



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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### Memorandum

To: Eugene District Manager, Bureau of Land Management, Eugene, Oregon

From: State Supervisor/Deputy State Supervisor, Oregon Fish & Wildlife Office, Portland, Oregon

Subject: Formal and informal consultation on the proposed Upper Siuslaw Late-successional reserve restoration plan in Lane and Douglas Counties, OR which may disturb bald eagles, northern spotted owls, and marbled murrelets [FWS *reference*: 1-7-04-F-0374].

This memorandum responds to your request for formal and informal consultation with the U.S. Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended (Act). At issue in this consultation are the effects that the proposed Upper Siuslaw Late-successional reserve restoration plan may have on the bald eagle (*Haliaeetus leucocephalus*), the northern spotted owl (*Strix occidentalis caurina*) (spotted owl), the marbled murrelet (*Brachyramphus marmoratus*) (murrelet) and on the spotted owl and murrelet critical habitat in fiscal year 2004 through 2014.

This opinion is based upon information provided in the following documents: Biological assessment of the Upper Siuslaw Late-successional reserve restoration plan (BA); documents and other sources of information listed in the "Literature Cited" section below; and informal consultation between our staffs. A complete administrative record of this consultation is on file at the Oregon Fish and Wildlife Office.

### Consultation History

On April 13, 2004 the Level 1 team reviewed and approved a draft of the BA, with some minor clarifications. The clarifications were addressed by BLM and a final draft was review by the Service. On May 3, 2004 the Service received the request for consultation and a BA from the BLM dated April 29, 2004. Formal and informal consultation was officially initiated by this office on March 3, 2004, upon receipt of the request for consultation and the BA.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

The proposed actions are described in the BA cited above and are incorporated by reference. The purpose of the proposed actions are to manage the Upper Siuslaw River sub-unit of Late-successional Reserve (LSR) 267 to benefit the long term development of habitats for spotted owls, murrelets and coho salmon (*Oncorhynchus kisutch*) while minimizing short term impacts to these species. Actions which would occur within ten years are being consulted on in this assessment; actions under the restoration plan which would occur after ten years, some snag and downed wood creation, are described here for information but are not undergoing consultation at this time.

The proposed action also implements the Northwest Forest Plan directives to enhance late-successional forest conditions in LSRs and achieve Aquatic Conservation Strategy objectives by 1) protecting and enhancing late-successional and old-growth forest ecosystems, 2) fostering the development of late-successional forest structure and composition in plantations and young forests, and 3) reconnecting streams and reconnecting stream channels to their riparian zones and upslope areas.

#### *Action Area*

The action area is the Upper Siuslaw River sub-unit of LSR 267 and adjacent lands within a 0.25 mile. The action area is defined by 50 CFR 402 to mean "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The action area, the 24,400-acre Upper Siuslaw River sub-unit of LSR 267, extends from the eastern edge of LSR 267, just west of the Lorane Valley. The Upper Siuslaw sub-unit extends west to Oxbow Creek. The northern boundary is defined by the ridge between the Siuslaw and Wolf Creek watersheds. The southern boundary is defined by the boundary between the Eugene and Roseburg Districts, which approximates the ridge between the Siuslaw and Umpqua River basins (although a very small portion of the Upper Siuslaw sub-unit of LSR 267 extends into the Umpqua River basin). Although only the BLM-managed LSR within the above boundaries would be treated under this proposal, the action area encompasses all federal and nonfederal lands (57,000 acres) potentially affected by the proposed action, including through disturbances. Since the action area includes suitable eagle habitat, the action area includes all lands within 0.5 mile line-of-sight of the plan area boundary within a mile of the Siuslaw River.

#### **Density Management Treatments**

Thinning treatments would be limited to younger stands (10 – 60 years old) and would have targets for a wide range of stand densities and high variability of tree spacing (Table 1) to effectively foster the development of late-successional forest structure and maintain future management options. All stand thinning prescriptions requiring timber removal would be completed within the next 10 years.

Very young stands (= 20 years old) would be thinned to variable spacing at low densities without any timber removal because the amount of wood left would not pose a fire or insect infestation risk.

Young and mid-seral stands (21-60 years old) would be thinned to variable spacing at a wide range of densities with some timber removal and would include both proportional thinning (selection of trees across all diameter classes) and thinning from below. Enough cut trees would be left to provide 551 cubic feet per acre of coarse woody debris, however, some cut trees would be removed from thinned stands to reduce the risk of fire and insect infestation. Shade-tolerant conifers would be planted at the time of thinning.

Within the action area, the overall quantity of dispersal habitat (stands 40 to 60 years old) would not decrease from the current amount, 3,728 acres (Figure 1 and Table 2). As young stands become dispersal habitat, thereby increasing the overall amount, other stands that are currently dispersal habitat would be thinned to below 40 percent canopy closure and therefore not be dispersal habitat for several years. Proposed thinning treatments in dispersal habitat would degrade 1,350 acres (36 percent) and remove 662 acres (17 percent) of the dispersal habitat. Meanwhile, younger stands would have grown and developed dispersal habitat characteristics so that the overall amount of dispersal habitat in the action area would increase each year. Currently, there are also 10,600 acres of suitable habitat through which owls could disperse.

### **Stream Enhancement Treatments**

Stands that are currently 61-80 years old and greater/more than 100 feet from streams would not be thinned or have coarse woody debris and snag creation. Riparian stands (<100' from streams) currently 61-80 years old would not be thinned, but some would have individual trees felled for in-stream woody debris and structures. In-stream structures would be constructed primarily of wood but might be stabilized by large rocks and cabling. Trees would be felled into all streams adjacent to stands = 80 years old at an average rate of 12 to 24 trees per stream mile (approximately 1-2 trees/acre > 18" diameter at breast height (dbh) over 200 stream miles). In general, there would not be a need to yard but if there were, helicopters would not be used.

Full criteria for in-stream tree selection includes no suitable nesting trees or trees greater than 32 inches dbh will be removed and selected single trees or small groups of trees (2-4 trees) will be: [1] along the periphery of permanent openings (*e.g.*, rights-of-way, powerlines, *etc.*), or along the periphery of non-permanent openings (*e.g.*, along plantation edges, along recent clearcuts less than 40 years old); [2] single trees may only be removed from the first two lines of trees and will be dispersed along these edges but may not be adjacent to one another; [3] single trees or small groups of trees (2-4 trees) must be spaced at least one site potential tree height apart and at least one site potential tree height from any trees with potential nesting structure for any listed species (for streamside operations, spacing requirements apply to each bank independently).

In 55 percent of the riparian areas (<100 feet from streams but outside of the primary shade zone) which are conifer-dominated between 10-60 years old, stands would be thinned from below without any timber removal. Thinned stands would undergo subsequent coarse woody debris and snag creation every 10-20 years. Shade-tolerant conifers would be planted at the time of subsequent coarse woody debris and snag creation. Approximately half of the riparian areas which are hardwood-dominated would be thinned, and conifers would be planted at the time of thinning to produce a future supple of large, downed wood to the streams.

**Table 1. Proposed thinning prescriptions**

Age (years)	Total acres	Thinning prescription	Acres treated	Guidelines and mitigation measures	Anticipated snag and CWD creation
<b>1-20</b>	1,971	40-60 tpa (proportional)	443	Timber removal in some stands (most likely in stands 15-20 years old; >8 years since pre-commercial thinning).	In stands with timber removal, create 551 ft <sup>3</sup> /acre cwd and 551 ft <sup>3</sup> /acre snags at time of thinning. Kill 10 tpa/decade until age 80 for cwd and snags.
		75-100 tpa (from below)	443	No timber removal	Leave all cut trees.
		100-120 tpa (from below)	443		
		120-150 tpa (from below)	443		
		<i>total</i>	<i>1,772</i>		
<b>21-50</b>	9,621	40-60 (proportional)	1,149	- Do not select trees >20" dbh for cutting. - In existing dispersal habitat within current owl home ranges, retain =40% canopy closure.	Create 551 ft <sup>3</sup> /acre cwd and 551 ft <sup>3</sup> /acre snags at time of thinning. Kill 10 tpa/decade until age 80 for cwd and snags.
		60-80 tpa (proportional)	1,149		
		80-110 tpa (proportional)	1,149		
		60-110 tpa (from below)	653	No timber removal	Leave all cut trees.
		Riparian 60-110 tpa (from below)	1,372		
		<i>total</i>	<i>5,472</i>		
<b>51-60</b>	1,688	40-60 (proportional)	151	- Do not thin in suitable habitat. - Do not thin within current owl home ranges that currently have less than 40% suitable habitat. - Do not select trees >20" dbh for cutting. - In existing dispersal habitat within current owl home ranges, retain =40% canopy closure.	Create 551 ft <sup>3</sup> /acre cwd and 551 ft <sup>3</sup> /acre snags at time of thinning. Kill 10 trees per acre/decade until age 80 for cwd and snags.
		60-80 tpa (proportional)	151		
		Riparian 60-110 tpa (from below)	121	No timber removal	Leave all cut trees.
		<i>total</i>	<i>423</i>		
<b>61-80</b>	547	No thinning	--	--	--
		Riparian CWD creation	69	Do not fall or pull conifers =32" dbh. Follow standards for Individual Tree Removal for Stream Enhancement from the B. O. for Hab. Mod. in the North Coast Province 2003/2004.	Fall 1-2 tpa =18" dbh near stream; <25 smaller trees per acre total in riparian zone (<100' from stream).

Figure 1. The development into dispersal habitat of stands currently under 80 years old and the amount that will be available through time for both the proposed action and no action.

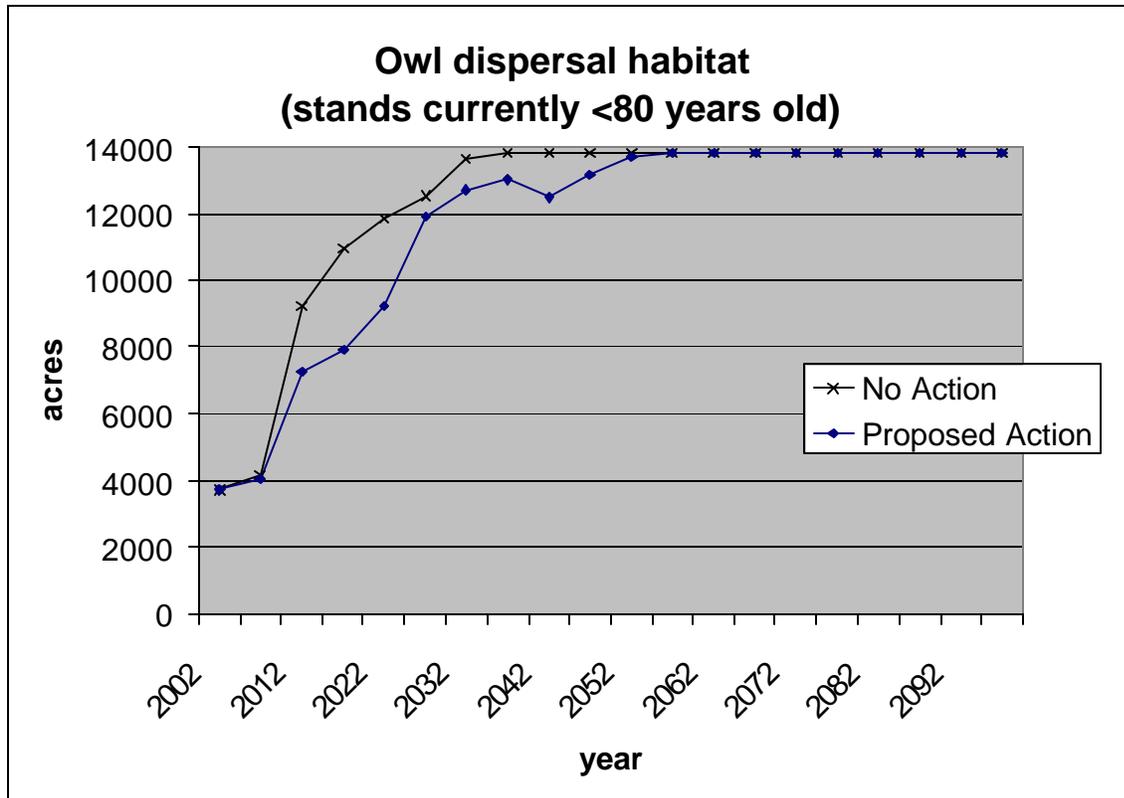


Table 2. Dispersal Acres

	year		
	2002	2007	2012
Total dispersal acres (stands currently <80 years old)	3,728	4,012	7,299
Dispersal acres removed by thinning	--	- 613	-49
Dispersal acres added by growth	--	+897	+3,336

Stream shading would be maintained by managing riparian stands in three zones (Figure 2):

- (1) The primary shade zone (Table 3) would be maintained unthinned (except for approximately 1-2 trees per acre which would be felled for large woody debris in streams). The primary shade zone is the area that shades the stream at midday. Note that primary shade zones would not be established on intermittent streams or on the north side of east-west oriented streams.
- (2) Outside of the primary shade zone but <100' from streams, 55 percent of stands would be thinned, but trees would not be harvested. Thinning would not result in more than a 50 percent reduction in canopy closure.
- (3) Upland thinning prescriptions that may include timber harvest would be applied =100' from streams (Table 1).

Figure 2. Riparian Management Zones

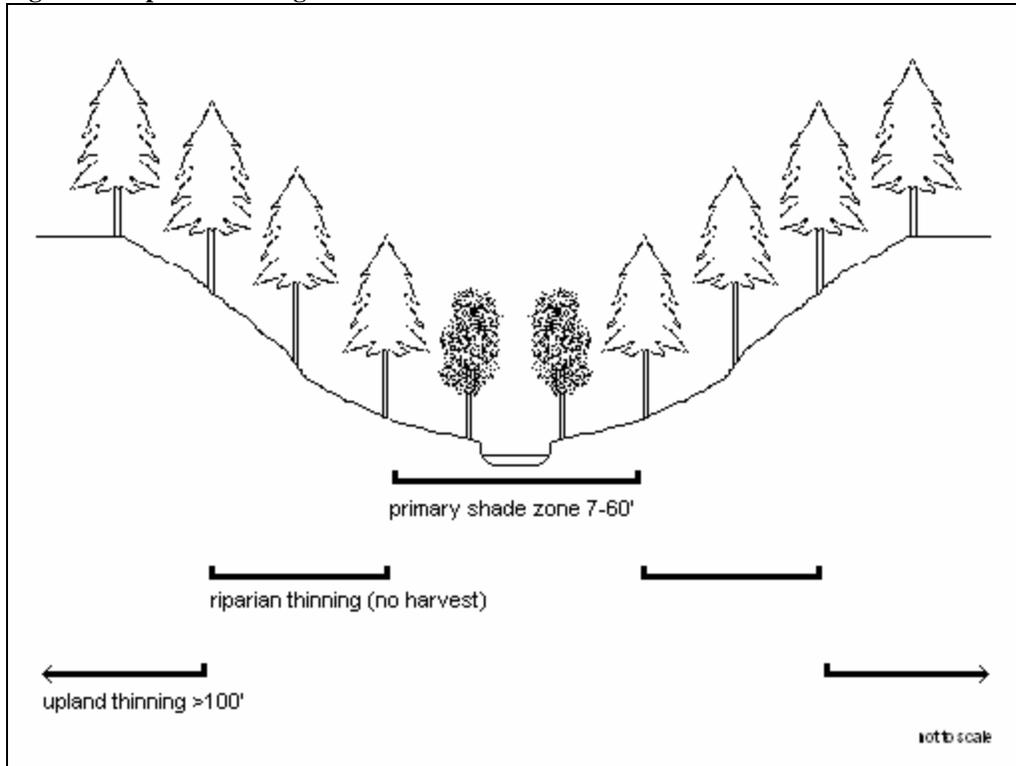


Table 3. Primary Shade Zone in Project Area

Stand age (years)	Distance (feet from stream)		
	<30% slope	30-60% slope	>60% slope
=10	7	8	10
11-30	20	25	30
31-50	30	40	50
>50	40	50	60

### Road Decommissioning and Road Construction

Non-shared roads capable of delivering sediment to streams, damaged roads, and roads within or adjacent to late-successional forest (45 miles), would be decommissioned. All high-risk and fish-barrier culverts would be removed or replaced. New road construction (3.6 miles) would be limited to temporary spur roads each generally less than 200 feet. All spur roads would be within the treatment units. No blasting is included in the proposed action. No subsequent treatments, such as tree planting and snag and coarse woody debris creation, would require building or renovating roads.

### Snag and Downed Wood Creation

During the initial treatment of stands aged 21-60 years old, enough cut trees would be left to provide 551 cubic feet per acre of coarse woody debris. In thinned stands in which snag needs are not being met, snags would be created to meet stand average snag levels of at least 551

cu.ft./acre. Snags may be created by a variety of methods, including girdling, topping, and/or fungal inoculation. No snag creation by blasting is included in this biological assessment.

Both very young and young stands would undergo subsequent coarse woody debris and snag creation every 10-20 years after the thinning treatment until each stand is 80 years old. This would continue to improve habitat conditions for spotted owl prey species and thereby improve foraging habitat quality. For example, stands currently 50 years old would have only one subsequent entry to produce additional coarse woody debris. Stands that are currently 20 years old could have 3 - 6 subsequent entries to produce coarse woody debris.

### **Under planting of Shade-tolerant Conifers**

In stands that have been thinned (aged 21-60 years old), including upland and riparian reserve stands, and that have few shade-tolerant conifers, western hemlock, western red-cedar, grand fir, incense-cedar and/or Pacific yew would be planted at a rate of 26-200 trees per acre. Conifers would also be planted in some hardwood-dominated riparian stands. Planting would occur during the winter and only hand tools would be used.

### **Noxious Weed Control**

Noxious weeds would be removed from BLM-controlled roads including from roads to be decommissioned. Trees or other native species would be planted in the decommissioned roads to prevent noxious weeds from becoming established in areas where weed seed is likely to spread into the decommissioned roads. Methods to remove weeds include mowing, pulling, cutting and grubbing depending on the weed species. Methods using mechanized tools would follow distance and timing restrictions to prevent adverse effects to listed species. No burning or pesticides would be used.

### **The following standards to protect listed species are part of the proposed action:**

#### *Density Management Treatments*

Harvest activities outside of unsurveyed suitable or potential marbled murrelet habitat but within 100 yards of said habitat would be minimized to the extent feasible during the breeding period and would not begin until 2 hours after sunrise and would end 2 hours before sunset (up to 1,100 acres could be affected). Hauling within 100 yards of unsurveyed suitable or potential marbled murrelet habitat would be minimized to the extent feasible during the breeding period and would not begin until 2 hours after sunrise and would end 2 hours before sunset. In some cases (approximately 30 miles) hauling could occur within 100 yards of habitat because the existing roads are adjacent to or run through suitable habitat and would not be able to be used in the winter.

Activities that could cause disturbance within 65 yards of suitable spotted owl habitat would not occur during the critical breeding period unless that habitat had been surveyed to protocol and determined to be unoccupied or the owls are not nesting. Thinning treatments of stands > 50 years old would be avoided within a spotted owl's home range (within 1.5 miles of the spotted owl activity center) where there is currently less than 40 percent suitable habitat within the owls' home range.

No trees 32" dbh or larger would be cut. Trees between 20" and 31" dbh would not be selected for cutting and would only be cut for safety or operational reasons.

Although burning is described in Appendix A of the BA, associated with density management treatments, no burning will occur during the murrelet or spotted owl season when within 0.25 mile of unsurveyed or occupied habitat.

#### *Stream Enhancement Treatments*

Besides the restrictions to tree selection in the description of Stream enhancement treatments, the largest, most vigorous trees would be retained and the majority of the cut trees would be left in the stand as downed wood. Helicopters would not be used on the projects.

Activities that could cause disturbances would occur beyond 100 yards of unsurveyed suitable or potential marbled murrelet habitat during the marbled murrelet critical nesting period or during the late nesting period and would not begin until 2 hours after sunrise and would end 2 hours before sunset.

Activities that could cause disturbance within 65 yards of suitable spotted owl habitat would not occur during the critical breeding period unless that habitat had been surveyed to protocol and determined to be unoccupied or the owls are not nesting.

#### *Road Decommissioning and Road Construction*

Road construction activities adjacent to and within 100 yards of unsurveyed suitable or potential marbled murrelet habitat would occur within the murrelet critical breeding season, but would be minimized to the extent feasible during the breeding period and would not begin until 2 hours after sunrise and would end 2 hours before sunset (up to 1,100 acres could be affected).

Road decommissioning activities that could cause disturbances would occur beyond 100 yards during the critical nesting period or during the late nesting period and would not begin until 2 hours after sunrise and would end 2 hours before sunset.

Activities that could cause disturbance within 65 yards of suitable spotted owl habitat would not occur during the critical breeding period unless that habitat had been surveyed to protocol and determined to be unoccupied or the owls are not nesting.

#### *Snag and Downed Wood Creation*

Snags and downed wood creation would occur at the time of the density management treatments and stream enhancement treatments. The same standards described above under density management treatments and stream enhancement treatments would be followed except that some trees 20" or greater (but less than 32") would be selected. Subsequent snag and downed wood creation that would occur in future decades will be consulted upon in future biological assessments.

### *Under planting of Shade-tolerant Conifers*

This activity would occur during the winter and hand tools would be used.

### *Noxious Weed Control*

Weed removal activities that could cause disturbances would occur beyond 100 yards of unsurveyed suitable or potential marbled murrelet habitat during the marbled murrelet critical nesting period or during the late nesting period and would not begin until 2 hours after sunrise and would end 2 hours before sunset.

Activities that could cause disturbance within 65 yards of suitable spotted owl habitat would not occur during the critical breeding period unless that habitat had been surveyed to protocol and determined to be unoccupied or the owls are not nesting.

## **STATUS OF THE SPECIES**

### **Marbled Murrelet**

#### *Background*

An account of the taxonomy, ecology, and reproductive characteristics of the marbled murrelet (murrelet) is found in the 1988 Status Review (Marshall 1988), the final rule designating the species as threatened (USDI 1992b), the final rule designating critical habitat for the species (USDI 1996), the Service's Biological Opinion for Alternative 9 (USDI 1994) of the FSEIS on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Spotted Owl (USDA and USDI 1994a), the Recovery Plan for the Threatened Marbled Murrelet (USDI 1997), and the 2004 Evaluation Report prepared by EDAW, Inc. for the murrelet 5-year review (McShane et al 2004).

#### *Introduction*

The Marbled Murrelet Recovery Plan (USDI 1997) for the murrelet refers to the NWFP as the backbone of the recovery effort for the murrelet. However, it strategically builds off the NWFP and considers non-federal lands and their role in recovery. The NWFP contributes to the recovery and conservation of the murrelet by providing large blocks of protected habitat in LSR land allocations within murrelet conservation zones along the Washington, Oregon, and California coasts. Furthermore, murrelet habitat is protected on Federal land under the NWFP. No new timber sales will be planned in forested stands known to be occupied by murrelets regardless of whether these stands occur in LSRs, AMAs, or Matrix areas (USDA and USDI 1994b). Protocol surveys are required in suitable habitat to determine occupancy prior to actions that result in habitat loss. In addition, the system of LSRs will not only protect habitat currently suitable to murrelets, but also develop future habitat in larger blocks.

#### *Recovery Threats*

The recovery plan identified the primary threats to the species (not in order of importance): 1) predation; 2) loss of nesting habitat; 3) by-catch in gill-nets, and; 4) oil pollution, both chronic

and from major spills. Predation and the amount and distribution of nesting habitat are considered to be the most important determinants for species recovery.

### *Nest Tree Characteristics*

Lank et al. 2003 state that murrelets “occur during the breeding season in near-shore waters along the north Pacific coastline from Bristol Bay in Alaska to central California”, using single platform trees generally within 20 miles and older forest stands generally within 50 miles of the coast for nesting. Unlike most auks, murrelets nest solitarily on mossy platforms of large branches in old-forest trees (Lank et al. 2003). Suitable habitat for murrelets may include contiguous forested areas with conditions that contain potential nesting structure. These forests are generally characterized by large trees greater than 18 inches dbh, multistoried canopies with moderate closure, sufficient limb size and substrate (e.g. moss, duff) to support nest cups, flight accessibility, and protective cover from ambient conditions and potential avian predators (Manley 1999, Burger 2002, and Nelson and Wilson 2002). Over 95 percent of measured nest limbs were =15 cm diameter, with limb diameter ranges from 7-74 cm diameter (Burger 2002).

Nelson and Wilson (2002) found that all 37 nest cups identified were in trees containing at least seven platforms. All trees were climbed, however, and ground-based estimates of platforms per tree in the study were not analyzed. Lank et al. (2003) emphasize the hypothesis that murrelets do not select tree species for nesting, but select individual trees containing suitable nest platforms. Nest cups have been found in deciduous trees, albeit rarely. Nest trees may be scattered or clumped throughout a forest stand.

Adjacent forest can contribute to the conservation of the murrelet by reducing potential for wind throw during storms, and by providing area buffers (USDI 1996, Burger 2001, Meyer et al. 2002, Raphael et al. 2002, and Zharikov et al. submitted). Trees surrounding and within the vicinity of the potential nest tree(s) may provide protection to the nest platform and potentially reduce gradations in microclimate (Chen et al. 1993).

### *Nest Stand Characteristics*

Nest stands are typically composed of low elevation conifer species. In California, nest sites have been located in stands containing old-growth redwood and Douglas-fir, while nests in Oregon and Washington have been located in stands dominated by Douglas-fir, western hemlock, and Sitka spruce. Murrelets appear to select forest stands greater than 50 ha (Burger 2002), but are found nesting in stands as small as one acre (Nelson and Wilson 2002). In surveys of mature or younger second-growth forests in California, murrelets were only found in these forests when there was nearby old-growth stands or where residual older trees remained (USDI 1992, and Singer et al. 1995).

At the stand level, vertical complexity was correlated with nest sites (Meekins and Hamer 1998, Manley 1999, Waterhouse et al. 2002, and Nelson and Wilson 2002), and flight accessibility has been postulated as a necessary component for suitable habitat (Burger 2002). Some studies have shown higher murrelet activity near stands of old-forest blocks over fragmented or unsuitable forest areas (Paton et al. 1992, Rodway et al. 1993, Burger 1997, Deschesne and Smith 1997, and Rodway and Regehr 2002), but this correlation may be confounded by ocean conditions, distance inland, elevation, survey bias, and disproportionate available habitat. Nelson and Wilson (2002)

found that potential nest platforms per acre were a strong correlate for nest stand selection by murrelets in Oregon.

### *Landscape Characteristics*

Studies to determine the characteristics of murrelet nesting habitat at a landscape scale have been conducted using a variety of methods, including predictive models, radio telemetry, audio-visual surveys, and radar. McShane et al. (2004:pg. 4-103) report, “At the landscape level, areas with evidence of occupancy tended to have higher proportions of large, old-growth forest, larger stands and greater habitat complexity, but distance to the ocean (up to about 37 miles [60 km]) did not seem important.” Elevation had a negative association in some studies with murrelet habitat occupancy (Burger 2002). Hamer and Nelson (1995) sampled 45 nest trees in British Columbia, Washington, Oregon, and California and found the mean elevation to be 1,089 feet (332 m).

Multiple radar studies (e.g., Burger 2001, Cullen 2002, Raphael et al. 2002, Steventon and Holmes 2002) in British Columbia and Washington have shown radar counts of murrelets to be positively associated with total watershed area, increasing amounts of late-seral forests, and with increasing age and height class of associated forests. The radar counts of murrelets are also negatively associated with increasing forest edge and areas of logged and immature forests (McShane et al. 2004). There are also several studies concluding murrelets do not pack into higher densities within remaining habitat when nesting habitat is removed (Burger 2001, Manley et al. 2001, Cullen 2002).

Although there is a relationship between proximity of human-modified habitat and an increased abundance of avian predators, there is not always proven casualty between increased numbers of avian predators and increased predation on murrelet nests. For example, Luginbuhl et al. (2001:pg. 565) report, in a study using simulated murrelet nests, that “Corvid numbers were poorly correlated with the rate of predation within each forested plot”. Luginbuhl et al. (2001:pg. 569), conclude, “that using measurements of corvid abundance to assess nest predation risk is not possible at the typical scale of homogenous plots (0.5-1.0 km<sup>2</sup> in our study). Rather this approach should be considered useful only at a broader, landscape scale on the order of 5-50 km<sup>2</sup> (based on the scale of our fragmentation and human-use measures)”.

Artificial murrelet nest depredation rates were found to be highest in western conifer forests where stand edges were close to human development (De Santo and Willson 2001 and Luginbuhl et al. 2001), and Bradley (2002) found increased corvid densities within 3 miles of an urban interface, probably due to supplemental feeding opportunities from anthropogenic activities. Golightly et al. (2002) found extremely low reproductive success for murrelets nesting in large old-growth blocks of redwoods in the California Redwoods National and State Parks. Artificially high corvid densities from adjacent urbanization and park campgrounds are suspected to be a direct cause of the high nesting failure rates for murrelets in the redwoods parks.

If the surrounding landscape has been permanently modified to change the predators' numbers or densities through, for example, agriculture, urbanization, or recreation, and the predators impact the murrelet, it is our professional judgment that the reproductive success of the murrelet may also be reduced. Because corvids account for the majority of depredations on murrelet nests and

corvid density can increase with human development, corvid predation on murrelet habitat is a primary impact consideration.

### *Demography and Vital Rates*

The present population estimate for the murrelet in Oregon is 9,500 ( $\pm$  3,000) and approximately 23,700 ( $\pm$  5,200) within the conterminous United States (Huff et al. 2003, Strong 2003a and Strong 2003b). Spiech and Wahl (1995) concluded murrelet populations in Puget Sound are lower now than they were at the beginning of this century, and total estimates for Washington are still about 9,800 murrelets (Huff et al. 2003). Ralph and Miller (1995) estimated the California population to be approximately 6,500 birds, and this estimate remains at the high end of the statistical confidence interval with roughly 4,000 birds being the low end (Huff et al. 2003, Strong 2003a and 2003b, McShane et al. 2004).

Beissinger (1995) constructed a demographic model of the murrelet and concluded that the population may be declining at rates of 4-6 percent per year, but this estimate is hampered by the possibility that the age-ratio data used in the model are reflective of a relatively temporary decline due to unusual ocean conditions (Ralph et al. 1995). Boulanger et al. (1996) found change in adult survivorship is the single most important factor when projecting demographic trends for murrelets. Similarly, Strong and Carten (2000) suggest there may have been a 50 percent decline from 1992 to 1996 in the Oregon population, which appears to have stabilized since (Strong 2003a and 2003b). Ralph et al. (1995) summarized some of the reasons for variability in population estimates among researchers, including differences in methodology, assumptions, spatial coverage, and survey and model errors. Lank *et al.* (2003) state, "Regardless of the approaches taken to estimate [(sic) vital rate] parameter values, the output from the Leslie matrix models representing survivorship and fecundity values for all populations in Washington, Oregon and California (Beissinger and Nur 1997) suggest negative population growth rates." Present at-sea surveys for effectiveness monitoring have a 95 percent chance of detecting annual population changes of  $\pm$ 20 percent or greater.

### *Available Nesting Habitat*

The precise number of acres of suitable habitat in WA, OR and CA is not well known. However, based on agency estimates and the Services' internal section 7 files, the best estimates of suitable habitat for the murrelet on Federal lands is estimated at 2,223,048 acres of which 154,838 acres (7 percent) are classified as remnant habitat within the listed range of this species. Approximately 93 percent of the suitable habitat occurs on Federal lands. Occupied murrelet habitat is protected on Federal land under the NWFP in several ways. All occupied murrelet habitat outside of mapped LSRs becomes an unmapped LSR, regardless of the original designated land allocation. In addition, all "contiguous existing and recruitment habitat for marbled murrelets...within a 0.5-mile radius" is protected (USDA and USDI 1994ab; C-10). Timber harvest within LSRs is designed to benefit the development of late-successional conditions, which should improve future conditions of murrelet nesting habitat. Designated LSRs not only protect habitat currently suitable to murrelets (whether occupied or not), but will also develop future suitable habitat in large blocks.

## Murrelet Critical Habitat

Designation of critical habitat serves to identify lands which may be necessary for the conservation and recovery of listed species. On May 24, 1996, the Service published the final rule designating critical habitat for the murrelet in the *Federal Register* (USDI 1996). The final rule became effective June 24, 1996.

The Service's primary objective in designating critical habitat was to identify existing terrestrial murrelet habitat that supported nesting, roosting, and other normal behaviors and require special management considerations. The Service designated critical habitat to protect murrelets and their habitat in a well-distributed manner throughout the three states. Critical habitat is primarily based on the LSRs identified in the NWFP (approximately 3 million of the 3.9 million acre boundary designation). The LSR system identifies large, contiguous blocks of late-successional forest that are to be managed for the conservation and development of the older forest features required by the murrelet, and as such, serve as an ideal basis for murrelet critical habitat. Where LSRs were not sufficient to provide habitat considered critical for the survival and recovery of the murrelet, other lands were identified, including state, county, and private lands.

The boundary of critical habitat for the murrelet encompasses approximately 3.9 million acres across Washington, Oregon and California. When designating critical habitat the Service focused on areas essential for successful murrelet nesting. Within the boundaries of designated critical habitat, only those areas that contain one or more primary constituent elements are critical habitat. Areas without any primary constituent elements are excluded by definition. The primary constituent elements are: (1) individual trees with potential nesting platforms and (2) forested lands of at least one half site potential tree height regardless of contiguity within 0.8 kilometers (0.5 miles) of individual trees with potential nesting platforms, and that are used or potentially used by murrelets for nesting or roosting. The site-potential tree height is the average maximum height for trees given the local growing conditions, and is based on species-specific site index tables.

## ENVIRONMENTAL BASELINE

The Environmental Baseline is defined as the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process [50CFR 402.02].@

LSR 267 lies within the North Coast Planning Province. Within this province, LSR 267 occurs mainly within the Siuslaw River Basin with a very small portion in the Umpqua River Basin. LSR 267 includes 175,280 acres of federal land managed by the BLM Eugene, Roseburg, and Coos Bay districts and the Siuslaw National Forest.

The Eugene District manages approximately 83,000 acres (47 percent) of LSR 267. Of this total acreage, 24,400 acres are within the Upper Siuslaw River sub-unit (14 percent of LSR 267) which is addressed by the proposed action. The Eugene District plans to develop restoration plans for the other sub-units of LSR 267: Middle Siuslaw River, Wolf Creek and Wildcat Creek.

## Status of the Species in the Action Area

The following status information was compiled by BLM and the Service.

### *Murrelet*

The action area is located about 34-45 miles from the Pacific coast, which is near the 50-mile limit of expected murrelet distribution in Oregon. The action area contains about 10,600 acres of murrelet habitat and about 2,235 acres of potential habitat, all of which are located on Federal lands.

Most stands in action area have not been surveyed to protocol. BLM has conducted murrelet surveys in stands proposed for thinning treatments that had potential habitat within the stand or that were adjacent to suitable habitat. Six percent of the suitable murrelet habitat and two percent of the potential murrelet habitat have been surveyed within the action area. Murrelets have been observed at three locations in the action area:

Over a stand in Section 7, Township 20 South, Range 5 West;

In Section 17, Township 20 South, Range 7 West;

And under the canopy in a stand in Section 1, Township 20 South, Range 7 West.

This last observation was an incidental sighting (*i.e.*, not part of a survey effort), but qualified as an occupied site (“birds flying below, through, into, or out of the forest canopy within or adjacent to a site of potential habitat”). Further surveys in all of these areas resulted in no additional observations.

The action area contains about 17,830 acres of land that is within critical habitat unit (CHU) OR-04-i.

### *Recovery Zone 3*

Over the last four years the murrelet population estimate in this zone has not varied substantially (Huff 2003, Strong 2003a and Strong 2003b). More years of data are needed to establish a trend, but a supportable hypothesis is that as habitat is protected and no longer lost, the murrelet may stabilize at a new lower level supported by the remaining habitat. Ocean conditions play a role in the success of murrelets, and therefore additional years of population and productivity monitoring will be needed to separate marine and habitat effects on murrelets (Huff 2003).

Since the murrelet was listed in 1992, the Service is aware of 2,645<sup>1</sup> acres of murrelet habitat that have been removed in Recovery Zone 3 (McShane et al. 2004). This estimate is based only on agency estimates from Federal lands. The amount of habitat lost from non-federal lands is not known. However, internal section 7 files show an additional 3,026 acres on private land and

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<sup>1</sup> This number may be inflated, due to all of BLM, Roseburg and Coos Bay districts consultations being included in Recovery Zone 3 for this calculation due to the BLM, Roseburg and Coos Bay districts occurrence in both Recovery Zone 3 and 4.

1,259 acres on tribal land were removed, 1992 through May 17, 2004 (USDI 2004). Most of the tribal habitat removed was known to be unoccupied by murrelets, 52 percent, while most of the private lands were unsurveyed, 72 percent.

## **EFFECTS OF THE ACTION**

Projects addressed in this consultation will adversely affect murrelets due to disturbance during the critical nesting period from density management treatments in stands = 60 years old and associated road construction, snag and down wood creation, which will occur within the units' boundaries. Although the potential effects of disturbance on the survival and recovery of murrelets are considered to be of much less importance than the loss of habitat, such effects can still lead to a likelihood of injury under certain circumstances.

### **Murrelet**

#### *Habitat*

Trees will only be harvested from habitat under the activity type of stream enhancement treatments. The stream enhancement treatments would remove individual trees from possibly suitable (no stands over 80 years old but some stands that are 60 -79 years old could have 18" dbh average) or potential habitat and place them in stream channels or floodplains for stream enhancement. Although canopy cover may be altered, no suitable nest trees or trees greater than 32 inches dbh will be removed.

Full criteria for in-stream tree selection under stream enhancement treatments include no suitable nesting trees or trees greater than 32 inches dbh will be removed and selected. single trees or small groups of trees (2-4 trees) will be: [1] along the periphery of permanent openings (*e.g.*, rights-of-way, powerlines), or along the periphery of non-permanent openings (*e.g.*, along plantation edges, along recent clearcuts less than 40 years old); [2] single trees or small groups of trees (2-4 trees) may only be removed from the first two lines of trees and will be dispersed along these edges but may not be adjacent to one another; [3] single trees or small groups of trees (2-4 trees) must be spaced at least one site potential tree height apart and at least one tree from any trees with potential nesting structure for any listed species (for streamside operations, spacing requirements apply to each bank independently).

The selection criteria for in-stream trees, described above, will provide additional protection to any potential nest trees in the treatment area (#3), as well as minimize the potential effects to interior forest conditions (#1 and 2). Therefore, the removal of 140 individual trees across the watershed for use in stream enhancement *may affect, but is not likely to adversely affect* murrelets.

Thinning of young units next to habitat may have a small affect to habitat by removing trees that may be buffering potential nesting trees or by creating an edge which would increase the risk of wind throw during storms and affect the stability of microclimate along the exposed border (Chen et al. 1992), but these affects are expected to be minimal due to the treatments being thinning prescriptions and 40 to 110 trees per acre will be left behind (Table 1). Although road construction, and snag and down wood creation activities will also be removing trees, these activities will only occur within the young treatment units. Therefore, the activity types of

density management treatments, road construction, and snag and downed wood creation *may affect, but are not likely to adversely affect* murrelet habitat.

Additionally, the density management treatments and road decommissioning (45 miles) should have a beneficial effect to future murrelet populations by producing future nest trees/stands.

### *Disturbance*

Noise, visual disturbance, and/or smoke may disturb adult or juvenile murrelets and could cause them to flush from their nest site, could cause a juvenile to prematurely fledge or could interrupt feeding attempts by the adult. While the effects of these disturbances are not clear, any of these impacts could result in the reduced fitness or even death of an individual bird due to missed feedings, or reduced protection of the young if adults are disturbed.

The potential for effects may occur out to a 0.25 mile zone although it is likely that the most severe impacts of noise disturbance that may disrupt reproductive activities occur within a narrower zone. As noise attenuates over distance, the likelihood that it remains at a level sufficient to cause injury is reduced. The exact distance where noise disrupts breeding is difficult to predict and can be influenced by a multitude of factors. Site specific information (e.g. topographic features, project length or frequency of disturbance to an area) could be used to further evaluate potential effects from disturbance which may result in some effects being reduced.

There is little data regarding the impacts of noise on murrelets and other listed species. However, the Service has recently analyzed the available data on spotted owls, murrelets and other species (USDI 2003a), and has consulted species experts who have worked extensively with murrelets to determine the extent to which above-ambient noises may affect murrelets. The results of this analysis indicate that murrelets may flush from their nest or roost or may abort a feeding attempt of their young when the following activities occur up to the specific distances (Table 4). These distances are somewhat different than the distances for spotted owls due to the available scientific data. In addition, a visual harassment distance of a minimum of one hundred yards is included and is based on a separate analysis by the Service to quantify both visual and auditory harassment to murrelets (USDI 2003b). These data represent a comprehensive assessment of harassment distances based on the best available science. These assessments are incorporated into this Opinion as current guidance for harassment distances for various activities as it relates to adverse effects to the murrelets from harassment due to disturbance. The Service is continuing to use 0.25 mile for smoke disturbance, due to no new information being available to better estimate effects distances for smoke. If the Services' understanding of these distances change, adjustments to these distances may be recommended in the future.

Above-ambient noises farther than these Table 4 distances from murrelets are expected to have either insignificant effects or no effect to murrelets. The types of reactions that murrelets could have to noise that the Service considers having an insignificant impact include flapping of wings, the turning of a head towards the noise, attempting to hide, assuming a defensive stance, or other reactions that do not significantly disrupt breeding, feeding, or sheltering (USDI 2003a).

**Table 4. Harassment distances from various activities for marbled murrelets.**

Type of Activity	Distance at which murrelets may flush or abort a feeding attempt
an impact pile driver, a jackhammer, or a rock drill	100 yards
a helicopter or a single-engine airplane	120 yards
chainsaws (hazard trees, precommercial and commercial thinning)	100 yards
heavy equipment	100 yards
Burning *	440 yards (0.25 mile)

\* Although the category of Burning was not part of the Services recent analysis of disturbance, it is added here to complete the types of activities that are covered under this BO.

#### *Timing of Disturbance*

The risk to murrelets from disturbance is tied to the timing of the activity and is highest when adults have eggs in a nest or are feeding and protecting chicks in the nest. During these periods the disruption of adults and their young could result in death or injury to the young as a result of predation. The leading known causes of mortality in juvenile murrelets are starvation and predation (Burger 2002, Lank et al. 2003, and Nelson and Wilson 2002).

The timing of nesting and chick-rearing varies geographically, although murrelets generally start laying their eggs around the beginning of April. In Oregon, August 5<sup>th</sup> is the date by which data indicate that most juveniles have likely fledged and returned to the ocean (Hamer and Nelson 1995).

Activities that may result in above ambient noise levels include the use of mechanized tree harvest equipment, road hauling, aircraft/helicopters, heavy equipment, hydraulic hammers, road construction and maintenance equipment. In some instances, noise levels produced by these activities can remain above ambient levels out to 0.25 mile and may affect murrelets. If potentially disturbing activities are implemented within the prescribed distances (Table 4) of occupied or unsurveyed murrelet habitat during the murrelet critical nesting season (April 1 – Aug 5), those activities *may affect, and are likely to adversely affect* murrelets by causing adults to flush from their nest site, nest abandonment, premature fledging, interruption of feeding attempts, or increased predation due to less protection when the adult flushes. If disturbance activities are implemented beyond the prescribed distances (Table 4), but within 0.25 mile of occupied or unsurveyed murrelet habitat, during the murrelet critical nesting season (April 1 – August 5) they *may affect, but are not likely to adversely affect* murrelets.

After August 5, it is presumed that most chicks have fledged or adult murrelets still tending the nest are heavily invested in chick-rearing, thus reducing the likelihood of nest abandonment or significant alteration of breeding success. Additionally, if disturbance is avoided during the crepuscular periods when murrelets are making the majority of their feeding trips, activities occurring in the late breeding period (August 6 - September 15) *may affect, but are not likely to adversely affect* murrelets if within 0.25 mile of occupied habitat, or unsurveyed suitable or potential habitat. Implementation of proposed projects outside the breeding period (that is,

activities occurring between October 1, and March 30, or more than 0.25 mile from suitable or potential habitat, would have *no effect* on murrelets.

The Service anticipates *adverse effects* due to disturbance of 1,100 acres of unsurveyed or occupied murrelet habitat within distances in Table 4 of some of the Density Management treatments in stands = 60 years old, and associated road construction, snag and down wood creation within these stands, during the murrelet critical nesting seasons (April 1 – August 5) of each year. Other activities will have unoccupied habitat within the distances of Table 4, be located beyond the distances in Table 4 from habitat, or activities will occur outside of the non-critical breeding season, with 2 hour daily timing restrictions of disturbance activities after sunrise and before sunset, or outside the entire breeding season (October 1 – March 30). Affects for all activities are summarized in Table 5.

Although the Service has previously thought hauling of timber on open roads may affect, and is likely to adversely affect murrelet, new data from Golightly et al. (2002) have shown no correlation between road proximity and nest success. This study included two years of data and 20 nests initiated by radio marked murrelets. Hamer and Nelson (1998) described one murrelet nest that successfully fledged next to a road. Hamer and Nelson (1998) concluded these murrelets showed a high degree of tolerance to trucks and automobiles and that human presence appeared to have the greatest impacts on nesting murrelets. Singer et al. (1995) report observing no visible response by murrelets to vehicles transiting on a “well-traveled park road” located within 230 feet (70 m) of nests monitored in Big Basin State Park from 1992 to 1994. Nelson, too, documented no response to vehicular noise from birds associated with nests in this same location in 1989. Chinnici also noted little response by murrelets to vehicles driving on a “lightly used” logging road located 230 feet (70) m from a nest in Humboldt County, California observed over 11 days in 1992. Chinnici noted that the chick once opened its eyes and became alert at the approach of a vehicle but otherwise did not respond to vehicular noise (Long and Ralph 1998). Nelson reported observing no response from chicks or adult murrelets to vehicular noise (Long and Ralph 1998). Therefore, the Service anticipates hauling of timber, associated with the density management treatments, *may affect, but is not likely to adversely affect* murrelets.

#### *Critical Habitat*

Critical habitat is present within the action area. Trees from suitable habitat within critical habitat will be harvested for stream enhancement treatments. As stated, the selection criteria will provide protection to any potential nest trees in the treatment area, as well as minimize the potential effects to interior forest conditions. Therefore, the removal of 140 individual trees across the watershed for use in stream enhancement *may affect, but is not likely to adversely affect* critical habitat.

Thinning of young units within and next to critical habitat may have a small affect to critical habitat by removing trees that may be buffering potential nesting trees or by creating an edge which would increase the risk of wind throw during storms and affect the stability of microclimate along the exposed border, but these affects are expected to be minimal due to the treatments being thinning prescriptions and 40 to 110 trees per acre will be left behind (Table 1). Although road construction, and snag and down wood creation activities will also be removing trees these activities will only occur within the young treatment units. Therefore, the activity types of density management treatments, road construction, and snag and downed wood creation *may affect, but are not likely to adversely affect* critical habitat.

**Table 5. Affect of disturbance to occupied or unsurveyed suitable murrelet habitat**

<b>Marble Murrelet Breeding season</b>	<b>Critical nesting season April 1-August 5</b>			<b>Late breeding season August 6 – September 15</b>	
Disturbance to:	<b>Habitat within 100 yards</b>	Habitat from 100 yards to within 0.25 mile	No habitat within 0.25 mile	Habitat within 0.25 mile	No habitat within 0.25 mile
Density Management Treatments	<b>May affect, and is likely to adversely affect (MA,LAA)</b> some stands = 60 years old will be treated during this time period	May affect, but not likely to adversely affect (MA,NLAA)	No effect	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect
Road decommissioning	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect
Road construction	<b>MA,LAA</b> all road construction is associated and within density management thinning treatment units	MA,NLAA	No effect	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect
Stream Enhancement treatments	None planned during this time period	None planned during this time period	None planned during this time period	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect
Snag and downed wood creation	<b>MA,LAA</b> associated with density management thinning treatments	MA,NLAA	No effect	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect
Under planting of shade-tolerant conifers	None planned during this time period	None planned during this time period	None planned during this time period	None planned during this time period	None planned during this time period
Noxious weed control	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA due to a 2 hour daily timing restriction after sunrise and before sunset on heavy equipment and chain saw use	No effect

Additionally, the density management treatments and road decommissioning (45 miles) should have a beneficial effect to future murrelet critical habitat by producing future nest trees/stands.

### *Recovery Zone 3*

Although, 1,100 acres of occupied or unsurveyed habitat will be disturbed with the proposed project, the effects will be spread out over ten years.

Analyzing just the suitable habitat within the North Coast Province<sup>2</sup> on Federal land (423,433 acres), the harassment of 1,100 acres is less than 0.3 percent of suitable habitat or about 0.03 percent a year. Additionally approximately 1,030,399 acres have been designated as critical habitat units for murrelets. Although not all of the lands within the CHUs are functioning as suitable habitat, the quantity of habitat is expected to increase over time as young forest stands mature and develop nesting structure for murrelets. The harassment of 1,100 acres over ten years would be a smaller proportion of the total if habitat estimates were available for the entire Recovery Zone 3. Therefore, at the scale of the Recovery Zone 3, our best professional judgment is that the habitat harassed from the proposed action will not likely be a causative factor in destabilizing the Recovery Zone 3 murrelet subpopulation.

This project does not remove any suitable stands and is designed to promote late-successional conditions by thinning young stands.

## **CUMULATIVE EFFECTS**

Cumulative effects are those effects of future state or private actions, not involving Federal actions, that reasonably are certain to occur within the action area of a Federal action subject to consultation (50 CFR 402.02). Cumulative effects analysis of foreseeable state and private actions provide greater insight to understanding the current environmental factors and likely trends that might affect a species.

No suitable habitat for murrelets is known to occur on non-federal lands within the action area. Private lands within the action area are expected to continue to be used for commercial timber production. Habitat for the murrelets is not expected to develop due to the short rotation ages used in commercial timber harvest. As a result, private lands within the action area probably will not contribute to the recovery of the murrelet.

## **CONCLUSION**

After reviewing the current status of the murrelet, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed programmatic actions are *not likely to jeopardize the continued existence* of the murrelet because the overall risk will not preclude recovery and per year risk is low. In addition, these proposed actions are *not likely to destroy or adversely modify* murrelet critical habitat.

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<sup>2</sup> The North coast is a subset of Recovery Zone 3. Numbers for the entire Recovery Zone 3 not available.

## CONCURRENCE

### Murrelets

The Service concurs with activities resulting in *not likely to adversely affect* determinations for murrelets. In the preceding BO, the anticipated impacts to murrelets from the proposed activities were detailed in the Effects of the Action section. Although the above BO constitutes formal consultation on activities determined likely to adversely affect listed species, analyses therein also address those circumstances under which activities were considered not likely to adversely affect murrelets. Those analyses are incorporated by reference into this informal consultation.

### Spotted Owls

Spotted owls do occur within the action area, but the BLM has designed the proposed action to avoid adverse affects. Additionally, all spotted owl habitat within the action area is designated critical habitat.

Dispersal habitat will be treated through density management treatments and snag and downed wood creation, which should promote suitable spotted owl habitat by reducing the time required for the stands to develop late successional habitat conditions. Only 3.6 miles of temporary spur roads will be created within the density management treatment units. Treatments will degrade 1,350 acres and remove 662 acres (642 acres from critical habitat unit OR-53 and 20 acres from OR-52) of dispersal habitat, but the overall amount of dispersal in the action area is expected to increase over the 10 year plan, do to harvest limitations and in growth of younger stands. Additionally, no thinning of stands > 50 years old will occur within an active owl home range that currently has less than 40 percent suitable habitat.

Stream enhancement treatments will be in older stands, 60 -79 years old, which have an average of 18" dbh. Therefore, these stands may be functioning as suitable habitat, but project design criteria will limit the selection of trees to non-nest trees with spacing requirements that minimize the impact to the stand.

Disturbances will not occur within the distances listed in Table 6 during the critical breeding season so as to avoid adverse affects to spotted owls. Table 7 summarize s the disturbance restrictions and affects determinations by activity type and time period.

Therefore, due to the project design criteria that restrict impacts to spotted owl habitat/critical habitat and disturbance activities, during the spotted owl critical nesting season, the Service concurs with activities resulting in a *may affect, but not likely to adversely affect* determinations for spotted owls and spotted owl critical habitat.

**Table 6. Harassment distances from various activities for spotted owls.**

Type of Activity	Distance at which spotted owl may flush or abort a feeding attempt
an impact pile driver, a jackhammer, or a rock drill	60 yards
a helicopter or a single-engine airplane	120 yards
chainsaws (hazard trees, precommercial and commercial thinning)	65 yards
heavy equipment	35 yards
Burning	440 yards (0.25 mile)

**Table 7. Affect of disturbance to suitable spotted owl habitat**

Spotted Owl Breeding Season	Critical nesting season March 1 – July 7			Non critical nesting season July 8 – September 30	
	Un-surveyed or occupied habitat within 65 yards	Un-surveyed or occupied habitat from 65 yards to within 0.25 mile, or occupied habitat within 65 yards is determined to have a non-nesting pair of spotted owls	Un-occupied habitat or no habitat within 0.25 mile	Un-surveyed or occupied habitat within 0.25 mile	Un-occupied habitat or no habitat within 0.25 mile
Disturbance to:	<b>Un-surveyed or occupied habitat within 65 yards</b>	Un-surveyed or occupied habitat from 65 yards to within 0.25 mile, or occupied habitat within 65 yards is determined to have a non-nesting pair of spotted owls	Un-occupied habitat or no habitat within 0.25 mile	Un-surveyed or occupied habitat within 0.25 mile	Un-occupied habitat or no habitat within 0.25 mile
Density Management Treatments	Heavy equipment, and chain saw use prohibited	May affect, but not likely to adversely affect (MA,NLAA)	No effect	MA,NLAA	No effect
Road decommissioning	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA	No effect
Road construction	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA	No effect
Stream Enhancement treatments	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA	No effect
Snag and downed wood creation	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA	No effect
Under planting of shade-tolerant conifers	None planned during this time period	None planned during this time period	None planned during this time period	None planned during this time period	None planned during this time period
Noxious weed control	Heavy equipment and chain saw use prohibited	MA,NLAA	No effect	MA,NLAA	No effect

### **Bald Eagles**

No bald eagle habitat will be removed and no bald eagles are currently using the action area. Bald eagle habitat is present and if a bald eagle nest is discovered, activities within 0.25 mile or 0.5 mile line of site will be scheduled outside of the bald eagle nesting period of January 1 – August 31. Therefore, the Service concurs with activities resulting in a *may affect, but not likely to adversely affect* determinations for bald eagles.

This concludes informal consultation for activities resulting in *not likely to adversely affect* determinations in the Upper Siuslaw late-successional reserve restoration plan.

## **INCIDENTAL TAKE STATEMENT**

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. The measures described below are non-discretionary. Failure to comply with these measures may cause the protective coverage of section 7(o)(2) to lapse.

### **AMOUNT OF TAKE**

#### **Marbled Murrelet**

The Service anticipates harassment of 1,100 acres of habitat within 100 yards of density management treatment units and associated temporary road construction, snag and down wood creation within the units during the period of April 1 to September 15. Disturbance is expected from people using chainsaws and heavy equipment.

### **EFFECT OF THE TAKE**

#### **Murrelet**

The Service anticipates that disturbance impacts will vary depending on the type of noise, the duration of the disturbance, the proximity of the disturbance to occupied habitat, and the sensitivity of individual murrelets to disturbance. A noise-induced movement may expose an adult or juvenile murrelet to elevated levels of predation, and a visual disturbance may cause a delayed or aborted feeding attempt to young which may reduce the young's fitness level. The effect of the harassment take may also cause nest abandonment, adults flushing from the nest, and possible loss of the egg due to predation.

## **REASONABLE AND PRUDENT MEASURES**

The Service believes that the following reasonable and prudent measures (RPM) are necessary and appropriate to minimize the impacts of incidental take of the murrelet.

- 1) Provide project monitoring and reporting to accurately assess the amount of take and projects implemented.
- 2) To reduce concerns about human activities attracting predators, provide project guidance requiring the collection and proper disposal of human-generated garbage.

## **TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

- 1) Implementation and monitoring forms need to be completed and submitted with a cover letter from the District Manager verifying the amount of affect that has occurred. These forms are to be submitted yearly. An implementation and monitoring form is attached to the end of this BO. An electronic copy is available upon request.
- 2) Specific guidance needs to be provided to every contractor operating near murrelet suitable habitat that all garbage must be collected and properly disposed of each day. Such garbage may include, for example, food scraps, soda cans, or candy wrappers.

The Service analyzed the impact of the above reasonable and prudent measures on the proposed action and believes that these measures comply with the minor change requirement as defined by 50 CFR 402.14(I)(2).

If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the nearest Service Law Enforcement Office, located at 9025 SW Hillman Court, Suite 3134, Wilsonville, OR 97070; phone: 503-682-6131. Care should be taken in handling sick or injured specimens to ensure effective treatment or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Notice: The Service will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

The incidental take statement contained in the biological opinion does not constitute an exemption for non-listed migratory birds and bald or golden eagles from the prohibitions of take under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (U.S.C. 668-668d), respectively. Proposed Federal actions, including those by applicants, should (through appropriate means) avoid, reduce,

or otherwise minimize such take which is subject to prosecution under these statutes.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service believes the following conservation recommendations would reduce the impact of the proposed action on listed species within the action area:

- 1) Disturbance activities within 100 yards of occupied or unsurveyed murrelet habitat between April 1 and August 5 should be scheduled as late in the murrelet nesting season (April 1 – September 15) as is operationally feasible.

### **REINITIATION NOTICE-CLOSING STATEMENT**

This concludes formal consultation and informal conferencing on the actions outlined in your BA and during the informal consultation process. Reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the proposed action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the proposed action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. If consultation is reinitiated for any of the above reasons, the BLM shall not make any irreversible or irretrievable commitment of resources which has the effect of foreclosing the formulation of reasonable and prudent alternatives.

If you have any questions regarding this Opinion or would like technical assistance in implementing the provisions of this Opinion, please contact Lee Folliard or Bridgette Tuerler at (503) 231-6179.

cc:

Alison Center, BLM, Eugene, OR  
Service, Regional Office, Portland, OR (electronic)  
Spotted owl workgroup (electronic)  
Spotted owl binder, OFWO, Portland, OR  
Marbled murrelet binder, OFWO, Portland, OR

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If a NEPA decision, what was it's date, name, and/or number? This question is not mandatory.

Did the project comply with the applicable BO?  
If no, attach a detailed explanation.

**NORTHERN SPOTTED OWLS**

Effect of activity to spotted owls. Please give acres for each land allocation/CHU combination separately. For example each land allocation could be paired with no CHU or several overlying CHUs and each of these combinations receives a separate line on this table. Degraded, removed and disturbed acres do not overlap each other.

Land allocation (include # if LSR or AMA)	Overlying CHU # (please indicate when no overlying CHU)	Effects associated with take						Effects not associated with take			
		Suitable habitat removed (acres)	Suitable habitat downgraded (acres)	Suitable habitat degraded (acres)	# of activity centers associated with suitable habitat loss	Suitable habitat disturbed/take (acres)	# of activity centers associated with disturbance take	Suitable habitat removed (acres)	Suitable habitat downgraded (acres)	Suitable habitat degraded (acres)	Dispersal habitat removed/thinned below 40% crown cover (acres)
<b>Totals:</b>											

Definitions:  
 Removed – cause habitat to no longer function as suitable or dispersal spotted owl habitat  
 Downgraded – cause suitable habitat to no longer function as suitable, but it is functioning as dispersal spotted owl habitat  
 Degraded – cause a negative effect to suitable habitat, but it still is functioning as suitable spotted owl habitat

**MARBLED MURRELETS**

Effects of activity to murrelets. Please give acres for each land allocation/CHU combination separately. For example each land allocation could be paired with no CHU or several overlying CHUs and each of these combinations receives a separate line on this table. Degraded, removed and disturbed acres do not overlap each other.

Land allocation (include # if LSR or AMA)	Overlying CHU # (please indicate when no overlying CHU)	Effects associated with take			Effects not associated with take		Other questions		
		Suitable habitat removed (acres/trees)	Suitable habitat degraded (acres/trees)	Suitable habitat disturbed/take (acres/trees)	Suitable habitat removed (acres/trees)	Suitable habitat degraded (acres/trees)	Zone (1, 2, or both)	Was this area surveyed?	Was presence or occupancy detected?
<b>Total:</b>							X	X	X

Definitions:  
 Zone 1 – 0 to 35 miles from the coast  
 Zone 2 – 35 to 50 miles from the coast

**BALD EAGLES**

Please complete the bottom row of this table.

Habitat effects		Disturbance effects	Management plan information if available
Name or identification number of individuals or pairs taken due to habitat removal	Number of known or suspected nest/roost/perch trees removed	Name or identification number of pairs taken due to habitat disturbance	ID number of management area where bald eagles were affected

**Other** \_\_\_\_\_

To date, fields for species other than murrelets, spotted owls, and bald eagles have not yet been fully defined. If your project may affect other listed or sensitive species, please contact your U.S. Fish and Wildlife Service provincial representative to discuss additional information prior to form completion.