

## **MEDFORD BLM 2008 BIOLOGICAL ASSESSMENT THAT MAY AFFECT BUT WILL NOT ADVERSELY AFFECT SPOTTED OWLS AND MARBLED MURRELETS OR CRITICAL HABITAT**

(May be cited as 08 Medford NLAA BA)

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### **I. INTRODUCTION**

#### **Purpose of the Biological Assessment**

Many of the activities included in the proposed action were originally analyzed in previous biological assessments (BA) prepared by the Medford BLM (BLM) or jointly by BLM and the Rogue River Siskiyou National Forest (FS). These same activities were evaluated by the US Fish and Wildlife Service (Service) in letters of concurrence or Biological Opinions. Recent lawsuits on Endangered Species Act (ESA) issues have resulted in the need to reinstate on all remaining projects identified in the Proposed Action section of this BA, which the BLM has determined may affect, but are not likely to adversely affect (NLAA) spotted owls (*Strix occidentalis caurina*) (spotted owl) or spotted owl designated critical habitat. A separate BA will be prepared to evaluate proposed activities the BLM has determined may affect, are likely to adversely affect (LAA) spotted owls and/or their designated critical habitat.

Some potentially noise generating activities are proposed to occur (in the Glendale Resource Area) in marbled murrelet (*Brachyramphus marmoratus*) survey area Zone "B" where numerous surveys have occurred without documenting presence since the listing of the marbled murrelet. These projects will avoid any adverse disturbance by avoiding marbled murrelet habitat and by occurring outside of the critical breeding period. BLM has determined that these projects may affect, but are not likely to adversely affect (NLAA) marbled murrelet due to small amounts of habitat treated from individually selected trees for snag creation, and from disturbance caused by hazard tree removal. Snag creation activities causing disturbance would occur outside the critical and extended breeding season, and vegetative treatments in non-habitat would apply PDC disturbance distances and seasonal restrictions to adjacent suitable habitat. Minor disturbance from hazard tree removal could occur during the breeding season only in habitat buffering the known murrelet range. BLM has determined these projects may affect but will not adversely affect marbled murrelet critical habitat because vegetative treatments would take place in young stands not meeting suitable habitat definitions (see Definitions). Proposed actions would maintain primary constituent elements for all stands affected by hazard tree removal or snag creation.

The effects of projects on plants through 2008 are evaluated in the Biological Assessment for FY04-08 Programmatic Consultation, July 14, 2003 (USDA, USDI 2003). Listed fish are evaluated in separate project level consultations. No other listed species or designated critical habitat will be affected by the activities identified in this BA.

## Description of the Action Area

The Action Area is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402), and includes all public lands managed by Medford BLM and all areas subject to increased ambient noise levels caused by activities associated with the proposed action. Habitat baseline in this document includes habitat on federal ownership across Medford BLM and the Rogue-River Siskiyou National Forest, as described in the joint 06-08 BA (USDA, USDI, 2006).

Analysis is presented by units called “Section 7” Watersheds. The Level 1 Team developed Section 7 Watersheds to aid Endangered Species Act (ESA) analysis of projects shortly after the northern spotted owl was listed to comply with Section 7 of the ESA. Section 7 Watersheds are similar to sub-basins, roughly equivalent to the combined size of three to fifteen HUC 5 watersheds, and range in size from 114,000 to 1,318,000 acres. They were formulated to make reasonable units of analysis. They are described and mapped in Appendix F of the 06-08 BA (USDA, USDI, 2006).

The Medford District BLM encompasses approximately 866,000 acres of public land in a checkerboard pattern of mixed private and federal ownership acres (GIS calculations 4/15/07). Not all of these lands are capable of providing owl or murrelet habitat. The proposed projects (actions) are located mostly within the Oregon Klamath and Oregon Western Cascades Physiographic Provinces. A small area on the Medford BLM lies within the Eastern Cascade Province.

Natural plant community types within the Action Area are diverse. In the lower elevations Oregon white oak woodlands and grasslands, chaparral, scattered ponderosa pine, and Douglas-fir occur up to about 2,400 feet in the interior valleys. Above this on the Klamath mountain side of the valley is the mixed evergreen zone, dominated with Douglas-fir and madrone up to about 4,500 feet, and a mixed conifer zone on the Cascade side dominated by ponderosa pine, Douglas-fir, incense cedar, and white fir in more mesic sites. In both areas, dense, chaparral (sclerophyllous type) communities can occupy large patches of the landscape, composed primarily of wedge-leaf ceanothus (*Ceanothus cuneatus*) and manzanita (*Arctostaphylos* species). Above 4,500 feet is the white fir zone, grading into a Shasta red-fir zone up to about 6,500 feet. Above this, areas of mountain hemlock and whitebark pine can be found up to open rocky herbaceous grasslands on the highest peaks above timberline.

The ecological diversity of communities and species of the BLM is attributed to its physiographic setting at the confluence of the Klamath and the Cascade ecoregions. Many eastern Cascade and Great Basin species are on the periphery of their range in the Klamath sub-basin and spill into the southern edge of the Rogue valley from the east. The juxtaposition of these regions has led to a diverse array of species including species whose distributions are centered south into the Sierra's of California, east into the Great Basin, or north up the Cascades and the Coast range.

The BLM has allocated the lands under their jurisdiction into several land use allocations (LUAs). Land use allocations common to both agencies include Late Successional Reserve (LSR), Riparian Reserves, Matrix, and Adaptive Management Areas (AMA).

**Private lands:**

BLM-managed lands are generally intermingled with private lands. Human populations are centered on the cities of Medford, Grants Pass, and Ashland. Private lands comprise approximately 50 percent of the total Action Area. Private forested lands managed for timber production will typically be harvested between 40 and 60 years of age, in accordance with State Forest Practices Act standards. These lands are typically not expected to provide long-term spotted owl nesting, roosting and foraging habitat, or marbled murrelet habitat, although some habitat may occur in private ownership. The conversion of intact suitable habitat in the low elevation woodlands and grasslands into pastures, vineyards, orchards, and home sites is increasing throughout the Rogue Valley. We assume that the listed species in this document cannot depend on the continued presence of private habitat through the life of this consultation, and therefore do not include any private habitat that may be present in our baseline or effects calculations.

## **II. DEFINITIONS**

### **NW Forest Plan Land Use Allocations (USDA USDI 1994b)**

**Late-Successional Reserves (LSRs)** are managed to protect and enhance habitat conditions for late-successional and old-growth related species. These reserves are designed to maintain a functional, interacting late-successional and old-growth ecosystem.

**Riparian Reserves** are areas along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis.

**Matrix** consists of those federal lands not in the categories above. For the BLM this is the general direction for Matrix lands.

### **Medford Resource Management Plan (RMP) Land Designations**

#### North General Forest Management Area

- Retain on average 6-8 trees per acre (modified even-aged systems)
- Retain on average of 12-15 trees per acre (for shelterwood)
- Retain on average 16-25 trees per acre (structural retention systems) in scattered or clumped distribution

#### Southern General Forest Management Area

- Retain on average 16-25 trees per acre in scattered or clumped distribution

Further details on management in land use allocations are located in Medford District Record of Decision (ROD) and Resource Management Plan (RMP) USDI (1995).

#### **AMA (Adaptive management Areas)**

Generally follows Matrix guidance, but encourages adaptive management approaches to forest management. Specifically, for the Applegate AMA, the direction is to develop and test forest management practices, including partial cutting, prescribed burning, and low impact approaches to forest harvest (e.g., aerial systems), that provides for a broad range of forest values, including late-successional forest and high-quality riparian habitat.

#### **Streamlined Consultation**

This BA was developed by the Level 1 team, which includes the USFS Forest Biologist, the Medford BLM District Biologist and the Roseburg Office USFWS Biologist (USDA, USDC, USDI, 1999). The Level 2 team includes the USFS Forest Supervisor, the Medford BLM District Manager, and the Roseburg Office USFWS Supervisor.

#### **Spotted owl site**

A **spotted owl site** is defined as a location with evidence of continued use by spotted owls, including: breeding, repeated location of a pair or single birds during a single season and /or over several years, presence of young before dispersal, or some other strong indication of continued occupation. A spotted owl site may include one or more Known Spotted Owl Activity Centers (i.e., nest site) or a site found after 1994. Sites found after 1994 do not have 100 acre core areas. Recent evaluation of owl telemetry literature indicates that most spotted owl activities are focused within the 0.5 mile radius around the nest tree (Jim Thraikill, March 15, 2007, personal communication).

#### **Known Spotted Owl Activity Center (KOAC)**

A Known Spotted Owl Activity Center (KOAC) for the northern spotted owl is a designated reserve protecting approximately 100 acres of the best habitat adjacent to a nest site or activity center for all spotted owl sites known prior to January 1, 1994 on Federal Matrix and AMA lands. Although not required by the NWFP (Northwest Forest Plan, USDA, USDI 1994), Medford BLM also identified 100 acre core areas for historic owl sites in LSR (Late Successional Reserves). By definition, LSRs are already identified as reserves for northern spotted owls and other late-successional related species.

#### **Activity Periods**

#### **Table 1 Breeding periods of northern spotted owls and marbled murrelets**

Species	Entire Breeding Period	Critical Breeding Period	Extended Breeding Period
Northern spotted owl	March 1-September 30	March 1-June 30	July 1-September 30
Marbled murrelet	April 1-September 15	April 1-August 5	August 6-September 15

### Habitats

**Capable habitat** for the northern spotted owl is habitat that is either currently suitable or that can become suitable in the future, as trees mature.

**Dispersal or Dispersal-only habitat (northern spotted owl)** is a subcategory of all dispersal habitat for northern spotted owls. Zabel et al. (2003) developed a model of owl habitat for northern California. They defined this type of habitat as “foraging/dispersal”. Throughout this document, “dispersal” will be used to describe dispersal-only. We define dispersal as forested habitat greater than 40 years old, with canopy closure more than 40 %, average diameter greater than 11 inches, and that has flying space for owls in the under story. It provides temporary shelter for owls moving through the area between NRF habitat and provides some opportunity for owls to find prey, but does not provide all of the requirements to support an owl throughout its life. (Thomas et al 1990). Dispersal will be used throughout this document to refer to habitat that doesn’t meet the criteria to be NRF (nesting, roosting or foraging) habitat, but has adequate cover to facilitate movement between blocks of suitable NRF habitat. Owls can also disperse through NRF habitat. When both dispersal and NRF are intended, we’ll use the term “all dispersal”. Dispersal habitat is defined as Habitat 5 and 6 (USDA, USDI 2005). These classifications were part of the 1991-1992 Draft Resource Management Plan (RMP) (USDI 1992). Habitat 5 currently lacks NRF structure and provides dispersal-only function. It has the potential to develop into NRF habitat. Habitat 6 currently lacks NRF structure, provides dispersal-only function and does not have the potential to develop into NRF habitat.

**Suitable habitat** for the northern spotted owl consists of habitat used by owls for nesting, roosting *and* foraging (NRF). NRF habitat also functions as dispersal habitat. Generally this habitat is at least 80 years of age or older (depending on stand type and structural condition), is multi-storied and has sufficient snags and down wood to provide opportunities for nesting, roosting and foraging. The canopy closure generally exceeds 60 percent, but canopy closure alone does not qualify a stand as NRF. The attributed of nesting and roosting habitat typically include a moderate to high canopy closure (60-80 percent): a multi-layered, multi-species canopy with large (>30 inches dbh) overstory trees: a high incidence of large trees with various deformities (e.g. large cavities, broken tops, mistletoe infestations, and other evidence of decadence); large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for owls to fly (Thomas et al 1990).

NRF habitat in SW Oregon is typified by mixed-conifer habitats, recurrent fire history, patchy habitat components, and has a higher incidence of wood rats, which is a high quality spotted owl prey species.

Forsman et al (1984) described some of the differences in the Klamath Mountains, typical of large parts of the Medford District: "Eighty-one percent of all nests in northwestern Oregon were in cavities, compared to only 50% in the Klamath Mountains. These differences appeared to reflect regional differences in availability of the different nest types. Dwarf mistletoe infections in Douglas-fir (and numerous debris platforms that were associated with dwarf mistletoe infections) were common in the mixed coniferous forests of the Klamath Mountains and the east slopes of the cascades, but did not occur in western Oregon."

NRF in SW Oregon varies greatly. It may consist of somewhat smaller tree sizes yet tree species are more diverse within each stand than owl habitat in the northern Westside Oregon BLM Districts and Forests. One or more important habitat components such as dead down wood, snags, dense canopy or multi-storied stands, mid-canopy habitat might be lacking or even absent in portions of SW Oregon NRF. However, SW Oregon NRF can support nesting owls if those components are available across the immediate landscape. Forsman et al (1984) documented the range of nest trees for platform nests (from table) (n=47) range equals 36-179 cm (14.2" - 70.5") averaging 106 cm (41.7"). Mistletoe is often used as a nesting substrate in SW Oregon, which makes smaller trees suitable as nest trees. The unit wildlife biologist makes site-specific determinations and delineations of suitable habitat.

Medford BLM classifies suitable NRF habitat as McKelvey Habitat 1 and Habitat 2. These classifications were part of the 1991-1992 Draft Resource Management Plan (USDI 1992). Acres changed due to fire or harvest activities have been incorporated in the Environmental Baseline (USDA, USDI, 2005). Habitat 1 classified lands are those that provide nesting, roosting and foraging. Habitat 2 classified lands are those that lack obvious nesting structure but provide foraging and/or roosting characteristics at varying degrees of quality.

For spotted owls, features that support nesting and roosting habitat typically include a moderate to high canopy (60-90 percent), a multi-storied multi-species canopy with large overstory trees (>30 inch diameter), a high incidence of larger trees with various deformities, including mistletoe, large snags, large accumulations of fallen trees and wood on the ground and flying space (Thomas et al. 1990).

**Designated Critical Habitat** for the northern spotted owl was designated in *Federal Register 57* and includes the primary constituent elements that support nesting, roosting, foraging, and dispersal. Designated Critical Habitat also includes forest land that is currently unsuitable, but has the capability of becoming suitable habitat in the future (FR57 (10):1796-1837).

Primary constituent elements of spotted owl designated critical habitat *are those physical and biological attributes that are essential to species conservation. In addition, the Act stipulates that the areas containing these elements may require special management consideration or protection. Such physical and biological features include, but are not limited to, the following elements:*

- Space for individual and population growth, and for normal behavior;
- Food, water, or other nutritional or physiological requirements;
- Cover or shelter;
- Sites for breeding, reproduction, rearing of offspring; and

*-Habitats that are protected from disturbance or are representatives of the historic geographical and ecological distribution of the species. (50 CFR 4.2.4.1.2)*

## **Treatment Types**

Forest stands in southwest Oregon are often multiple-aged with multiple canopy levels that have resulted from past natural stand disturbance such as repeated historic low-intensity fire or from previous harvesting (Draft Medford Resource Management Plan and EIS Vol. II, p 2-37, USDI 1992). The actual interpretation of treatment impacts to owls will be defined by the Resource Area (RA) Biologists in collaboration with their Interdisciplinary Team and Field and District Manager. Interpretation issues will also be coordinated with the Level 1 Team to ensure all projects in this BA will treat and maintain spotted owl or marbled murrelet habitat.

Effects of individual activities will be determined by the BLM following these descriptions.

### ***Spotted Owl***

Treat and maintain NRF or dispersal habitat means to affect the quality of spotted owl NRF or dispersal habitat without changing the owl habitat classification. The NRF stand retains large trees, multi-storied canopy, standing and down dead wood, diverse understory adequate to support prey, and may have some mistletoe or other decay. Dispersal stands continue to function as dispersal habitat.

The effects determination for treating and maintaining habitat is “may affect not likely to adversely affect” the spotted owl because spotted owls will be able to use the stand as before. By design, these projects will maintain the habitat conditions pre and post-treatment that defined the habitat condition (Thomas 1990). Some change to understory vegetation and dense trees may occur. NRF habitat will retain 60% canopy cover, and large trees and snags, large down wood, and structural diversity important to northern spotted owls will be retained. Dispersal only habitat will continue to provide at least 40% canopy, flying space, and trees 11 inches or greater, on average following treatment. The habitat classification of the stand following treatment will be the same as the pre-treatment habitat classification. Many NLAA fuels, silviculture and timber projects may have a long term benefit because they reduce the unnaturally high brush and dense trees that have resulted from years of wildfire suppression. Resulting treated stands are more ecologically sustainable for high fire return interval ecosystems.

### ***Spotted Owl Designated Critical Habitat***

Treating and maintaining critical habitat means that no primary constituent elements are removed or reduced and all primary constituent elements of CH are retained. The ESA consultation handbook (USFWS 2002, pg 4-33), as amended, provides the following information regarding designated critical habitat.

#### **Constituent elements**

*The physical and biological features of designated or proposed critical habitat essential to the conservation and recovery (amendment due to Gifford Pinchot court evaluation) of the species, including, but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species [ESA S3(5)(A)(i), 50 CFR 424, 12 (b)].*

It further defines critical habitat for listed species consists of: *(1) the specific areas within the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection ; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species [ESA S 3 (5)(A)]. Designated critical habitats are described in 50 CFR S 17 and 226.*

### ***Marbled Murrelet***

#### **Suitable habitat**

Suitable habitat includes the conifer-dominated stands that generally are 80 years old or older and/or have trees greater than or equal to 18 inches average diameter breast height (dbh). Murrelet suitable habitat must include potential nesting structure as described below and by the Level 2 policy of March 26, 2004. At least one potential nest tree must be present in a stand of trees at least one acre of a size, and the stand trees must be at least ½ the height of the site potential tree.

#### **Potential Structure**

Potential marbled murrelet nest trees occur within 50 miles (81 km) of the coast (USFWS 1997:32) and below 2,925 ft. (900 m) in elevation (Burger 2002); in one of four species: western hemlock, Douglas-fir, Sitka spruce, or western red cedar (Nelson & Wilson 2002:24, 44);  $\geq 19.1$  in. (49 cm) (dbh) in diameter,  $> 107$  ft. (33 m) in height, has at least one platform  $\geq 5.9$  in. (15 cm) in diameter, nesting substrate (*e.g.*, moss, epiphytes, duff) on that platform, and an access route through the canopy that a murrelet could use to approach and land on the platform (Burger 2002, Nelson & Wilson 2002:24, 27, 42, 97, 100); and it has a tree branch or foliage, either on the tree with potential structure or on a surrounding tree, that provides protective cover over the platform (Nelson & Wilson 2002:98 & 99).

#### **Occupied habitat**

Occupied habitat is suitable habitat or potential structure that has been found to meet the definition of occupied by interagency established survey protocol (Evans et.al. 2002).



The Forest Service and Medford BLM completed a study to better quantify the likelihood of murrelet occurrence beyond the eastern boundary of the western hemlock/tanoak vegetation zone in SW Oregon (USDA Forest Service and USDI Bureau of Land Management 2001). This study refined the existing survey zone boundaries to better reflect known murrelet occurrence. Area A encompasses the known range of the marbled murrelet. Area B is a “buffer” to area A and includes all land 10 km east of Area A. Surveys are conducted only in Areas A and B. Federal Land east of B is assumed to not be murrelet habitat, and is no longer surveyed. The project area is within Area B. To date, no murrelets have been found in Area B (other than in the transition zone between Areas A and B). Appendix J of FY 06-08 BA (USDA, USDI 2006) includes a letter from the Service concurring with our study conclusions: *Technical Assistance on the Final Results of Landscape level Surveys for Marbled Murrelets in Southwest Oregon (USDI Fish and Wildlife Service reference: 1-7-02-TA-6401)*.

### ***Designated Critical Habitat for marbled murrelet***

Critical habitat for the marbled murrelet was designated in *Federal Register 61* and includes the primary constituent elements that support nesting, roosting, and other normal behaviors that are essential to the conservation of the marbled murrelet. The primary constituent elements include: 1) individual trees with potential nesting platforms, and 2) forested areas within 0.8 kilometers (0.5 miles) of individual trees with potential nesting platforms, and with a canopy height of at least one-half the site-potential tree height. Designated Critical Habitat also includes habitat that is currently unsuitable, but has the capability of becoming suitable habitat within 25 years Federal Register: September 12, 2006 (Volume 71, Number 176).

### **III. DESCRIPTION OF THE PROPOSED ACTION**

Projects listed in this BA are scheduled to be implemented in FY08, have NEPA signed in FY08, or have task orders or contracts obligated in FY08.

#### **Project Design Criteria**

Project Design Criteria (PDC) are conservation measures developed to reduce impacts to listed species. PDC include three primary components:

- a) Retention and protection of known nesting trees  
And
- b) Seasonal protection during the critical or extended breeding periods of nesting species  
And/or
- c) Establishing distance protection around active nesting sites to reduce the potential of disturbance effects.

Murrelet PDC also includes litter control measures around nest sites to avoid attracting corvids, which can kill murrelet chicks.

Mandatory PDC will be applied to all activities associated with this proposed action. Recommended PDC will be incorporated during project implementation when practical. Detailed descriptions of the PDC are provided in Appendix B.

### **Harvest Treatments**

Harvest treatments described in this BA are designed to ensure that suitable habitat for owls and murrelets retains characteristics post-treatment and dispersal habitat retains dispersal characteristics post-treatment. Harvest activities that meet these criteria include various levels of: commercial thinning, selective harvest, density management, commercial firewood, hazard tree removal, salvage, and roads and site preparation (including slash treatment) related to the timber sale. Appendix A is a spreadsheet with detailed information about projects that occur in habitat.

Tree harvest also covers miscellaneous projects, including the removal of hazard trees for public safety, commercial firewood, and salvage. Salvage may result from blowdown (other than hazard trees), disease, or small fires. Typically, a blowdown salvage project may cover 500 acres or more along at least 50 miles of roadway. If the salvage situation (such as blowdown or fire) changes the stand to non-habitat, the impacts of salvage removal will be no effect, except for possible disturbance. Most salvage harvest that maintains habitat will involve the removal of a few trees and the retention of the pre-salvage habitat condition for owls and murrelets. This type of salvage may occur within LSRs and Riparian Reserves. The standards and guidelines in the Northwest Forest Plan and LSR individual Assessments will be met.

Selective harvest is planned in densely-spaced stands that provide dispersal habitat for owls. Harvest in dispersal habitat is designed to promote tree growth in areas designated for timber harvest. Some dispersal stands have been previously managed, some resulted from wildfires that removed portions of the stand, and some are mixed-conifer/hardwood stands from natural regeneration. Some are older stands, possibly up to 120 years on average, of dense trees that are beginning to experience suppression mortality, and are beginning to lose “flying space.” These stands typically consist of little structural or tree species diversity and currently function as marginal dispersal habitat for spotted owls.

Harvest can result in the removal of a few trees within a stand within the project area. Openings may occur in an even or patchy distribution, depending on objectives of the treatment and constraints of the land use allocation. Trees are harvested by individual sawyers, or crews of people with chain saws or machine-mounted saws. Harvest includes the layout, marking, falling, limbing, yarding, and decking the trees to be removed from the site. In all cases but biomass removal, the limbs and needles/branches remain within the project area, and the bole of the harvested tree is removed. Trees are hauled to landings by cable or heavy equipment or helicopter. Trees are removed from decks or landings by logging trucks or helicopters. Access to the timber sale involves the use of existing roads in areas where roads already occur, and can also involve the design and development of new roads or redevelopment of old roads. New roads involve cutting trees from the road prism, occasional blasting, grading, hauling gravel, cutting into side banks, installing culverts and waterbars, stabilizing adjacent areas. Trees

removed from road prisms are often decked for inclusion in the timber sale, or could be sold in unrelated sales, or could occasionally be used on-site or off-site for watershed restoration, down wood supplementation, or in-stream structures.

Hazard tree removal is difficult to anticipate, but safety concerns require them to be dealt with promptly. Hazard trees can occur along active roadways, may result from localized wind or snow break damage, or may be existing trees considered hazardous by contractors working in adjacent areas. Most hazard tree removal will occur along the road prism and will involve individual trees. Most hazard trees in the matrix are sold, but some in LSR and other reserves may be left on site as down wood or be used for stream improvement projects. The amount of hazard tree removal in this biological assessment is estimated from widely variable hazard tree treatments in prior years. Actual acres in FY 08 may be less than estimated. If a situation occurs that exceeds that estimate, the Level 1 team will evaluate the need for additional consultation. Any removal or falling of hazard trees would be evaluated to ensure they would either be no effect or would be “discountable, insignificant, or completely beneficial” (ESA Handbook Definition of May affect, Not likely to adversely affect, USDI, 2002). Some hazard tree removal occurs in non-habitat or involves the removal of small trees and would have no effect to northern spotted owls or critical habitat. BLM is not required to consult on activities that have “No Affect” to listed species or critical habitat.

Potentially disturbing activities are seasonally restricted around known and potential spotted owl nest sites (see PDC for details) to reduce potential disturbance to nesting owls. Some harvest could occur in suitable habitat that has not been surveyed for northern spotted owls. BLM evaluated all BLM lands to determine the likelihood of owl occupancy based on habitat condition. Where adverse disturbance may be possible, and the project would occur during the critical nesting season within the disturbance distances outlined in Appendix B—Project Design Criteria, those projects would be analyzed in the LAA BA. No adverse disturbance projects are included in this BA, because all projects are designed to reduce and avoid LAA impacts, including those resulting from disturbance.

All timber sale contracts will contain special provision E-4 (BLM). These are standard contract provisions which require purchasers to discontinue operations upon receiving written notice from the BLM that listed species may be affected by the action; an example situation might be when a previously unknown spotted owl nest is discovered in project areas.

Some fuels reduction related to slash could be expected, and would incorporate PDC to ensure any potential disturbance effects to owls will not be adverse. Fuels treatments related to site preparation after timber harvest are included in the “footprint” acres reported for the timber sale and are not reported as fuels acres.

Port Orford Cedar (POC) sanitation treatments are incorporated into timber harvest or fuels projects on sites at high-risk for spreading Port Orford Cedar (POC) root disease. POC acres are built into the proposed actions of harvest and vegetation management projects in Appendix A. POC sanitation treatments are incorporated into these projects as a protective measure to limit the spread of disease, benefiting the overall forest health of affected watersheds. Harvest and vegetation management contracts include a stipulation for the removal of all POC encountered,

generally within 50 feet of major roads where native POC trees occur. No POC greater than 20 inches in dbh will be removed from LSR, and all of the proposed harvest projects will maintain pre-existing owl habitat.

### **Vegetation Management - including Silvicultural Projects**

All projects in this BA are designed to ensure the owl habitat classification following treatment will retain the owl habitat characteristics of the pre-treatment habitat and habitat will be maintained. Silvicultural projects usually involve site preparation, planting, maintenance to assure survival of planted material, and the removal of trees and shrubs to enhance the vigor and growth of residual plants.

Maintenance brushing, release, pre-commercial thinning, prescribed burning or scalping small areas of grass / forbs for site preparation (see also fuels reduction), planting, POC clearing (sanitation) to control *Phytophthora lateralis*, animal damage control, fertilization, and pruning are common treatments. Many of these treatments occur in stands that have been previously harvested or have experienced natural disturbance events such as fire, and these areas commonly do not qualify as northern spotted owl habitat. Thinning and brushing work is usually done with hand crews, but mechanical thinning/brushing may occur where slope and other factors allow. Occasionally, a woody material mastication machine may be used. Underground traps are used to control gopher population extremes to prevent them from killing newly planted seedlings. Fuels reduction projects in this BA are designed to maintain pre-treatment habitat by design. They incorporate PDC to avoid adverse disturbance. Fuels reduction can include piling and prescribed burning, thinning, and brush treatments. These activities usually consist of the removal of surface fuels, brush or small trees, and the removal of ladder fuels or crowded conifers or hardwoods up to 12 inches in diameter. Actual prescriptions vary by project.

Medford BLM has short natural fire return intervals. Years of fire suppression and management actions have resulted in habitat conditions much brushier and denser than would occur under natural burn regimes. Fuels management has three primary purposes: fuels reduction to reduce wildfire hazard, site preparation/slash reduction for improving conifer planting (covered in silviculture and timber above), and restoration of ecosystem function where wildfire has been suppressed. Fuels projects designed to restore ecological function may have long term beneficial effects to owls.

Fuels management includes manual and/or mechanical treatments using chainsaws or mechanical equipment such as mechanical masticators, followed up with prescribed fire (pile burning or under-burns. Broadcast burning without pre-treatment (brush fields) can also occur. Mechanical treatment is designed to convert abnormally high amounts of shrubs and ladder fuels so that subsequent prescribed burning or wildfire won't be as severe. The material may be piled or may be left dispersed, and is usually burned once that material dries out. A small portion of the acres may also be burned or brushed again. These fuel treatments are generally implemented over a period of years. The acres in the proposed action are the acres of the fuels treatment "footprint", and impacts are assessed for the entire treatment period.

Prescribed fire use is dependent upon management objectives. The primary role of prescribed fire has traditionally been for site preparation and fuels reduction. Recently, natural fuels reduction and ecological “improvement” have become end goals of prescribed fire. The effects of prescribed natural fire, when limited to the prescription, can usually be controlled or manipulated.

Prescribed burning is generally restricted to spring or a small window in the fall, due to risks of escapes, smoke concerns, and weather. When successful understory treatments have been completed, and risks of escape are reduced, more burning during late summer or fall could be anticipated. Mechanical and mastication treatments can occur at any time of the year. Fire line construction may occur as a tool to help create fire lines. No treatments will occur without an evaluation for habitat of listed species, and incorporation of protection methods to ensure adverse effects are avoided.

### **Watershed restoration**

Watershed restoration projects in this BA are designed to maintain habitat and avoid disturbance. They include culvert repair/replacement, road restoration or decommissioning, slope stabilization, habitat improvement projects, stream improvement projects, including tree lining/felling, down wood, and snag creation that will treat and maintain habitat. Road work also includes some of these treatments. Resource areas reported projects as one or the other and are not duplicative.

We anticipate the conversion of up to 500 green trees to snags in the Galesville/South Umpqua LSR (RO 223). Green trees would be converted to snag trees in areas where these important habitat components are scarce. No loss of habitat would result from creating snags, but NLAA activity in habitat would result. No murrelet nest trees would be selected and no trees that have spotted owl nest characteristics will be treated. Other than snag creation, no habitat impacts are anticipated in the proposed watershed restoration actions in this BA for 2008. Culvert and ditching activities occur on existing roads, where high use is expected to have two scenarios: listed species have habituated to the noise, and work in these areas would be NE, or listed species would have been displaced already from the high use. We are consulting only on projects that occur on closed or low-use roads, where owls or murrelets may remain in the vicinity, and the watershed construction work is likely to exceed ambient noise levels for that area, and estimate that to impact less than 100 acres. PDC for season and/or distance will reduce any noise impacts to nesting owls or murrelets and would be NLAA in these limited situations.

Specific watershed restoration projects anticipated on Medford BLM include: road decommissioning to restore habitat to pre-road conditions, storm proofing of roads (see road maintenance/decommissioning below), upslope erosion rehabilitation, riparian silviculture, in-stream habitat improvement, large down wood restoration, wildlife tree development using chainsaws (dead and green snags), wildlife habitat restoration and enhancement (such as meadows), and prescribed burning (see fuels management). Some blasting for snag creation may occur.

Roads no longer essential for forest management may be gated, closed or ripped or sub-soiled or otherwise decommissioned (put back to natural contours). Roads with the potential to fail or deliver large amounts of sediment to stream segments may be decommissioned or closed or may be improved. Improvements include repairing road drainage facilities (culverts, drain dips, etc.) and surfacing (to reduce sediment). Meadow restoration, fencing, native plant seeding and planting, and weed removal may occur to restore or repair healthy ecosystems. Other restoration work may be required as the result of future wind, snowstorms, rain, and flooding. Expected activities and effects specific to roads are evaluated under road construction and maintenance (below), although road construction, restoration, maintenance, and drainage work is interdependent and interrelated to most Action Agency activities. No ground disturbance will occur without an evaluation for habitat of listed species.

### **Recreation Projects**

Recreation projects in this BA are designed to maintain pre-treatment owl or murrelet habitat and avoid adverse impacts related to disturbance. Most recreation projects would occur in areas of high use by the public. As such, any listed species near these areas are likely to be habituated to that activity, or have already been displaced to quieter areas.

Recreation management includes trail construction and maintenance, campground and physical facilities maintenance, boat landing maintenance, observation decks and guard rails, signing, foot bridges, and permits for rafting and boating and other uses (see special use permits). Ground or habitat disturbing actions will not occur without an evaluation for habitat or presence of potential nesting of listed species. Occasional heavy equipment use could cause high noise levels for less than a week, and occasional groups of people may be concentrated along short sections of a trail or river for various periods of time. Trees may be felled in developed areas or along trails where public safety is a concern (this is generally an annual activity).

*The Limestone Challenge Endurance Ride* will use approximately twenty miles of existing BLM roads and trails for a one day equestrian endurance event, with approximately 30-60 participants. The roads and trails are located in: T38S, R7W, Section 19, 33; T38S, R8W, Section 13, 23, and 25; T39S, R7W, Section 4, 7, 8, 9, 17, 18, 19 and 20; and T39S, R8W, Section 1, 11, 13, 14 and 23. No habitat will be removed or changed. It does not occur within the range of the marbled murrelet. No known spotted owl nests are located within 65 yards of the event, which is beyond the disturbance distance of any known or potential owl sites. The date for FY 08 has not yet been set. This event may or may not occur during the breeding season.

### **Road Maintenance**

Road Maintenance includes maintenance, ditching, restoration or decommissioning, culvert replacement and repair, bridge maintenance and repair, road re-alignment. Most road maintenance would occur on already heavily used roads where listed species are likely to be habituated to this level of activity or have previously been displaced from near the road.

BLM maintains roads on a schedule, but also responds to unanticipated repairs due to weather, accident, or landslide. Most activity is limited to short periods of time (*i.e.*, one or two passes with a grader). Road grading generally affects the ditch and a foot or so of the cut-slope; some loose material is spilled over the fill-slope. Maintenance brushing generally entails mechanically cutting brush down to less than a foot high within four feet of the edge of road. Brush more than four feet from the edge of the road tread is not treated. Heavy trucks and heavy equipment such as graders, gravel trucks, backhoes, and chainsaws and/or brush removal machinery, can increase noise in the area of activity for short, but intense, periods of time, and can occur for up to one week in time. Most activities require a few hours of work or less within any 0.25-mile road segment in a 24-hour period. Some blasting may be required with road projects removing unstable portions of the cut-slope, often at rock faces.

Road decommissioning is tied to Watershed Restoration and covers activities that reduce or eliminate traffic use on the road by installing gates, barriers, rocks, ripping the tread, pulling culverts, and seeding grass and herbs. Full obliteration of the road returns the road back to natural contour levels using excavators. Full obliteration can remove vegetation along the top of the cut slope to create a stable slope.

### **Mining and Quarry Operations**

Mining and Quarry Operations evaluated in this BA are designed to ensure that owl habitat will be maintained and no adverse disturbance effects will occur due to the implementation of PDC. No new quarries or mines are being proposed in this consultation. Mining and quarry operations include: casual use, notice and plan level permits and operations, and commercial quarries on BLM lands. BLM regulates mining claims under 43 CFR 3809 (Surface management) and 43 CFR 3715 (Occupancy). These regulations perpetuate a three-tiered system that distinguishes between three levels of mining. All levels of mining must conform to state regulations:

Casual use activities causing no or negligible surface disturbance, which require no notice to or approval from the BLM

Exploration activities exceeding casual use that will disturb five acres or less, which require that the BLM be notified (notice level) bond required.

Mining activities greater than casual use or will affect certain protected categories of land, require the submission and approval of a plan of operations bond required.

A notice or plan of operations require no specific form but must specify the nature and location of access routes and must describe operating conditions adequate to prevent unnecessary or undue degradation.

To prevent unnecessary or undue degradation, an operation must be reasonably incident to prospecting, mining, or milling activities and operators must meet certain specific

performance standards, abide by their notice or plan of operations and comply with all other state and federal laws related to environmental protections.

The performance standards address such things as road placement and construction, the sequence of operations, compliance with land use plans, mitigation measures, ongoing reclamation, air and water quality, environmental compliance, cultural resource protection, treatment of acid-forming materials, leaching operations and public safety.

A few special exceptions apply, for instance, mining activities within Areas of Critical Environmental Concern (ACEC), or areas known to contain proposed or listed species are required to have a plan of operations (BLM Manual Section 3809.11 part C(6)).

Plans of operations are required to comply with the ESA, and the operator must take such action as necessary to prevent adverse impacts to listed species. Habitat evaluation or surveys for new notice-level and plan-level operations will be done prior to commencement of operations.

#### *Notice*

Exploration operations that will exceed casual use but will disturb five acres or less, requires that an operator notify the BLM at least 15 calendar days before beginning operations. The notice must describe and show access routes and must describe the type of equipment to be use in the operations. The operator must also provide a reclamation plan and reclamation cost estimate.

#### *Plans*

A plan of operation must be filed for any mining activity greater than casual use. In addition a plan must be filed if exploration related surface disturbance (not disturbance to owls) will exceed five acres, if proposed operations exceed 1,000 tons in bulk sampling, if operations are proposed in various protected lands, are closed to off road vehicles. Plans must provide sufficient information so that BLM can make the determination that no unnecessary or undue degradation of the ground (not habitat) will occur. A reclamation plan and reclamation cost estimate must be provided.

Before approving a plan of operations, the BLM must complete an environmental review as required by NEPA.

#### *Suction Dredging*

The use of a 4" or less suction dredge is classified as casual use on BLM mining claims. Therefore the claimant does not need to notify the BLM if they are only suction dredging. However, the BLM does have an agreement with the state, for the use of suction dredges and the claimant is required get the following permits:



- From: Division of State Lands
- From: Department of Environmental Quality
- Must work within the guidelines and timing of in stream work. The work periods for dredging are determined by Oregon Department of Fish and Wildlife.

Most rock crushing operations take place in existing quarries. Most actions take place within the developed quarry limits. Standard operations include drilling; which takes approximately 2-3 weeks; blasting which is quick (less than one minute) but recur repeatedly may extend over several days; and crushing which takes 2-3 weeks. If the development is to go out side of the existing development limits a Categorical Exclusion (CE) or Environmental Assessment (EA) is undertaken.

### **Adaptive Management**

The BLM practices adaptive management as described in the Northwest Forest Plan (NWFP ROD, Section C, Standards and Guidelines, April 1994 (USDA, USDI 1994). Adaptive management allows minor project variations to meet site-specific conditions or landscape objectives. Therefore, there may be minor deviations in the description of projects. This consultation will address these minor alterations in project activities if the following conditions are met:

1. Project complies with the NWFP.
2. Project complies with the RMP or LRMP to which it is tiered.
3. Impacts and extent of the project are within parameters of described activities in this BA.
4. Minor deviations are reviewed by the Level 1 team to ensure impacts to listed species remain the same or less than those described within this BA
5. Minimization measures proposed for the project are consistent with the intent and impacts of actions described in this BA

Separate consultation will be required to meet ESA compliance if the project cannot be revised to comply with this consultation, if site-specific NEPA evaluations indicate the project may affect and will likely adversely affect the northern spotted owl or its critical habitat, or if the Level 1/Level 2 teams cannot reach consensus that the project deviation meets the intent, extent and impacts addressed in the BA and subsequent Letter of Concurrence (LOC).

**Table 2. Proposed Action**

<b>Project Category</b>		<b>Scope</b>
<b>Habitat Modification</b>		
<b>Treatment Type</b>		<b>Amount</b>
<b>Harvest Activities: (includes stewardship, forest products, hazard tree removal, selection harvest, and Port Orford Cedar (POC) sanitation treatments).</b>		<b>1,917 acres</b>
LSR <sup>2</sup> Subset		276 acres
CHU <sup>3</sup> Subset		1,020 acres
<b>Vegetation Management: (includes Fuels Reduction Projects, pre-commercial thinning, brushing, pruning, site preparation, and POC sanitation treatments).</b>		<b>21,652 acres</b>
LSR subset		5,660 acres
CHU subset		7,036 acres
<b>Watershed Restoration (snag development (trees), riparian/stream enhancement work (acres) NOT inclusive</b>		<b>500 trees 100 acres</b>
LSR subset		500 trees 100 acres
CHU subset		500 trees 100 acres
<b>Disturbance</b>		
<b>Noise would be kept to an insignificant level through implementation of seasonal and distance PDC.</b>		
<b>Project Category</b>		
Harvest treatments	<p>Harvest treatments could occur across all land use allocations and within designated CHUs. The District anticipates no more than 100 acres of spotted owl suitable habitat may experience insignificant noise disturbance associated with the implementation of harvest treatment activities.</p> <ul style="list-style-type: none"> <li>▪ Mandatory Project Design Criteria (PDC) apply (Appendix B).</li> </ul>	
Vegetation management including silviculture	<p>Vegetation Management activities could occur in all land use allocations and within designated spotted owl CHUs. The District anticipates up to 10,000 acres of spotted owl suitable habitat may experience insignificant noise disturbance associated with the implementation of vegetation management activities.</p> <ul style="list-style-type: none"> <li>▪ Mandatory Project Design Criteria (PDC) apply (Appendix B).</li> </ul>	
Watershed Restoration	<ul style="list-style-type: none"> <li>▪ Riparian Restoration 100 acres (boulder placement, structures).</li> <li>▪ General wildlife enhancement: Tree top blasting; snag development: Up to 500 trees in 2008.</li> <li>▪ Could occur across all land allocations and designated spotted owl CHUs. Emphasis in riparian reserves and LSR.</li> <li>▪ PDC (Appendix B) apply.</li> </ul>	
Mining and quarry operations	<ul style="list-style-type: none"> <li>▪ Up to 30 acres of insignificant noise disturbance associated with Notice-level and Plan-level operations, rock permits (existing quarries) and/or mine reclamations as money allows.</li> <li>▪ Could occur across all land use allocations and designated spotted owl CHUs.</li> <li>▪ PDC (Appendix B) apply.</li> </ul>	

Recreation	<ul style="list-style-type: none"> <li>▪ Limestone Challenge special recreation permit to hold a one-day equestrian event (plus 1-3 days for preparation) for approximately 30-60 participants using BLM land and BLM-owned and controlled roads.</li> <li>▪ PDC (Appendix B) apply</li> </ul>
Road maintenance (outside of timber sales)	<ul style="list-style-type: none"> <li>▪ Up to 100 miles of road maintenance and repair, including culverts.</li> <li>▪ Could occur across all land use allocations and designated spotted owl CHUs.</li> <li>▪ PDC (Appendix B) apply.</li> </ul>

**IV EFFECTS OF THE ACTION**

Table 3 shows that no more than 9,742 acres of NRF habitat are proposed to be treated and maintained by any treatment as a result of implementation of this proposed action. There will be no change to the amount of NRF habitat as a result of any of these treatments. Quality, in many cases, will improve because the post-treatment stand will allow more space for residual trees to develop NRF characteristics. Treated stands are designed to be more resilient to stand-replacement fire, disease, and suppression mortality. Less than 2 percent of all NRF habitat will be treated and maintained through these actions. This maintenance of NRF habitat will occur in both the Klamath and Southern Cascades provinces (Table 3).

**Table 3: Total Treated acres of NRF Habitat within the Action Area by Section 7 Watershed that will be maintained**

<b>Section 7 Watershed</b>	<b>Federal NRF Acres in Watershed</b>	<b>Acres of Treatment (treat and maintain)</b>	<b>Percent of total federal NRF treated and maintained</b>
Applegate	114,362	2,937	3%
Bear	21,174	65	Less than 1%
Cow Upper	43,657	2,058	5%
Illinois	135,772	1,217	1%
Klamath	16,820	50	Less than 1%
Little Butte Creek	39,719	55	Less than 1%
Rogue Lower Wild	105,073	47	Less than 1%
Rogue Middle	88,774	3,313	4%
Rogue Upper	180,071	0	0%
<b>Total</b>	<b>745,422</b>	<b>9,742</b>	<b>2%</b>

## Harvest Treatments

Table 4 portrays that up to 641 acres of NRF habitat will be treated and maintained through harvest treatments among nine Section 7 watersheds, or less than 1 percent of NRF. The total amount of NRF habitat will remain the same following treatment. Quality of the stands where treatment occurs should improve. Stands will be more ecologically sustainable and there will be more light and moisture for remaining trees to gain height and diameter.

**Table 4: Subset of NRF Habitat treatments within the Action Area by Section 7 Watershed that will be treated and maintained by harvest activities**

Watershed	Federal NRF Acres in Watershed	Acres of Treatment (NRF treat and maintained)	Percent of total federal NRF treated and maintained
Applegate	114,362	57	Less than 1%
Bear	21,174	40	Less than 1%
Cow Upper	43,657	323	1%
Illinois	135,772	7	Less than 1%
Klamath	16,820	25	Less than 1%
Little Butte Creek	39,719	25	Less than 1%
Rogue Lower Wild	105,073	47	Less than 1%
Rogue Middle	88,774	117	Less than 1%
Rogue Upper	180,071	0	Less than 1%
<b>Total</b>	<b>745,422</b>	<b>641</b>	Less than 1%

Harvest activities within NRF include thinning, density management, and some stewardship projects that are designed to ensure NRF habitat will retain 60% canopy cover, and large trees and snags, large down wood, and structural diversity important to northern spotted owls will be retained. Hazard trees are usually sold, and acres where hazard trees are removed are included in the harvest treatment table above. Effects to spotted owls as a result of the implementation of harvest treatments within spotted owl NRF habitat will be insignificant to spotted owls for the following reasons:

1. Canopy cover will be maintained at 60 percent.
2. Decadent woody material, such as large snags and down wood will remain post-treatment.
3. All multi-canopy, uneven aged tree structure that was present pre-treatment will remain post-treatment.
4. NRF habitat treatments will be distributed both spatially and temporally throughout the nine affected watersheds.
5. Activities will be distributed both spatially and temporally across BLM.
6. No nest trees will be removed.

7. POC treatments will help avoid the spread of POC root rot that could reduce the health of the infected and adjoining watersheds. Ecological health will be improved in terms of owl habitat.
6. PDC will avoid adverse disturbance.

Light to moderate thinning will reduce the average canopy cover of the stand to no less than 60 percent. Selective harvest may affect NRF habitat by removing some horizontal and vertical structure. Components important to spotted owls such as nest trees, multi-layered canopies, and dead and down wood that support prey species habitat will remain within a given project area post-harvest, retaining the ability to provide for the nesting, roosting, foraging and dispersal of spotted owls.

### Vegetation treatments

**Table 5: Acres of NRF Habitat treated and maintained through vegetation management within Section 7 Watersheds.**

Section 7 Watershed	Federal Acres of NRF in Section 7 watershed	Acres of treatment that maintains habitat	Percent of Federal NRF habitat within each Section 7 Watershed treated and maintained
Applegate	114,362	2,880	3%
Bear	21,174	25	0%
Cow Upper	43,657	1,735	4%
Illinois	135,772	1,210	1%
Klamath	16,820	25	0%
Little Butte	39,719	30	0%
Rogue Lower Wild	105,073	0	0%
Rogue Middle	88,774	3,196	4%
Rogue Upper	180,071	0	0%
<b>Total</b>	<b>745,422</b>	<b>9,101</b>	<b>1%</b>

Treating and maintaining 9,101 NRF habitat acres with vegetation management, including silvicultural and fuels reduction, will be insignificant to the nesting, roosting, foraging of spotted owls within the action area because:

1. There will be no change to the amount of NRF as a result of these projects.
2. Overall canopy cover of affected NRF timber stands will be maintained at 60 percent or greater.
3. Decadent woody material, such as large snags and down wood will remain post-treatment.
4. Multi-canopy, uneven-aged tree structure will remain post-treatment.
5. Activities will be distributed both spatially and temporally across BLM.
6. Vegetation treatments will improve ecological health of the stand, stimulate forage plants important to spotted owl prey, reduce the chance of tree loss due to suppression

mortality because the stand has more trees than the site can support over the long-term, and will reduce the intensity and risk of wildfire by removing excess fuels.

7. No nest trees will be removed.
8. PDC will avoid potential of adverse disturbance

### **Watershed Restoration**

Up to 500 snags could be created from green trees in LSR or riparian reserves in the Galesville/South Umpqua LSR (RO 223) to improve habitat for spotted owls and other late-successional associated species that need dead wood. The Galesville/South Umpqua LSR (RO 223) has 33,804 acres of LSR (Table C-1, 06-08 BA, USDA, USDI 2006). Snag creation will maintain NRF habitat,. All could occur in CHU OR-32. No nest trees or trees with nest structural conditions for murrelets or owls would be selected for snag development. The actual treatment of up to 500 snags may have some associated noise or activity (see disturbance) to owls. Implementing PDC for distance and/or season will ensure that any disturbing activity would occur outside the critical breeding period, and/or outside the disturbance distance of nesting owls, reducing the impacts to NLAA, or avoiding the impact altogether to get it to a NE.

### **EFFECTS TO LATE SUCCESSIONAL RESERVES (LSRs)**

Management activities proposed to occur within LSRs have been designed to contribute to the development of late seral forest conditions and maintain or improve existing owl habitat (see definitions). The total amount of NRF habitat treated and maintained within the affected LSRs is displayed in Table 6. Only those LSR’s that have proposed projects are depicted, although hazard trees locations are difficult to predict. There is a chance that a few trees may need to be removed from any of the LSRs that occur in the District. No more than a few acres could be expected to be treated for hazard tree removal in each LSR. No change of owl habitat will result. In many cases, in LSR, hazard trees may be used in the LSR to supplement existing down wood.

**Table 6 Effects to LSRs.**

<b>Late-Successional Reserve</b>	<b>Total NRF Habitat Federal Acres by LSR<sup>1</sup></b>	<b>Acres of Vegetation Treatment in LSR</b>	<b>Acres of Harvest Treatment in LSR</b>	<b>Total NRF Acres of treatment-habitat maintained</b>	<b>Total NRF habitat treated and maintained as a Percent of Federal NRF Habitat</b>
RO223	33,804	1,300	15	1,315	4%
RO224	8,370	0	5	5	Less than 1%
RO249	40,224	1,605	8	1,613	4%
RO258	33,641	0	4	4	Less than 1%
<b>Total</b>	<b>116,039</b>	<b>2,905</b>	<b>32</b>	<b>2,937</b>	<b>3%</b>

1. Baseline acres are all federal lands within the LSR from Environmental Baseline Tables: 06-08 BA (USDI, USDA 2006)

Treating 2,937 acres NRF in LSR will be insignificant for the following reasons:

1. There amount of NRF in LSR will not change as a result of these treatments.
2. NRF Canopy cover will be maintained at 60 percent or greater.

3. Decadent woody material, such as large snags and down wood will remain post-treatment.
4. Any multi-canopy, uneven aged tree structure that was present prior to the treatment will remain post-treatment.
5. Less than 4% of any LSR will be treated
6. NRF treatments are designed to maintain or improve late-successional habitat. Thinning and vegetation management will help accelerate the stand towards conditions more favorable to owls and other late-successional species.
7. Vegetation treatments are designed to make the NRF habitat more ecologically sustainable and more suited to site conditions, moisture and fire risk.
8. NRF in LSR will continue to function as NRF following treatment. Treatment will accelerate the trajectory to late seral forest conditions important to owls or murrelets (where they occur within the potential range of murrelets).
9. No nest trees will be removed.
10. PDC will avoid adverse disturbance effects.

### Restoration activities

The Galesville/South Umpqua LSR (RO 223) has 33,804 acres of LSR (Table C-1, 06-08 BA, USDA, USDI 2006). Snag creation will maintain NRF habitat. There will be no change to the amount of NRF or other owl habitat in LSR. Quality of NRF in LSR is expected to improve slightly with the implementation of this project because snags and dead wood are important components of LSR and to owls.

### EFFECTS: SPOTTED OWL DISPERSAL HABITAT

Table 7 shows that up to 13,827 of dispersal habitat will be treated and maintained under the proposed action in nine Section 7 watersheds (Table 7).

**Table 7: Dispersal Habitat Treated and Maintained by Section 7 Watershed.**

Section 7 Watershed	Federal All-Dispersal Habitat <sup>1</sup>	Treatment Acres (dispersal treated and maintained)	Percent of habitat treated and maintained
<b>Applegate</b>	192,550	4,528	2%
<b>Bear</b>	31,526	65	Less than 1%
<b>Cow Upper</b>	52,471	1,199	2%
<b>Illinois</b>	210,183	2,723	1%
<b>Klamath</b>	32,628	50	Less than 1%
<b>Little Butte</b>	54,093	115	Less than 1%
<b>Rogue Lower Wild</b>	138,273	790	1%
<b>Rogue Middle</b>	134,917	4,222	3%
<b>Rogue Upper</b>	292,031	135	Less than 1%
<b>Total</b>	<b>1,138,672</b>	<b>13,827</b>	<b>1%</b>



There is no dispersal habitat removal in the proposed action. The total amount of dispersal habitat in the action area will not change as a result of these treatments. The projects analyzed in this BA are designed to maintain dispersal habitat characteristics post-project. Trees over 11 inches dbh will retain 40 percent canopy cover, a value widely used as dispersal function threshold (Thomas *et al.* 1990). Flying space will be maintained or improved. Selective harvest in spotted owl dispersal habitat is not anticipated to diminish the ability of spotted owls to move through treated stands. Treatments in dispersal will help restore a more ecologically-sustainable density in these stands. Residual young trees rapidly respond to increased space and light following treatment and develop increased bole and crowns. Suppression mortality, a condition where unnaturally crowded trees suppress growth and viability of those trees, will be avoided. Wild fire resiliency will be improved. Remaining trees will have more water, space and light to be healthier and grow faster, and develop more structural diversity. The results of these treatments could have long-term beneficial effects to spotted owls by reducing the risks of loss to fire or suppression mortality of the stand, and setting the stand to a trajectory more favorable to use by spotted owls.

**Table 8 shows the harvest breakdown of the total dispersal treatments by Section 7 watershed.**

Section 7 Watershed	Federal All-Dispersal Habitat <sup>1</sup>	Harvest treatments (dispersal habitat treated and maintained)
<b>Applegate</b>	192,550	58
<b>Bear</b>	31,526	40
<b>Cow Upper</b>	52,471	634
<b>Illinois</b>	210,183	8
<b>Klamath</b>	32,628	25
<b>Little Butte</b>	54,093	85
<b>Rogue Lower Wild</b>	138,273	150
<b>Rogue Middle</b>	134,917	171
<b>Rogue Upper</b>	292,031	105
<b>Total</b>	<b>1,138,672</b>	<b>1276</b>

Harvest treatments in Dispersal Habitat that will maintain dispersal.

Selective harvest is planned within dispersal habitat in densely-spaced stands that provide dispersal habitat. These treatments will cause an indirect beneficial effect for spotted owls by accelerating the development of late-successional elements, such as large diameter trees, multiple canopy layers, flying space and hunting perches in the long term. The additional light in the stand improves vigor of residual trees, but can also provides light to some of the forage plants important to spotted owl prey, if structural components are retained to provide prey cover habitat. Additionally, post-project snag and coarse woody debris standards will help minimize impacts to spotted owl prey species that utilize these features. Effects to spotted owls as a result

of the implementation of selective harvest treatments within spotted owl dispersal habitat will be insignificant to spotted owls for the following reasons:

1. There will be no change in the amount of spotted owl dispersal habitat in the Action Area as a result of these proposed activities.
2. Canopy cover will be maintained at 40 percent.
3. Decadent woody material, such as large snags and down wood will be maintained during these treatments.
4. If thinned stands are allowed to develop into late-seral conditions, they will develop structural diversity more rapidly than an unthinned stand because residual trees will grow faster in more ecologically-sustainable conditions.
5. Very dense stands will be opened by thinning, thereby improving conditions for dispersing spotted owls.
6. Thinning dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
7. No nest trees will be removed.
7. PDC will avoid adverse disturbance impacts.

Vegetation Management, including silvicultural treatments and fuels reduction that will maintain dispersal habitat.

**Table 9 shows the vegetation breakdown of the total dispersal treatments by Section 7 watershed.**

Section 7 Watershed	Federal All-Dispersal Habitat <sup>1</sup>	Vegetation treatments(dispersal habitat treated and maintained)
<b>Applegate</b>	192,550	4470
<b>Bear</b>	31,526	25
<b>Cow Upper</b>	52,471	565
<b>Illinois</b>	210,183	2715
<b>Klamath</b>	32,628	25
<b>Little Butte</b>	54,093	30
<b>Rogue Lower Wild</b>	138,273	640
<b>Rogue Middle</b>	134,917	4051
<b>Rogue Upper</b>	292,031	30
<b>Total</b>	<b>1,138,672</b>	<b>12551</b>

Necessary components of spotted owl dispersal habitat will be retained. Effects to spotted owls as a result of vegetation management reduction activities will be insignificant because:

1. The amount of dispersal habitat will remain unchanged as a result of these treatments.
2. Canopy cover within affected stands will be maintained at 40 percent.
3. Very dense stands will be opened by thinning, thereby improving conditions for dispersing spotted owls, and their prey.

4. Thinning dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
5. The treated stand will be more ecologically sustainable, by avoiding or removing vegetation that could cause suppression mortality in the stand as a whole.
6. No nest trees will be removed.
7. PDC will avoid adverse disturbance impacts.

Additionally, long term benefits to spotted owl habitat may be realized, as these treatments are designed to reduce the severity and rate of spread of large, stand-replacement fires capable of removing many acres of spotted owl habitat and common to the Action Area. Thinning also provides more resources for residual trees, allowing them to grow larger faster. Additional light can improve food for some prey species in some situations if residual habitat is retained to provide prey cover. This potential beneficial effect will vary by project. In many cases, these treatments occur in non-owl habitat, but could result in some insignificant noise that could carry into adjacent stands. PDC will protect known owl sites. Activities along the edge of habitat will be short duration and low intensity. Only activities that have no adverse impacts are included in this BA.

## **EFFECTS to PREY**

Harvest and vegetation treatments may improve foraging habitat conditions for prey. Lemkuhl et al (2006) confirmed the importance of maintaining snags, down wood and mistletoe. Gomez et al (2005) noted that commercial thinning in young stands of Coastal Oregon Douglas-fir (35-45 yr) did not have a measurable short-term effect on density, survival or body mass of northern flying squirrels, another important prey species for spotted owls. Gomez et al (2005) also noted the importance of fungal sporocarps, which were positively associated with large down wood.

Residual trees, snags and down wood that are retained in the thinned stands will provide some cover for prey species over time, and will help minimize harvest impacts to some prey species. Some arboreal prey species will venture into harvest units a short distance for food. Northern spotted owls seldom venture far into non-forested stands to hunt. However, edges can be areas of good prey availability and potentially increased vulnerability (i.e. better hunting for owls) (Zabel 1995). The retained trees may respond favorably to more light and resources and gain height and canopy over time.

Projects described in this BA are designed to maintain existing owl habitat, and in many cases improve it by opening the stand, improving ecological sustainability and reducing fire risks. Treatments will retain habitat for prey. Prey animals may be more exposed in the disturbed area or may move away from the disturbed area over the short term. Some minor changes in prey availability may occur as cover is disturbed and animals move around in the understory. They may become more vulnerable and exposed. The disturbance might attract other predators such as other owls, hawks and mammalian predators. This may increase competition for owls in the treatment area, but the exposure of prey may also improve prey availability for northern spotted owls. The spacing, timing and standards and guidelines of the projects described in this BA, are designed to ensure there will be no adverse impacts on spotted owls.

Some disturbance of habitat may improve forage conditions, provided under-story structure and cover are retained. Removal of some tree canopy, provided it is not too extreme, will bring more light and resources into the stand, stimulating forbs, shrubs and other prey food. Once the initial impact of disturbance recovers (6 months to two years), the understory habitat conditions for prey food will increase over the next few years, until shrubs and residual trees respond to again close in the stand.

## **EFFECTS TO OWLS DUE TO DISTURBANCE**

No disturbance associated with Vegetation Management Activities, Watershed/Riparian Restoration, Recreation, Road Maintenance and Mining and Quarry Operations (as described in Table 1) will adversely affect known spotted owl nest sites because BLM will apply the mandatory PDC. Standards and guides from the Medford RMP will be applied. Additional conservation measures may be implemented at the site specific project level by the ID teams reviewing these projects, and projects will be evaluated to ensure the project won't cause adverse affects. Some owls may notice noise or activity, but due to the PDC, these noises and activities will not cause "*significant impairment to feeding, breeding and sheltering such that harm would occur.*" (USFWS ESA Handbook, version 3).

BLM biologists evaluated all projects in this biological assessment against the known and potential owl sites. To estimate likely occupied habitat outside of known home ranges, nearest-neighbor distances and known spotted owl density estimates were utilized to "place" potential spotted owl occupied sites in suitable habitat. Only those projects that would occur outside the critical breeding period (Mar 1 to June 30) or outside the appropriate disturbance distance (Appendix B), or both, are included in this BA. Any other situation could have the potential of adverse disturbance effects to spotted owls, and will be evaluated under a separate consultation for "may affect, likely to adversely affect" projects.

Proving "no effect" is a very high bar and modeling is an imperfect science. Each owl has individual behavioral traits. ESA guides us to evaluate our impacts conservatively in favor of the owl. Therefore, we are including portions of these projects as "may affect, not likely to adversely affect" in terms of disturbance, as depicted in Table 2. This approach may over-estimate the NLAA activities in owl habitat, but is consistent with ESA and the USFWS Consultation Handbook (USDI 2002).

Medford BLM conducts road maintenance, primarily grading and brushing, on approximately 500 miles in 2008, but anticipates that most of that activity would not affect owls or murrelets. Road maintenance can intersect NRF or dispersal habitat. Habitat would be maintained, and could occur within all nine affected Section 7 watersheds. These activities will be dispersed across the Action Area spatially and temporally. At the specific project level, depending on the situation, most road work, including hazard tree removal may have no effect. In some cases, there might be some heavy equipment or chainsaw use for short periods of time, with low intensity and very short duration that might exceed the ambient noise levels. Activities will be scheduled to avoid adverse disturbance impacts and avoid nesting listed species. We anticipate that up to 50 miles of maintenance might occur in dispersal habitat and 50 miles occur in NRF

during the extended breeding period, or in areas of where young owls may be in the area. No change of behavior is expected, nor will habitat function any differently. Any road work that could not avoid adverse effects will be consulted on in the LAA BA or separate consultation. We anticipate that less than 50 miles of road maintenance could occur within NRF and outside of the critical breeding period, but potentially within the extended breeding period of northern spotted owls or marbled murrelets. These treatments could qualify as low intensity, low duration, insignificant and immeasurable, and may differ insignificantly from the noise of an active road. There might be some heavy equipment or chainsaw use for short periods of time on limited areas. This limited amount of road maintenance would be NLAA because young owls could be present in the area. No change in behavior is anticipated. Any road work that could not avoid adverse effects will be consulted on in the LAA BA or separate consultation.

This BA includes only road work that maintains existing spotted owl or marbled murrelet habitat, and may exceed the ambient noise levels of the existing road. We estimate that less than 100 miles of our annual 500 miles of road maintenance would fall into this NLAA category because the work avoids the critical breeding period, but could occur in the extended breeding period when birds are more mobile and not tied to the nest. Implementation of PDC for distance and or season will ensure that any adverse related disturbance will be avoided or reduced to a NE or NLAA due to PDC.

Watershed restoration projects will avoid adverse affects to spotted owls or marbled murrelets by implementing the PDC for distance and/or season around known or potential sites.

Quarry and mine operations evaluated in this BA implement strict PDC criteria for distance and season to avoid adverse effects. Any quarry work that has the potential of adverse impacts will be incorporated in a separate BA for adverse impacts. There may be limited situations where work in a seldom-used quarry may occur during the extended breeding period of a listed species adjacent to habitat. Since nesting species are protected through the critical (and sometimes extended) breeding period, we anticipate that fewer than 30 acres could be considered NLAA. Some quarries may be adjacent to owl habitat, and PDC ensure the project will not adversely affect known or potential nesting owls or marbled murrelets.

## **EFFECTS TO DESIGNATED SPOTTED OWL CRITICAL HABITAT**

### **NRF Habitat in CHU**

The Assessment describes the affects of treating and maintaining up to 3890 acres of spotted owl NRF habitat among ten individual CHUs by the treatment types depicted (Table 10).

**Table 10: Effects to Spotted Owl Critical Habitat (NRF)**

Critical Habitat Units	Federal Acres of NRF in Critical Habitat <sup>1</sup>	NRF Treated and maintained	Percent of CHU treated and maintained*
<b>OR 32</b>	<b>20,287</b>		
Veg treatment		470	
Harvest treatments		174	
<b>Total</b>		<b>644</b>	<b>3%</b>
<b>OR 34</b>	<b>21,096</b>		
Veg treatment		0	
Harvest treatments		5	
<b>Total</b>		<b>5</b>	<b>Less than 1%</b>
<b>OR 37</b>	<b>36,482</b>		
Veg treatment		15	
Harvest treatments		10	
<b>Total</b>		<b>25</b>	<b>Less than 1%</b>
<b>OR 38</b>	<b>14,120</b>		
Veg treatment		20	
Harvest treatments		30	
<b>Total</b>		<b>50</b>	<b>Less than 1%</b>
<b>OR 62</b>	<b>3,609</b>		
Veg treatment		65	
Harvest treatments		10	
<b>Total</b>		<b>75</b>	<b>Less than 1%</b>
<b>OR 64</b>	<b>3,799</b>		
Veg treatment		579	
Harvest treatments		0	
<b>Total</b>		<b>579</b>	<b>15%</b>
<b>OR 65</b>	<b>39,680</b>		
Veg treatment		175	
Harvest treatments		14	
<b>Total</b>		<b>189</b>	<b>Less than 1%</b>
<b>OR 72</b>	<b>18,465</b>		
Veg treatment		1,705	
Harvest treatments		8	
<b>Total</b>		<b>1,713</b>	<b>9%</b>
<b>OR 74</b>	<b>9,859</b>		
Veg treatment		575	
Harvest treatments		10	
<b>Total</b>		<b>585</b>	<b>6%</b>
<b>OR 75</b>	<b>4,949</b>		
Veg treatment		15	
Harvest treatments		10	
<b>Total</b>		<b>25</b>	<b>1%</b>
<b>Total all treatments</b>	<b>107,360</b>	<b>3890</b>	<b>4%</b>
Total Veg treatment		3,619	3%
Total Harvest treatments		271	Less than 1%
<b>* CHU OR 34 has treatments scheduled in dispersal, but not in NRF (see Table 10)</b>			

<sup>1</sup> Appendix B, 06-08 BA, (USDA, USDI 2006).

### **Harvest treatments of NRF in CHU**

Up to 271 acres of NRF habitat in nine CHUs will be treated through selective harvest methods as displayed in Table 10. Some of this treatment anticipates hazard tree removal. None of the criteria used to define primary constituent elements of critical habitat will change. These treatments will be insignificant to spotted owl critical habitat because:

1. There will be no change to the amount of NRF in CHUs in the action area.
2. The primary constituent elements of critical habitat that make up NRF will be maintained, and improved over the long term. Treated stands will be more ecologically sustainable and fire resilient.
3. Canopy cover within treated NRF stands will be retained at or above 60 percent.
4. Decadent woody material in the treatment area, such as large snags and down wood will remain post-treatment.
5. Any multi-canopy, uneven aged tree structure that was present prior to treatment will remain post-treatment.
6. POC treatments will prevent disease from being transferred to other areas. Ecological health will be improved.
7. No nest trees will be removed.

### **Vegetation Management Treatments of NRF in CHU**

Up to 3619 acres of NRF habitat will be treated through vegetation management, which includes silvicultural, fuels reduction projects, and incorporates some POC sanitation treatments. All treated NRF will be maintained as NRF habitat in the CHUs as depicted in Table 10. These treatments will be insignificant to spotted owl critical habitat because:

1. There will be no change in the amount of NRF in CHU resulting from these projects.
2. The primary constituent elements of critical habitat that make up NRF will be maintained, and improved over the long term. Treated stands will be more ecologically sustainable and fire resilient. No change to the amount of owl habitat will occur. No habitat categories will change.
3. Canopy cover within affected NRF stands will be maintained at 60 percent.
4. Collectively, no more than 4 percent of the NRF habitat within the CHUs listed in Table 10 will be treated and maintained as a result of vegetation management projects.
5. POC treatments will help avoid POC root rot disease from being transferred to other areas. Ecological health will be improved.
6. NRF Treatments are distributed both spatially and temporally throughout six CHUs.

Vegetation treatments are designed to ensure the residual stand is more ecologically sustainable, Treated stands reduce the risk of wildfire, and decrease intensity of any fires that do occur, which will help to reduce the chance of loss of owl habitat to wild fire or suppression mortality.

### **Watershed Restoration-CHU**

Up to 500 green trees would be modified to create green snag habitat in CHU OR-32 where this important habitat feature for owls is lacking or sparse. Snags are a primary constituent element of critical habitat and would benefit the purposes for which the CHU was designated. No potential nest trees or trees with platforms or structures would be treated.

### **CHU Dispersal Habitat: Harvest Treatment**

Table 11 displays that up to 749 acres of dispersal will be treated and maintained through selective harvest treatments or hazard tree removal within the nine CHUs noted. The hazard tree removal will not change the habitat conditions used to define critical habitat.



**Table 11: Effects to Dispersal Habitat within designated Critical Habitat Units.**

Critical Habitat Units	Federal Dispersal by CHU Habitat <sup>1</sup>	Dispersal-only habitat CHU treated and maintained within all federal habitat	Percent treated
<b>OR 32</b>	<b>24,558</b>		
Veg treatments		0	
Harvest treatments		460	
Total		<b>460</b>	<b>2%</b>
<b>OR-34</b>	<b>28,462</b>		
Veg treatments		0	
Harvest treatments		5	
Total		<b>5</b>	<b>Less than 1%</b>
<b>OR 37</b>	<b>35,238</b>		
Veg treatments		15	
Harvest treatments		15	
Total		<b>30</b>	<b>Less than 1%</b>
<b>OR 38</b>	<b>23,669</b>		
Veg treatments		30	
Harvest treatments		35	
Total		<b>65</b>	<b>Less than 1%</b>
<b>OR 62</b>			
Veg treatments		<b>0</b>	
Harvest treatments		<b>10</b>	
Total		<b>10</b>	<b>Less than 1%</b>
<b>OR 65</b>	<b>65,784</b>		
Veg treatments		867	
Harvest treatments		13	
Total		<b>880</b>	<b>1%</b>
<b>OR 67</b>	<b>66,355</b>		
Veg treatments		0	
Harvest treatments		175	
Total		<b>175</b>	<b>Less than 1%</b>
<b>OR 72</b>	<b>40,807</b>		
Veg treatments		2300	
Harvest treatments		6	
Total		<b>2,306</b>	<b>6%</b>
<b>OR 74</b>	<b>19,597</b>		
Veg treatments		190	
Harvest treatments		15	
Total		<b>205</b>	<b>1%</b>
<b>OR 75</b>	<b>9,531</b>		
Veg treatments		15	
Harvest treatments		15	
		<b>30</b>	<b>Less than 1%</b>
<b>Total</b>	<b>256,663</b>	<b>4166</b>	<b>2%</b>
Total Veg subset		3417	<b>Less than 2%</b>
Total harvest subset		749	<b>Less than 1%</b>

<sup>1</sup>From Appendix B in 2006-2008 BA, (USDA, USDI 2006).

There will be no loss of primary constituent elements in any CHU resulting from these actions. BLM will maintain the characteristics that classify a stand as dispersal throughout the treatments for no loss of dispersal habitat. No primary constituent elements of critical habitat will be compromised as a result of any or all of these treatments, by design. These stands will continue to provide at least 40 percent canopy, flying space, and trees greater than 11 inches on average. Effects to spotted dispersal habitat within critical habitat units will be insignificant because:

1. There will be no change in the amount of dispersal in CHU resulting from these proposed actions.
2. Canopy cover will be maintained at 40 percent.
3. Decadent woody material, such as large snags and down wood will be retained as a result of selective harvest treatments, if they were present pre-treatment.
4. Very dense stands will be opened by thinning, thereby improving conditions for dispersing spotted owls.
5. Thinning stands that currently provide poor quality dispersal habitat will improve the dispersal function for spotted owls by providing more “flying space”, and encouraging residual trees to develop more size and structural diversity. Foraging in treated dispersal stands could improve.
6. Treatments will be distributed both spatially and temporally throughout the watersheds depicted in Appendix A.
7. Thinning treatments could reduce the rate of spread and intensity of wildland fires common to the Medford BLM.
8. Less than one percent of the dispersal habitat within the affected CHUs will be treated and maintained as a result of selective harvest activities.

### **CHU Dispersal Habitat: Vegetation Treatment**

Up to 3417 acres of dispersal habitat will be treated and maintained through vegetation management treatments in the nine CHUs depicted in Table 11.

1. There will be no change to the amount of dispersal in CHU resulting from these treatments.
2. Canopy cover will be maintained at 40 percent.
3. Decadent woody material, such as large snags and down wood will be retained as a result of selective harvest treatments.
4. Very dense stands will be opened by thinning, thereby improving conditions for dispersing spotted owls.
5. Thinning treatments within plantations that currently function poorly as dispersal habitat will improve the dispersal function for spotted owls.
6. Treatments will be distributed both spatially and temporally throughout the eight CHUs where dispersal treatment will take place.
7. Thinning treatments could reduce the rate of spread and intensity of wildland fires common to the Medford BLM.

8. Less than 2 percent of the dispersal habitat within the affected CHUs will be treated and maintained as a result of selective harvest activities.

## **EFFECTS TO MARBLED MURRELET and MARBLED MURRELET CRITICAL HABITAT**

The projects (except hazard tree removal) in marbled murrelet survey zone B will occur in non-marbled murrelet suitable habitat and will not affect marbled murrelet designated critical habitat. There may be minor noise impacts in habitat adjacent to marbled murrelet suitable habitat. However, these areas are unlikely to support active marbled murrelet nesting, based on previous surveys. Lacking confirmation of marbled murrelet nesting activity, PDC will be implemented to avoid any potential impacts.

Anaktuvuk Stewardship will occur in the marbled murrelet survey zone B. The project will not occur in marbled murrelet habitat, and involves chainsaw thinning to remove small trees in young silvicultural units. Seasonal PDC will be imposed where suitable habitat surrounds the project units.

There is a young stand management project proposed in Zone B. It involved chainsaw thinning in young silvicultural units, including tree spacing and brush removal. Most units are adjacent to suitable habitat. About 5 units occur in West Fork Cow Creek 5th field watershed, and about 18 units in occur in the Rogue Lower Wild 5th field watershed. About 8 units of these would occur in marbled murrelet CHU, but none would affect marbled murrelet suitable habitat. Units average approximately 30 acres. Seasonal PDC would be implemented where units lie within the disturbance distance of any suitable marbled murrelet habitat to reduce any potential noise disturbance.

Hazard tree removal could occur throughout the year. There is an insignificantly small area of landscape potentially affected. Scattered individual trees may be removed, and primarily along existing right-of-way road corridors for public safety where ambient noise levels are already higher than stand interiors. These activities are difficult to predict but in the Glendale Resource Area occur in Zone B and marbled murrelet CHU, and are very short in duration for tree felling, bucking and removal. Hazard trees would avoid adverse effects because Medford BLM has no known nest trees, and no detections over an extensive survey period and geographical area, including randomly selected suitable habitat (*Technical Assistance on the Final Results of Landscape level Surveys for Marbled Murrelets in Southwest Oregon (USDI Fish and Wildlife Service reference: 1-7-02-TA-6401)*). Removed hazard trees occur outside the known range (zone A) of marbled murrelets, and are typically dead, dying, or exposed and leaning towards open Right-of-ways and do not have surrounding canopy to provide cover and protection from predators. No stand level treatment would occur that would degrade stand suitability, reduce nesting potential to the interior of a stand, or occur at the level of stand maintenance. ..

Opening size that results over the long-term from snag creation would mimic natural openings in late successional forests that result from natural processes. Green trees used for snag development would be selected to ensure that potential murrelet nesting habitat would not be

adversely affected. Snag creation would be small scale, low impact and low intensity work. PDC for season and distance would avoid adverse disturbance effects.

Although undocumented to date, and unlikely to occur, some undetected murrelets may occur in the 10 kilometer buffer (zone B) adjacent to the known range (zone A) and may notice noise or activity, but with applying a daily restriction of work activities to be confined to between 2 hours after sunrise to 2 hours before sunset, noises and activities from these temporally and geographically widely spaced events limited to single trees will not cause “*significant impairment to feeding, breeding and sheltering such that harm would occur.*” (USFWS ESA Handbook, version 3). These are singular trees or snags that are at risk for falling at any time of the year, regardless of BLM action, and would cause disturbance from falling, and most likely require chainsaw work for removal to maintain open roadways. This action allows BLM to accomplish removal in the interest of public safety, in a controlled environment, including a daily time restriction, and directional falling to reduce damage to adjacent trees. ESA guides us to evaluate our impacts conservatively in favor of the murrelet. Therefore, we are including portions of these projects as “may affect, not likely to adversely affect” in terms of disturbance, as depicted in Table 2. This approach may over-estimate the NLAA activities in murrelet habitat, but is consistent with ESA and the USFWS Consultation Handbook (USDI 2002).

## **V. CONCLUSION**

Medford BLM has determined that the combined treatments described in the BA will not change the amount of spotted owl habitat, and may affect and will not likely affect spotted owls or designated critical habitat. The disturbance related to the projects in this BA will incorporate distance and/or seasonal PDC to avoid adverse effects from noise or smoke.

### **Spotted Owls**

Wild fire resiliency will be improved. Ecological sustainability will be enhanced. Remaining trees will have more water, space and light to be healthier and grow faster, and develop more structural diversity.

The results of these treatments in NRF could have long-term beneficial effects to spotted owls by reducing the risks of loss to fire or suppression mortality of the stand, and setting the stand to a trajectory more favorable to use by spotted owls.

The results of these treatments in dispersal could have long-term beneficial effects to spotted owls by reducing the risks of loss to fire or suppression mortality of the stand, and setting the stand to a trajectory more favorable to use by spotted owls. Flying space will be improved. These treatments are designed to reduce the severity and rate of spread of large, stand-replacement fires capable of removing many acres of spotted owl habitat and common to the Action Area.

Adverse disturbance is avoided by implementing PDC.

## **Spotted Owl Critical Habitat**

All projects in this Biological Assessment were carefully evaluated and included only if they maintain the pre-treatment critical habitat. The results of these treatments in spotted owl habitat may affect and will not likely adversely affect critical habitat because all primary constituent elements will be retained. There will be no change in the amount of dispersal or NRF in critical habitat. Projects that maintain habitat in CHU will reduce fuels and crowded growing conditions, but will maintain overstory canopy percentage to ensure the treatment area will serve owls as it did before treatment. The treated stand will be more ecologically sustainable. All large snags and down wood will be retained in conformance with the NWFP and the Medford RMP. Critical habitat will continue to provide the same habitat conditions as prior to treatment. The risk of wildfire that could remove habitat will be decreased as a result of these treatments. Long-term benefits could be expected through less risk to fire and suppression mortality.

## **Marbled Murrelets and Marbled Murrelet Critical Habitat**

Medford BLM has determined that the combined treatments described in the BA will not change the amount of marbled murrelet habitat. The BA determined that habitat treatments from hazard trees or snag creation would avoid adverse effects because nest trees and potential nest trees will be avoided, and the little treatment that would occur would be of low intensity and short duration. Hazard trees are typically exposed, likely to fall, or otherwise poor candidates for murrelet nesting. Project Design Criteria will ensure that any potential disturbance related to treatments in non-murrelet habitat that is near murrelet habitat will avoid adverse impacts.

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**VII APPENDIX A: SPREADSHEET OF PROPOSED ACTIVITIES BY SECTION 7  
WATERSHED, CHU AND LSR**

INSERT HERE

(Spreadsheet, pg 1)



(Spreadsheet pg 2)

## VIII APPENDIX B: PROJECT DESIGN CRITERIA

Project design criteria (PDC) are measures applied to project activities designed to minimize potential detrimental effects to proposed or listed species. PDC usually include seasonal restrictions and may also include clumping of retention trees around nest trees, establishment of buffers, dropping the unit(s)/portions, or dropping the entire project. Use of project design criteria may result in a determination of no effect for a project which would have otherwise been not likely to adversely affect. In other cases, project design criteria have resulted in a determination of not likely to adversely affect for a project which might have otherwise been determined to be likely to adversely affect. The goal of project design criteria is to reduce adverse effects to listed or proposed threatened or endangered species.

Physical impacts to habitat and disturbances to spotted owls will be reduced or avoided with PDC. Listed are project design criteria designed for the programmatic impacts discussed in the *Effects of the Action* section.

Medford BLM retains discretion to halt and modify all projects, anywhere in the process, should new information regarding proposed and listed threatened or endangered species arise. Minimization of impacts will then, at the least, include an appropriate seasonal restriction; and could include clumping of retention trees around the nest trees, establishment of buffers, dropping the unit(s)/portions, or dropping the entire project.

The seasonal or daily restrictions listed below may be waived at the discretion of the decision maker if necessary to protect public safety (as in the case of emergency road repairs or hazard tree removal). Emergency consultation with the Service will then be initiated in such cases, where appropriate.

PDC for disturbance are intended to reduce disturbance to nesting spotted owls or marbled murrelets. For this consultation, potential disturbance could occur near either documented owl sites or projected owl sites. To estimate likely occupied habitat outside of known home ranges, nearest-neighbor distances and known spotted owl density estimates were utilized to “place” potential spotted owl occupied sites in suitable habitat. Marbled murrelets are difficult to locate. No murrelets have been documented on the District, but Medford remains within zone B. To ensure that activities that have the potential of disturbing marbled murrelets are reduced to NLAA (or NE), we will impose the PDC in or adjacent to marbled murrelet habitat.

Any of the following Mandatory PDC may be waived in a particular year if nesting or reproductive success surveys conducted according to the USFWS endorsed survey guidelines reveal that spotted owls are non-nesting or that no young are present that year. Waivers are only valid until March 1 of the following year. Previously known sites/ activity centers are assumed occupied until protocol surveys indicate otherwise.

**Mandatory Project Design Criteria (owls)**

A. Activities (such as tree felling, yarding, road construction, hauling on roads not generally used by the public, prescribed fire, muffled blasting) that produce loud noises above ambient levels will not occur within specified distances (Appendix B-1) of any documented or projected owl site between March 1 and June 30 (or until two weeks after the fledging period) – unless protocol surveys have determined the activity center to be not occupied, non-nesting, or failed in their nesting attempt. The distances may be shortened if significant topographical breaks or blast blankets (or other devices) muffle sound traveling between the work location and nest sites.

B. The action agency has the option to extend the restricted season until September 30 during the year of harvest, based on site-specific knowledge (such as a late or recycle nesting attempt) if project would cause a nesting spotted owl to flush. (See disturbance distance).

C. Burning will not take place within 0.25 miles of spotted owl sites (documented or projected) between 1 March and 30 June (or until two weeks after the fledging period) unless substantial smoke will not drift into the nest stand.

D. To minimize the number of potential spotted owl nest trees used for used for instream structures, only the following sources will be used:

- (I) Trees already on the ground in areas where large woody material is adequate;
- (II) Trees that lack structural conditions (snags, cavities) suitable for spotted owls.

**APPENDIX B-1. MANDATORY RESTRICTION DISTANCES TO AVOID DISTURBANCE TO SPOTTED OWL SITES.**

<b>Activity</b>	<b>Documented Owl Site</b>	<b>Projected Owl Site**</b>
Heavy Equipment (including non-blasting quarry operations)	105 feet	761 feet
Chain saws	195 feet	851 feet
Impact pile driver, jackhammer, rock drill	195 feet	851 feet
Small helicopter or plane	360 feet*	1016 feet
Type 1 or Type 2 helicopter	0.25 mile*	0.512 mile
Blasting; 2 lbs of explosive or less	360 feet	1016 feet
Blasting; more than 2 lbs of explosives	1 mile	1.12 miles

\* If below 1,500 feet above ground level

\*\* Radius distances were increased by 656 feet (200 meters) around estimated nest sites to provide additional protection, since the exact location of owls is unknown in these areas.

Above-ambient noises further than these Table B-1 distances from spotted owls are expected to have either negligible effects or no effect to spotted owls. The types of reactions that spotted owls could have

to noise that the Service considers to have a negligible impact, include flapping of wings, the turning of a head towards the noise, hiding, assuming a defensive stance, etc. (USFWS 2003).

**Recommended Project Design Criteria--Murrelets**

Restrict operations from March 1 through September 30 (through the extended breeding period) within disturbance distances (unless protocol surveys demonstrate non-nesting).

**Appendix B-2 Mandatory Marbled Murrelet Project Design Criteria**

Impacts	Species: <b>Marbled Murrelet</b>
Disturbance	(II) <b>Mandatory</b> -For <b>Survey Areas A and B work activities</b> (such as tree felling, yarding, road and other construction activities, hauling on roads not generally used by the public, muffled blasting) which produce noises above ambient levels <b>will not occur within specified distances (see table below) of any occupied stand or unsurveyed suitable habitat between April 1 – August 5. For the period between August 6 – September 15, work activities will be confined to between 2 hours after sunrise to 2 hours before sunset.</b> See Fuels management PDCs for direction regarding site preparation and prescribed fire.
Disturbance	(III) <b>Mandatory -Clean up trash and garbage daily</b> at all construction and logging sites. Keep food out of sight so as to not attract crows and ravens (predators on eggs or young murrelets).
Disturbance	(IV) <b>Mandatory- Blasting</b> (open air/unmuffled) – <b>No blasting activities during the critical breeding period (1 April through 15 August) within 1.0 mile of occupied stands or unsurveyed suitable habitat.</b> This distance may be shortened if significant topographical breaks or blast blankets (or other devices) muffle sound traveling between the blast and nest sites or less than 2 lbs of explosives are used If so, then use described distance.
Disturbance	1) <b>Recommended</b> Delay project implementation until after September 15 where possible
Disturbance	2) <b>Recommended</b> Between 1 April and 15 September, concentrate disturbance activities spatially and temporally as much as possible (e.g., get in and get out, in as small an area as possible; avoid spreading the impacts over time and space).
Disturbance	(IV) <b>Mandatory- Blasting</b> (open air/unmuffled) – <b>No blasting activities 1 April through 15 September within 1.0 mile of occupied stands or unsurveyed suitable habitat.</b> This distance may be shortened if significant topographical breaks or blast blankets (or other devices) muffle sound traveling between the blast and nest sites or less than 2 lbs of explosives are used If so, then use described distance.
Disturbance	1) <b>Recommended</b> Delay project implementation until after September 15 where possible
Disturbance	2) <b>Recommended</b> Between 1 April and 15 September, concentrate disturbance activities spatially and temporally as much as possible (e.g., get in and get out, in as small an area as possible; avoid spreading the impacts over time and space).
<b>Restoration projects</b>	<b>Mandatory</b> To minimize the number of potential spotted owl or murrelet nest trees used for instream structures, only the following sources shall be used: (I) Trees already on the ground in areas where large woody material is adequate; (II) Trees lacking suitable nesting structure for spotted owls or murrelets or contributing to trees with suitable nesting structure, as determined by an action agency wildlife biologist.

<b>Fuels</b>	<p><b>Mandatory</b></p> <p>(I) Burning would not take place within 0.25 mile of known occupied marbled murrelet sites, or unsurveyed marbled murrelet habitat between April 1 and August 6 unless substantial smoke will not drift into the occupied site or suitable habitat.</p> <p>(II) All broadcast and under-burning operations (except for residual “smokes”) will be completed in the period from two hours after sunrise to two hours before sunset.</p> <p>(IV) During helicopter operations, flights over suitable habitat will be restricted (helicopter should be a least 1,500 feet above ground level); if not possible, fly a minimum of 500 feet above suitable habitat (above canopy).</p>
<b>Wildfire</b>	<p><b>Mandatory</b></p> <p>Whenever possible, protect known nest sites of any listed species from high intensity fire. Update Resource Information Book annually; incorporate new nests or sites as soon as possible.</p>
<b>Wildfire</b>	<p><b>Mandatory</b></p> <p>(I) From 1 April - 5 August noise disturbance should be minimized inside occupied stands and within 0.25 mile of the edge of these stands. In order to accomplish this objective, minimize repeated aircraft flights that are less than 1,500 feet Above Ground Level (AGL). Also, minimize the use of fire line explosives within 1 air mile of occupied stands during the protection period.</p>
	<p>Light Hand Tactics or Minimize Impact Suppression Tactics (MIST) should receive consideration for use within the protection zones for northern spotted owls and murrelets.</p>
<b>Quarries</b>	<p><b>Mandatory</b></p> <p>1) For any occupied stands or unsurveyed suitable habitat within 0.25 miles of the quarry operation, restrict operation of the quarry from April 1 to August 5. Agency biologists also have the discretion to modify the 0.25-mile zone depending on topography and the level of noise - what equipment will be present (crusher or dozer/ripper or only loading of existing stockpiled rock).</p> <p><b>Recommended</b></p> <p>2) For active nest stands or unsurveyed suitable habitat within 0.25 mile of the quarry operation, restrict operation of the quarry from April 1 through September 15 (unless protocol surveys demonstrate non-nesting).</p>

**VIII APPENDIX C. APPROXIMATE BLM OWNERSHIP BY SECTION 7 WATERSHED.**

Acres below include BLM ownership, including all habitat conditions, of these Section 7 Watersheds. Remaining federal ownership is USFS Rogue River-Siskiyou National Forest. Calculations are from Medford GIS: 4/15/07.

<b><u>Section 7 Watershed</u></b>	<b><u>Acres</u></b>
Applegate:	148,260
Bear:	26,239
Cow-Upper	80,312
Illinois	66,635
Klamath	66,681
Little Butte	54,291
Rogue Lower Wild	100,234
Rogue Middle	214,221
Rogue Upper	108,939