

## Appendix B

### 2007 PLANTATION THIN ENVIRONMENTAL ASSESSMENT BIOLOGICAL EVALUATION

FOR THOSE WILDLIFE SPECIES LISTED AS THREATENED, ENDANGERED, OR PROPOSED UNDER  
SECTION 4 OF THE ENDANGERED SPECIES ACT & SENSITIVE SPECIES UNDER THE REGIONAL  
FORESTER'S LIST

DATE: February 13, 2007

Clackamas River Ranger District  
Mt. Hood National Forest

Written by: /s/ Sharon Hernandez Date: February 13, 2007  
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## EXECUTIVE SUMMARY

Forest management activities that may alter the habitat for threatened, endangered, sensitive or proposed species are required to undergo review in a Biological Evaluation (FSM 2671.44 and FSM 2670.32) as part of the National Environmental Policy Act process. The Biological Evaluation process (FSM 2672.43) is intended to document that proposed management actions will not jeopardize the continued existence or cause adverse modification of habitat for listed or proposed species, or (for sensitive species) lead towards the likelihood of Federal Listing.

The attached Executive Summary serves as documentation to display the effects of the 2007 Plantation Thin on threatened and Forest Service Regional Forester’s sensitive species that are documented or suspected to occur within the Mt. Hood National Forest. A more detailed analysis of project effects to species can be found in the body of this biological evaluation. (Note: No wildlife proposed or endangered species exists on the Mt. Hood National Forest.)

**Table 1: Executive Summary: 2007 Plantation Thin**

Listed or Regional Forester’s Sensitive Species	Field Review – Presence of Potential Habitat for Species	USFWS Consultation Requirements	Preferred Alternative Effects/ Impacts Call
<b>Threatened</b>			
Northern Spotted Owl	<i>Yes</i>	Consultation Required	May Affect, Likely to Adversely Affect
Northern Bald Eagle	<i>Yes</i>	Consultation Required	May Affect, Not Likely to Adversely Affect
<b>Sensitive</b>			
Oregon Slender Salamander	No	None Required	No Impact
Larch Mountain Salamander	No	None Required	No Impact
Cope’s Giant Salamander	Yes	None Required	MII-NLFL**
Cascade Torrent Salamander	No	None Required	No Impact
Oregon Spotted Frog	Yes	None Required	MII-NLFL**
Painted Turtle	No	None Required	No Impact
Northwestern Pond Turtle	No	None Required	No Impact
Horned Grebe	No	None Required	No Impact
Bufflehead	No	None Required	No Impact
Harlequin Duck	Yes	None Required	No Impact
American Peregrine Falcon	Yes	None Required	MII-NLFL**
Gray Flycatcher	No	None Required	No Impact
Baird’s Shrew	No	None Required	No Impact
Pacific Fringe-tailed Bat	Yes	None Required	No Impact
California Wolverine	No	None Required	No Impact
Puget Oregonian*	No	None Required	No Impact
Columbia Oregonian*	No	None Required	No Impact
Evening Fieldslug*	No	None Required	No Impact
Dalles Sideband*	No	None Required	No Impact
Crater Lake Tightcoil*	No	None Required	No Impact

\*These species are Survey and Manage Species and are classified as a Sensitive species on the Region 6 Regional Forester’s Sensitive Species list for the Mt. Hood National Forest.

\*\*May Impact Individuals, but not likely to but not Likely to Cause a Trend Toward Federal Listing or Loss of Viability.

## PROJECT BACKGROUND AND ALTERNATIVE SUMMARY

This timber sale is located within the Clackamas River Ranger District of the Mt. Hood National Forest. The project is covered by three analyses: Lower Clackamas River Watershed Analysis (1996); Fish Creek Watershed Analysis (1994); and the Collawash /Hot Springs Fork Watershed Analysis (1995), amended in 2003. Since these watershed analyses were done, fifth-field watersheds have been redrawn. The Collawash River and Hot Springs Fork have been combined into one fifth-field watershed called the Collawash River. Several watersheds including Lower Clackamas River and Fish Creek have been combined into one fifth-field called Middle Clackamas.

The proposed action (Alternative B) is to thin and harvest wood fiber from approximately 4,374 acres. Thinning would be designed to enhance diversity by applying variable density prescriptions. The proposal would begin as soon as possible.

The following gives a brief description of the alternatives:

**ALTERNATIVE A:** Under the no-action alternative, current management plans would continue to guide management of the project area. No timber harvest or associated actions would be accomplished under this proposal.

**ALTERNATIVE B:** Variability – Thinning would be conducted to introduce structural diversity through variable spaced thinning. Diversity and variability would be introduced in several ways. This list is a summary of practices that are described below and in the design criteria.

- Leave tree spacing would vary within units and between units.
- Skips and gaps would be created in a variety of sizes. (Skips are areas where no trees would be removed; Gaps are areas where few or no trees would be retained. Gaps may also include areas of heavy thinning where 50 or fewer trees per acre are retained.)
- Leave trees would include minor species.
- Hardwood trees such as red alder and bigleaf maple are present in many stands. Where they are in wet areas they would be retained. In dry upland areas red alder and bigleaf maple would be retained where they are a minor species. In some areas these trees comprise a large component of the dry upland portion of a stand and in these cases some of the hardwoods would be removed to accomplish the desired thinning and some would be retained. There would be a greater emphasis for hardwood retention in LSRs than in matrix.
- Leave trees would include trees with the elements of wood decay.
- Leave trees would include some live trees where their crowns touch certain key snags.
- All non-hazardous snags would be retained.
- All existing down logs would be retained and key concentrations of woody debris in the older decay classes would be protected.
- Some snags and down logs would be created.

**STREAMSIDE RIPARIAN RESERVES** - For this project, riparian reserve widths are 180 feet for non-fish-bearing streams and 360 feet for fish-bearing streams (approximately 1225 acres). In riparian reserves the thinning would be designed to create conditions suitable for maximum diameter growth and enhance the potential for large wood recruitment. The intention is to enhance riparian reserves by accelerating the development of mature and late-successional stand conditions. Trees would be thinned to a relative density of 30.

**Skips & Gaps** - The protection buffers along streams would be considered skips. Gaps would be created within riparian reserves but they would be 100 feet or farther from a stream. Gaps would be 0.1 to 0.25 acre in size and would make up 0-10% of the available riparian component. For units 122 and 124, gaps would have similar size and distribution but would be 180 feet or farther from Big Creek.

**Protection Buffers** – The width of protection buffers would vary depending on site conditions. Streams adjacent to listed fish habitat would have 100-foot wide buffers (this applies to unit 208 adjacent to Trout Creek, and to unit 122 and 124 adjacent to Big Creek). All other perennial streams and intermittent streams within one mile of listed fish habitat would have 50-foot wide buffers (this applies to units 2-24, 28-36, 42, 46, 52-56, 60, 64, 80, 84, 86, 100-128, 142-224 and 274-350). Intermittent streams farther than one mile of listed fish habitat would have 30-foot wide buffers (this applies to units 26, 38, 40, 44, 48, 50, 58, 62, 66-78, 82, 88-98, 130-140 and 226-272).

Within 50 feet of the stream protection buffers, only low impact harvesting equipment such as, but not limited to, mechanical harvesters or skyline systems, which have minimal ground disturbance would be allowed. Mechanical harvesting equipment would be required to operate on slash-covered paths. Trees in this zone would be directionally felled away from the protection buffers to minimize the disturbance to the forest floor. These requirements would maintain the indicators for sediment, stream temperature, stream bank condition, and large woody material indicators.

**OTHER RIPARIAN RESERVES** – There are some small seeps and wet areas that are too small to show on maps. Riparian features that are not perennial or intermittent streams such as seeps, springs, ponds or wetlands would be protected by the establishment of protection buffers that incorporate the riparian vegetation. Certain perennially wet features that are habitat for the aquatic mollusks *Lyogyrus* n. sp. 1 or *Juga (O.)* n. sp. 2 would be protected by the establishment of 50-foot wide protection buffers. The protection buffers along ponds, seeps and wet areas may be considered skips.

**LATE-SUCCESSIONAL RESERVES** - In late-successional reserves (approximately 1237 acres), the thinning would be designed to accelerate the development of mature and late-successional stand conditions. Trees would be retained at a relative density of 20 to 40. Where riparian reserves overlap late-successional reserves, the design features for riparian reserves would take priority in the riparian reserve component. In late-successional reserves (including where riparian reserves overlap) trees would not be cut if they are greater than 20 inches in diameter (at a height of 4.5 feet). If larger trees need to be cut for skyline corridors, skidtrails, landings or temporary roads they would be left in place. Hardwood trees across a range of size classes would be favored, including large trees that occupy mid-canopy and higher positions.

**Skips & Gaps** - Skips would be created that would vary in size and would comprise a minimum of 10% of each unit. Skips would be 0.25 to 1.25 acres or larger where appropriate based on site-specific features. Where riparian reserves overlap late-successional reserves, the protection buffers adjacent to streams may be counted as skips. Gaps would be created on 3 to 10% of each unit: Openings would be 0.1 to 0.25 acre in size would have 6 or fewer trees and heavy thinning (25 to 50 trees per acre) would vary in size from 0.25 and 1.25 acres.

**MATRIX** - In the matrix (approximately 2188 acres), thinning would be designed to increase health and growth that results in larger wind-firm trees. Trees would be retained at a relative density of 25 to 35.

**Skips & Gaps** - Skips would be created that would vary in size and would comprise up to 5% of each unit. Where riparian reserves cross through matrix, the protection buffers adjacent to streams may be counted as skips. Gaps would be created within matrix; they would be 0.1 to 0.25 acre in size and would make up 0-3% of each unit's matrix component.

**ROADS** – The term obliteration is used for temporary roads to describe the type of closure that is standard practice now. After use, temporary roads will be bermed at the entrance; decompacted and roughened with the jaws of a loader or excavator; and debris such as rootwads, slash, logs or boulders are placed near the entrance and along the first portion of the road. The term decommissioning is used to describe the process of removing them from the system. They would be treated similarly as described for temporary roads above. Decommissioning often would include the removal of culverts, but for this project, there are no culverts on the roads proposed for decommissioning. It is possible that obliterated or decommissioned roads may be reopened and used again where appropriate or used for trails.

**Temporary Roads** - Temporary roads are roads that are built by timber operators to access landings and are closed upon completion of logging until they are needed again. They are not considered part of the Forest's system of permanent roads. The units proposed for thinning are plantations, many of which were accessed by temporary roads during the original clear cut logging. Existing temporary roads were assessed to determine whether they are needed for the current thinning proposal. These existing temporary roads are closed and in some cases have vegetation, brush and trees growing on them. Even though all of the proposed units were clear cut logged before, there are cases where it is not feasible or desirable to use the same roads, landings or logging method used before. To protect the residual trees and soil and water resources, in some cases new temporary roads are proposed to access the landings where the existing system roads and old temporary roads do not adequately access the ground. The unit tables show the lengths of road for each unit and the unit maps in Appendix F show their location. In some cases a road crosses through one unit to access an adjacent unit. In these cases the road is listed with the unit that requires the road for its logging. If needed for future management, a future EA would address the need for and the impacts of reopening obliterated roads.

- Approximately 6.8 miles of old existing temporary roads would be reopened. They would be obliterated upon completion of the harvest units they access.
- Approximately 0.7 miles of temporary roads would be constructed on old existing skid trails. They would be obliterated upon completion of the harvest units they access.
- Approximately 2.6 miles of new temporary roads would be constructed. They would be obliterated upon completion of the harvest units they access.

**System Roads** - Many system roads are currently closed with berms or other devices. They would be temporarily reopened and would be reclosed upon completion of the harvest units they access. The following roads (approximately 6 miles) have berms: 4620-011, 4620-013, 4620-016, 4620-025, 4620 (near unit 270), 4620-150, 4620-174, 4620-180, 4621-017, 4621-018, 4621-019, 4621-020, 4621-022, 4621-027, 4621-125, 4621-140, 5410-016, 5412-012, 6320-021, 6320-022.

**Road Repair and Stabilization** - To facilitate safe use, several roads are in need of repair and are as follows: Road 4620, 4620340, 4621, 5400, 5410, 5411, 6300, 6340, 7000, and 7010. In addition, most haul roads would receive road maintenance including ditch and culvert cleaning and brushing. Gravel roads would be bladed and shaped where needed.

**OTHER PROJECT DETAILS** - Fuels treatment would be minimal: where a mechanical harvester is used, branches would be crushed under the equipment. Elsewhere there would be no fuels treatment except the piling and burning of incidental quantities of slash and debris at landings.

**ALTERNATIVE C:** Alternative C would be similar to B except that no roads would be constructed. Approximately 1,700 feet of old temporary road would still be reconstructed and re-used. The units that have changed logging systems or roads are 1, 24 and 25. Helicopter or other systems would be used where needed. Approximately 223 acres would be helicopter logged, 92 acres skyline logged, and 1,363 acres utilizing a ground-based system.

## **SPECIES SPECIFIC DISCUSSIONS**

### **Northern Spotted Owl (*Strix occidentalis caurina* – threatened)**

#### **A. HABITAT**

Old-growth coniferous forest is the preferred habitat of spotted owls in Oregon. Old-growth habitat components that are typical for spotted owls are: multilayered canopies, closed canopies, large diameter trees, abundance of dead or defective standing trees, and abundance of dead and down woody material.

Habitat for the owl is further defined as either nesting/roosting/foraging (NRF) or dispersal habitat. Generally this habitat is 80 years of age or older, multi-storied and has sufficient snags and down wood to provide opportunities for nesting, roosting and foraging. The canopy closure generally exceeds 60 percent. Dispersal habitat for the owl generally consists of mid-seral stage stands between 40 and 80 years of age with a canopy closure of 40 percent or greater and an average diameter of 11". Spotted owls use dispersal habitat to move between blocks of suitable habitat; juveniles use it to disperse from natal territories. Dispersal habitat may have roosting and foraging components, enabling spotted owls to survive, but lack structure suitable for nesting.

## **B. FIELD REVIEW**

### **Habitat Available on the District**

The last time extensive field surveys were conducted on the District was from 1979 to approximately 1994; in which the Regional protocol per Regional Forester's direction of March, 1993 was followed. During that time period there had been many documented sightings of adults and young produced on the District. (Historic records are on file at the District office). However, none of these surveys are considered current and valid for project planning effects analysis. Current management direction is to assume that all suitable (nesting/ roosting/foraging) habitat for spotted owls is currently occupied and to manage the area accordingly.

### **Habitat available within the Project Area**

Yes. Approximately 457 acres within units 54, 112, 116, 128, 130, 134, 142, 168, 276, 280, 282, 284, 286, 288, 292, 302, 306 and 312 are considered non-habitat for the spotted owl due to their young age and resultant lack of structure and small diameter trees. The remaining 3, 917 acres proposed for harvest are providing dispersal-only habitat for the spotted owls. None of the units are currently proving NRF habitat for the species. The stands lack a multi-storied structure, large diameter trees and appropriate levels of snags and down required for nesting.

### **Analysis Area**

The spotted owl analysis area (79,173 acres) for this project includes Forest Service lands on the Clackamas River Ranger District. The mean home-range of spotted owls in the Oregon Cascades is 7,576 acres and is based on various studies (Courtney et. al. 2004). Based on this information a 1.94 radius was drawn around all the proposed harvest units and connected together to form the analysis area. This analysis area is an appropriate size for evaluating the habitat needs of the spotted owl in the project area. This analysis area includes Matrix and Riparian Reserve land allocations, the Roaring River and Collawash River Late-Successional Reserves, and portions of the Bull of the Woods Wilderness. CHU OR-10 and 12 occur within the analysis area and overlap with the Matrix and LSR land allocations. Refer to maps F-2, F-3 and F-13 in Appendix F within the EA.

Within the spotted owl analysis area, 25 historic nest and resident single owl locations (activity centers) were known to exist prior to 1994. These historic activity centers are distributed fairly evenly throughout the analysis area. Suitable spotted owl habitat exists throughout the analysis area; although fragmented compared to historical conditions, this habitat still is adequate to provide nesting opportunities for spotted owls in most locations. There are gaps in suitable habitat within this landscape and are located primarily in the eastern portion of Lower Fish Creek, Pup Creek, Whale Creek, Third Creek and the lower reaches of Upper Fish Creek. Proposed units 2 through 98 are located in this area. A smaller gap in suitable habitat occur within the Thunder, Dutch and the upper reaches of the Hot Springs Fork Tributary drainages. Proposed units 274 to 320 are located in the center of this area. Adequate dispersal habitat for the owl exists in all parts of the analysis area and is well distributed.

## **C. ANALYSIS OF DIRECT/INDIRECT EFFECTS**

### **Alternative A (No action)**

No short-term effects to the spotted owl would be predicted with this alternative. For the short term, the units would continue to function as dispersal or non-habitat; snag and down wood levels would remain essentially unchanged. In the long term (20-40 years), the stands would start to differentiate to varying degrees and show an increase in the levels of snags and down wood as well as understory development. Where these developments occurred, they would improve the dispersal habitat characteristics being provided within the stands. The quality of dispersal habitat would improve only slightly in some stands while improving much more in others. In the long term, some of the stands may eventually develop nesting habitat characteristics and become suitable spotted owl habitat. However, with no action the development of these stands into suitable habitat would likely take more than 100 years; much longer than with the action alternatives. Refer to Growth and Productivity and Diversity sections of EA for further discussions of the response of trees to no action.

With no action there would also be no noise related disturbance to owls as a result of project implementation.

## Alternatives B (Proposed Action) and C

### Effects to Habitat on a Stand Scale

The proposed action includes commercial thinning and building temporary roads within approximately 4,374 acres of young managed plantations in the Matrix, Riparian Reserve, Roaring River and Collawash LSR land allocations; as well as Critical Habitat Units OR-10 and 12. Portions of the stands in stream protection buffers and skips would be unthinned. Other portions of the stands would include the creation of gaps, landings, helicopter landings, skid trails and skyline corridors.

The following table displays the acres of dispersal habitat treated within the spotted owl analysis area.

### Proposed Treatment within Dispersal Habitat

ANALYSIS AREA	TOTAL ACRES	TOTAL ACRES DISPERSAL HABITAT TREATED	TOTAL ACRES DISPERSAL HABITAT DEGRADED	TOTAL ACRES DISPERSAL HABITAT REMOVED	PERCENT OF Analysis Area WITH DISPERSAL HABITAT DEGRADED	PERCENT ANALYSIS AREA WITH DISPERSAL HABITAT REMOVED	EFFECT TO HABITAT
Spotted Owl Analysis Area	79,173	3,938	2,953	985	3.7%	1.2%	Small

The proposed treatments within the matrix and riparian reserve land allocations as well as critical habitat units would include a variable thinning prescription that would improve the growth rate of the residual stand. Larger trees would eventually be provided in these young managed plantations in a much faster timeframe than they would if no management occurred. Skips and gaps would be incorporated into the prescriptions as well as the creation of snags and down woody debris; also adding to the potential for increased habitat diversity in the future.

The plantations within the late-successional reserves would be thinned as described in section 3.2.5 of the EA. The incorporation of larger and more frequent skips and gaps, and the creation of additional snags and down woody debris would all add to the complexity of the stand and the acceleration of these proposed harvest units into developing spotted owl suitable habitat. In addition, a variable density thin would occur both between trees in the units and between stands, adding to the potential that the units would eventually provide diverse habitat attributes. These silvicultural techniques are more likely to push the stands to an accelerated trajectory that would result in NRF habitat sooner compared to treatments outside the late-successional reserves, and much sooner when compared to no action.

The proposed harvest treatments would temporarily degrade approximately 2,953 acres of dispersal habitat from the analysis area. This degradation of habitat would occur as a result of opening up the canopy from its current condition of 74-98% down to 40-55%; as well as the loss snags and down woody debris currently in the stands. The Design Criteria require the retention of down logs and snags where safety permits. Snag levels currently average from 1.3-1.8 per acre in the units proposed for harvest within the Roaring River and Collawash Late-Successional Reserves and are expected to be reduced to 1 snag/acre after project implementation. Snag surveys were not accomplished in the units occurring within the Matrix, but the snag levels in these units are expected to be the same as in the Late-Successional Reserves. Although the dispersal habitat within these units would be reduced in quality as described above, they would still function as dispersal habitat for the owl on 2,953 acres. It is estimated that these units would again provide the same quality of habitat in approximately 10-20 years after harvest.

Due to the intensity of thinning within some of the units, 985 acres of dispersal habitat would be temporarily removed in the stands. Even though the structural components (snags, remnant trees, down wood) would be retained, portions of these stands would be reduced to less than 40% canopy cover, the overall affect being a temporary loss of dispersal habitat within these stands. There would be a short-term loss of approximately 985 acres of dispersal habitat as a result of project implementation. This temporary loss of dispersal habitat would occur in both the Matrix and Late-Successional Reserves. These units would regain dispersal habitat attributes in approximately 5 years after harvest. Although dispersal habitat would be temporarily removed in the Late-Successional Reserves, the benefits of thinning would outweigh this loss. Incorporating variable-density thinning (ranging from RD 20-35) with skips and gaps would create a mosaic of small openings with unthinned, moderately thinned and heavily thinned patches. This prescription

helps generate complex structures by promoting tree growth at different rates. It also encourages understory development and diversity. Variable-density thinning with skips and gaps would also improve forest health by increasing resistance to disturbance and improving the stand's ability to recover after disturbance. By implementing these silvicultural techniques within these Late-Successional Reserves, they would more quickly grow into late-successional forests than if no treatment occurred.

**Effects to Spotted Owls in the Vicinity of the Project Area**

Since current spotted owl surveys have not been completed for the area, it is assumed that all NRF habitat has the potential to contain spotted owl activity centers (i.e. nest sites or resident singles). There is NRF habitat adjacent to many of the proposed thinning stands that is currently providing nesting, roosting and foraging habitat. In addition, most of the units are within the mean home range (1.9 miles) of historic activity centers. Research has shown that activity centers that have been utilized in the past are likely to continue to be utilized in the future.

The following units or portions of units are within ¼ mile of a historic spotted owl activity center: 190, 208, 210, 226, 252, 254, 330, 332 and 340.

A recent study by Meiman (2004) reports changes in spotted owl use following a commercial thinning in stands near core areas in Clatsop State Forest. Although sample sizes were not large, proportional use of the thinned area was significantly less during and after harvest operations than during the pre-harvest period. The nature of this effect is not clear, but it may include an influence on prey availability, microclimate conditions, or higher vulnerability to predation. In addition, home range expansion of one spotted owl was observed, and a shift of the core use area away from the thinned stand. These effects suggest that commercial thinning in proximity to spotted owl activity centers may have a short-term effect on home-range and habitat-use patterns of individuals.

The loss of dispersal habitat would preclude spotted owl movement through these stands where the habitat has been removed. The removal or reduction of quality of dispersal habitat within the proposed units could also change the habitat use and home-range of any spotted owls residing in or near the proposed treatment areas. Where activity centers are close to units, the loss of habitat or reduction in quality of dispersal habitat could alter the birds foraging habitats; or shift the core use area of an individual away from the thinned stand. However, since there would be no NRF habitat impacted by project activities, it is highly unlikely that the proposed harvest activities would negatively impact the health or resultant survival of any birds residing close to the project area.

Effects to spotted owls resulting from noise, human intrusion, or smoke-related disturbance are largely unknown. Based on anecdotal information and effects to other bird species, significant noise, smoke and human presence can result in a disruption of breeding, feeding, or sheltering behavior of the spotted owl such that it creates the potential for injury to individuals. Many of the proposed harvest units are near unsurveyed NRF habitat. However, NRF habitat is likely to be occupied at a rate of only one occupied nest site per 4,754 acres (USDI 2006). Effects of the proposed project would only be predicted to be adverse if the proposed activities occurred during the breeding season near an active spotted owl nest, and within the applicable disturbance distance for the activity, since adult owls are able to distance themselves from disturbances. Therefore, adverse effects are linked to breeding when eggs/young have restricted mobility. Although there is a potential for an overlap between the proposed harvest and associated activities and active nests that could cause adverse effects, there is not a likelihood for such an overlap. Therefore, based on spotted owl nesting density in relation to the density of proposed projects, disturbance from these activity types are not likely to adversely affect spotted owls because while adverse effects are possibly, they are not reasonably certain to occur.

**Effects Call to Spotted Owl Habitat and from Disturbance**

The effects call is **May Affect, Not Likely to Adversely Affect** to both habitat and from disturbance as a result of project implementation.

**Project Effects to Dispersal Habitat within Critical Habitat Units OR-10 and OR-12**

The following table displays the total dispersal acres proposed for treatment within both Critical Habitat Units.



**Proposed Treatments as Related to Critical Habitat Units OR-10 and 12.**

Critical Habitat Units	Proposed Total Acres Treated	Proposed Total Acres Treated in Dispersal Habitat	Proposed Acres Treated in Non-Habitat
CHU OR-10	1,344	1262	82
CHU OR-12	509	262	247
<b>Total Acres Treated</b>	1,853	1,524	329

The table below describes the existing condition of the Critical Habitat Units and the project effects to the CHUs.

**Existing Condition and Effects to Critical Habitat Units**

CRITICAL HABITAT UNIT	DISPERSAL HABITAT (INCLUDES SUITABLE AND DISPERSAL-ONLY HABITAT)					TOTAL REMAINING ACRES
	TOTAL ACRES	TOTAL ACRES REMOVED	PERCENT OF HABITAT REMOVED	ACRES DEGRADED	PERCENT ACRES DEGRADED	
OR-10	56,218	316	0.6%	946	1.7%	55,902
OR-12	51,069	66	0.1%	196	0.4%	51,003
<b>TOTAL</b>	<b>107,287</b>	<b>382</b>	<b>0.7%</b>	<b>1,142</b>	<b>2.1%</b>	<b>106,905</b>

**Effects Call to Critical Habitat:**

The effect determination for the action alternatives on northern spotted owl critical habitat units OR-10 and OR-12 is, “**May Affect, Likely to Adversely Affect.**” This determination is due to the removal of currently functional dispersal habitat. The proposed harvest treatments would open up the canopy cover to less than 40% in some areas, making them unsuitable for dispersing owls. Within the CHUs, the proposed actions would also in the short-term add cumulatively to the decline of dispersal habitat, a primary constituent element of northern spotted owl critical habitat.

However, the resultant spotted owl habitat within these CHUs as a whole after project completion would be sufficient to provide spotted owl nesting and dispersal. The action alternatives would not appreciably diminish the functionality of these CHUs to provide habitat conditions that support the recovery of the northern spotted owl. Long-term effects would overall be beneficial because the proposed harvest treatments are predicted to eventually improve the quality of dispersal habitat in many of the units and speed up the succession of these stands within the CHUs into suitable habitat.

**Effects to Spotted Owl on a Province Scale (Willamette Province)**

The United States Fish and Wildlife Service issued an opinion on the effects of the 2007 Plantation Thin Timber Sale within the document titled “Biological Opinion for Effects to Northern Spotted Owls (*Strix occidentalis caurina*) and Northern Spotted Owl Critical Habitat from the 2007 Plantation Thin that have the potential to adversely affect, due to habitat modification and disturbance, on the Mt. Hood National Forest, Clackamas River Ranger District” The conclusion they reached is the following: “After reviewing the current status of the spotted owl, the environmental baseline for the action area, the effects of the proposed activities on spotted owl critical habitat, and the cumulative effects, it is the Service’s biological opinion that the activities, as proposed, are not likely to adversely modify spotted owl critical habitat.

“We reached this conclusion because no cumulative effects are anticipated that would alter the *Effects of the Action* findings that implementation of the proposed action is compatible with maintaining the conservation role of the action area with respect to spotted owl critical habitat. Implementation of the proposed action will not remove any suitable habitat; removal of dispersal habitat will not limit the dispersal ability of critical habitat; and thinning prescriptions have the potential to accelerate the development of suitable habitat as compared to untreated stands. Therefore, the conservation function of critical habitat is maintained at the Oregon Western Cascades Physiographic Province, and range-wide (NWFP) scales.”

### **Effects to the Spotted Owl on the Entire Range of the Species (Washington, Oregon, and California)**

The Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Project Documents within the Range of the Northern Spotted Owl established a system of land allocations and a rate of timber harvest (probable sale quantity) that is considered to be consistent with maintaining viability for the northern spotted owl across its range (USDA 1994). The 2007 Plantation Thin Environmental Assessment meets all the Standards and Guidelines set forth within this decision document. The action alternatives would not significantly alter the landscape's capability to provide for the continued viability of the northern spotted owl on Federal Lands.

A report was published by Sustainable Ecosystems Institute of Portland Oregon (September 2004). The report is titled "Scientific evaluation of the status of the Northern Spotted Owl." (S P Courtney, J A Blakesley, R E Bigley, M L Cody, J P Dumbacher, R C Fleischer, AB Franklin, J F Franklin, R J Gutiérrez, J M Marzluff, L Sztukowski). The Biological Opinion that is associated with this project addressed the items brought up by this report. The report is a review and synthesis of information on the status of the Northern Spotted Owl. The report was prepared to aid the United States Fish and Wildlife Service in their 5-year status review process, as set out in the Endangered Species Act. The report did not make recommendations on listing status, or on management, and focused on identifying the best available science, and the most appropriate interpretations of that science. The focus is on information developed since the time of listing in 1990. The report relied on demography studies summarized in a report titled "Status and Trends in Demography of Northern Spotted Owls, 1985–2003", Anthony et al.

The following excerpt is from the executive summary of the SEI report. The italicized portion below each paragraph gives project specific information on that topic.

Central to understanding the status of the subspecies is an evaluation of its taxonomic status. The panel is unanimous in finding that the Northern Spotted Owl is a distinct subspecies, well differentiated from other subspecies of Spotted Owls. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project.*

The panel did not identify any genetic issues that were currently significant threats to Northern Spotted Owls, with the possible exception that the small Canadian population may be at such low levels that inbreeding, hybridization, and other effects could occur. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project. The 2007 Plantation Thin project would not affect Canadian owls.*

The use of habitat and of prey varies through the range of the subspecies. These two factors interact with each other and also with other factors such as weather, harvest history, habitat heterogeneity etc, to affect local habitat associations. While the general conclusion still holds that Northern Spotted Owls typically need some late-successional habitat, other habitat components are also important (at least in some parts of the range). *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project.*

The available data on habitat distribution and trends are somewhat limited. Development of new habitat is predicted under some models. However our ability to evaluate habitat trends is hampered by the lack of an adequate baseline. Given these caveats, the best available data suggest that timber harvest has decreased greatly since the time of listing, and that a major cause of habitat loss on federal lands is fire. In the future, Sudden Oak Death may become a threat to habitat in parts of the subspecies' range. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project. There have been no large fires in the 2007 Plantation Thin area in recent years. Sudden Oak Death has not been found in the 2007 Plantation Thin area.*

Barred Owls are an invasive species that may have competitive effects on Northern Spotted Owls (as was recognized at the time of listing). Opinion on the panel was divided on the effects of Barred Owls. While all panelists thought this was a major threat, some panelists felt that the scientific case for the effects of Barred Owls remained inconclusive; other panelists were more certain on this issue. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project. Barred owls are discussed in this Biological Evaluation within the cumulative effects section below.*

The demography of the Northern Spotted Owl has been recently summarized in a meta-analysis (Anthony et al 2004), which is the most appropriate source for information on trends. Although the overall population, and some individual populations show signs of decline, we cannot determine whether these rates are lower than predicted under the Northwest Forest Plan (since there is no baseline prediction under that plan). However the decline of all

four Washington state study populations was not predicted, and may indicate that conditions in that state are less suitable for Northern Spotted Owls. Several reasons for this pattern are plausible (including harvest history, Barred Owls, weather). *The 2007 Plantation Thin project area was not part of the demographic studies summarized by Anthony et al. (2004). Of the 14 study areas, one is nearby. The nearest is the H.J. Andrews study area. The estimated spotted owl population on the H.J. Andrews study area is 70-80% of the 1987 initial population size. The data from the report suggested that populations over all of the 14 study areas were declining about 4% per year during the study. It also was suggested that owl populations on federal lands had better demographic rates than elsewhere and that populations were doing poorest in Washington. This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project.*

There is currently little information on predation on Spotted Owls, and no empirical support for the hypothesis, advanced at the time of listing, that fragmentation of forest after harvest increases predation risk. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project.*

West Nile Virus is a potential threat, but of uncertain magnitude and effect. *This information was considered and incorporated when developing the assessment of effects for the 2007 Plantation Thin project. West Nile Virus has not been identified in the 2007 Plantation Thin project area.*

In general, conservation strategies for the Northern Spotted Owl are based on sound scientific principles and findings, which have not substantially altered since the time of listing (1990), the Final Draft Recovery Plan (1992) and adoption of the Northwest Forest Plan (1994). Nevertheless we identify several aspects of conservation and forest management that may increase both short and medium term risks to the species. These are typically due to failures of implementation.

A full evaluation of the uncertainties of the data, the conclusions that can be drawn from them, and of the perceived threats to the subspecies, are shown in the summary of individual panelist responses to a questionnaire.

Major threats to Northern Spotted Owls at this time include: the effects of past and current harvest; loss of habitat to fire; and competition from barred owls. Other threats are also present. Of threats identified at the time of listing, only one (predation linked to fragmentation) does not now appear well supported.

## **Alternative C Only**

Alternative C involves the same units as Alternative B. Alternative C would not construct any new temporary roads; therefore some of the logging methods for the affected units would be changed. Alternative C includes road closures and decommissioning. See section 3.3 in the EA for Alternative C details.

Alternative C would log 876 acres with helicopter; compared to 754 acres in Alternative B. Alternative C would also log with a skyline and ground-based system approximately 1200 and 2298 acres, respectively. Compare this to Alternative B which treats 1307 and 2312 acres with a skyline and ground-based system, respectively.

Alternative C would have slightly reduced effect to spotted owl dispersal habitat due to the 2.6 miles of new temporary road construction proposal being dropped and the increase of protection buffers on intermittent streams farther than one mile of listed fish habitat from 30 to 50 feet. Reduced roads and increases to streamside protection buffers would result in greater available dispersal habitat for owls. Although this change relative to Alternative B is measurable in acres, it would have no meaningful change to the effects to spotted owls related to dispersal habitat.

Alternative C would have an increase in helicopter logging by 122 acres and a reduction in skyline and ground-based system logging by 107 and 14 acres, respectively. Helicopter logging typically results in a loss of snags greater than in both tractor and skyline logging and typically has less of an effect on the existing down wood than both ground and skyline-based systems. The increase in helicopter logging by 122 acres would cause an increase on the potential loss of existing snags in the units and would cause a reduction in potential effects to existing down wood. These effects are measurable, but would have no measurable change to the effects to spotted owls related to snags and down wood being a component of spotted owl habitat. Although snags and down wood are beneficial in dispersal habitat and increase the opportunities for foraging; snags are already at low level within these stands, averaging 1.3 – 1.8 snags/acre in the LSRs. A few additional losses of existing snags would have no additional measurable impacts to spotted owls utilizing this habitat.

The 4.5 miles of proposed road decommissioning would slightly reduce the effects of fragmentation caused by road building once the roads become vegetated. The proposal to berm 43.23 miles and close 8.94 miles of roads with year-round gates would result in less noise disturbance to the owls. However, these roads would still remain intact and would continue to contribute to the fragmentation of spotted owl habitat.

## D. ANALYSIS OF CUMULATIVE EFFECTS

A cumulative effects analysis has been conducted for dispersal habitat within the Spotted Owl Analysis Area since there is a meaningful change. The change in dispersal habitat is small and the effects to northern spotted owls from this change would be minor. Since the Forest has emphasized the thinning of this type of habitat in recent years, a cumulative effects analysis for dispersal habitat has been conducted. Since the proposed project would have no effect on suitable habitat, no cumulative effects would occur to this spotted owl habitat type.

### Alternatives B and C

Stands that have a canopy cover greater than or equal to 40 percent and conifer trees greater than or equal to 11 inches average diameter are considered dispersal habitat for spotted owls. As plantations grow, these conditions would be met at approximately age 40. Stands older than this would be considered functioning dispersal habitat and would not enter into this analysis unless their canopy has been reduced to less than 40%.

### Past, Present and Foreseeable Future Projects and Actions

Project Name	Extent, Size, Type, & Distance	Overlap In Time Or Space	Type Of Potential Effect To Dispersal Habitat	Measurable Effect To Dispersal Habitat	Rationale For Inclusion Or Exclusion From Analysis Below
<b>Present – Parts of the Moore Thin (No Whisky EA)</b>	Units 16, 17 & 19: 98 acres of plantation thinning	Units occur within Analysis Area. Thinning is under contract but not yet logged.	Temporary loss and degradation of dispersal habitat	Yes. Approximately 38 acres of dispersal habitat lost and 60 acres of dispersal habitat degraded. These have been previously thinned.	Include. A loss and reduction in quality of dispersal habitat.
<b>Present – Slip Thin</b>	All units, 64 acres of plantation thinning	Units occur within Analysis Area. Slip Thin is under contract but not yet logged.	Degradation of dispersal habitat	yes	Include. A reduction in quality of dispersal habitat would occur.
<b>Present – Elbow Thin (South Fork EA)</b>	Units 1 & 2: 74 acres of plantation thinning	Units occur within Analysis Area. Not yet under contract.	None	no	Exclude. These units are not dispersal habitat before thinning.
<b>Present – Fan and Thunder II Timber Sales (Collawash EA)</b>	All units, 237 acres of plantation thinning and 55 acres of natural second-growth thinning	Units occur within Analysis Area. Fan under contract but delayed by litigation, Thunder II is Not yet under contract.	Degradation of dispersal habitat	yes	Include. A reduction in quality of dispersal habitat would occur.
<b>Present – B Thin (Cloak EA)</b>	Units 497, 498 & 500: 85 acres of plantation thinning	Units occur within analysis area. B Thin is currently in the process of being logged.	Degradation of dispersal habitat	yes	Include. A reduction in quality of dispersal habitat would occur.

<b>Project Name</b>	<b>Extent, Size, Type, &amp; Distance</b>	<b>Overlap In Time Or Space</b>	<b>Type Of Potential Effect To Dispersal Habitat</b>	<b>Measurable Effect To Dispersal Habitat</b>	<b>Rationale For Inclusion Or Exclusion From Analysis Below</b>
<b>Present – Blister Fire</b>	Lightning caused wildfire affecting dispersal habitat	Yes. Fire occurred within Analysis Area	With current and predicted mortality, 149 ac. of dispersal habitat lost	yes	Include. A loss and reduction of quality of dispersal habitat has occurred.
<b>Past – regeneration harvest</b>	Throughout Analysis Area	Yes, all plantations less than 40 years*	Loss of dispersal habitat	Yes	Include. A loss of dispersal habitat has occurred.
<b>Past – other commercial thinning not listed above</b>	Throughout Analysis Area	No. Older thinning prescriptions used a light thinning which have recovered to dispersal habitat already.	Loss or degradation of dispersal habitat	No	Exclude. Effects no longer evident. Stands have recovered.
<b>Past – road construction</b>	Throughout Analysis Area	Yes. roads occur throughout the Analysis Area	Permanent loss of dispersal habitat	Yes. Approximately 2,768 acres of dispersal habitat has been converted to roads	Include. A permanent loss of dispersal habitat has occurred.
<b>Past – rock quarries</b>	Throughout Analysis Area	Yes. Rock quarries are permanent and occur throughout the Analysis Area	Permanent loss of dispersal habitat	Yes	Include. A permanent loss of dispersal habitat has occurred.
<b>Past – Power Line</b>	Southern portion of Analysis Area	Yes. Power lines are permanent	Permanent loss of dispersal habitat	yes	Include. Trees that grow under power line are cut for safety before they can become dispersal habitat.
<b>Past – road decommissioning</b>	Throughout Analysis Area	Yes	Trees begin to grow in road	No	Exclude. No detrimental effect to dispersal habitat. Roads eventually would become dispersal habitat.
<b>Past and present watershed restoration projects</b>	Culvert replacement, road repairs, etc.	Yes.	None	No	Exclude. No effect to dispersal habitat.
<b>Activities on other ownerships</b>	Past logging. No known foreseeable future logging.	Yes, 52 acres of private ownership	Loss of dispersal habitat	Yes	Include. A loss of dispersal habitat has occurred from past logging.
<b>Future timber harvest</b>	Unknown, but potential for timber	Unknown location	Unknown of intensity	No	Exclude. No site specificity. Can

Project Name	Extent, Size, Type, & Distance	Overlap In Time Or Space	Type Of Potential Effect To Dispersal Habitat	Measurable Effect To Dispersal Habitat	Rationale For Inclusion Or Exclusion From Analysis Below
	harvest occurs within all parts of the Analysis Area except for Wilderness.		of treatments		not be modeled at this time. The appropriate time to conduct a cumulative effects analysis would be in a future EA after a firm proposal is developed.
<b>Off highway vehicle use</b>	Minimal dispersed use throughout the Analysis Area	Yes	Compaction and disturbance	No	Exclude. No effect to dispersal habitat.

\* Timber sales occurring more than 40 years ago would likely have already grown into dispersal habitat. There has been a total of 29,738 acres if regeneration harvest. Of this total, 18,957 acres of past regeneration harvest occurred within the past 40 years.

The analysis area is comprised of 56,484 acres of dispersal habitat, or 71%. This calculation looks at the existing condition of vegetation as it has been affected by past regeneration harvest timber sales, fires, power line and rock quarry creation, and road construction; all of which are listed in s. 4.5.1.11. These disturbances are tracked by stand age (Data source – GIS data from Veg2005.shp and Roads.shp). In addition, this calculation takes into consideration the loss of dispersal habitat that would result from the implementation of the Moore thinning timber sale as well as the anticipated loss of dispersal habitat from the Blister Fire. There would also be approximately 688 acres that would have dispersal habitat degraded in the Moore, Fan, Thunder, Slip and B thinning timber sales. The baseline adjusted for these planned sales would be 55,796 acres of dispersal habitat or 70%.

**Effects of Past Actions**

The landscape pattern of vegetation has been affected by past timber harvest, fires, etc, substantially impacting the habitat for spotted owls. Some ecologically important features of landscape pattern are: amount of edge habitat, degree of fragmentation of late-successional forest, and amount of interior forest. As fragmentation of a landscape pattern increases, the amount of interior forest habitat decreases and the amount of edge habitat increases. As fragmentation increases, the amount of interior forest habitat decreases, impacting organisms that prefer large patches of interior habitat, such as the spotted owl.

Past management actions, the Blister Fire and other fires have reduced the amount of dispersal habitat within the analysis area by approximately 20,000 acres. There is currently still adequate dispersal habitat for spotted owls.

**Proposed Treatments as Related to the Current Dispersal Habitat Available Within the Spotted Owl Analysis Area**

ANALYSIS AREA	DISPERSAL HABITAT (INCLUDES SUITABLE AND DISPERSAL-ONLY HABITAT)						TOTAL REMAINING DISPERSAL ACRES
	TOTAL ACRES	TOTAL ACRES REMOVED	TOTAL ACRES REMAINING POST-HARVEST	PERCENT OF HABITAT REMOVED	ACRES DEGRADED	PERCENT ACRES DEGRADED	
<b>Spotted Owl Analysis Area</b>	55,796	985	54,811	2%	2,954	5%	54,811

The loss of approximately 985 acres of dispersal habitat from the current proposal as well as the subsequent implementation of the Moore timber sales would preclude spotted owl movement through these stands where the

habitat has been removed. However, the ability of the owls to move across the landscape in the analysis area would still be adequate since adequate dispersal still exists in the appropriate quantities and juxtaposition. Abundant dispersal habitat would remain in the analysis area to allow the birds to adequately disperse between suitable habitat blocks.

There would be a degradation of approximately 2,954 acres of dispersal habitat from the current proposal in addition to the subsequent implementation of the Moore, Fan, Thunder, Slip and the B Thins. The loss of dispersal habitat described above as well as reduction of quality of dispersal habitat within the proposed harvest units and on-going projects listed above could change the habitat use and home range of any spotted owls residing within the analysis area. Where activity centers are close to thinning proposals that would remove or reduce the quality of dispersal habitat, it could alter the birds foraging habitats; or shift the core use area of an individual away from the thinned stand. Since dispersal habitat would still be available in the analysis area in adequate quantities and distribution, it is unlikely that these actions would negatively impact the health or resultant survival of any birds residing within the analysis area.

The cumulative effects on dispersal habitat would be minor, mainly because dispersal habitat is not the limiting factor for owls in the area. In this analysis area, the more likely limiting factor for spotted owl occupancy of the area is the lack of spotted owl suitable habitat and lack of connectivity between these suitable habitat blocks. In the long term, thinning treatments in the LSR with the action alternatives would accelerate the development of suitable spotted owl habitat.

### **E. CONFLICT DETERMINATION (all alternatives):**

All action alternatives for the 2007 Plantation Thin Commercial Thinning Project has a **“May Affect, and is Not Likely to Adversely Affect,” the spotted owl, its habitat, critical habitat, or from disturbance.**

### **F. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE:**

The northern spotted owl is listed as threatened throughout its range under the endangered species act (55 CFR 26114) on June 22, 1990. Any action that would result in a beneficial effect or could result in an adverse impact to the spotted owl would result in a may effect determination and would require consultation with the U.S. Fish and Wildlife Service.

Consultation with the U.S. Fish and Wildlife Service was initiated on the “2007 Plantation Thin Timber Sale” in July of 200 through the document titled “Biological Assessment for the 2007 Plantation Thin” The Fish and Wildlife Service issued the Biological Opinion in October of 2006.

## **Northern Bald Eagle** *(Haliaeetus leucocephalus – threatened)*

### **A. HABITAT**

The bald eagle is a permanent resident in Oregon. Their nests are usually located in multi-storied stands with old-growth components, and are near water bodies that support an adequate food supply. Nests, which usually consist of a bulky platform of sticks, are usually located in the super-canopy of trees, or even on a cliff. Nest sites are usually within ¼ mile of water in the Cascades.

Adequate forage sources are possibly the most critical component of bald eagle breeding and wintering habitat. Fish, waterfowl, rabbits, and various types of carrion comprise the most common food sources for eagles in the Pacific Recovery Plan area. Wintering bald eagles perch on a variety of substrates, proximity to a food source being the most important factor influencing perch selection. Eagles tend to use the highest perch sites available that provides a good view of the surrounding area. These perch sites typically are snags and trees with exposed lateral limbs or dead tops (USFWS 1986). Communal roosts are invariably near a rich food source and in forest stands that are multi-storied and have at least a remnant old-growth component.

### **B. FIELD REVIEW**

#### **Habitat Available on the District**

Bald eagles are observed occasionally on the District, especially in late summer through late winter. Due to low numbers and sporadic use, no communal roost areas are known to exist on the District. There has been consistent use

by adults in two areas of the Clackamas River Ranger District, one of which has had recent nesting success by a bald eagle pair. These areas are greater than 20 miles away from the proposed project site.

**Habitat Available within the Project Area (proposed harvest units) and Surrounding Area:**

The project area is in close proximity to the Clackamas and Collawash Rivers, two areas that bald eagles are commonly observed during the spring/summer period. The Analysis Area for bald eagles is ¼ mile from the west stream banks of Clackamas River, starting at Indian Henry and ending at Two Rivers. It then continues on the Collawash River from the same place at Two Rivers to the confluence of Happy Creek. This area was designed to incorporate the area that is likely have most of the bald eagle activity and contain the proposed actions that occur within this potential bald eagle habitat.

Habitat for bald eagles is described in terms of foraging, nesting, roosting, and perching. The lower portions of the Clackamas and Collawash Rivers are fairly narrow and usually have swift water and rapids which may decrease the availability of fish to foraging eagles. The steepness of the river canyons and the narrow riverbeds limit the views of the river for a bald eagle from any areas except right along the rivers' banks. The high use paved roads in the area occur adjacent to the river banks along much of the Clackamas and Collawash Rivers, often without any visual buffer. This prevents any potential foraging areas from being free of disturbance.

Although there have been no documented nesting eagles in the area, there is suitable nesting and roosting habitat along these Rivers. The nesting quality is considered fair in the analysis area, with prey availability being the likely limiting factor. Most of the better forest stands with characteristics favorable to bald eagles are also located along the rivers, so nest sites would likely be located very near the rivers. Most adequate nesting habitat in these areas would also be impacted by disturbance from the heavy traffic and easy access. Roosting quality in the analysis area is considered marginal to fair.

**Existing Condition of Proposed Harvest Units:** Some of the proposed harvest units occur within ¼ mile the Clackamas and Collawash Rivers, a potential foraging source. Portions of units 100, 102, 104, 144, 146, 148, 150, 160, 161, 162, 164, 166, 176, 177, 178, 208 and 210 are within ¼ mile of the Clackamas River and portions of units 202, 204, 206, 322, 326, 346 and 348 are within ¼ mile of the Collawash River. None of these proposed harvest units have the structural components necessary for potential bald eagle nesting or communal roosting habitat. The units lack a mature multi-story structure with old-growth or old-age second-growth trees. However, these units may provide potential perching habitat due to their proximity to these two rivers. This potential perching habitat is considered fair/poor quality due to the minor amounts of snags and trees providing a good view of the surrounding area. In addition, many of the proposed harvest units within ¼ mile are directly adjacent to potential bald eagle nesting habitat (i.e. late-seral stands that within ¼ mile of these two rivers).

## **C. ANALYSIS OF DIRECT/INDIRECT EFFECTS:**

### **Alternative A (No Action)**

There would be no effects to the northern bald eagle with this alternative. In the short term, some of the units would continue to provide poor/fair quality perching habitat. In the long-term (20-40 years), the stands would somewhat increase in tree size and show an increase in the levels of snags. When these developments occurred, they would improve the perching habitat characteristics being provided within the stands adjacent to the Clackamas and Collawash Rivers. In 100+ years, some of the stands may eventually develop nesting habitat characteristics and become potential nesting or communal roosting habitat for the bald eagle. However, the development of these stands into improved perching habitat and eventual suitable nesting habitat would take much longer in the no action alternative due to the current densities of the stands and their resultant slower growth rates. Refer to Growth and Productivity and Diversity sections of EA for further discussions of the response of trees to no action.

### **Alternative B (Proposed Action) and C**

#### **Effects to Habitat**

There would be no project effects to potential nesting or communal roosting bald eagle habitat due to the lack of these habitats within the proposed harvest units. Some of the units listed above could have a few remnant trees or snags still remaining in the units that could serve as potential perch trees. Although no potential perch trees would be proposed for harvest, it is possible a few, mainly snags, would need to be cut down due to safety concerns during harvest



operations. It is also possible that a few potential perch trees would blow down as a result of helicopter logging or “opening up the stand.”

Perch trees along these portions of the Clackamas and Collawash Rivers are currently abundant and have moderate to high densities of relatively large trees with irregular crowns. Because there is currently moderate to high qualities of perch trees present within ¼ mile of these two portions of the Clackamas and Collawash Rivers, the loss of a few perch trees as a result of the proposed harvest treatments is not predicted to meaningfully impact the quality of perching habitat for bald eagles within the area. It is unlikely that this loss of perch trees would meaningfully lower the availability of potential bald eagle habitat currently being provided in the area. In addition, the action alternatives contain would create some snags (s. 3.5.2 of the EA).

With Alternative B, approximately 2.6 miles of new temporary roads would be built. However, only one of the roads would be built within ¼ mile of the Collawash River; none would be built this close to the Clackamas River. This road is approximately 1250 feet in length and occurs within unit 348. The construction and temporary use of this road would cause a slight increase in potential disturbance to bald eagles potentially using this habitat or the surrounding stands for perching and foraging. However, this increase in disturbance would create no meaningful impacts to the bald eagle. There would be no meaningful decrease in potential perching habitat available for bald eagles in the area. All other roads built would be beyond ¼ mile of the two rivers and have no effect on bald eagles or their habitat.

All other proposed activities associated with this project that fall outside of this analysis area would have no impacts to bald eagle habitat.

#### **Effects to Individuals**

If a bald eagle were present in any of the units or surrounding area during project implementation, it would have the ability to quickly move to adjacent acceptable habitat. No harm would come to the individuals. Several of the proposed harvest units within ¼ mile of the rivers are directly adjacent to potential nesting, communal roosting and high quality perching habitat. Disturbance caused by project implementation could cause these potential habitats to be temporarily unavailable to bald eagles. Since the availability of a high quality foraging source is the limiting factor for bald eagle in the area and not the habitat components comprising roosting, nesting and perching habitats, the temporary unavailability of a small percentage these habitats is not predicted to impact bald eagles. Because of the high visibility of bald eagles, it is unlikely that this project would be implemented in an area with an undiscovered bald eagle nest or roost. If a new bald eagle nest or roost is discovered within 0.25 mile (or 0.5-mile sight distance) of the project, the situation would immediately be evaluated by the District biologist for potential effects on bald eagles and mitigated to prevent disturbances.

All other proposed activities associated with this project that fall outside of this analysis area would have no disturbance impacts to bald eagles.

#### **Effects to Population**

None expected since there would be no meaningful effects to bald eagles and their habitat.

### **Alternative C Only**

Alternative C involves the same units as Alternative B. Alternative C would not construct any new temporary roads; therefore some of the logging methods for the affected units would be changed. Alternative C includes road closures and decommissioning. Approximately 4.5 miles of roads would be decommissioned, 43.23 miles would be bermed, and 8.94 miles would be closed year-round with gates. Intermittent streams farther than one mile of listed fish habitat would have the protection buffers increased from 30 to 50 feet.

Alternative C would log 876 acres with helicopter; compared to 754 acres in Alternative B. Alternative C would also log with a skyline and ground-based system approximately 1200 and 2298 acres, respectively. Compare this to Alternative B which treats 1307 and 2312 acres with a skyline and ground-based system, respectively.

As a result of no new road building in this alternative, there would be an increase in helicopter logging by 21 acres within 4 units (178, 322, 346, and 348) that are within ¼ mile of the Clackamas and Collawash Rivers. There would also be a subsequent reduction in skyline and/or ground-based logging in these same units. Helicopter logging typically results in a loss of snags greater than in both tractor and skyline logging. The increase in helicopter logging by 21 acres compared to Alternative B would cause a very slight increase in the potential loss of existing snags, and possibly potential perch trees, in the units and surrounding stands. There would be no measurable change to potential bald eagles perching habitat. The majority of snags lost would be small/moderate diameter snags less than 20”

diameter; too small for a bald eagle perching site. Although snags are the most common perching sites for bald eagles, they are already at low level within these stands, averaging 1.3 – 1.8 snags/acre. The loss of some existing snags, most of which would be too small to be utilized by bald eagles, would have no additional meaningful impacts to potential bald eagle perching habitat.

There are no roads proposed for decommissioning or closed with a gate that are within ¼ mile of the Clackamas or Collawash Rivers. However, there are four roads proposed to be bermed that are within ¼ mile; one near the Collawash and three close to the Clackamas River. These roads are 6340-120, 4621-150, 4621-162 and 4620-130. Only small portions of these roads proposed to be closed with a berm are within ¼ of the rivers, so only approximately 2000 additional feet of road would be closed in potential perching habitat for bald eagles. The closing of access to these segments of road would cause a slight decrease in potential disturbance to bald eagles potentially using this habitat or the surrounding stands for perching and foraging. However, these almost immeasurable decreases in disturbance would create no meaningful benefits to the bald eagle potentially using the area.

## **D. Cumulative Effects**

The action alternatives would have no cumulative effects on potential bald eagle nesting or communal roosting habitat. The loss of a few perch trees would reduce the total amount of potential perch trees available; but the change would be so minor it would essentially have no effect to the available habitat for bald eagle foraging or perching. A cumulative effects analysis is not needed for bald eagle habitat since there is no meaningful change in bald eagle habitat with implementation of the action alternatives.

## **E. CONFLICT DETERMINATION**

All action alternatives would have a “**May Affect, not Likely to Adversely Affect**” for disturbance only on the bald eagle. There would be **No Effect** to bald eagle habitat.

## **F. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE**

The northern bald eagle is listed as threatened throughout its range under the endangered species act (55 CFR 26114) on June 22, 1990. Any action that would result in a beneficial effect or could result in an adverse impact to the bald eagle would result in a may effect determination and would require consultation with the U.S. Fish and Wildlife Service.

Consultation with the U.S. Fish and Wildlife Service was not needed for modification to bald eagle habitat. However, there is the potential for disturbance effects to the species. Consultation with the U.S. Fish and Wildlife Service is covered under the Letter of Concurrence dated October 17, 2005.

# **Larch Mountain Salamander** (*Plethodon larseli* – Sensitive)

## **A. HABITAT**

Habitat is mainly restricted to the talus slopes of the Columbia River Gorge, although the species is now known to occur at several locations in the Cascade Mountains of Washington. This salamander can be found near the surface under rocks during wet weather, but it retreats to considerable depths in the talus during cold and dry weather. Individuals can occur far from streams and seepages and seem to be less common in perpetually wet talus than in talus that varies from wet to dry with seasonal rainfall.

## **B. FIELD REVIEW**

### **Habitat available within the project area (proposed harvest units) and surrounding area:**

No. The 2007 Plantation Thin Project Area occurs just south of the identified Larch Mountain salamander distribution range as defined in the Northwest Forest Plan. As mentioned before, the three subwatersheds that comprise the project area are: Lower Clackamas, Fish Creek, and Collawash subwatersheds. Approximately 1000 acres of rock/talus with scattered conifers exist within Lower Clackamas subwatershed (USDA 1996); 991 acres within the Fish Creek subwatershed (USDA 1994); and many hundreds of acres within the Collawash subwatershed (USDA 1995).

However, these habitats are not located in the steep, wooded areas preferred by the Larch Mountain Salamander. In addition, all of the proposed harvest units do not occur within or directly adjacent to these special habitats (i.e. talus slopes).

No further analysis needed due to lack of habitat.

## **Oregon Slender Salamander** (*Batrachoseps wright* - Sensitive)

### **A. HABITAT**

The only amphibian endemic to Oregon, this species is found predominantly on the west slope of the Cascade Range from the Columbia River south to southern Lane County. Sites have been found in Lane, Linn, Clackamas, and Multnomah counties as well as a few sites on the eastern slopes of the Cascades in Hood River and Wasco counties. Sites are generally scarce, occurring in scattered and often widely separated colonies, but sometimes locally common. It is known to occur at only a few dozen localities.

The Oregon Slender salamander is found in moist woods consisting of Douglas fir, maple, hemlock, and red cedar. It is most common in mature Douglas-fir forests and appears to be dependent on mature and old-growth stands. Individuals are found under rocks, wood, or bark and wood chips at the base of stumps as well as under the bark and moss of logs. They are also found in rotting logs, in holes and crevices in the ground, and in termite burrows. Nests that have been located were found under bark and in rotten logs.

### **B. FIELD REVIEW**

#### **Habitat available within the project area (proposed harvest units) and surrounding area:**

**No.** All the proposed harvest units occur within young managed plantation, the oldest being 61 years. Although most of the proposed harvest units occur within moist Douglas-fir forests, they do not contain sufficient amounts of some of the habitat components common in older stands (i.e. large snags and down wood) and necessary for habitation by the Oregon Slender Salamander.

No further analysis required due to lack of habitat.

## **Cope's Giant Salamander (*Dicamptodon copei* - Sensitive) & Oregon Spotted Frog (*Rana pretiosa* – Sensitive)**

### **A. HABITAT**

Cope's Giant Salamander: Cope's Giant salamander prefers streams and seepages in moist coniferous forests. They limit their occurrence to waters with temperatures in the 8 to 14 degrees Celsius range. They will also inhabit cold clear mountain lakes and ponds. They occur in suitable areas from sea level up to 1,350 meters elevation. The Cope's salamander breed and rear its young within the cracks and crevices of the rocky substrates within the stream course. They sometimes leave streams on wet rainy nights but remain on wet rocks and vegetation near the stream. This salamander is most frequently found on pieces of wood in streams, under logs, bark, rocks or other objects near streams.

Oregon Spotted Frog: The range of this species is from Northern British Columbia and coastal southern Alaska south to the Rocky Mountains of Idaho, Montana, and Utah. Populations are also present in both the interior and coastal mountains of the Pacific Northwest.

The Oregon Spotted Frog is a highly aquatic species that is rarely found far from permanent water. This species frequents waters and associated vegetated shorelines of ponds, springs, marshes, and slow-flowing streams and appears to prefer waters with a bottom layer of dead and decaying vegetation. They are found in aquatic sites in a variety of vegetation types, from grasslands to forests. Individuals may disperse into adjacent non-aquatic areas during wet weather.

## B. FIELD REVIEW

### Habitat available on the district:

Cope's Giant Salamander: This species' range is predominantly west of the Cascade Range. Potential habitat for this species does exist within the Clackamas River Ranger District. The Cope's Giant Salamander is difficult to identify and can be easily confused with the Pacific Giant Salamander (*Dicamptodon tenebrosus*). There have been numerous sightings reported from streams on the Clackamas River Ranger District, only a few of which have been positively identified.

Oregon Spotted Frog: This species is highly aquatic and needs a permanent water source to survive. Potential habitat for this species does exist within the Clackamas River Ranger District.

### Habitat available within the project area (proposed harvest units) and surrounding area:

Yes. The Lower Clackamas River subwatershed contains a substantial amount of habitat from the preferred rocky streams and seeps with large boulders to the less desirable pebble/cobble streambed. There have been documented sightings of the Cope's giant salamander in this subwatershed (USDA 1996). It is likely that the other two subwatersheds in the project area, Collawash and Fish creek, also have potential habitat for this species.

Many of the units within the 2007 Plantation Thin include perennial streams that have potential habitat for the Cope's Giant Salamander and Oregon Spotted Frog.

## C. ANALYSIS OF DIRECT/INDIRECT EFFECTS

### Alternative A (No Action)

No effects to the Cope's Giant salamander or Oregon Spotted frog would occur with implementation of this alternative. The streams and wet areas within the stands would continue to provide potential habitat for the species.

### Alternative B (Proposed Action) and C

#### Effects to Individuals

There are short segments of perennial streams occurring within many of the 2007 Plantation Thin units. The riparian reserves associated with these streams will have active management occurring within them except for the no-cut buffers described below. A minimum of a 50-foot no-harvest buffer will be established along the active channel of all perennial streams. Larger buffer widths may be needed on a site-specific basis to prevent any increase in sediment delivery rates or a decrease in stream shading. Smaller buffer widths would be allowed if it is determined on a site specific basis that there would be no increase in sediment delivery rates or decrease in stream shading.

These buffers described above would be in place during the length of the timber sale and post-sale activities, including road construction. It is likely that all potential habitat for the Cope's Giant Salamander and Oregon Spotted frog would be present within these no-treatments buffers. These no-cut areas should prevent any un-intentional extirpation or injuring of individuals that may be present near the water sources during on-the-ground activities.

#### Effects to Habitat

The Oregon Spotted frog and Cope's Giant salamander have the potential to be negatively affected by increased sedimentation resulting from timber sale activities adjacent to or intersecting streams and water sources. Sediment deposition within the substrate could impair preferred habitat characteristics. Also, sedimentation of streams can lead to asphyxiation of embryos and larvae as well as a degradation of overwintering habitat that may result in local extinctions.

Ground disturbing activities associated with the temporary road building and reconstruction has been designed to minimize the risk of erosion and the potential for sediment into streams. Road construction would be restricted to the dry season between June 1 and October 31. This restriction would reduce the risk of any surface erosion due to ground disturbance. The proposed temporary roads are located on dry ground, would not cross any stream channels, and would have no hydrological link to any water source. These roads would be constructed on relatively flat terrain along

ridgetops, which would not cause an increase in roads within the drainage network. Because of the distance of the proposed temporary roads to any water source; and that these roads do not cross any perennial or intermittent streams, vegetative buffers would act as an effective barrier to any sediment being transported into stream channels by surface erosion or runoff. All temporary roads would be obliterated and revegetated following completion of harvest operations to help reduce compaction and increase infiltration rates.

Impacts to the habitats for the Cope's Giant Salamander and Oregon Spotted Frog caused by sedimentation from road construction or obliteration, if any, would be short-term and minor. No measurable or meaningful degradation of habitat would occur with the temporary road building, reconstruction and eventual obliteration.

Thinning within the riparian reserves is a ground disturbing activity that has the potential to allow sediment to enter the stream channel from surface erosion or run-off. No-cut buffers described above have been established within the 2007 Plantation Thin Project. Buffer width design would take into account the stream influence zone, steepness of slope, size and location of trees, aspect, slope stability, and stream bank stability. No-cut areas would include any hardwood vegetation occurring along the stream bank. These 30-50 foot minimum vegetative buffers on either side of the streams would act as an effective barrier and likely retain any displaced and eroded soil before it is transported to the stream channel. Seasonal restrictions on ground-based operations would further reduce the risk of soil disturbance and run-off.

Impacts to the habitats for the Cope's Giant Salamander and Oregon Spotted Frog caused by sedimentation from thinning in riparian reserves, if any, would be short-term and minor. No measurable or meaningful degradation of habitat would occur with the proposed silvicultural treatments.

Log hauling would not measurably increase the amount of fine sediment in streams. The roads along the haul route are rocked or paved at stream crossings and road ditches are well vegetated. Any sediment that would enter a stream during haul activities would be at crossings along aggregate surfaced roads. The majority of these crossings are at small streams that would not be flowing, or would have very little flow during the normal season of operation (June 1 to October 31). Any sediment that leaves the road surface due to run-off is expected to disperse over land or be stored within these small channels. It is very unlikely that any measurable amount of sediment produced during log haul would be transported to stream channels that have potential habitat for the Cope's Giant Salamander and Oregon Spotted Frog.

Impacts to the habitats for the Cope's Giant Salamander and Oregon Spotted Frog caused by sedimentation from log haul, if any, would be short-term and very minor. No measurable or meaningful degradation of habitat would occur with the log haul.

The no-cut buffers along these streams would insure that the majority of shade producing vegetation would remain. Since the majority of the streams within the project area are relatively small, the no-cut buffers would provide adequate canopy cover to maintain existing shade components, thus maintaining stream temperatures. The Riparian Reserves along the larger streams within the 2007 Plantation Thin Project Area have a hardwood component within the stream influence zone (one site potential tree height) that will provide adequate buffer width to maintain stream shading. There is a low probability that implementation of the project would increase solar radiation. Current stream temperatures in all streams within the project area are expected to be maintained.

Although there is the potential that very small micro-climate changes would occur with implementation of this project, the change is not predicted to be measurable or meaningful enough to affect habitation of the areas by Cope's Giant Salamander and Oregon Spotted Frog.

### **Alternative C Only**

Effects similar to alternative B except that no new temporary roads would be built and all intermittent streams would receive a 50 foot no-cut buffer. There would be no risk of erosion or sediment entering streams due to the construction or obliteration of temporary roads. There would be slightly less risk of erosion from harvest operations under this alternative since helicopter logging would be used instead of ground based or skyline yarding in some of the units. On units where temporary access roads would not be built, longer skidding distances may be used. This would result in many passes of equipment over a mainline skid trail that when completed would have a very similar effect to that of a temporary road. Because of less ground disturbance, the chance of sediment reaching the stream channel and impacting potential habitat for the Cope's Giant Salamander and Oregon Spotted Frog is slightly less than in alternative B.

No measurable or meaningful degradation of habitat would occur with the harvest operations, road reconstruction, or log haul.

## D. CUMULATIVE EFFECTS

No cumulative effects are anticipated due to lack of meaningful or measurable direct/indirect effects.

## E. CONFLICT DETERMINATION

Action alternative of the 2007 Plantation Thin will have a “**May Impact but not Likely to Cause a Trend Toward Listing or Loss of Viability**” to the Cope’s Giant salamander and Oregon Spotted frog or their habitat.

### **Cascade Torrent Salamander** (*Rhyacotriton cascadae* – Sensitive)

#### A. HABITAT

The range of this species is from the coastal mountains on the Olympic Peninsula in Washington south to Mendocino County, California. It also has a known population in the Cascade Mountains of southern Washington and northern Oregon, with a local disjunct population in the southern Oregon Cascades.

The torrent salamander is most abundant in rocks bathed in a constant flow of cold water, but also occurs in cool rocky streams, lakes, and seeps. Individuals from this species require microclimatic and microhabitat conditions generally found only in older forests.

The diet of this salamander consists of aquatic and semi-aquatic invertebrates, including amphipods, springtails, fly larvae, worms, snails, and spiders. They search for prey under rocks and other objects in streams. Adults occasionally are found under surface objects a few meters from water after heavy rains, but they are the most aquatic of our metamorphosed salamanders and should be expected only in saturated stream-side talus and in streams. Experiments have shown that this species are among the most sensitive of all terrestrial northwestern salamanders to loss of body water and will die quickly in a desiccating environment.

#### B. FIELD REVIEW

**Habitat available within the project area (proposed harvest units) and surrounding area:**

No. All the proposed harvest units consist of young managed plantations, the oldest being 61 years. None of these units have the habitat components necessary for occupancy by the Cascade Torrent Salamander.

No further analysis needed due to lack of habitat

### **Gray Flycatcher** (*Empidonax wrightii* – Sensitive)

#### A. HABITAT

The Gray Flycatcher is a bird of the arid interior West. It prefers relatively treeless areas with tall sagebrush, bitterbrush, or mountain mahogany communities. It will also occupy these communities within open forests of ponderosa or lodgepole pine. It also lives in juniper woodland with a sagebrush understory.

#### B. FIELD REVIEW

**Habitat available within the project area (proposed harvest units) and surrounding area:**

No. There is no habitat for this species on the Clackamas River Ranger District. No further analysis needed due to lack of habitat.

# American Peregrine Falcon

(Falco peregrinus anatum – Sensitive)

## A. HABITAT

The most critical habitat components for Peregrine Falcons are suitable nest sites, usually cliffs; and overlooking fairly open areas with an ample food supply. Peregrines are not forest-dwelling birds but hunt in forest openings or above the canopy. They commonly use a mixture of successional stages that provide hunting opportunities near the eyrie. They nest along seacoasts, near marshes, and even in cities, but are not well suited to life in interior forests. They usually nest or roost near a marsh, lake, or coast where water birds are plentiful.

## B. FIELD REVIEW

### **Habitat available within the project area (proposed harvest units) and surrounding area:**

Yes. There is an active peregrine falcon eyrie within close proximity to the project area. Three harvest units fall within the Peregrine Falcon Zone Protection Zone 1, and many units fall within Zones 2 and 3.

## C. ANALYSIS OF DIRECT/INDIRECT EFFECTS

### **Alternative A (No Action)**

No effects to the Peregrine Falcon would occur with implementation of the no action alternative. Although for other reasons peregrines could stop using this nest site, the cliff would continue to provide potential habitat for the species.

### **Alternative B (Proposed Action) and C**

#### **Effects to Individuals:**

The Draft Peregrine Falcon Management Direction Document for this eyrie provides direction for the management of this site. Three of the harvest units (206, 208, and 210) occur within the primary nest protection zone for the site. In addition, units 132-158, 161, 204, 224, and 262 occur within the secondary nest protection zone. Units 116, 120-130, 160, 162-178, 180-196, 202, 222, 240-266, 270-272 occur within the tertiary habitat management zone.

To minimize potential disturbance to the active eyrie, no mechanized slash piling, site preparation, road building or obliteration, log loading, yarding, helicopter use, or other management activities that produce sound above the ambient noise level of the area would be permitted in the units occurring within the primary and secondary protection zone from January 15th to July 31<sup>st</sup>. In addition, no foot or vehicle entry into the primary zone will be permitted during this time period as well. Units occurring within the tertiary habitat management zone only need a seasonal restriction for helicopter use. Helicopter use is restricted below 1500 feet Above Ground Level anywhere within the primary, secondary and tertiary management zones during this time period. These restrictions may be waived if the site is unoccupied or if nesting effort(s) fail and there is not possibility of re-nesting. Documentation of nesting failures can be finalized no earlier than June 30<sup>th</sup> due to the possibility of re-nesting.

The above seasonal restrictions have been incorporated into the Design Criteria for this project. For this reason, project activities are predicted to have a reduced impact to the known peregrine falcons in the area. Although the potential for disturbance is still present, the seasonal restrictions have been incorporated into the Design Criteria for the project and are predicted to prevent any adverse affects.

#### **Effect to Habitat:**

Several of the proposed harvest units are within the primary protection zone and are adjacent to the cliff site containing the eyrie. However, project implementation will not degrade the habitat associated with this peregrine falcon nest site (i.e. eyrie) or any other potential falcon nest sites. In fact, the units proposed for harvest within the primary and secondary protection zones occur within the foraging distance of the eyrie site. These stands are all dense, young managed plantations that have reached a closed mid-seral structural stage. They are currently providing little prey for the falcons. Thinning these stands would improve the overall prey base available to the nesting pair. Thinning within the riparian reserves could especially be beneficial since riparian corridors are often favored hunting location for

peregrine falcons. Overall, increased habitat diversity means an increase in prey diversity and availability of prey for the peregrine falcon.

Since the overall landscape in the area is comprised of somewhat homogeneous second-growth stands less than 80 years old, the proposed timber harvest that occurs within foraging distance of the eyrie site should increase habitat diversity in the area.

Providing large diameter snags within the secondary and tertiary zones of this active eyrie would also maintain or improve on the existing prey base for foraging falcons. Direction is given within the Draft Peregrine Falcon Management Plan that snags will be managed at the 100% biological potential level to provide for cavity-nesting birds. It also states that course woody debris will be maintained at levels totaling a minimum of 240 linear feet per acre. Although the proposed harvest units present within these areas are managed plantations and have few large diameter snags and course woody debris, there is the potential to create snags and down wood through restoration projects connected with this project. Priority will be given for snag and down woody debris creation within the units proposed for treatment within the Late-Successional Reserves. However, if any money becomes available beyond that, second priority will be given to units within the primary and secondary projection management zones.

## D. CUMULATIVE EFFECTS

No cumulative effects are anticipated due to lack of substantial direct/indirect effects.

## E. CONFLICT DETERMINATION

The action alternatives of the 2007 Plantation Thin Timber Sale will have “**May Impact Individuals but not Likely to Cause a Trend Toward Federal Listing or Loss of Viability**” to the peregrine falcon or its habitat.

### **Northern Painted Turtle (*Chrysemys picta* -Sensitive) Western Pond Turtle (*Clemmys marmorata marmorata*- Sensitive) Horned Grebe (*Podiceps auritus* – Sensitive) & Bufflehead (*Bucephala albeola* – Sensitive)**

## A. HABITAT

Painted Turtle: An aquatic turtle that frequents ponds, marshes, small lakes, ditches and streams where the water is quiet or sluggish and the bottom is sandy or muddy, and there is considerable vegetation. Mudbanks, logs, partially submerged branches and rocks are preferred for sunning.

Western Pond Turtle: The western pond turtle inhabits ponds, marshes, and the slow-moving portions of creeks and rivers that have rocky or muddy bottoms. Partially submerged logs, vegetation mats, mudbanks, rocks and tree branches provide areas for sunning. Western pond turtles have been found to occur from sea level up to around 2000 feet. During the winter months these turtles usually hibernate in bottom mud.

Horned Grebe: The Horned Grebe breeds throughout most of Alaska and Canada and, locally, just south of the Canadian border. It also breeds in northern Eurasia. Its habitat consists of areas with much open water surrounded with emergent vegetation.

Bufflehead: The Bufflehead is a northern species that breeds from Alaska across Canada, and south to Oregon, northern California, and Wisconsin. This species nests near mountain lakes surrounded by open woodlands containing snags. In many areas, the preferred nest trees are aspen, but it will also nest in ponderosa pine or Douglas-fir.

## B. FIELD REVIEW

### **Habitat available within the project area (proposed harvest units) and surrounding area:**

Painted turtle and Western Pond turtle: No. All of the units are situated within dense forested environments. Although many of the units contain riparian areas, they do not consist of relatively large open sites for sunning and abundant riparian and aquatic vegetation that is usually associated with the habitat for the species. There are no



known sightings of these species on the Clackamas River Ranger District. The Region 6 Regional Forester's Sensitive Species list only has them as suspected to occur on the Mt. Hood National Forest.

Horned Grebe and Bufflehead: No. There are no lakes or ponds within the project area of the required size to provide habitat for these species.

No further analysis needed due to lack of habitat.

## **Harlequin Duck** (*Histrionicus histrionicus* – Sensitive)

### **A. HABITAT**

Harlequin Duck: This species occurs from Iceland and Greenland west to eastern Canada. It is absent from the central part of North America, and the “western” population ranges from eastern Siberia east through Alaska and south to the Sierra Nevada of California and the mountains of southwestern Colorado. In the Northwestern United States, the Harlequin duck breeds along relatively low-gradient, slower-flowing reaches of mountain streams in forested areas.

### **B. FIELD REVIEW**

This species is highly aquatic and needs a permanent water source to survive. Potential habitat for this species does exist within the Clackamas River drainage and within some of the potential harvest units. Harlequin ducks are occasionally sighted within Clackamas River Ranger District.

#### **Habitat available within the project area (proposed harvest units) and surrounding area:**

Yes. Several of the units contain perennial streams, of which are considered potential habitat for the harlequin duck. The remainder of the streams that are within or adjacent to the proposed harvest units have too high of a gradient and are too fast-flowing in this area to be considered potential habitat for the species. In addition, some of the perennial streams are too small in size and headwater characteristics that they are also not considered potential habitat for the species.

A minimum of a 50-foot no-harvest buffer will be established along the active channel of all perennial streams. These buffers described above would be in place during the length of the timber sale and post-sale activities, including road construction. All potential habitat for the harlequin duck would be present within these no-treatments buffers. These no-cut areas should prevent any un-intentional extirpation or injuring of individuals that may be present near the water sources during on-the-ground activities. This species is highly mobile and could easily move to another site if disturbed by elevated noise levels created from project implementation. Sedimentation would be minimal or non-existent and would have no meaningful effect on the quality of harlequin duck habitat.

No impact due to lack of meaningful effect to either individuals or habitat of the harlequin duck.

## **Wolverine** (*Gulo lyscus* – Sensitive)

### **A. HABITAT**

Populations in the Cascade Mountains are small and scattered. Wolverines are usually found in high temperate coniferous forests, from mid-elevation (around 4000 feet) to moderately high elevation (above timberline), depending on the season. Common tree species are subalpine fir and lodgepole pine. They prefer to feed along rivers and streams and in wet meadows. The den is usually in a rock crevice, cave, or beneath a talus slope. Territories may encompass 10 to 80 square miles. Wolverines are believed to prefer areas of minimal people presence and high levels of solitude and seclusion. They are usually associated with wilderness, chiefly because they are so vulnerable to the activities of humans.

### **B. FIELD REVIEW**

#### **Habitat available within the project area (proposed harvest units) and surrounding area:**

No. Elevation within the project area ranges from approximately x to x feet in elevation. All of the proposed harvest units occur well below 4000 feet in elevation, which is generally considered too low for occupation by the wolverine.

All of the units are located within areas that lack solitude and seclusion qualities due to the open road densities, management activities, and recreational activities occurring in the area. For these reasons, it is unlikely that a wolverine would be present in the project area.

Recent field surveys have not been accomplished. The last time broad based surveys were conducted on the Forest was during the winter of 1993-1994 and 1994-1995. There were no sightings of wolverine or sign of their presence.

No further analysis needed due to lack of habitat

## **Baird's Shrew** (*Sorex bairdii permiliensis* – Sensitive)

### **A. HABITAT**

This species is endemic to Oregon. Its range is from northwestern Oregon from the Pacific coast east to the Cascades, and from the Columbia River south to Benton and Lane Counties.

Little published information exists that assigns with certainty habitat characteristics to the Baird's Shrew. In 1986 two specimens were collected in an open Douglas-fir forested area with numerous rotting logs in Polk County. The habitat of the Baird's shrew can be described as moist coniferous forests with a shrubby understory. Individuals of the species tend to forage near logs and rocks.

### **B. FIELD REVIEW**

#### **Habitat available within the project area (proposed harvest units) and surrounding area:**

No. All the proposed harvest units consist of second-growth stands, the oldest being 61 years. Although all the proposed harvest units occur within moist coniferous forests, they do not contain sufficient amounts of some habitat components, such as large snags and down wood, common in older stands and necessary for habitation by the Baird's Shrew.

No further analysis needed due to lack of habitat

## **Pacific Fringe-tailed Bat** (*Myotis thysanodes vespertinus* – Sensitive)

### **A. HABITAT**

Little to nothing is known about this subspecies of the Fringed Myotis (*Myotis thysanodes*). There appears to be only one source of information for the Pacific Fringe-tailed bat. The distribution of this species is in California, Oregon, and Washington. No habitat data could be found on the Pacific Fringe-tailed bat so habitat information and the following analysis are based on what is known for the Fringed Myotis.

Although the Fringed Myotis is found in a wide variety of habitats throughout its range, it seems to prefer forested or riparian areas. Most Oregon records are west of the Cascade Mountains. Its nursery colonies and roost sites are established in caves, mines, and buildings. The species is thought to forage by picking up food items from shrubs or the ground. It consumes beetles, moths, harvestmen, crickets, craneflies, and spiders.

### **B. PRE-FIELD REVIEW**

#### **Habitat available within the project area (proposed harvest units) and surrounding area:**

Yes. No breeding or roosting sites are available within the project area. There is the potential for the project area to contain foraging habitat, although foraging usually occurs near the species' breeding and roosting sites. Species would only occur in area during dispersal or possibly foraging.

### **C. ANALYSIS OF DIRECT/ INDIRECT EFFECTS & CUMULATIVE EFFECTS**

No effects in any alternative due to lack of nesting or roosting habitat. In the event that individuals were dispersing or foraging through the area, they would likely be able to quickly disperse from the area during project implementation.

Foraging habitat is not limiting and if individuals happened to be displaced, they could easily find other areas to forage

within nearby. In addition, it is likely that the thinned units would still provide foraging habitat after project implementation.

#### **D. CONFLICT DETERMINATION**

The action alternatives of the 2007 Plantation Thin will have a “**No Impact**” to the Pacific Fringe-tailed bat or its habitat.

### **Puget Oregonian** (*Cryptomastix devia* - Sensitive)

#### **A. HABITAT**

The Puget Oregonian may be found in mature and old-growth forest habitat, typically on or under hardwood logs and leaf litter. These snails are also found on or in the litter under sword ferns growing under hardwood trees and shrubs, especially big leaf maples.

#### **B. PRE-FIELD REVIEW**

##### **Habitat available within the project area (proposed harvest units) and surrounding area:**

No. All the proposed harvest units consist of second-growth stands, the oldest being 61 years. Although some of these proposed harvest units occur within older stands, they do not contain sufficient amounts of snags and coarse woody debris, the habitat components necessary for habitation by the Puget Oregonian.

No further analysis needed due to lack of habitat

### **Columbia Oregonian** (*Cryptomastix hendersoni* - Sensitive)

#### **A. HABITAT**

In the Western Cascades, this species can be found in mature forested habitats outside of riparian areas. Individuals have been found in damp situations under relatively closed canopies in mature western hemlock forests that include some Douglas-fir, cedar, vine maple, and alder.

#### **B. PRE-FIELD REVIEW**

##### **Habitat available within the project area (proposed harvest units) and surrounding area:**

No. None of the units have the sufficient habitat components necessary for habitation by the Columbia Oregonian. No further analysis needed due to lack of habitat.

### **Evening Fieldslug** (*Deroceras hesperium* - Sensitive)

#### **A. HABITAT**

This species has been reported to be associated with wet meadows in forested environments in a variety of low vegetation, litter and debris; rocks may also be used. Little is known about this species or its habitat. It is possible that individuals may be confined to moist surface vegetation and cover objects within 30 meters (98 feet) of perennial wetlands, springs, seeps and riparian areas.

#### **B. PRE-FIELD REVIEW**

##### **Habitat available within the project area**

No. This species is usually found within non-forested meadow habitats. None of this habitat is found within the project area. No further analysis needed due to lack of habitat.

## **Dalles Sideband** (*Monadenia fidelis ochromphalus* - Sensitive)

### **A. HABITAT**

The Dalles Sideband has been located in steep situations on both sides of the Columbia Gorge near and below where springs are located and in upland locations where moisture conditions allow. This species is usually found associated with basalt talus, within 200 m. of streams, seeps or springs, in steppe or dry forest plant communities. It may be found among rocks, shrubs, or other vegetation and under down wood.

### **B. PRE-FIELD REVIEW**

#### **Habitat available within the project area**

No. No none locations of this species have been found or are suspected to occur on the Clackamas River Ranger District. It's habitat in the surrounding area is expected to occur within the Columbia Gorge National Scenic Area as well as Hood River and Barlow Ranger Districts.

No further analysis needed due to lack of habitat.

## **Crater Lake Tightcoil** (*Pristiloma arcticum crateris* - Sensitive)

### **A. HABITAT**

This species is found in perennially wet situations in mature conifer forests, among rushes, mosses and other surface vegetation or under rocks and woody debris within 10 m. of open water in wetlands, springs, seeps and riparian areas, generally in areas which remain under snow for long periods in the winter. It is found within moderate to high elevations (2000 to 7000 feet).

### **B. PRE-FIELD REVIEW**

#### **Habitat available within the project area**

None. Although the project area occurs within the lower end of the elevational band known for the species, this area does not remain under snow for long periods in the winter. It is unlikely the species would be found in the area.

No further analysis needed due to lack of habitat

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