

# **3P FALL, BUCK and SCALE SAMPLING**

Environmental Assessment

Roseburg District Office

EA # OR-100-00-06

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# Chapter 1

## PURPOSE AND NEED FOR ACTION

This chapter provides a brief description of the purpose and need for the proposed action being analyzed in this environmental assessment.

### Background

The Roseburg District cruises forest stands to evaluate the quantity and quality of timber available for timber sales and land exchanges. Cruising involves indirect estimation of the standing timber volume and condition by non-destructive means. In the past, District cruisers have used 3P (Probability is Proportional to Prediction) Fall, Buck and Scale in conjunction with cruising. 3P Fall, Buck and Scale employs direct measurement of a set of sample trees. The probability that a tree becomes a part of the sample is proportional to predicted volume (an advanced ocular estimate of a tree's volume.) In response to public concerns, the Roseburg District has suspended the use of 3P Fall, Buck and Scale sampling pending the completion of this environmental assessment.

### Need

There is a need for accurate timber cruises. Accurate timber cruises facilitate the preparation of timber sales, by which the BLM produces a sustainable supply of timber to provide jobs and contributes to the economic stability of communities. Accurate timber cruises are needed to ensure that the public receives fair value for the timber sold. BLM Manual Supplement Handbook H-5310-1 directs that BLM conduct consistent timber cruises and that cruises meet quality standards including accuracy within 10% of the net volume of timber in the sale.

### Purpose

The purpose of the proposed action is to use 3P Fall, Buck and Scale sampling to ensure the accuracy of timber cruises. In most instances, this is the most efficient measurement method and affords the greatest degree of accuracy. Sampling would be used to verify cruise accuracy, develop local volume tables, and validate timber volume equations.. Since 3P Fall, Buck and Scale sampling would be a part of timber sale preparation or value assessment for proposed land exchanges, the incorporation of appropriate project design features and Best Management Practices particular to the proposed timber sale or exchange would be addressed in individual project-specific environmental analyses.

This environmental analysis serves to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI).

Implementation of the proposed action would conform to standards and guidelines contained in the Roseburg District Record of Decision and Resource Management Plan (ROD/RMP, June 1995) which is tiered to and incorporates the analysis contained in the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl and the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD, April 13, 1994).

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## **Chapter 2**

# **DISCUSSION OF ALTERNATIVES**

This chapter describes the basic component features of the alternatives being analyzed in this environmental assessment.

### **I. Alternative 1 - No Action**

Under this alternative, 3P Fall, Buck and Scale sampling would not be used in conjunction with cruising. Cruising methods using indirect measurement and ocular estimation of timber quantity and quality would be used in determining timber volumes and values.

For regeneration harvests in heterogenous stands, indicative of late-successional and old-growth conditions there would be no direct examination and measurement of visible and hidden defects to verify cruise estimates of volume and value.

For commercial thinning or density management actions in managed second-growth stands, no local volume tables would be generated to reflect local growth conditions and the effects of intensive management activities on timber volume and form. Existing taper/volume tables developed for mature, unmanaged stands would be used in conjunction with indirect measurements for determination of timber volume.

### **II. Alternative 2 - Proposed Action**

In conjunction with visual cruising, a set of sample trees would be felled, bucked and scaled, if deemed necessary. Felling would be accomplished with gasoline powered chainsaws and hand tools. This would primarily occur in Matrix lands and Adaptive Management Areas, but could be applied to density management actions in Late-Successional Reserves and Riparian Reserves. The number of trees to be felled would depend on site and stand conditions, but would range from approximately 0.5-to-1 tree per acre when averaged across an entire project area. Sample trees would be randomly selected and scattered across proposed project areas. The trees would be bucked to standard, merchantable lengths for direct measurement of volume and evaluation of condition and value.

In heterogenous late-successional and old-growth stands the potential for high defect and high value of the timber is difficult to estimate in standing trees. Application of 3P Fall, Buck and Scale sampling is needed in order to provide the most precise measurements practical for accurately determining timber volumes and values.

Many managed stands have been planted with genetically improved stock, precommercially thinned and fertilized. These stands are growing faster and with different form than typically occurred in natural stands. As a consequence, existing volume/taper tables based on data from natural stands do not accurately predict tree volumes. For commercial thinning or density management actions in relatively homogenous stands, trees may be felled to construct a local volume table in which the timber volume of sample trees is related to the tree diameter and taper.

Tree felling in Riparian Reserves and Late-Successional Reserves would only occur in stands under 80 years of age where density management is deemed desirable. Felled trees would reflect the diameter class distribution of the stand(s) to be treated. Typically, no trees greater than 20 inches in diameter at breast height (DBH) would be cut.

All required surveys for threatened and endangered species, survey and manage species, and cultural resources would be completed prior to initiation of any felling activity. Any decision to harvest the sample trees or retain them on site as large, woody debris would be addressed in a project-specific environmental assessment.

### **III. Features Common to Both Alternatives**

There would be no road construction, renovation or decommissioning associated with either alternative. No use of any ground-based equipment would be involved.

### **IV. Resources That Would Remain Unaffected by Either Alternative**

The following resources would not be affected by either of the alternatives: air quality, Areas of Critical Environmental Concern, prime or unique farm lands, floodplains, Native American religious concerns, solid or hazardous wastes, visual resources, and Wild and Scenic Rivers. No effects on the introduction or spread of invasive, non-native species and noxious weeds would be expected.

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## **Chapter 3**

# **AFFECTED ENVIRONMENT**

This chapter summarizes the specific resources that are present or have the potential to be present within the area, and that could be affected by the proposed action.

### **I. Timber/Vegetative Resources**

The Roseburg District PRMP/EIS (October 1994) identifies 371,207 acres of suitable commercial forest land on the District (Table 3-34, p. 3-55), composed of O&C lands, Public Domain and Coos Bay Wagon Road lands. These acres are primarily distributed among the Matrix, Riparian Reserve, and Late-Successional Reserve land use allocations.

The ROD/RMP (p. 33) identified 81,800 acres as Matrix lands. Within the Matrix designation, 54,900 acres are designated as General Forest Management Area (GFMA) to be managed on an average rotation of 80 years. The remaining 26,900 acres were designated as Connectivity/Diversity Blocks which are to be managed on a rotation of 150 years. There are 19,260 acres allocated to the Little River Adaptive Management Area, with 11,260 acres identified as lands outside of Riparian Reserves.

The ROD/RMP designated 186,423 acres as Late-Successional Reserves (p. 29) and approximately 113,500 acres as Riparian Reserves (p. 23) on the Roseburg District. These lands are managed for late-successional habitat and are not scheduled for timber harvest. However, density management may occur in these reserves in stands less than 80 years of age. Forest stands in Late-Successional Reserves and Riparian Reserves that are greater than 80 years of age would not be candidates for density management, so there would be no need for application of 3P Fall, Buck and Scale sampling.

Typically, stands in all land use allocations less than 40 years of age are considered too small for commercial thinning or density management and would not be candidates for 3P Fall, Buck and Scale sampling.

Table 1 contains the approximate (rounded to the nearest 100 acres) distribution of acres among land use allocations and seral stages. These are current figures and differ from ROD/RMP figures because of adjustments in land use allocations, stand aging over the past five years, and timber harvest.

Table 1 - Seral Stage Acres by Land Use Allocation

Land Use Allocation	Acres < 40 years old (early-seral)	Acres 40-80 years old (mid-seral)	Acres > 80 years old (late-seral)
GFMA & AMA	36,700	5,600	44,400
Connectivity/Diversity Blocks	13,500	2,900	18,300
Late-Successional Reserves	51,400	9,400	115,600
Riparian Reserves	45,700	7,800	43,100

## II. Special Status Species

The Roseburg District Proposed Resource Management Plan/Environmental Impact Statement (PRMP/EIS, October 1994) defines Special Status Species as follows: “Species which are limited in abundance and distribution and have identifiable threats to their existence are managed as special status species.” (PRMP/EIS, p. 3-33) Six categories of special status species are recognized. These include:

1. Federally threatened or endangered (FT/FE)
2. Federally proposed (FP)
3. Federal candidate (Category 1 and 2) (FC)
4. State threatened and endangered (ST/SE)
5. Bureau sensitive (BS)
6. Assessment species (AS)

### A. Wildlife

The following species inhabit lands managed by the Roseburg District: the Federally-endangered Columbian White-tailed deer (*Odocoileus virginianus leucurus*), the Federally-threatened marbled murrelet (*Brachyramphus marmoratum*), the Federally-threatened northern spotted owl (*Strix occidentalis caurina*), and the Federally-threatened bald eagle (*Haliaeetus leucocephalus*). State of Oregon High Priority Species that may be present include osprey, golden eagle, 7 species of woodpecker and 5 game species (PRMP/EIS, Table 3-14, p. 3-25). A list of other Federal-candidate species, Bureau assessment species, and Oregon State threatened or endangered species known or suspected to occupy lands on the Roseburg District is contained in the Roseburg District PRMP/EIS (Table 3-19, p. 3-35).

**B. Fish**

The Roseburg District manages lands primarily located in the Umpqua and Coquille river basins. These river basins support a wide variety of native and exotic fish species, including seven salmonid and twenty-five non-salmonid fish species. Table 3-17 contains a list of priority species (ROD/RMP, p. 3-31).

It is estimated that 192 miles of streams on lands administered by the Roseburg District BLM support anadromous fish, while 756 miles of streams support resident fish (ROD/RMP 1994, p. 3-32). Freshwater habitat found on the District is widely distributed throughout the subject river basins and is of variable quality.

Table 2 contains a list of anadromous fish species present on the Roseburg District that are currently listed as threatened or endangered, or are candidates for listing by the National Marine Fisheries Service under the Endangered Species Act of 1973, as amended.

Table 2 - Fish Species on the Roseburg District Listed or Candidates for Listing Under the Endangered Species Act

RIVER BASIN	SPECIES	STATUS
Umpqua River	Umpqua River cutthroat trout Oregon Coast coho salmon Oregon Coast steelhead trout	Endangered Threatened Candidate
Coquille River	Oregon Coastal cutthroat trout Oregon Coast coho salmon Oregon Coast steelhead trout	Candidate Threatened Candidate

**C. Plants**

All commercially suitable forest lands available for regeneration harvest, commercial thinning and density management actions in the Matrix, and density management actions in land use allocations not available for scheduled timber harvest have the potential to provide habitat for special status plant species. Tables 3 and 4 in Appendix B contain a list of the 37 special status vascular plant species known or suspected to occur on the Roseburg District, that could be affected by the proposed action.

**III. SEIS Special Attention Species**

SEIS Special Attention Species identified in the ROD/RMP include Survey and Manage and Protection Buffer species as discussed in the Standards and Guidelines, Attachment A of the ROD for the Northwest Forest Plan. Special Attention Species are species for which there was a concern for persistence under the management direction contained in the Northwest Forest Plan. These species are generally described as

rare or uncommon, and do not qualify for protection under the Endangered Species Act unless individually proposed and listed. Special Attention Species include mammals, birds, amphibians, reptiles and plants.

#### **A. Wildlife**

There is one Protection Buffer wildlife species known to inhabit forest stands on the Roseburg District. The great gray owl occupies mature conifer forest adjacent to forest openings and meadows, where it forages.

There are six Survey and Manage species that inhabit forest stands within the Roseburg District. These species consist of a mammal (red tree vole), an amphibian (Del Norte salamander), and four species of mollusks (*Helminthoglypta hertleini*, *Megomphix hemphilli*, *Prophysaon coeruleum*, and *Prophysaon dubium*).

The red tree vole is an arboreal mammal that depends on conifer canopies for nesting sites, forage, cover, moisture and travel routes.

The Del Norte salamander typically inhabits rocky substrates and talus in association with late-successional forest stands.

The four species of mollusks inhabit forested stands ranging from early-seral to late-seral in development, and frequently characterized by the presence of closed canopy; large, decayed wood; and hardwood leaf litter.

#### **B. Plants**

There are 10 Protection Buffer species and 13 Survey and Manage species known or suspected in forested stands on the Roseburg District. The 10 Protection buffer species consist of 6 fungi and 4 bryophytes. Of these 10 species, 7 are also included in Survey and Manage. The 13 Survey and Manage species include 3 lichens, 2 fungi, 4 bryophytes and 4 vascular plants. The individual species and their status are identified in Tables 5 - 8 in Appendix B.

### **IV. Water Resources**

The Roseburg District is composed of all or parts of watersheds located in the Umpqua, Coquille, Willamette and Siuslaw River basins. There are more than 2,600 miles of streams and rivers on the Roseburg District BLM. Streams and rivers provide a number of beneficial uses. The more common beneficial uses on the Roseburg District include: cold water for fish and other aquatic life, water for livestock and wildlife, water for irrigation, municipal and domestic water, and industrial water supplies .

Precipitation in the area occurs in the form of rain and snow, averaging approximately 45 inches annually. Typically, 85 percent of the annual precipitation occurs from October to April. Lands managed by the BLM are located in and below the Transient Snow Zone.

The State of Oregon Department of Environmental Quality (DEQ) 1998 Non-Point Sources assessment identified 52 waterbodies on the Roseburg District as water quality limited in their 303(d) listing. The listing evaluates 16 parameters for water quality. None of the waterbodies listed were found to be deficient for all 16 parameters. The most common deficient parameters listed were for sediment, pH, dissolved oxygen, stream temperature, and habitat modification.

Land ownership in the watersheds is a mixture of both private and BLM, with a range of uses that include residential/municipal, agriculture and forest management. Removal of vegetation and the location of roads next to streams are cited by DEQ as the primary degrading activities. Forest management is the land use activity most often associated with these disturbances (PRMP/EIS, p. 3-17) .

## **V. Soils**

The proposed action could potentially occur anywhere on the District where land exchanges or timber management activities are planned. This covers a large portion of District managed lands which are distributed over three major geomorphic divisions; the Coast Range, the Klamath Mountains and the Western Cascades. Due to the areal extent, soil types and conditions will be variable and wide ranging.

## **VI. Cultural Resources**

There are currently 174 known prehistoric sites and 50 historic sites on the Roseburg District. Two of these sites, the Susan Creek Indian Mounds and the China Ditch, are listed on the National Register of Historic Places. In addition, 28 prehistoric sites have been determined eligible for the National Register and one historic site is considered eligible.

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## Chapter 4

# ENVIRONMENTAL CONSEQUENCES

This chapter discusses how the specific resources would or would not be affected in the short term and long term, by implementation of the alternatives contained in this analysis. The discussion also identifies the potential impacts or consequences that would be expected.

### **I. Alternative 1 - No Action**

#### **A. Timber/Vegetative Resources**

There would be no short-term impacts to timber resources, because timber cruising would continue but would be restricted to methods that solely employ ocular estimation of volume, defect and value. There would be no opportunity to verify assumptions made on form and defect, by direct examination of felled and bucked sample trees. Equally, there would be limited opportunity for cruiser/appraiser training in the recognition of common timber defects.

The potential exists for long-term consequences, because in the absence of visual verification and direct measurement, the tendency exists to underestimate timber quantity and quality (USDI, Bureau of Land Management, 1996. Final Report of the Bureau of Land Management Oregon/Washington Timber Cruiser/Appraiser Program, p.37 ). If timber volumes on Matrix and Adaptive Management Area land use allocations are underestimated, additional acres of timber sale preparation would potentially be needed to meet the District's annual sale quantity objective.

The allowable sale quantity is considered sustainable over the long term. This is based on assumptions that the number of acres allocated for scheduled timber harvest is fixed and that certain inventoried volumes per acre are available for harvest. If cruising consistently underestimates the volume of timber available for harvest, this could result in an inability to meet the calculated sustained yield harvest level. This could occur if more acres than anticipated would need to be harvested in order to meet the allowable sale quantity objective.

If timber quantity and value is underestimated, the result would be a reduction in monies received by the Federal government for commodities sold and a potential reduction in county revenues in the form of payments made in lieu of taxes.

## **B. Special Status Species**

### **1. *Wildlife***

There would be no short-term direct, indirect or cumulative impacts to threatened, endangered, candidate or other high priority wildlife species from cruising timber using ocular estimation in place of felling and scaling sample trees, because the alternative would not involve the felling of any trees for sampling and would not constitute any disturbance or modification of present or potential habitat for the species. Underestimation of timber volumes would result in a need to prepare additional acres for sale in order to meet District allowable sale quantity objectives. This would lead to long-term impacts arising from reductions in late-successional habitat in the Matrix and Adaptive Management Area at a faster rate than anticipated in the RMP/EIS. The difference in rate of harvest compared to that anticipated in the PRMP/EIS would be directly proportional to the level of underestimation of timber volume.

### **2. *Fish***

No direct effects to listed species or their habitats would be expected in the short term or long term, because the alternative would not involve the felling of any trees for sampling and would not constitute any disturbance or modification of present or potential habitat for the species. Current indirect and cumulative impacts resulting from past management activities and natural disturbances would be expected to continue. No changes in the level of indirect and cumulative impacts would be anticipated. Implementation of a No Action alternative would have no effect to listed, proposed, or candidate fish species in the subject river basins.

### **3. *Plants***

There would be no direct impacts to any vascular plants identified as special status species as a consequence of a No Action alternative, because the alternative would not involve the felling of any trees for sampling and would not constitute any disturbance or modification of present or potential habitat for the species.

## **C. SEIS Special Attention Species**

### **1. *Wildlife***

There would be no direct impacts to the Protection Buffer and Survey and Manage species that inhabit forest stands on the Roseburg District associated with the No Action alternative. No sample trees would be felled, so there would be no disturbance or modification of any known habitat for these species.

## **2. *Plants***

There would be no alteration of vegetation associated with the No Action alternative. No sample trees would be felled, so there would be no disturbance or modification of any known habitat for these species. As a consequence there would be no direct effects on habitat or micro-climate conditions necessary to the persistence of any special attention vascular and non-vascular species that may occupy any proposed project area.

### **D. Water Resources**

The No Action alternative would have no direct impacts to hydrological functions at a site or watershed scale because there would be no reduction in vegetative cover that would potentially affect peak and base flows, there would be no disruption of streambank and stream channel configuration and structure, there would be no reduction of stream shading which would affect water temperatures, and there would be no activities that have the potential to generate and transport sediments into the aquatic system. Current indirect and cumulative impacts, based on past and present watershed conditions and land use activities would be expected to continue to affect stream function and water quality.

### **E. Soils**

There would be no direct or indirect impacts in the short term or long term, from the No Action alternative. There would be no activities which involving the use of ground based equipment or causing disturbance or displacement of the soil litter and surface mineral horizons. There would be no compaction or increase in the potential for surface erosion, which could affect long-term productivity.

### **F. Cultural Resources**

The No Action alternative would have no direct effect on cultural resources because there would be no ground-disturbing activity. Areas proposed for a timber sale or land exchange would be inventoried for cultural resources in site-specific project analyses. In accordance with policy and law, if cultural resources are found, a project is typically redesigned to avoid the cultural resources, or evaluation and mitigation procedures are implemented based on recommendations from the District Archaeologist.

## II. Alternative 2 - Proposed Action

### A. Timber/Vegetative Resources

Table 3 projects the anticipated annual acres of scheduled timber harvest for Matrix and Adaptive Management Area lands on the Roseburg District (Roseburg District Post-Reorganization Analysis, November 1996).

Table 3 - Projected Annual Acres of Timber Harvest

<b>Land Use Allocation</b>	<b>Regeneration Harvest</b>	<b>Commercial Thinning</b>	<b>Density Management</b>
GFMA & AMA	995	124	- - -
Connectivity/Diversity	192	- - -	125

Density management in Late-Successional Reserves and Riparian Reserves has averaged approximately 300 acres per year, combined, for the period of 1995-98 (Fiscal Year 1998 Annual Program Summary and Monitoring Report for the Roseburg District, Table 15, p. 126). Similar levels of density management are expected to occur in the near future. In the long term, as stands in Riparian Reserves and Late-Successional Reserves across the District mature and surpass the age of 80 years, the acres available for density management will gradually decline, barring catastrophic natural disturbances.

Mature forest stands designated for regeneration harvest generally average about 100 trees per acre. Younger, managed stands that would be candidates for commercial thinning or density management typically contain between 200 and 300 trees per acre. Assuming a range of sampling of 0.5-1 tree per acre, the maximum number of trees that could be subject to 3P Fall, Buck and Scale sampling in a given year would range from approximately 720 to 1440 based on projected timber harvest acres contained in Table 2. Assuming maximum sampling of acres across all timber sale proposals, on average, less than one percent of the standing trees would be felled in mature stands where regeneration harvest would occur, and less than one-half percent of the standing trees would be felled in mid-seral stands where commercial thinning and density management would occur. The need for sampling would vary based on stand composition and condition, it is expected that the actual number of trees that would be sampled would be well below the maximum projected numbers. The effects of such sampling on the available timber base would be negligible, because of the small number of trees that would potentially be cut.

The only negative and direct, short-term impacts of implementing the proposed action would be mortality of the selected sample trees and potential collateral damage to adjacent trees. These impacts would be indistinguishable from and consistent with the range of natural variability associated with gap-phase mortality common to Douglas-fir forests. "Death of one or a few overstory trees acts like a small minor disturbance and permits a small, single-cohort stand to grow from advance regeneration and other regeneration mechanisms." (Oliver, Chadwick D. and Larson, Bruce C. 1990. Forest Stand Dynamics, p. 153) If felled trees were subsequently retained on site, there would be a localized, long-term beneficial impact to the levels of coarse and large woody debris present in the upland areas and Riparian Reserves.

## **B. Special Status Species**

### **1. *Wildlife***

The use of 3P Fall, Buck and Scale sampling is an activity associated with timber sales. It was recently addressed as such for Consultation under Section 7 of the ESA in the FY1999-2000 Programmatic Biological Assessment (dated Feb. 22, 1999 as revised April 16, 1999) prepared by the Roseburg District and the associated Biological Opinion (Ref:1-15-99-F-206) prepared by the U. S. Fish and Wildlife Service. As long as project design features listed in the Biological Assessment and terms and conditions specified in the Biological Opinion are followed there is no need to re-consult on this action.

Trees exhibiting obvious wildlife use are typically reserved as a component of retention tree requirements for regeneration harvests. Remnant late-successional components are traditionally reserved in commercial thinning and density management actions. Where timber falling activities have the potential to disturb nesting species that may reside in close proximity to a proposed sale area, appropriate seasonal or hourly restrictions would be observed. As a result, no measurable direct impacts would be expected to special status or high priority species as a consequence of 3P Fall, Buck and Scale sampling.

### **2. *Fish***

The primary potential for effects to listed and candidate species and their habitats is from disturbance of vegetation occurring within a one-half site potential tree height distance of non-fish bearing streams and a one site potential tree height distance of fish-bearing streams (FSEIS, 1994. pp. 3&4-190 to 3&4-201) This creates the potential for affecting peak and base flows, stream bank and channel configuration, shading that helps maintain stream temperature, stream sedimentation, and large wood recruitment processes that are important for maintaining or creating aquatic habitat.

There would be no direct or indirect effects to peak or base flows, stream banks/channels, stream temperature, or stream sedimentation would be expected at either the site or watershed scale, because there would be no substantive changes to present aquatic conditions. The creation of small gaps would not be sufficient to affect peak and base flows, and the consequences indistinguishable from and consistent with the range of natural variability associated with gap-phase mortality common to Douglas-fir forests, as discussed in Chapter 4, Section II, Part A of this document.

The small gaps would have an inconsequential impact on the effectiveness of the riparian buffers and would not affect canopy closure (Oliver, 1990. p. 153) to a degree where shading of streams would be substantially changed and adversely modify water temperatures. Mountain riparian buffers of 100 feet or more have been reported to provide as much shade as undisturbed late-successional/old-growth forests (FEMAT Report, 1993, p. V-28; FSEIS, 1994. Figure 3&4-4, p. 3&4-60 ). Stands in Riparian Reserves where density management could be proposed would be typically stocked at 200-300 trees per acre, therefore the cutting of less than a single tree per acre would not have any substantive impact on stream shading and temperature.

The soils discussion in Chapter 4, Section II., Part E does not identify or anticipate any activities associated with the proposed action that would have the potential to generate sediments to aquatic systems.

The cutting of less than one tree per acre would not affect the potential for future recruitment of large wood into the aquatic systems. Delivery of large wood to streams is low at distances greater than approximately one tree height (FEMAT Report, 1993. p. V-26). Approximately seventy percent of all coarse woody debris delivered to streams originates within a half site-potential tree height of streams (FSEIS, 1994. Figure 3&4-4, p. 3&4-60). Even following a density management action, the number of trees remaining would equal or exceed stocking densities found in natural stands which have historically provided for a continuum of large wood recruitment into streams. If a subsequent decision was made to leave the sample trees on site, there would be an immediate and localized benefit to Riparian Reserves in the form of supplemental large woody debris.

Current watershed conditions that affect aquatic habitat quality would be expected to continue to operate at present levels and magnitude across the Roseburg District because no direct or indirect effects of the proposed 3P Fall, Buck and Scale sampling have been identified in this analysis at either the site or watershed levels which would alter present watershed function. Therefore, no cumulative effects to listed, proposed or candidate species, or their habitats, different from currently conditions, are anticipated as a result of implementing the Action Alternative.

Implementation of the Action Alternative would have no effect to listed, proposed, or candidate fish species in the subject river basins. The no effect determination does not require consultation with the National Marine Fisheries Service or the United States Fish and Wildlife Service.

### **3. *Plants***

Surveys of potential habitat for special status species of vascular plants would be conducted prior to implementation of the proposed action. Known sites would be protected in accordance with management direction. The potential for impacts to undiscovered sites would be small because of the low level of sampling that would be applied. Felling less than one tree per acre, on average, would represent less than one percent of the standing timber in mature stands, and less than one-half percent in mid-seral stands in which commercial thinning and density management would occur. This would not be sufficient to effect habitat or local micro-climate that the species are dependent upon (Oliver, 1990).

## **C. SEIS Special Attention Species**

### **1. *Wildlife***

There would be no direct or indirect impacts to vascular and nonvascular plants listed as Protection Buffer or Survey and Manage species as a consequence of 3P Fall, Buck and Scale sampling. Prior to implementation of the proposed action, protocol surveys of suitable habitat would be conducted for the species. If species are located during surveys, sites would be managed in accordance with current management direction. This management direction would protect habitat and micro-climate conditions essential to the persistence of the species. (FSEIS, 1994; PRMP/EIS, 1994. pp. 4-50 and 4-51)

### **2. *Plants***

There would be no direct or indirect impacts to vascular and nonvascular plants listed as Protection Buffer or Survey and Manage species as a consequence of 3P Fall, Buck and Scale sampling. Prior to implementation of the proposed action, protocol surveys of potential suitable habitat would be conducted for the species. If species are located during surveys, sites would be managed in accordance with current management direction. This management direction would protect habitat and micro-climate conditions essential to the persistence of the species (FSEIS, 1994).

## **D. Water Resources**

Indirect, direct and cumulative impacts to watershed conditions arising from the proposed action would be considered negligible because the felling of less than one sample tree per acre would not measurably change present conditions at the fifth-field watershed level. Impacts to water quality parameters identified by DEQ would also be negligible, because impacts to conditions at the fifth-field watershed level would not be measurable.

Timber felling in upland areas and Riparian Reserves, particularly in the Transient Snow Zone, has the potential to increase peak flows by removing vegetative cover or creating gaps in the canopy. These gaps allow abnormal accumulations of snow. During warm rain on snow events, there is a potential for

increases in peak flows associated with rapid snow melt. The small size and scattered nature of the canopy gaps that would be created would not be sufficient to have any measurable effect on snow pack on the forest floor that would affect peak and base flows, and would not constitute an effect any greater than would be associated with the loss of individual trees. This would be consistent with the range of natural variability associated with gap-phase mortality common to Douglas-fir forests, as discussed in Chapter 4, Section II, Part A of this document.

The potential for affecting stream temperature could also occur in conjunction with canopy removal. The proposed action would involve the felling less than one tree per acre on average. This level of canopy reduction would be too small to affect temperatures. As noted in Chapter 4, Section II, Part B(2) of this document, the small gaps would not affect canopy closure to a degree where shading of streams would be substantially changed and adversely modify water temperatures. Mountain riparian buffers of 100 feet or more have been reported to provide as much shade as undisturbed late-successional/old-growth forests (FEMAT Report, 1993, p. V-28; FSEIS, 1994. Figure 3&4-4, p. 3&4-60 ).

#### **E. Soils**

The removal or retention of felled trees would be addressed in a subsequent project-specific EA. Felling of trees could result in direct disturbance/displacement of the soil litter layer in the immediate vicinity of the tree(s) and minor compaction of the surface mineral horizon. Any impacts on soil resources, including compaction, disturbance, displacement or surface erosion would be minor, short-term in nature. These impacts would be indistinguishable from and consistent with the effects of natural, canopy gap formation. No ground-based equipment would be used, and no yarding of felled trees would occur, so there would be no soil disturbance associated with such activities.

#### **F. Cultural Resources**

The proposed action would have no direct effect on cultural resources because areas proposed for 3P Fall, Buck and Scale sampling would be inventoried for cultural resources in a site-specific project analysis, such as a timber sale or land exchange proposal. All ground-disturbing activities would be conducted in a manner that complies with the National Historic Preservation Act (NHPA) and implementing regulations (36CFR800); the National Cultural Programmatic Agreement between the BLM, the National Conference of State Historic Preservation Offices (SHPO), and the Advisory Council on Historic Preservation; and Oregon state cultural protocol. In accordance with policy and law, if cultural resources are found, the project is typically redesigned to avoid the cultural resources, or evaluation and mitigation procedures are implemented based on recommendations from the District Archaeologist.

### **III. Monitoring**

Monitoring would be specific to the project analysis to which 3P Fall, Buck and Scale is applied, and would be in accordance with the ROD/RMP, Appendix I (pp. 84,190-191, & 195-198).

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## **Chapter 5**

### **PREPARERS**

The following individuals were consulted and participated in the preparation of this environmental assessment:

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## APPENDIX A

### CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order. These resources or values either **not present** or **would not be affected by the proposed actions or alternative**, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

ELEMENT	NOT PRESENT	NOT AFFECTED	IN TEXT	INITIALS	TITLE
Air Quality					
Areas of Critical Environmental Concern					
Cultural Resources					
Environmental Justice					
Farm Lands (prime or unique)					
Floodplains					
Non-Native and Invasive Species					
Native American Religious Concerns					
Threatened or Endangered Wildlife Species					
Threatened or Endangered Plant Species					
Wastes, Hazardous or Solid					
Water Quality Drinking/Ground					
Wetlands/Riparian Zones					
Wild & Scenic Rivers					
Wilderness					
Visual Resource Management					

## **APPENDIX B**

### **SPECIAL STATUS AND SPECIAL ATTENTION PLANTS**

#### Special Status

FT Federally Threatened  
FE Federally Endangered  
FP Federally Proposed  
FC Federal Candidate  
ST State Threatened  
SE State Endangered  
BS Bureau Sensitive  
AS Assessment Species

#### Special Attention

PB Protection Buffer  
SM Survey and Manage

Table 4

Special Status Vascular Plants Known or Suspected on the Roseburg District  
That Could be Affected by the Proposed Action.

Species	Common Name	Status
<i>Asplenium septentrionale</i>	grass fern	AS
<i>Aster vialis</i> <sup>1</sup>	wayside aster	BS/ST
<i>Bensoniella oregana</i>	bensoniella	BS
<i>Calochortus coxii</i>	Crinite mariposa lily	BS/SE
<i>Calochortus umpquaensis</i>	Umpqua mariposa lily	FC/SE
<i>Cimicifuga elata</i>	tall bugbane	BS
<i>Cypripedium fasciculatum</i> *	clustered lady's slipper	BS
<i>Festuca elmeri</i>	Elmer's fescue	AS
<i>Frasera umpquaensis</i>	Umpqua swertia	BS
<i>Horkelia congesta</i> ssp. <i>congesta</i>	dense-flowered horkelia	BS
<i>Iliamna latibracteata</i>	California globe mallow	AS
<i>Isopyrum stipitatum</i>	dwarf isopyrum	AS
<i>Kalmiopsis fragrans</i>	North Umpqua kalmiopsis	BS
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>	Kincaid's lupine	FP/ST
<i>Pellaea andromedifolia</i>	coffee fern	AS
<i>Polystichum californicum</i>	California sword fern	AS
<i>Sedum laxum</i> ssp. <i>heckneri</i>	Heckner's stonecrop	AS
<i>Sysyrinchium hitchcockii</i>	Hitchcock's blue-eyed grass	BS

\* Also listed as special attention species

Table 5 Special Attention Lichens Known or Suspected in the Roseburg District That Could be Affected by the Proposed Action.

<b>Species</b>	<b>Status</b>
<i>Hypogymnia duplicata</i>	SM
<i>Lobaria linita</i>	SM
<i>Pseudocyphellaria rainierensis</i>	SM

Table 6 Special Attention Fungi Known or Suspected in the Roseburg District That Could be Affected by the Proposed Action.

<b>Species</b>	<b>Status</b>
<i>Aleuria rhenana</i>	PB, SM
<i>Bondarzewia montana</i>	SM
<i>Bridgeoporus nobilissimus</i>	SM
<i>Otidea leporina</i>	PB, SM
<i>Otidea onotica</i>	PB, SM
<i>Otidea smithii</i>	PB, SM
<i>Polyozellus multiplex</i>	PB, SM
<i>Sarcosoma mexicana</i>	PB, SM

Table 7 Special Attention Bryophytes Known or Suspected in the Roseburg District That Could be Affected by the Proposed Action.

<b>Species</b>	<b>Status</b>
<i>Buxbaumia viridis</i>	PB
<i>Diplophyllum plicatum</i>	SM
<i>Kurzia makinoana</i>	SM
<i>Marsupella emarginata aquatica</i>	SM
<i>Rhizomnium nudum</i>	PB
<i>Tetraphis geniculata</i>	PB, SM
<i>Tritomaria exsectiformis</i>	SM
<i>Ulota megalospora</i>	PB

Table 8 Special Attention Vascular Plants Known or Suspected in the Roseburg District That Could be Affected by the Proposed Action.

<b>Species</b>	<b>Status</b>
<i>Allotropia virgata</i>	SM
<i>Aster vialis</i>	SM
<i>Cypripedium fasciculatum</i>	SM (Klamath Province)
<i>Cypripedium montanum</i>	SM (West Cascades)