proposed Action

No cumulative impacts, as a result of this timber sale, are identified at this time for aquatic resources.

Any hydrologic effects, even if quite large on a site, become increasingly difficult to detect downstream because of fluctuations in flows from groundwater sources, tributaries, or timing and varying intensities of precipitation events. This natural variability coupled with the fact that as small streams join and form increasingly large drainage networks, the ability of individual actions in small drainages to affect hydrology in the larger subwatersheds decreases.

The magnitude of any affect is generally proportional to the area that is treated. Since this project impacts only 0.8% (70 acres of the Paradise Creek drainage and only 0.2% (17 acres) of the Weatherly Creek drainage, it is not possible to separate these cumulative effects from natural variability at the subwatershed or the drainage scale.

The 3.35 miles of road renovation would serve to improve drainage associated with that road system. Surface disturbance would be temporary and may result in minor surface erosion and a slight chance of stream sedimentation. There would be no net gain in the amount of permanent roads within the section. The current road density for Section 33 is 1.25 and would remain at that level. Construction for the helicopter landing and decking area (approximately 2.2 acres) would be located outside of the riparian reserves and would preclude any new road construction that would otherwise be necessary to harvest this sale with a conventional cable system.

The regeneration harvest would have a slight impact on old-growth dependent species in the short term, but impacts in the long term would be negligible, as second growth stands within the reserves would mature into old-growth at a faster rate than old-growth stands are harvested in the GFMA under the NWFP.

The cumulative effects related to the loss of late-successional forest habitat were analyzed at the landscape level for Threatened and Endangered Species, Special Status Species, Survey and Manage Species and all other wildlife associated with these forests in the Final Supplemental Environmental Impact Statement (U.S.D.A. and U.S.D.I. 1994) for the NWFP. Under the NWFP Late-Successional Reserves, Riparian Reserves, and 100 acre spotted owl cores, the reserves associated with marbled murrelet occupied sites and other GFMA reserves were allocated to provide habitat for late-successional species and ensure the viability of their populations despite the loss of their habitat from the GFMA.

There also are cumulative effects at the local or subwatershed level that are associated with the proposed action. Regeneration harvest would remove and/or degrade late-successional forest habitat in GFMA lands within subwatersheds. The effects would vary for different wildlife species.

For larger, more mobile, wildlife species associated with late-successional forest, such as the spotted owl, the late-successional forest habitat present in the GFMA would generally not support viable populations since the habitat occurs mostly as scattered, relatively small blocks. These species have large home ranges and require much larger habitat blocks, provided by the Late-Successional Reserves, to meet all their life requirements.
Late-successional habitat blocks present in the GFMA would provide these species with some temporary feeding, resting and roosting opportunities. These blocks also provide some connectivity function since they aid movements by these larger species through GFMA lands from one Late-Successional Reserve to another. Over time the harvest of late-successional habitat would reduce but not eliminate these habitat values since Riparian Reserves and some green trees, snags and down logs in sale units would remain in the GFMA after harvest. For larger, more mobile wildlife species the loss and/or degradation of late-successional habitat in the GFMA is not likely to have

long term effects for their populations given that Late-Successional Reserves, Riparian Reserves and other types of reserves would be present on the landscape.

For smaller, less mobile, wildlife species that have small home ranges, such as amphibians and small mammals, the immediate effects are different. The late-successional habitat blocks present in the GFMA lands can provide for all of their life requirements and therefore can support viable populations.

So the loss and/or degradation of the remaining late-successional habitat blocks in the GFMA, that is associated with timber harvest, would have a greater impact on local populations. As harvest of late-successional forest habitat continues over time, populations of these wildlife species would be either reduced or lost from GFMA lands in the subwatershed.

Irreversible and Irretrievable Commitment of Resources

None identified.

Chapter V - List of Agencies and Individuals Contacted

The general public was notified of the planned EA through the publication of Coos Bay District's semi-annual *Planning Update*.

The proposed project was reviewed by the U.S. Fish and Wildlife Service through the consultation process provided under section 7(A) (4) of the Endangered Species Act

The following District and Resource Area personnel were contacted for input:

Rick Schultz	Forester, Team Lead
Jon Menten	Forest Coordinator
Terry Evans	Forester
Pat Olmstead	Fisheries Biologist
Scott Knowles	Noxious Weed Coordinator
Kevin Kritz	Wildlife Biologist
Estella Morgan	Botanist
Scott Poore	Fuels Management Specialist
Brian Thauland	Forest Engineer
Craig Garland	Soil Scientist
Mark Storzer	Hydrologist
Tim Votaw	District Hazardous Materials Coordinator
Steve Samuels	District Cultural Specialist

The following public agencies and interested parties were notified with scoping letters:

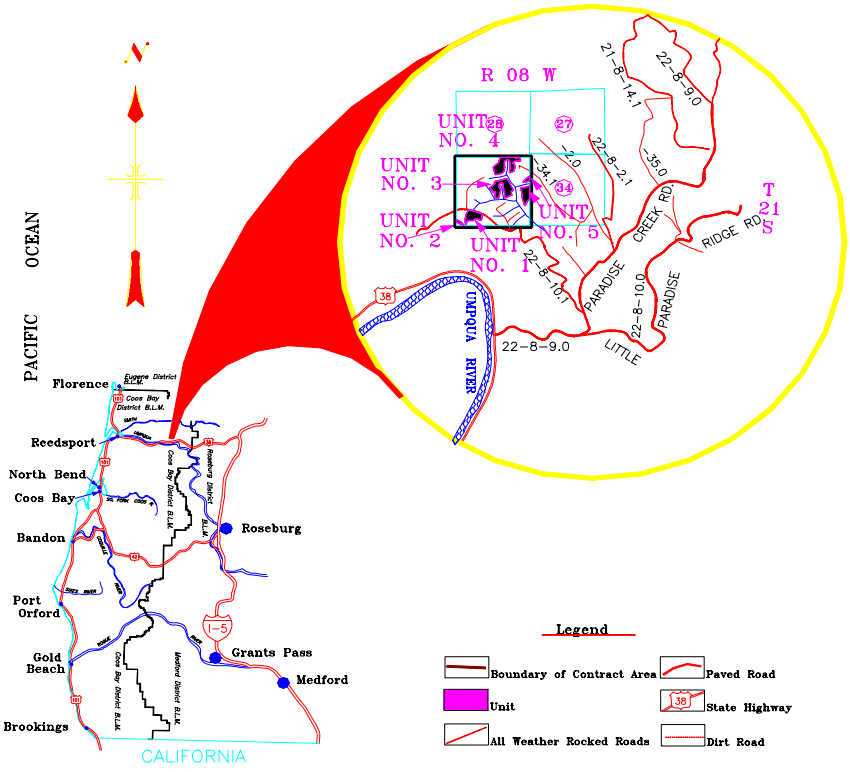
Association of O&C Counties	Sierra Club, Many Rivers Group
Cape Arago Audobon Society	Swanson Superior Forest Products
Coast Range Association	Umpqua Watersheds, Inc.
Defenders of Wildlife	Leigh Ann Lipscomb
Kalmiopsis Audobon Society	Pacific Rivers Council
Roseburg Forest Products	Oregon Natural Resources Council

Appendix 1

General Location Map
Forest Type map

CEDAR HOUSE TIMBER SALE

T21S R08W SEC. 33




CEDAR HOUSE TIMBER SALE
THIN 1620
Graveyard
C-L-UMP-13A-25
UNIT 4
UNIT 5B
UNIT 3
UNIT 5A
Creek
Unit 1
Unit 2
T.21 S. R.08 W. Section 33