

Medford Bureau of Land Management LM FY 10-11 Biological Assessment of Projects that May Affect, but are Not Likely to Adversely Affect (NLAA) Northern Spotted Owls or Marbled Murrelets.

(Cite as Fall 09 FY 10-11 NLAA BA)

I. INTRODUCTION

This Biological Assessment (BA) evaluates one (1) right-of-way (ROW), eleven (11) timber harvest projects (including four (4) stewardship projects), eight (8) fuels-reduction projects, one (1) recreation maintenance project, two (2) restoration/road maintenance projects (including culvert replacement), and scattered hazard tree reduction projects that “may affect and are not likely to adversely affect” (NLAA) northern spotted owls, northern spotted owl critical habitat, or marbled murrelets within the Medford District of the Bureau of Land Management (BLM). We seek concurrence from the US Fish and Wildlife Service (Service) that these projects are not likely to adversely affect spotted owls, marbled murrelets, nor spotted owl critical habitat. There will be “no effect” to marbled murrelet critical habitat. Potential disturbance will be avoided through application of daily and seasonal PDC (Appendix C).

The projects and acres described in the Proposed Action of this BA are proposed to commence in Fiscal Year 2010 or 2011. We expect completion within seven (7) years of receiving a Letter of Concurrence. Listed plants are consulted upon separately (USDI 2008a). Listed fish are consulted upon separately. 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 the Medford District 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 on Medford District BLM only. The actions proposed in this document are distributed across the Medford District BLM.

The Medford District BLM encompasses approximately 862,964 acres of public land in a checkerboard pattern of mixed private and federal ownership acres (GIS calculations DA BA FH 11_2008, USDI 2008b). Not all of these lands are capable of providing northern spotted owl or marbled murrelet habitat. The proposed projects (actions) are located within the Oregon Klamath Mountains and Oregon Western Cascades Physiographic Provinces, and are spread across the Medford BLM District.

Natural plant community types within the action area are diverse. Oregon white oak woodlands and grasslands, chaparral, scattered ponderosa pine, and Douglas-fir occur up to about 2,400 feet in the interior valleys. 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. On the Cascade side the forest is dominated by ponderosa pine, Douglas-fir, incense cedar, and white fir in more mesic sites. On xeric 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 region 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 Sierras of California, east into the Great Basin, or north up the Cascades and the Coast range.

Projects within Late Successional Reserves are designed to protect and enhance habitat conditions for late-successional and old-growth related species. No habitat within Known Spotted Owl Core Areas (KSOCA) (100 Acre unmapped LSRs) will be affected. All projects were planned under the Northwest Forest Plan (NWFP), (USDA, USDI 1994a, 1994b) and comply with standards and guides established therein. Projects proposed in this BA will maintain all owl habitat across all land use allocations (including, but not limited to: NWFP reserves, riparian areas and 1992 and 2008 critical habitat). No treatments will occur in any stand that could be considered older, structurally-complex, and multi-storied.

Private Lands

BLM-managed lands are 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 northern spotted owl nesting, roosting and foraging habitat, although some habitat occurs in private ownership. The conversion of intact suitable habitat in low elevation woodlands and grasslands into pastures, vineyards, orchards, and home sites is an on-going activity throughout the Rogue Valley.

II. DEFINITIONS

NW Forest Plan Land Use Allocations (USDA USDI 1994b). All projects in this BA were planned under NWFP land use allocations and standards and guidelines and follow the guidelines in place at the time of planning.

Late-Successional Reserves 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.

100-acre Cores (LSR) are the best 100 acres around northern spotted owl activity centers that were documented as of January 1, 1994 on Matrix and AMA lands, and are managed as LSR.

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

Level 1 Review

A draft of this BA was reviewed by the Level 1 team on October 28, 2009, and November 16, 2009. The Level 1 team includes the USFS Forest Biologist, the Service Biologist, and the Medford BLM District Biologist. All recommendations from that meeting were incorporated into this final draft.

Northern Spotted Owls

Documented Northern Spotted Owl Sites are defined as locations with evidence of continued use by northern spotted owls, including breeding, repeated location of a pair or single birds during a single season or over several years, presence of young before dispersal, or some other strong indication of continued occupation. Documented northern spotted owl sites are tracked in the BLM's northern spotted owl database. The majority of the known sites were established through protocol surveys completed in the late 1980s and early 1990s. Protocol surveys are currently conducted only in demographic study areas. Protocol surveys are no longer required outside of the demographic study areas, but northern spotted owl sites and survey data are recorded in an opportunistic manner. All northern spotted owl sites receive seasonal protection, unless shown to be non-nesting as described in the Project Design Criteria (see Appendix A, PDC).

Generated ("G") Sites were created by the use of a methodology developed by an interagency team in order to estimate the number of northern spotted owls affected by a proposed federal action in areas where sufficient survey information is not available. The entire set of northern spotted owl sites used for OEM (Owl Estimation Methodology) analysis includes the generated sites and documented sites. *Methodology for Estimating the Number of Northern Spotted Owls Affected by Proposed Federal Actions* (USDA et al. 2007, corrected 9/2008, Appendix B of DA BA FH USDI 2008b) was used to provide a reasonable basis for estimating potentially-occupied

northern spotted owl nest sites on a given landscape. The OEM aids the Service in estimating of the number of northern spotted owls likely to occur within the area affected by proposed Federal actions.

The methodology relied on known northern spotted owl locations from northern spotted owl surveys as the foundation for the template. Survey data, in some cases, was insufficient to estimate the number and distribution of northern spotted owl on a given area. The known northern spotted owl locations were supplemented with generated northern spotted owl locations derived from an analysis of survey data from similar areas within the range of the northern spotted owl and information on the configuration of habitat in the subject area. Nearest-neighbor distances and known northern spotted owl density estimates were used to “place” potential northern spotted owl occupied sites in habitat. Both known northern spotted owl locations and habitat information were factored into the OEM process to provide the Service a more comprehensive accounting of likely northern spotted owl distribution and potential adverse effects.

Provincial Home Range is defined as the circle around an activity center and represents the area northern spotted owl are assumed to use for nesting and foraging in any given year. The home ranges of several owl pairs may overlap. Provincial home range radii vary based on the physiographic province in which they are located: Klamath Mountains Province = 1.3 miles (approximately 3,400 acres), and Cascades West Province = 1.2 miles (approximately 2,900 acres).

Core Area is a 0.5-mile radius circle (approximately 500 acres) from the nest or center of activity to delineate the area most heavily used by northern spotted owl during the nesting season; it is included in the provincial home range circle. Core areas represent the areas which are defended by territorial northern spotted owl and generally do not overlap the core areas of other northern spotted owl pairs. Recent evaluation of northern spotted owl telemetry literature indicates most northern spotted owl activities are focused within the 0.5-mile radius around the nest tree (OEM, Appendix B DA BA FH, USDI 2008b).

Nest Patch is the 300-meter radius area around a known or likely nest site; it is included in the core area. Disturbance or treatments that reduce canopy of habitat within this area could potentially affect the reproductive success of nesting birds. Exceptions to this are noted in some site-specific situations.

Northern Spotted Owl Activity Periods

Table 1. Northern Spotted Owl Breeding Periods (see also PDC, Appendix B)		
Entire Breeding Period	Critical Breeding Period	Extended Breeding Period
March 1-September 30	March 1-June 30	July 1-September 30

We use these categories of forest land in this BA to aid our analysis. These categories are distinct and are not over-lapping:

Non-habitat

Capable Medford Bureau of Land Management LM FY 10-11 Biological Assessment of Projects that May Affect, but are Not Likely to Adversely Affect (NLAA) Northern Spotted Owls or Marbled Murrelets.

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Non-habitat

Capable

Dispersal*

NRF (Nesting, Roosting and Foraging)*

***“All-Dispersal” is used to describe Dispersal plus NRF. Northern spotted owls also disperse through NRF habitat.**

Nesting, Roosting, and Foraging (NRF) Habitat for the northern spotted owl consists of habitat used by owls for nesting, roosting, and foraging. NRF habitat also functions as Dispersal habitat. Generally, this habitat is multi-storied, at least 80 years old, 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 or age alone does not qualify a stand as NRF. Other attributes include 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 northern spotted owl to fly (Thomas et al. 1990). NRF habitat in southwest Oregon is typified by mixed-conifer habitat, recurrent fire history, patchy habitat components, and a higher incidence of woodrats, a high quality northern spotted owl prey species in our area.

Forsman et al. (1984) described some of the differences in the Klamath Mountains Province, typical of large parts of the Medford District, “Eighty-one percent of all [northern spotted owl] nests in northwestern Oregon were in cavities, compared to only 50 percent 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 southwest Oregon varies greatly. It may consist of somewhat smaller tree sizes. One or more important habitat component, such as dead down wood, snags, dense canopy, multistoried

stands, or mid-canopy habitat, might be lacking or even absent in portions of southwest Oregon NRF. However, southwest Oregon NRF can support nesting northern spotted owl 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 to 179 centimeters (cm) (14.2 to 70.5 inches) in diameter at breast height (dbh) averaging 106 cm (41.7 inches) dbh. Mistletoe is occasionally used as a nesting substrate in southwest Oregon, which makes smaller trees suitable as nest trees. The BLM Resource Area wildlife biologists make site-specific determinations and delineations of NRF habitat at the project level. Site-specific determinations are incorporated into the Medford District NRF habitat layer.

Habitat Capable for the northern spotted owl is forest land that is currently not habitat but can become NRF or Dispersal habitat in the future, as trees mature and canopy fills in.

Dispersal is a subcategory of “All Dispersal” habitat for northern spotted owls. Throughout this document, “Dispersal” will be used to describe Dispersal-only habitat. Thomas, et al. 1990, defined Dispersal habitat as forested habitat more than 40 years old, with canopy closure more than 40 percent, average diameter greater than 11 inches, and flying space for northern spotted owl in the understory but does not provide the components found in NRF. It provides temporary shelter for northern spotted owl moving through the area between NRF habitat and some opportunity for northern spotted owl to find prey, but does not provide all of the requirements to support an owl throughout its life. Dispersal will be used throughout this document to refer to habitat that does not meet the criteria to be NRF habitat, but has adequate cover to facilitate movement between blocks of NRF habitat. Northern spotted owls also disperse through NRF habitat.

Northern Spotted Owl Habitat Treatment Types

Forest stands in southwest Oregon are often multiple-aged with multiple canopy levels that have resulted from previous harvesting or from past natural stand disturbance such as repeated historic low intensity fire (USDI 1992a, Vol. II, 2-37). The actual interpretation of treatment impacts to northern spotted owl will be defined by the Resource Area wildlife biologists in collaboration with their Interdisciplinary Team and Field and District Managers. Effects of individual activities will be determined by the BLM following these descriptions.

Medford BLM mapped suitable NRF habitat on the Owl Habitat Baseline (Appendix A of DA BA FH, USDI 2008b). Resource Area biologists will continue to improve and refine this habitat layer as projects are proposed and field/photo evaluations can be conducted. Acres changed due to fire, blow-down or harvest activities have been incorporated in the Environmental Baseline (USDI, 2008b).

Treat and Maintain NRF or Dispersal Habitat means an action or activity will occur within NRF or Dispersal habitat that will not change the classification of that habitat post-treatment. The NRF stand retains large trees, multistoried canopy, standing and down dead wood, diverse understory adequate to support prey, and may have some mistletoe or other decay. Dispersal stands continue to support northern spotted owl dispersal following treatment.

The effects determination for treating and maintaining habitat is “may affect, not likely to adversely affect” (NLAA) the northern spotted owl because the treated stand will retain the characteristics that resulted in its pre-treatment habitat classification. Northern spotted owls will be able to use the stand as before, and the treatment would not significantly impair the feeding, breeding or sheltering of a northern spotted owl using that habitat such that harm would occur. Some change to understory vegetation and tree density may occur. NRF habitat will retain 60 percent canopy cover, large trees and snags, large down wood, and structural diversity important to northern spotted owls. Dispersal habitat will continue to provide at least 40 percent canopy, flying space, and trees 11 inches dbh 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 shrubs and dense trees that have resulted from years of wildfire suppression. Resulting treated stands are more ecologically-sustainable in ecosystems with high fire return intervals.

No potential disturbance to nesting northern spotted owl is anticipated with any of these proposed projects. Applying the PDC (Appendix A) will ensure that no potentially disturbing noise or activity would occur within sensitive distances of nesting owls by implementing one or more of the following:

- avoiding activities during the nesting period;
- spacing projects outside sensitive distances, as defined by Mandatory PDC distances; and/or
- conducting protocol surveys to ensure northern spotted owl are not nesting at the location or time of the activity.

Northern Spotted Owl Designated Critical Habitat

The final rule for Revised Designation of Critical Habitat for the northern spotted owl was published by the US Fish and Wildlife Service (the Service) in the *Federal Register* was signed on August 12, 2008 (73 Federal Register 157:47326) and became effective on September 12, 2008 (USDI 2008c). Critical Habitat 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 NRF habitat in the future (57 FR 10:1796-1837).

The Service’s Critical Habitat delineations are being challenged in court as this BA is being completed. The Secretary of Interior has sought to remand the 2008 designation of NSO CHU. The remand is now in litigation. At this time, the 2008 CHU designation remains in effect. BLM conservatively planned projects to be consistent with current guidelines on the 2008 CHU as well as the 1992 CHU. No projects will remove or downgrade NRF or remove Dispersal habitat in either the former 1992 CHU or the 2008 CHU (Appendix A: Summer 09 NLAA Spreadsheet). Maintenance projects in the 1992 and 2008 CHU areas will maintain current habitat and not change the quantity of any former or 2008 CHU habitat nor adversely affect the primary constituent elements used to define the former or 2008 CHU habitat.

Treat and Maintain Critical Habitat means no primary constituent elements are removed or reduced and primary constituent elements of critical habitat are retained. The Endangered Species Act (ESA) consultation handbook (USDA et al. 2002, 4-33), as amended, provides the following information regarding designated critical habitat:

Primary Constituent Elements

The physical and biological features of designated or proposed critical habitat essential to the conservation and recovery (amendment due to *Gifford Pinchot* lawsuit¹) of the species, including, but not limited to the following:

- space for individual and population growth, and for normal behavior;
- food, water, air, light, minerals, or other nutritional or physiological requirements;
- cover or shelter;
- sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
- habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species [50 CFR 424.12(b)].

It further defines critical habitat for listed species as: “(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] (I) essential to the conservation of the species and (II) 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” [16 U.S.C. § 1532(5)(A)]. Designated 1992 critical habitats are described in 50 CFR part 17 and part 226.

The Service defined the following elements of Primary Constituent Elements (PCE), in the 2007 CHU proposed ruling (32450 Federal Register / Vol. 72, No. 112, June 12, 2007 / Proposed Rules) which were later confirmed by reference when the CHU was finalized in 2008.

Sites for habitats that are representative of the historical geographical and ecological distributions of the northern spotted owl for:

PCE-1 Forest types known to support the northern spotted owl across its geographic range...

PCE-2 Forest types as described in PCE 1 of sufficient area, quality, and configuration, or that have the ability to develop these characteristics, to meet the home range needs of territorial pairs of northern spotted owls throughout the year. A home range must provide all of the habitat components and prey needed to provide for the survival and successful reproduction of a resident breeding pair of northern spotted owls....

Nesting Habitat: breeding, reproduction, and rearing of offspring...

Roosting Habitat: cover, or shelter...

Foraging Habitat: food, or other nutritional or physiological requirements...

PCE-3 Dispersal habitat: The dispersal of juveniles requires habitat supporting both the transience and colonization phases. Habitat supporting the transience phase of dispersal includes, at a minimum, stands with adequate tree size and canopy closure to provide protection

¹ *Gifford Pinchot Task Force et al. v U.S. Fish and Wildlife Service et al.*, 378 F.3d 1059, 1069-71

*from avian predators and at least minimal foraging opportunities. This may include younger and less diverse forest stands than foraging habitat, such as even-aged, pole-sized stands....
Habitat supporting colonization is generally equivalent to roosting and foraging habitat...*

Marbled Murrelets

Marbled Murrelet Suitable Habitat

Marbled murrelet suitable habitat includes conifer-dominated stands generally 100 years old or more with trees averaging 18 inches dbh or more. At least one potential nest tree must be present in a stand of trees at least 1 acre in size (6 per 5 acre area) and the stand trees must be at least one-half the height of the site-potential tree.

We used the spotted owl NRF habitat layer to identify areas that have the potential to provide the forest structure necessary to provide for nesting of murrelets. This is an overly broad category of suitable potential marbled murrelet habitat, but we have no corporate data system in place to evaluate large branches and special site-specific criteria that would qualify as potential marbled murrelet habitat. The Farout project has been evaluated in the field to refine project-level marbled murrelet habitat conditions. BLM biologists have identified several stands that contain trees with some nest tree characteristics.

Marbled Murrelet Suitable Structure

The distance inland that marbled murrelets breed is variable and influenced by a number of factors including nesting habitat availability, climate suitability, maximum foraging range, and predation rates. Most murrelets appear to nest within 37 miles (60 km) of the coast (Miller and Ralph 1995); the Service (USDI 1997p.32) considers 50 miles (31 km) as the minimum inland distance for determining habitat suitability and amount within the listed range. Commuting distances are, however, extremely variable, with birds in Washington tending to commute larger distances than those in Oregon and California. The “Marbled Murrelet Effectiveness Monitoring Plan for the Northwest Forest Plan” (Madsen et al. 1999) considers the primary nesting range of the species to extend inland 35 miles (22 km) in Oregon. Murrelets nest in one of four tree species: western hemlock, Douglas-fir, Sitka spruce, or western red cedar (Nelson and Wilson 2002, p. 24 and 44). In Washington, Oregon and California, nests continue to be found below 2,625 feet (800 meters) in elevation. (McShane et. al 2004).

In the Pacific Northwest (California, Oregon, Washington, British Columbia), the mean nest tree diameter was 211 cm, with the smallest diameter nest tree reported from Washington, which was a western hemlock 88 cm (34 inches) diameter. Nest tree diameters were normally distributed with a maximum number of trees found between 140 and 160 cm, and 85 percent of the trees ranging between 120 and 280 cm (47 and 110 inches). For a sample of 16 nests in the Pacific Northwest the mean stand age was 522 years with the youngest stand age reported as 180 years old. To date, all 61 tree nests found in North America have been found in stands described as old-growth or mature forests. Nest stands in Washington and Oregon with reported mean dbh. were characterized by large diameter trees of 47.7 cm (18 inches). Canopy closure of nest stands ranged from 12-99%.

In California, Oregon and Washington, the elevation of nests ranged up to 2120 feet. (USDA 1995). Nest trees found in western Oregon were found in stands of age 180-350, are 19.1-110

inches dbh (49-279 centimeters) and more than 107 feet (33-86 meters) in height, have at least one platform four (4) inches (10-81 centimeters) or more in diameter, contain nesting substrate (e.g., moss, epiphytes, duff) on that platform, and have an access route through the canopy that a murrelet could use to approach and land on the platform (Nelson and Wilson 2002, p. 24, 27, 42, 97, 100; McShane 2004 p. 4-52; USDA 1995 p.74).

In inland area in northern California and southwestern Oregon, murrelets have been found to be absent in dry areas that do not possess the moss or other substrates important for murrelet nesting (McShane et. al. 2004; 5-Year Status Review for the Marbled Murrelet Evaluation Report p. 4-35). Old-growth conifers tend to be the only trees that provide nesting, with the exceptions found of young and mature trees (66-150 years of age) distinguished by the number of platforms provided by mistletoe infection (Nelson and Wilson 2002; McShane et. al. 4-50). The tree 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 and Wilson 2002, p. 98 and 99).

Marble Murrelet Occupied Habitat

Suitable habitat is found to meet the definition of occupied by interagency established survey protocol (Evans Mack et al. 2003). Survey data collected by the Rogue River-Siskiyou National Forest (Forest Service) and BLM in southwestern Oregon (9,795 survey visits for murrelets between 1988 and 2001) indicate murrelets inhabit forested areas relatively close to the ocean. Murrelets have not been found more than 32 miles (51.5 kilometers) inland on the Powers Ranger District or more than 16 miles (25.7 kilometers) inland on the Gold Beach or Chetco Ranger Districts of the Rogue River-Siskiyou National Forest, located adjacent to Medford BLM (Dillingham et al. 1995; USDA and USDI 1996; USDA and USDI 2003, Appendix I).

The Forest Service and BLM completed an evaluation to better quantify the likelihood of murrelet occurrence beyond the eastern boundary of the western hemlock/tanoak vegetation zone in southwest Oregon (USDA and USDI 2001). This evaluation refined the existing survey zone boundaries to better reflect known murrelet occurrence. Area A encompasses the known range of the marbled murrelet. Approximately 82,400 acres of suitable habitat are located in Area A. NWFP LSRs and other reserved areas contain 90 percent of the suitable habitat in Area A; any stands of suitable habitat in Matrix subsequently found to be occupied are designated as additional “Murrelet” LSR. Area B is a “buffer” to Area A and includes all land 6.2 miles (10 kilometers) east of Area A. Surveys are conducted only in Areas A and B. Federal land east of Area B is assumed to not contain murrelet habitat and is no longer surveyed. To date, no murrelets have been documented in Area B within Medford BLM or Rogue River Siskiyou National Forest. (The Service concurred with the evaluation conclusions in a letter: *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).)

Treat and Maintain Marbled Murrelet Suitable Habitat

Treat and maintain marbled murrelet suitable habitat means to cut some trees within the stand while maintaining its ability to serve as nesting habitat. Treating trees in the understory—

not the actual nest trees—is an example of treating and maintaining marbled murrelet nesting habitat.

Marbled Murrelet Potential Disturbance

Potential disturbance can occur from projects occurring near marbled murrelet sites that do not directly affect the marbled murrelet habitat itself. Disturbance is also a possibility when marbled murrelet habitat is treated, but PDC (Appendix C) ensure projects would avoid adverse effects through disturbance to nesting murrelets.

Marbled Murrelet Activity Period

Table 2. Marbled Murrelet Breeding Period (see also PDC, Appendix C)		
Entire Breeding Period	Critical Breeding Period	Extended Breeding Period
April 1-September 15	April 1-August 5	August 6-September 15

III. DESCRIPTION OF THE PROPOSED ACTION

All projects described in this BA avoid any treatment within the nest patch of any northern spotted owl intercepted by a project boundary to avoid the potential adverse effects described in the OEM process for activities in the nest patch (OEM Appendix B, DA BA FH USDI 2008b). All projects described in this BA are designed to treat and maintain NRF and Dispersal habitat for northern spotted owls. If protocol surveys have not been conducted to confirm that northern spotted owls are non-nesting that season, activities will be curtailed within the mandatory disturbance distances (PDC Appendix B) to avoid the potential of in-season disturbance. PDC and nest patch protection will also apply to sites located through the OEM process in areas where field surveys have not documented actual owl sites. Lacking field surveys, these areas indicate the highest likelihood of northern spotted owl occupancy, and provide a conservative approach to protect northern spotted owls during the sensitive breeding period.

Six (6) culvert replacements will occur in marbled murrelet critical habitat (CHU # OR-07F). One timber sale, Farout, occurs in marbled murrelet survey Zone A and B. The Farout project is designed to treat and maintain marbled murrelet suitable habitat. Projects all comply with the PDC (northern spotted owl and marbled murrelet—Appendices B and C) below that are designed to avoid adverse disturbance impacts to owls and marbled murrelets. Recommended PDC will be followed when possible.

Project Design Criteria

PDC are conservation measures developed to reduce impacts to listed species. PDC include three general components:

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

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. A spreadsheet listing all proposed actions in this BA is included as Appendix A.

Right of Way (ROW)

East McMullin ROW

The East McMullin ROW application involves construction of an access road across Medford BLM land in Township 39 South, Range 07 West, Section 5 (NE of SE) in the Grants Pass Resource Area in northern spotted owl habitat. This discretionary ROW was requested on behalf of Indian Hill to access a portion of their land holdings. The ROW grant would authorize

construction of 1,337 feet of natural surface road with approximately 20 foot ROW width. This project does not occur in northern spotted owl critical habitat or marbled murrelet habitat.

Timber Sales (T)

Timber harvest projects proposed in this BA are as follows:

Ashland Resource Area: Wagner Anderson, Fallback, Shale City Salvage, Shale Divide C, MC Thin

Grants Pass Resource Area: Reeves Creek Thin

Glendale Resource Area: Farout, GL Silv DM/CT

Timber harvest projects included in this BA share the following design features:

- NRF habitat will retain approximately 60% canopy closure post treatment.
- Dispersal habitat will retain approximately 40% canopy closure post treatment.
- Habitat mid-story will reflect pre-treatment composition and diversity. All species and age classes will be retained, but at a lower density.
- Snags will be retained post treatment.
- Down wood will be retained post treatment.

Proposed timber projects will thin forest stands. The majority of trees removed would be less than 12 inches dbh. Some larger trees may be removed in areas of root rot, mistletoe, or other forest pathogen infestation and in areas where restoration to pine dominance is desired. In the Wagner Anderson, Shale City Salvage, Shale City Divide C, and MC Thin projects some areas of mistletoe infestation up to ¼ acre in size may be removed.

The Farout project occurs in marbled murrelet survey Zone A and B. This project will remove some trees from the understory. This harvest is designed to **treat and maintain marbled murrelet suitable habitat**. Treating trees in the understory—not the actual nest trees—is an example of treating and maintaining marbled murrelet nesting habitat.

Timber--Stewardship Sub-Set

Stewardship projects included in this BA would share the design features listed for the above Timber harvest projects. Stewardship is a contracting method that authorizes the value of commercial vegetative material to be applied as an offset against the cost of services received. Stewardship projects may be entered into with private persons or public or private entities, by contract or by agreement, to perform services to achieve land management goals for the public lands that meet local and rural community needs. Stewardship projects included in this BA would thin conifers, and remove shrubs from the forest understory. Thinning and shrub removal will follow spacing guidelines to ensure retention of a diverse mosaic of habitat post treatment.

Conifers selected for removal in the Fallback project would be predominately those less than 8 inches dbh, although less than 2 percent of trees harvested may be 20 inches or greater dbh.

Large tree removal would be limited to areas immediately surrounding dominant pines. In these cases Douglas-firs of greater than 20 inch dbh may be removed to facilitate regeneration of pines.

Ranch Stew II Stewardship project would thin within approximately 1530 acres of dense forest stands in two-storied ponderosa pine plantations and dense small diameter mixed conifer stands. The project would occur in forest stands that are 40-60 years old. The majority of the treated area is not NRF or Dispersal habitat for northern spotted owls. Sixty four acres of thinning would occur within NRF. Projects in NRF are designed to retain 60% canopy, large trees, snags, and down wood. One hundred forty nine acres of treatment would occur in northern spotted owl Dispersal habitat. Projects in Dispersal habitat are designed to retain 40% canopy and retain large trees, snags, and down wood.

Ranch Stew II Stewardship project would

- Thin conifers less than 8 inches DBH to 200 trees per acre,
- Remove shrubs greater than 1 foot high within 8 feet of a leave tree when the shrubs are more than ½ the height of the tree, and
- Leave all shrubs greater than 1 foot high within 8 feet of a leave tree when the shrubs are less than ½ the height of the leave tree.

Special Forest Products

Special Forest Products projects proposed in this BA will take place in the Butte Falls Resource Area and the Grants Pass Resource Area. Projects propose treat and maintain activities in up to 300 acres of northern spotted owl Dispersal habitat in the Klamath Mountains Physiographic Province. These projects will not occur in northern spotted owl critical habitat or marbled murrelet habitat.

Miscellaneous special forest products is a program that covers assorted projects, including the removal of hazard trees for public safety, commercial firewood, small pole harvest, salvage of small areas of disease or insect damage, and other specialty wood products. These projects would be designed to “treat and maintain” existing northern spotted owl habitat..

Fuels Reduction Projects

Fuels Reduction projects proposed in this BA are as follows:

Butte Falls Resource Area: Cascade Silviculture, Evans Silviculture, Ranch Stew II, Butte Falls Fuels Hazard Reduction

Grants Pass Resource Area: Scattered Apples Roadside Fuels, Lucky boy Roadside Fuels, O’Brien Fuels, Takilma Fuels

These projects will occur in northern spotted owl habitat, northern spotted owl critical habitat and northern spotted owl Late Successional Reserves, but will not occur in marbled murrelet habitat.

Fuels reduction projects include piling and prescribed burning, thinning, pruning, slashing, biomass removal, underburning, hand-piling, and shrub treatments via manual and mechanical methods. These activities usually consist of the removal of surface fuels, shrubs or small trees, and the removal of ladder fuels or crowded conifers or hardwoods. Actual prescriptions vary by project.

General Roadside Fuel Hazard Reduction Project Description (Grants Pass Resource Area)

These projects will thin vegetation within 200 feet of roads for fuel hazard reduction and the development of strategic fuel modification zones along strategic ridges. The total area covered by this project will not exceed 700 acres. Fuel hazard reduction may be extended further than 200' from roads where it is reasonable to extend to the top of strategic ridge systems.

Treatments would include a mix of thinning, slashing, biomass removal, underburning and handpile burning, depending on site specific conditions. Understory vegetation would be thinned using manual and mechanical techniques (slashing, pruning) to the desired tree densities and stocking levels. Understory vegetation density would be reduced by cutting and spacing of conifers <12" DBH and hardwoods <12" DBH. Retained vegetation would be spaced 14-45' apart. Within this range, wider spacing would be used for larger leave trees or for species such as pine or oak which thrive in less dense conditions. Vegetation diversity would be obtained by maintaining species occurring at low frequencies in the stand (i.e. Pacific yew, pine, vine maple). Untreated vegetation groups ranging in size from 0.1 to 2 acres would be retained in each treatment unit.

General Fuel Hazard Reduction Project Description (Grants Pass Resource Area)

These projects will reduce fuel loads using hand-tools, chainsaws, ATV's, trucks, and chippers on approximately 200 acres of private property. Total BLM treatment acres will not exceed 400. Small trees and shrubs would be thinned, and trees would be limbed to reduce ladder fuels. Slash would be hand piled, covered and burned, lopped and scattered, or removed from the sites. The intensity and nature of the treatments could vary based on individual landowner preference but would be consistent with the following project design features:

- Trees and other vegetation thinned / cut would be less than 12" DBH.
- Residual hardwood and conifer trees would be spaced approximately 14' by 30'.
- Thinning would be limited to 100' around structures.
- Thinning along roads would be limited to 30' from road bed edge. Conifers would be limbed from six to fourteen feet high.
- No vegetation would be cut within 50' any stream.
- Burning would occur in the most disturbed areas only.

Mechanized equipment off established roads would include chain saws and ATV's. Vehicles and heavy equipment would remain on established roads.

Hazardous Fuels Reduction (Butte Falls Resource Area)

The project would reduce hazardous fuels by thinning noncommercial-size vegetation on BLM-administered lands. Total acres treated by these projects will not exceed 4301. All work will be done manually (slashing, hand piling, and burning) with follow up under burning for maintaining the treated areas.

The fuels reduction would:

- Cut conifers more than one (1) foot tall and less than eight (8) inches dbh on a 25 by 25 ft spacing,
- Cut shrub species more than one (1) foot tall and less than 12 inches dbh,
- Prune conifers ranging six (6) to 13 inch dbh,
- Retain an average of ten (10) percent of the piles unburned,
- Cut and broadcast burn material in shrub fields,
- Remove some cut materials by hand to use as woody fuel(biomass) or special forest products, and
- Retain all dominant or co-dominant trees.

Restoration/Road Maintenance

Upper Cow Roadside

Roadside treatment is designed to remove conifer and hardwood vegetation that is shading roadways on BLM roads in the Glendale Resource Area. Approximately 34 miles of BLM road would be treated. Conifers and hardwoods with diameters up to 24 inches would be targeted for removal within approximately ten (10) feet of the road with a feller buncher. Open canopy conditions along roadsides have promoted vigorous second growth trees. These stands do not meet the definitions of NRF or Dispersal habitat for owls because they lack potential nest structures, possess excessive density, and exhibit impenetrable branch structure. The project would be designed to retain trees in buffered riparian areas, trees greater than 24 inch diameter (dbh), and old-growth trees that remain from the period of initial road construction. Treatment adjacent to the road returns the roadside to its former, more open condition. This project will take place adjacent to northern spotted owl habitat, in northern spotted owl critical habitat, and in a northern spotted owl Late Successional Reserve, but will not take place in marbled murrelet habitat.

Rogue Culvert (Replacement) (East and West)

Culverts would be replaced as part of the normal road maintenance regime in the Glendale Resource Area. In most cases, no habitat would be altered. In some instances, it would be necessary to remove select trees for safety or project logistics reasons. These projects would take place in northern spotted owl habitat, northern spotted owl critical habitat, northern spotted owl Late Successional Reserve, and marbled murrelet critical habitat.

Recreation Maintenance

Up to five (5) acres in and near recreation sites in the Butte Falls Resource Area would be treated. Recreation management includes trail construction and maintenance, campground and physical facilities maintenance, signing. PDC will avoid activities with the potential of disturbing 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 project would take place in northern spotted owl Dispersal habitat, but not in northern spotted owl NRF habitat, critical habitat, Late Successional Reserve, or marbled murrelet habitat.

Hazard Trees

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. BLM sells most hazard trees that are located in matrix. 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 and will not exceed 200 acres across the entire Medford District. Hazard tree removal will take place throughout all resource areas and in northern spotted owl habitat, northern spotted owl critical habitat, and a northern spotted owl Late Successional Reserve, but would not take place in marbled murrelet habitat.

Adaptive Management

Adaptive management allows minor project variations to meet site-specific conditions or landscape objectives. 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:

- > Project complies with the RMP to which it is tiered. In this BA, projects comply with the NWFP and the Medford RMP (USDI 1995).
- > Impacts and extent of the project are within parameters of described activities in this BA.
- > 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
- > 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).

IV EFFECTS

Effects to Northern Spotted Owls

Effects to NRF

Table 3 shows acres of NRF habitat proposed for treatment. 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.

<i>Table 3 Effects to NRF Habitat</i>			
<i>Klamath Mountains Province</i>			
<i>Treatment</i>	<i>NRF baseline</i>	<i>NRF treatment</i>	<i>Percent of baseline to be treated</i>
<i>Rights of Way</i>		<i>0</i>	<i>0 No change</i>
<i>Timber Harvest</i>		<i>1260</i>	<i>0.4 No change</i>
<i>Fuels</i>		<i>1302</i>	<i>0.4 No change</i>
<i>Special Forest Products</i>		<i>0</i>	<i>0 No change</i>
<i>Restoration</i>		<i>0</i>	<i>0 No change</i>
<i>Recreation</i>		<i>0</i>	<i>0 No change</i>
<i>Hazard Tree</i>		<i>30</i>	<i>0.01 No change</i>
<i>Klamath Mountains Province Totals</i>	<i>308,612</i>	<i>2592</i>	<i>0.8 No change</i>
<i>Cascades West Province</i>			
<i>Treatment Type</i>	<i>NRF baseline acres</i>	<i>NRF treatment acres</i>	<i>Percent of baseline to be treated</i>
<i>Rights of Way</i>		<i>0</i>	<i>0 No change</i>
<i>Timber Harvest</i>		<i>300</i>	<i>0.4 No change</i>
<i>Fuels</i>		<i>114</i>	<i>0.2 No change</i>

Special Forest Products		0	0 No change
Restoration		0	0 No change
Recreation		0	0 No change
Hazard Tree		20	0.03 No change
Cascades West Province Totals	74,832	414	0.6 No change
<i>District Combined Totals (both Provinces)</i>	383,444	3006	0.8 No change

Projects within NRF are designed to ensure NRF habitat will retain at least 60% canopy cover, and large trees and snags, large down wood and structural diversity important to northern spotted owls will be retained. 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 northern 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 northern spotted owls. Hazard tree removal will result in elimination of some scattered snags and potential nest trees along road edges. Ample potential nest trees will remain on the landscape. Effects to northern spotted owls as a result of the implementation of harvest and hazard tree removal treatments within northern spotted owl NRF habitat will be insignificant to northern spotted owls for the following reasons:

Canopy cover will be maintained at 60 percent or greater at the stand level.

Decadent woody material, such as large snags and down wood will remain post-treatment.

Multi-canopy, uneven aged tree structure that was present pre-treatment will remain post-treatment. Species diversity and composition will be retained, but at reduced density.

(Potential RA 32 stands will not be treated).

NRF habitat treatments will be distributed both spatially and temporally throughout the two affected Physiographic provinces.

Activities will be distributed both spatially and temporally across BLM.

No nest trees will be removed.

PDC will avoid adverse disturbance.

Fuels treatments will improve ecological health of the stand, stimulate forage plants important to northern spotted owl prey, reduce the chance of tree loss due to suppression mortality, and reduce the intensity and risk of wildfire by removing excess fuels.

Effects to Dispersal

Table 3 Effects to Dispersal Habitat			
Klamath Mountains Province			
Treatment Type	Dispersal baseline acres	Dispersal treatment acres	Percent of baseline to be dispersed
Rights of Way		1 remove	0.001
Timber Harvest		1280	1.3 No change
Fuels		3786	3.8 No change
Special Forest Products		300	0.3 No change
Restoration		0	0 No change
Recreation		5	0.005 No change
Hazard Tree		00	0.1 No change
Klamath Mountains Province Totals	99,602	5462	5.5
Cascades West Province			
Treatment Type	Dispersal baseline acres	Dispersal treatment acres	Percent of baseline to be dispersed
Rights of Way		0	0 No change
Timber Harvest		525	1.7 No change
Fuels		100	0.7 No change
Special Forest Products		150	0.5 No change
Restoration		0	0 No change
Recreation		0	0 No change
Hazard Tree		60	0.6 No change
Cascades West Province Totals	30,462	934	3.1 No change
District Combined Totals (Both)	130,064	6396	4.9

<i>Provinces)</i>			
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A small amount of Dispersal habitat will be removed by the proposed treatments (Table 3). The East McMullin ROW is routed across BLM administered land to access private lands in the center of the section. Approximately one linear acre of Dispersal habitat will be removed in the construction of the road authorized by this ROW agreement. Northern spotted owls will be able to disperse through the area after road construction because:

- > the road prism is a narrow, linear opening;
- > few trees would be removed; and
- > the area will continue to provide flying space and prey for dispersing owls following treatment.

(Forsman et. al., 2002)

The timber projects will treat 1805 acres (1.4 %) of Dispersal habitat on the Medford District BLM. Fuels projects will treat 3985 acres (3.5%) of Dispersal habitat (Table 3). Special Forest Products and Hazard Tree Removal may treat up to 150 acres and 60 acres respectively. Prescriptions are designed to maintain northern spotted owl habitat. The total amount of Dispersal habitat in the action area will not change as a result of these treatments. Trees over 11 inches dbh will retain 40 percent canopy cover, a value widely used as dispersal function threshold (Thomas *et al.* 1990). Selective harvest in northern spotted owl Dispersal habitat is not anticipated to diminish the ability of northern spotted owls to move through treated stands because flying space will be maintained or improved (Forsman et. al. 2002).

Treatments in Dispersal habitat will help restore a more ecologically-sustainable density in these stands. Selective harvest and forest health projects are planned within Dispersal habitat in densely-spaced stands. These treatments will accelerate the development of late-successional elements, such as large diameter trees, multiple canopy layers, flying space and hunting perches. Treatments will allow additional light to enter stands, improving vigor of residual trees. Suppression mortality, a condition where crowding of trees inhibits tree growth and viability, will be avoided. Residual young trees rapidly respond to increased space and light following treatment and develop increased bole and crowns. Additional light penetration into stands can also provide light for some of the forage plants important to northern spotted owl prey. Structural components will be retained to provide prey cover habitat. Post-project snag and coarse woody debris retention will help minimize impacts to northern spotted owl prey species that utilize these features. Wildfire resiliency will be improved through removal of select shrubs, small trees, and low limbs which could fuel the spread of fire. These treatments could have long-term beneficial effects to northern spotted owls by reducing the risks of loss to fire or suppression mortality of the stand, and setting the stand on a trajectory more favorable to development of northern spotted owl habitat and use by northern spotted owls.

Effects to northern spotted owls as a result of the implementation of treat and maintain actions within Dispersal habitat will be insignificant to northern spotted owls for the following reasons:

- There will be an insignificant decrease (1 acre) of Dispersal habitat in the Action Area as a result of these proposed activities.
- Canopy cover will be maintained at 40 percent (a value known to provide for the dispersal of spotted owls across a landscape (Forsman 2002).
- Decadent woody material, such as large snags and down wood (values important for prey species of spotted owls) will be maintained during these treatments except in the case of hazard tree removal and road construction.
- 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.
- Very dense stands will be opened by thinning, thereby improving conditions for dispersing northern spotted owls.
- Thinning Dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
- No nest trees will be removed; nest patches will be avoided.
- PDC will avoid adverse disturbance impacts
- Necessary components of Dispersal habitat will be retained.

Effects to Prey

Timber harvest and fuels 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 northern 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 most habitat for prey, although some understory vegetation will be altered for a period of time up to ten (10) years. 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 northern spotted owls.

Thinning may also 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, 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. The positive and negative changes to prey habitat are difficult to measure, and will be small scale in terms of owl home range and prey habitat. Patchiness and spacing will be built into projects at the stand scale to ensure impacts to prey habitat remain not likely to adversely affect owls.

Effects to Northern Spotted Owl Late Successional Reserves

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. Projects proposed in this BA include treatments in LSR. NRF proposed for treatment include 300 acres of fuel hazard reduction, 200 acres of thinning, and 20 acres of hazard tree removal for a total of 525 acres. Dispersal habitat proposed for treatment includes 450 acres of timber harvest, and 20 acres of hazard tree removal. All treatments are designed to treat and maintain habitat, resulting in no change in total acres of NRF or Dispersal habitat in LSRs post-treatment. All acres which occur in LSRs are included in Northern Spotted Owl Critical Habitat Units analyzed in detail in the following section. Treatments in LSR are designed to guide the stands to later seral habitat more conducive to long term use by northern spotted owls. Hazard tree removal and road maintenance activities are insignificant to this end.

LSR #	All BLM acres	Acres of NRF	Treatment Type	NRF T&M	% NRF treated by LSR
RO-249	18,666	8,575	Hazard Tree	10	0.1 no change
RO-258	84,544	47,177	Hazard Tree	5	0.01 no change
RO-258	84,544	47,177	Fuel Hazard	300	0.6 no change
RO-223	26,101	15,307	Timber Harvest	200	1.3 no change
RO-224	22,978	10,854	Hazard Tree	5	0.05 no change

LSR #	All BLM acres	Acres of Dispersal	Treatment Type	Dispersal T&M	% Dispersal treated
RO-249	18,666	2,793	Hazard Tree	10	0.4 no change
RO-258	84,544	10,827	Hazard Tree	5	0.05 no change
RO-223	26,101	3,019	Timber Harvest	450	14.9 no change
RO-224	22,978	2,300	Hazard Tree	5	0.2 no change

Effects to Northern Spotted Owl Critical Habitat

The CHU of northern spotted owls is under litigation. BLM evaluated the effects to 1992 CHU and 2008 CHU for these projects. No NRF removal or downgrade will occur in 1992 CHU or 2008 CHU, nor will Dispersal habitat be removed. Tables 6 and 7 indicate habitat treatments that maintain habitat will occur in seven (7) 1992 and one (1) 2008 critical habitat units. A portion of the 2008 CHU project is also within 1992 CHU. None of the primary constituent elements of critical habitat will be removed or adversely affected with these treatments.

Table 6 Effects to NRF Habitat in 1992 CHU

1992 CHU #	All BLM acres	Acres of NRF	Treatment Type	NRF T&M	% NRF treated by CHU
OR-72	50,295	22,178	Hazard Tree	10	0.04
OR-65	84,554	49,717	Hazard Tree	5	0.01
OR-65	84,554	49,717	Fuel Hazard	300	0.6
OR-75	19,423	9,507	Hazard Tree	10	0.1
	43,012	24,543	Timber	200	0.8

OR-32			Harvest		
OR-36	7,549	1,650	Hazard Tree	5	0.3
OR-38	41,578	13,698	Hazard Tree	5	0.04

Table 7 Effects to Dispersal Habitat in 1992 CHU

1992 CHU #	All BLM acres	Acres of Dispersal	Treatme nt Type	Dispersal T&M	% Dispersal treated
OR-72	50,295	7,555	Hazard Tree	10	0.1
OR-65	84,554	11,267	Hazard Tree	5	0.04
OR-75	19,423	1,789	Hazard Tree	10	0.6
OR-32	43,012	5,702	Timber Harvest	30	0.5
OR-32	43,012	5,702	Fuel Hazard	450	7.9
OR-36	7,549	2,984	Hazard Tree	5	0.2
OR-38	41,578	2,427	Hazard Tree	5	0.2
OR-62	5,341	354	Timber Harvest	40	11.3

Baseline habitat acres are from 2008 DA BA FH, Table 15, pg 42. (USDI, 2008b).

Table 8 Effects to NRF Habitat in 2008 CHU

2008 CHU #	All BLM acres	Acres of NRF	Treatme nt Type	NRF T&M	% NRF treated by CHU
14	95,606	59,800	Timber Harvest	150	0.3

Table 9 Effects to Dispersal Habitat in 2008 CHU

2008 CHU #	All BLM acres	Acres of Dispersal	Treatme nt Type	Dispersal T&M	% Dispersal treated
14	95,606	13,277	Timber Harvest	200	1.5

Baseline habitat acres calculated by Steve Haney, GIS on August 24, 2009.

These projects will not affect the NRF primary constituent element of CHU because:

Projects within NRF are designed to ensure NRF habitat will retain at least 60% canopy cover, and large trees and snags, large down wood, and structural diversity important to northern spotted owls will be retained. 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 northern 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 northern spotted owls. Effects to northern spotted owls as a result of the implementation of harvest treatments within northern spotted owl NRF habitat will be insignificant to northern spotted owls for the following reasons:

- Canopy cover will be maintained at 60 percent or greater at the stand level.
- Decadent woody material, such as large snags and down wood will remain post-treatment.
- All multi-canopy, uneven aged tree structure that was present pre-treatment will remain post-treatment. (Potential RA 32 stands will not be treated).
- NRF habitat treatments will be distributed both spatially and temporally throughout the two affected Physiographic provinces.
- Activities will be distributed both spatially and temporally across BLM.
- No nest trees will be removed.
- PDC will avoid adverse disturbance.

Treatments will improve ecological health of the stand, stimulate forage plants important to northern 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.

Treatments in 1992 and 2008 critical habitat will not adversely affect the dispersal primary constituent elements of CHU in those areas because:

- There will be no decrease of Dispersal habitat in 1992 or 2008 CHU as a result of these proposed activities.
- Canopy cover will be maintained at 40 percent.
- Decadent woody material, such as large snags and down wood will be maintained during these treatments.
- If thinned stands are allowed to develop into late-seral conditions, they will develop structural diversity more rapidly than an un-thinned stand because residual trees will grow more quickly in more ecologically-sustainable conditions.
- Very dense stands will be opened by thinning, thereby improving conditions for dispersing northern spotted owls.
- Thinning Dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
- No nest trees will be removed; nest patches will be avoided.
- PDC will avoid adverse disturbance impacts
- Necessary components of Dispersal habitat will be retained.

NRF also functions as high-quality Dispersal. The amount of All-Dispersal (NRF plus Dispersal) within each CHU remains the same.

Treatments in 1992 and 2008 critical habitat will not adversely affect the foraging primary constituent elements of CHU in those areas because:

- Foraging habitat will be maintained in 1992 and 2008 CHU.
- Treatments in CHU are designed to maintain or enhance the primary constituent elements of CHU, including foraging.
- Thinning will allow more light to reach plants important to many prey species, and is likely to improve fruit/nut bearing capability over time.
- Down wood, snags and some untreated patches will be retained in treatment areas to provide prey refugia during the treatment.

Northern Spotted Owl Recovery Plan

Recovery Action 8

Manage the Klamath Provinces in Oregon and California to meet northern spotted owl recovery while creating more fire-resilient forests. Fuel hazard reduction and thinning will be compatible

with reducing risk of wildfire while maintaining northern spotted owl habitat. Much of the forest in the Klamath Province experiences a frequent fire return interval.

Recovery Action 32

BLM has specifically avoided treating stands that could meet the description in Recovery Action 32: *Maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands outside of MOCAs (USDI 2008c, pg 34-35).*

None of the projects in this BA remove habitat from multi-storied and structurally complex forested stands. Projects were designed to avoid these types of stands.

Effects to Northern Spotted Owls Due to Potential for Disturbance

Treatment activities have the potential of some insignificant noise that could carry into adjacent stands. Mandatory PDC (Appendix B) will protect owl sites. Only activities designed to avoid adverse impacts from noise and disturbance are included in this BA. Standards and guides from the NWFP and the current Medford RMP will be applied. Additional conservation measures may be implemented at the site specific project level by the ID teams reviewing these projects. Projects will be designed 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.*" (US Fish and Wildlife Service ESA Handbook, version 3)(USDI 2002).

BLM biologists evaluated all projects in this biological assessment against the known and potential owl sites. 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. Nest patches are avoided.

Effects to Marbled Murrelets

The Farout timber sale will occur in marbled murrelet survey Zone A and B. In marbled murrelet survey Zone A, Farout has approximately 90 acres of 70 to 90 year old age class in five forest stands. Farout units within Zone B total approximately 40 acres of 70 to 90 year old age class in two forest stands.

No marbled murrelet suitable habitat will be treated. Field evaluations of proposed harvest stands within Zones A and B have been carried out to identify habitat patches that could support a marbled murrelet nest tree. These habitat patches will not be treated. Large dominant trees with large branches and crowns, and adjacent trees within ½ site potential tree height, and moderate to high canopy cover of 40-60% will be retained to preserve murrelet habitat suitability. Treatment of younger (70-90 year old) stands will retain structural and species complexity. There will be no disturbance due to seasonal and distance PDC (Appendix B).

Effects to Marbled Murrelet Critical Habitat

Six (6) culvert replacements will occur in marbled murrelet CHU #OR-07F. No habitat modification will occur. There will be “no effect” to marbled murrelet critical habitat. Seasonal and daily PDC will be applied to these activities (see Appendix C).

Effects to Marbled Murrelet Due to Potential for Disturbance

Seasonal and daily PDC will be applied to harvest in the marbled murrelet zone B units of the Farout timber harvest project (see Appendix C).

V. CONCLUSION

Medford BLM has determined that the combined treatments described in the BA will not reduce the amount of northern spotted owl 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. Treatments in 1992 and 2008 CHU are designed to maintain owl habitat, reduce suppression loss from crowding and improve the ecological condition and fire resiliency of these areas. Medford BLM has determined that the harvest of the Farout timber sale may affect, and will not likely adversely affect (NLAA) marbled murrelets. Culvert replacements in marbled murrelet CHU # OR-07F will have “no effect” on marbled murrelet critical habitat. Suitable marbled murrelet nest trees will be protected by established conservation measures. Potential disturbance will be avoided by applying PDC. To date (10/2009), no marbled murrelets have been documented on the Medford District, but protocol surveys, and appropriate PDC will ensure that implementing the project will not have noise or activity impacts to nesting marbled murrelets.

Medford BLM seeks concurrence from the Service that the projects described in this BA “may affect and will not likely adversely affect” (NLAA) northern spotted owls and northern spotted owl critical habitat, and “may affect and will not likely adversely affect” (NLAA) marbled murrelets.

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APPENDIX A: SUMMER 09 NLAA SPREADSHEET (separate document to facilitate formatting)

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 northern 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 northern 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 northern spotted owl density estimates were utilized to “place” potential northern spotted owl occupied sites in suitable habitat. Marbled murrelets are difficult to locate. No marbled 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 northern 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 A-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 northern spotted owl to flush. (See disturbance distance).

C. Burning will not take place within 0.25 miles of northern 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 northern spotted owl nest trees used for used for in-stream 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 northern spotted owls.

Activity	Documented Owl Site
Heavy Equipment (including non-blasting quarry operations)	105 feet
Chain saws	195 feet
Impact pile driver,	195 feet

jackhammer, rock drill	
Small helicopter or plane	360 feet*
Type 1 or Type 2 helicopter	0.25 mile*
Blasting; 2 lbs of explosive or less	360 feet
Blasting; more than 2 lbs of explosives	1 mile

APPENDIX B-1-MANDATORY RESTRICTION DISTANCES TO AVOID

Disturbance to Northern Spotted Owl Sites

*** If below 1,500 feet above ground level**

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

APPENDIX C: MANDATORY MARBLED MURRELET PROJECT DESIGN CRITERIA

Medford BLM conservatively evaluates possible marbled murrelet habitat at the programmatic level using NRF habitat for northern spotted owls. Projects that occur in NRF habitat within the area where marbled murrelet surveys are required will be evaluated in the field to locate the large trees and limbs necessary to support marbled murrelet nesting. If potential nest trees are located within the project area, either:

- 1) Potential structure would be excluded from the project area and the following measures (proposed by Roseburg and Coos Bay Level 1 Team to North Coast Level 2 Team 2004) applied for protection to ensure that the proposed action would not adversely affect marbled murrelets:
 - A) Prohibit the removal or damage of potential structure. This includes the removal or damage of trees with potential structure and the removal or damage of adjacent trees with branches that interlock the branches of any tree with potential structure.
 - B) Prohibit timber harvest and associated ground disturbances during the marbled murrelet nesting period (Seasonal restriction April 1 – August 5; Daily restriction August 6 –September 15) unless otherwise authorized by a biological opinion or letter of concurrence.
 - C) Maintain a ½ site potential tree height un-thinned buffer around all trees with potential structure. That is, within ½ site potential tree height of any tree(s) exhibiting potential structure, no trees would be removed for any reason associated with the timber harvest, including the placement of roads, landings or yarding corridors.

Apply additional, site-specific prescriptive measures to maintain or enhance habitat conditions, as deemed necessary by the decision maker or responsible action agency official, in excess of ½ site potential tree height from all trees exhibiting potential structure (See maintenance of northern spotted owl habitat in Farout project above).

Recommended Project Design Criteria--Marbled Murrelets

Restrict operations from March 1 through September 15 (through the extended breeding period) within disturbance distances (unless protocol surveys demonstrate non-nesting).

Protocol surveys are conducted according to: Evans Mack, D., W. P. Ritchie, S. K. Nelson, E. Kuo-Harrison, and T. E. Hamer. 2003. Methods for surveying Marbled Murrelets in forests: a revised protocol for land management and

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Table C-1. Mandatory Marbled Murrelet Restriction Distances

Activity	Zone of Restricted Operation
Blasting: more than 2 pounds of explosive	1 mile
Blasting: 2 pounds or less of explosive	120 yards
Impact pile driver, jackhammer, or rock drill	120 yards
Type 3 or 4 Helicopter or single-engine airplane	120 yards
Type 1 or 2 Helicopter	0.25 miles
Chainsaws (hazard trees, tree harvest, etc.)	120 yards
Heavy equipment	120 yards

Impacts	Species: Marbled Murrelet
Disturbance	(II) Mandatory -For Survey Areas A and B work activities (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 will not occur within specified distances (see table below) of any occupied stand or un-surveyed suitable habitat between April 1 – August 5. For the period between August 6 and September 15, work activities will be confined to between 2 hours after sunrise to 2 hours before sunset. See Fuels management PDC for direction regarding site preparation and prescribed fire.
Disturbance	(III) Mandatory -Clean up trash and garbage daily at all construction and logging sites. Keep food out of sight so as to not attract crows and ravens (predators on eggs or young marbled murrelets).
Disturbance	(IV) Mandatory- Blasting (open air/un-muffled) – No blasting activities during the critical breeding period (1 April through 15 August) within 1.0 mile of occupied stands or un-surveyed suitable habitat. 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) Recommended - Delay project implementation until after September 15 where possible
Disturbance	2) Recommended - 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) Mandatory- Blasting (open air/un-muffled) – No blasting activities 1 April through 15 September within 1.0 mile of occupied stands or un-surveyed suitable habitat. 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) Recommended - Delay project implementation until after September 15 where possible
Disturbance	2) Recommended - 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).
Restoration projects	<p>Mandatory</p> <p>To minimize the number of potential northern spotted owl or marbled murrelet nest trees used for in-stream structures, only the following sources shall be used:</p> <p>(I) Trees already on the ground in areas where large woody material is adequate;</p> <p>(II) Trees lacking suitable nesting structure for northern spotted owls or marbled murrelets or contributing to trees with suitable nesting structure, as determined by an action agency wildlife biologist.</p>
Fuels	<p>Mandatory</p> <p>(I) Prescribed fire would not take place within 0.25 mile of known occupied marbled murrelet sites, or un-surveyed 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>
Wildfire	<p>Mandatory</p> <p>Whenever possible, protect known nest sites of any listed species</p>

	from high intensity fire. Update Resource Information Book annually; incorporate new nests or sites as soon as possible.
Wildfire	<p>Mandatory</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>
	Light Hand Tactics or Minimize Impact Suppression Tactics (MIST) should receive consideration for use within the protection zones for northern spotted owls and marbled murrelets.
Quarries	<p>Mandatory</p> <p>For any occupied stands or un-surveyed 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>Recommended</p> <p>2) For active nest stands or un-surveyed 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>

NRF (Nesting, Roosting and Foraging)*

*“All-Dispersal” is used to describe Dispersal plus NRF. Northern spotted owls also disperse through NRF habitat.

Nesting, Roosting, and Foraging (NRF) Habitat for the northern spotted owl consists of habitat used by owls for nesting, roosting, and foraging. NRF habitat also functions as Dispersal habitat. Generally, this habitat is multi-storied, at least 80 years old, 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 or age alone does not qualify a stand as NRF. Other attributes include 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 northern spotted owl to fly (Thomas et al. 1990). NRF habitat in southwest Oregon is typified by mixed-conifer habitat, recurrent fire history, patchy habitat components, and a higher incidence of woodrats, a high quality northern spotted owl prey species in our area.

Forsman et al. (1984) described some of the differences in the Klamath Mountains Province, typical of large parts of the Medford District, “Eighty-one percent of all [northern spotted owl] nests in northwestern Oregon were in cavities, compared to only 50 percent 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 southwest Oregon varies greatly. It may consist of somewhat smaller tree sizes. One or more important habitat component, such as dead down wood, snags, dense canopy, multistoried stands, or mid-canopy habitat, might be lacking or even absent in portions of southwest Oregon NRF. However, southwest Oregon NRF can support nesting northern spotted owl 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 to 179 centimeters (cm) (14.2 to 70.5 inches) in diameter at breast height (dbh) averaging 106 cm (41.7 inches) dbh. Mistletoe is occasionally used as a nesting substrate in southwest Oregon, which makes smaller trees suitable as nest trees. The BLM Resource Area wildlife biologists make site-specific determinations and delineations of NRF habitat at the project level. Site-specific determinations are incorporated into the Medford District NRF habitat layer.

Habitat Capable for the northern spotted owl is forest land that is currently not habitat but can become NRF or Dispersal habitat in the future, as trees mature and canopy fills in.

Dispersal is a subcategory of “All Dispersal” habitat for northern spotted owls. Throughout this document, “Dispersal” will be used to describe Dispersal-only habitat. Thomas, et al. 1990, defined Dispersal habitat as forested habitat more than 40 years old, with canopy closure more than 40 percent, average diameter greater than 11 inches, and flying space for northern spotted

owl in the understory but does not provide the components found in NRF. It provides temporary shelter for northern spotted owl moving through the area between NRF habitat and some opportunity for northern spotted owl to find prey, but does not provide all of the requirements to support an owl throughout its life. Dispersal will be used throughout this document to refer to habitat that does not meet the criteria to be NRF habitat, but has adequate cover to facilitate movement between blocks of NRF habitat. Northern spotted owls also disperse through NRF habitat.

Northern Spotted Owl Habitat Treatment Types

Forest stands in southwest Oregon are often multiple-aged with multiple canopy levels that have resulted from previous harvesting or from past natural stand disturbance such as repeated historic low intensity fire (USDI 1992a, Vol. II, 2-37). The actual interpretation of treatment impacts to northern spotted owl will be defined by the Resource Area wildlife biologists in collaboration with their Interdisciplinary Team and Field and District Managers. Effects of individual activities will be determined by the BLM following these descriptions.

Medford BLM mapped suitable NRF habitat on the Owl Habitat Baseline (Appendix A of DA BA FH, USDI 2008b). Resource Area biologists will continue to improve and refine this habitat layer as projects are proposed and field/photo evaluations can be conducted. Acres changed due to fire, blow-down or harvest activities have been incorporated in the Environmental Baseline (USDI, 2008b).

Treat and Maintain NRF or Dispersal Habitat means an action or activity will occur within NRF or Dispersal habitat that will not change the classification of that habitat post-treatment. The NRF stand retains large trees, multistoried canopy, standing and down dead wood, diverse understory adequate to support prey, and may have some mistletoe or other decay. Dispersal stands continue to support northern spotted owl dispersal following treatment.

The effects determination for treating and maintaining habitat is “may affect, not likely to adversely affect” (NLAA) the northern spotted owl because the treated stand will retain the characteristics that resulted in its pre-treatment habitat classification. Northern spotted owls will be able to use the stand as before, and the treatment would not significantly impair the feeding, breeding or sheltering of a northern spotted owl using that habitat such that harm would occur. Some change to understory vegetation and tree density may occur. NRF habitat will retain 60 percent canopy cover, large trees and snags, large down wood, and structural diversity important to northern spotted owls. Dispersal habitat will continue to provide at least 40 percent canopy, flying space, and trees 11 inches dbh 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 shrubs and dense trees that have resulted from years of wildfire suppression. Resulting treated stands are more ecologically-sustainable in ecosystems with high fire return intervals.

No potential disturbance to nesting northern spotted owl is anticipated with any of these proposed projects. Applying the PDC (Appendix A) will ensure that no potentially disturbing noise or activity would occur within sensitive distances of nesting owls by implementing one or more of the following:

- avoiding activities during the nesting period;
- spacing projects outside sensitive distances, as defined by Mandatory PDC distances; and/or
- conducting protocol surveys to ensure northern spotted owl are not nesting at the location or time of the activity.

Northern Spotted Owl Designated Critical Habitat

The final rule for Revised Designation of Critical Habitat for the northern spotted owl was published by the US Fish and Wildlife Service (the Service) in the *Federal Register* was signed on August 12, 2008 (73 Federal Register 157:47326) and became effective on September 12, 2008 (USDI 2008c). Critical Habitat 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 NRF habitat in the future (57 FR 10:1796-1837).

The Service's Critical Habitat delineations are being challenged in court as this BA is being completed. The Secretary of Interior has sought to remand the 2008 designation of NSO CHU. The remand is now in litigation. At this time, the 2008 CHU designation remains in effect. BLM conservatively planned projects to be consistent with current guidelines on the 2008 CHU as well as the 1992 CHU. No projects will remove or downgrade NRF or remove Dispersal habitat in either the former 1992 CHU or the 2008 CHU (Appendix A: Summer 09 NLAA Spreadsheet). Maintenance projects in the 1992 and 2008 CHU areas will maintain current habitat and not change the quantity of any former or 2008 CHU habitat nor adversely affect the primary constituent elements used to define the former or 2008 CHU habitat.

Treat and Maintain Critical Habitat means no primary constituent elements are removed or reduced and primary constituent elements of critical habitat are retained. The Endangered Species Act (ESA) consultation handbook (USDA et al. 2002, 4-33), as amended, provides the following information regarding designated critical habitat:

Primary Constituent Elements

The physical and biological features of designated or proposed critical habitat essential to the conservation and recovery (amendment due to *Gifford Pinchot* lawsuit²) of the species, including, but not limited to the following:

- space for individual and population growth, and for normal behavior;
- food, water, air, light, minerals, or other nutritional or physiological requirements;
- cover or shelter;
- sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
- habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species [50 CFR 424.12(b)].

It further defines critical habitat for listed species as: “(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] (I) essential to the conservation of the species and (II) 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” [16 U.S.C. § 1532(5)(A)]. Designated 1992 critical habitats are described in 50 CFR part 17 and part 226.

The Service defined the following elements of Primary Constituent Elements (PCE), in the 2007 CHU proposed ruling (32450 Federal Register / Vol. 72, No. 112, June 12, 2007 / Proposed Rules) which were later confirmed by reference when the CHU was finalized in 2008.

Sites for habitats that are representative of the historical geographical and ecological distributions of the northern spotted owl for:

PCE-1 Forest types known to support the northern spotted owl across its geographic range...

PCE-2 Forest types as described in PCE 1 of sufficient area, quality, and configuration, or that have the ability to develop these characteristics, to meet the home range needs of territorial pairs of northern spotted owls throughout the year. A home range must provide all of the habitat components and prey needed to provide for the survival and successful reproduction of a resident breeding pair of northern spotted owls....

Nesting Habitat: breeding, reproduction, and rearing of offspring...

Roosting Habitat: cover, or shelter...

Foraging Habitat: food, or other nutritional or physiological requirements...

PCE-3 Dispersal habitat: The dispersal of juveniles requires habitat supporting both the transience and colonization phases. Habitat supporting the transience phase of dispersal includes, at a minimum, stands with adequate tree size and canopy closure to provide protection

² *Gifford Pinchot Task Force et al. v U.S. Fish and Wildlife Service et al.*, 378 F.3d 1059, 1069-71

*from avian predators and at least minimal foraging opportunities. This may include younger and less diverse forest stands than foraging habitat, such as even-aged, pole-sized stands....
Habitat supporting colonization is generally equivalent to roosting and foraging habitat...*

Marbled Murrelets

Marbled Murrelet Suitable Habitat

Marbled murrelet suitable habitat includes conifer-dominated stands generally 100 years old or more with trees averaging 18 inches dbh or more. At least one potential nest tree must be present in a stand of trees at least 1 acre in size (6 per 5 acre area) and the stand trees must be at least one-half the height of the site-potential tree.

We used the spotted owl NRF habitat layer to identify areas that have the potential to provide the forest structure necessary to provide for nesting of murrelets. This is an overly broad category of suitable potential marbled murrelet habitat, but we have no corporate data system in place to evaluate large branches and special site-specific criteria that would qualify as potential marbled murrelet habitat. The Farout project has been evaluated in the field to refine project-level marbled murrelet habitat conditions. BLM biologists have identified several stands that contain trees with some nest tree characteristics.

Marbled Murrelet Suitable Structure

The distance inland that marbled murrelets breed is variable and influenced by a number of factors including nesting habitat availability, climate suitability, maximum foraging range, and predation rates. Most murrelets appear to nest within 37 miles (60 km) of the coast (Miller and Ralph 1995); the Service (USDI 1997p.32) considers 50 miles (31 km) as the minimum inland distance for determining habitat suitability and amount within the listed range. Commuting distances are, however, extremely variable, with birds in Washington tending to commute larger distances than those in Oregon and California. The “Marbled Murrelet Effectiveness Monitoring Plan for the Northwest Forest Plan” (Madsen et al. 1999) considers the primary nesting range of the species to extend inland 35 miles (22 km) in Oregon. Murrelets nest in one of four tree species: western hemlock, Douglas-fir, Sitka spruce, or western red cedar (Nelson and Wilson 2002, p. 24 and 44). In Washington, Oregon and California, nests continue to be found below 2,625 feet (800 meters) in elevation. (McShane et. al 2004).

In the Pacific Northwest (California, Oregon, Washington, British Columbia), the mean nest tree diameter was 211 cm, with the smallest diameter nest tree reported from Washington, which was a western hemlock 88 cm (34 inches) diameter. Nest tree diameters were normally distributed with a maximum number of trees found between 140 and 160 cm, and 85 percent of the trees ranging between 120 and 280 cm (47 and 110 inches). For a sample of 16 nests in the Pacific Northwest the mean stand age was 522 years with the youngest stand age reported as 180 years old. To date, all 61 tree nests found in North America have been found in stands described as old-growth or mature forests. Nest stands in Washington and Oregon with reported mean dbh. were characterized by large diameter trees of 47.7 cm (18 inches). Canopy closure of nest stands ranged from 12-99%.

In California, Oregon and Washington, the elevation of nests ranged up to 2120 feet. (USDA 1995). Nest trees found in western Oregon were found in stands of age 180-350, are 19.1-110

inches dbh (49-279 centimeters) and more than 107 feet (33-86 meters) in height, have at least one platform four (4) inches (10-81 centimeters) or more in diameter, contain nesting substrate (e.g., moss, epiphytes, duff) on that platform, and have an access route through the canopy that a murrelet could use to approach and land on the platform (Nelson and Wilson 2002, p. 24, 27, 42, 97, 100; McShane 2004 p. 4-52; USDA 1995 p.74).

In inland area in northern California and southwestern Oregon, murrelets have been found to be absent in dry areas that do not possess the moss or other substrates important for murrelet nesting (McShane et. al. 2004; 5-Year Status Review for the Marbled Murrelet Evaluation Report p. 4-35). Old-growth conifers tend to be the only trees that provide nesting, with the exceptions found of young and mature trees (66-150 years of age) distinguished by the number of platforms provided by mistletoe infection (Nelson and Wilson 2002; McShane et. al. 4-50). The tree 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 and Wilson 2002, p. 98 and 99).

Marble Murrelet Occupied Habitat

Suitable habitat is found to meet the definition of occupied by interagency established survey protocol (Evans Mack et al. 2003). Survey data collected by the Rogue River-Siskiyou National Forest (Forest Service) and BLM in southwestern Oregon (9,795 survey visits for murrelets between 1988 and 2001) indicate murrelets inhabit forested areas relatively close to the ocean. Murrelets have not been found more than 32 miles (51.5 kilometers) inland on the Powers Ranger District or more than 16 miles (25.7 kilometers) inland on the Gold Beach or Chetco Ranger Districts of the Rogue River-Siskiyou National Forest, located adjacent to Medford BLM (Dillingham et al. 1995; USDA and USDI 1996; USDA and USDI 2003, Appendix I).

The Forest Service and BLM completed an evaluation to better quantify the likelihood of murrelet occurrence beyond the eastern boundary of the western hemlock/tanoak vegetation zone in southwest Oregon (USDA and USDI 2001). This evaluation refined the existing survey zone boundaries to better reflect known murrelet occurrence. Area A encompasses the known range of the marbled murrelet. Approximately 82,400 acres of suitable habitat are located in Area A. NWFP LSRs and other reserved areas contain 90 percent of the suitable habitat in Area A; any stands of suitable habitat in Matrix subsequently found to be occupied are designated as additional “Murrelet” LSR. Area B is a “buffer” to Area A and includes all land 6.2 miles (10 kilometers) east of Area A. Surveys are conducted only in Areas A and B. Federal land east of Area B is assumed to not contain murrelet habitat and is no longer surveyed. To date, no murrelets have been documented in Area B within Medford BLM or Rogue River Siskiyou National Forest. (The Service concurred with the evaluation conclusions in a letter: *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).)

Treat and Maintain Marbled Murrelet Suitable Habitat

Treat and maintain marbled murrelet suitable habitat means to cut some trees within the stand while maintaining its ability to serve as nesting habitat. Treating trees in the understory—

not the actual nest trees—is an example of treating and maintaining marbled murrelet nesting habitat.

Marbled Murrelet Potential Disturbance

Potential disturbance can occur from projects occurring near marbled murrelet sites that do not directly affect the marbled murrelet habitat itself. Disturbance is also a possibility when marbled murrelet habitat is treated, but PDC (Appendix C) ensure projects would avoid adverse effects through disturbance to nesting murrelets.

Marbled Murrelet Activity Period

Table 2. Marbled Murrelet Breeding Period (see also PDC, Appendix C)		
Entire Breeding Period	Critical Breeding Period	Extended Breeding Period
April 1-September 15	April 1-August 5	August 6-September 15

III. DESCRIPTION OF THE PROPOSED ACTION

All projects described in this BA avoid any treatment within the nest patch of any northern spotted owl intercepted by a project boundary to avoid the potential adverse effects described in the OEM process for activities in the nest patch (OEM Appendix B, DA BA FH USDI 2008b). All projects described in this BA are designed to treat and maintain NRF and Dispersal habitat for northern spotted owls. If protocol surveys have not been conducted to confirm that northern spotted owls are non-nesting that season, activities will be curtailed within the mandatory disturbance distances (PDC Appendix B) to avoid the potential of in-season disturbance. PDC and nest patch protection will also apply to sites located through the OEM process in areas where field surveys have not documented actual owl sites. Lacking field surveys, these areas indicate the highest likelihood of northern spotted owl occupancy, and provide a conservative approach to protect northern spotted owls during the sensitive breeding period.

Six (6) culvert replacements will occur in marbled murrelet critical habitat (CHU # OR-07F). One timber sale, Farout, occurs in marbled murrelet survey Zone A and B. The Farout project is designed to treat and maintain marbled murrelet suitable habitat. Projects all comply with the PDC (northern spotted owl and marbled murrelet—Appendices B and C) below that are designed to avoid adverse disturbance impacts to owls and marbled murrelets. Recommended PDC will be followed when possible.

Project Design Criteria

PDC are conservation measures developed to reduce impacts to listed species. PDC include three general components:

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

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. A spreadsheet listing all proposed actions in this BA is included as Appendix A.

Right of Way (ROW)

East McMullin ROW

The East McMullin ROW application involves construction of an access road across Medford BLM land in Township 39 South, Range 07 West, Section 5 (NE of SE) in the Grants Pass Resource Area in northern spotted owl habitat. This discretionary ROW was requested on behalf of Indian Hill to access a portion of their land holdings. The ROW grant would authorize

construction of 1,337 feet of natural surface road with approximately 20 foot ROW width. This project does not occur in northern spotted owl critical habitat or marbled murrelet habitat.

Timber Sales (T)

Timber harvest projects proposed in this BA are as follows:

Ashland Resource Area: Wagner Anderson, Fallback, Shale City Salvage, Shale Divide C, MC Thin

Grants Pass Resource Area: Reeves Creek Thin

Glendale Resource Area: Farout, GL Silv DM/CT

Timber harvest projects included in this BA share the following design features:

- NRF habitat will retain approximately 60% canopy closure post treatment.
- Dispersal habitat will retain approximately 40% canopy closure post treatment.
- Habitat mid-story will reflect pre-treatment composition and diversity. All species and age classes will be retained, but at a lower density.
- Snags will be retained post treatment.
- Down wood will be retained post treatment.

Proposed timber projects will thin forest stands. The majority of trees removed would be less than 12 inches dbh. Some larger trees may be removed in areas of root rot, mistletoe, or other forest pathogen infestation and in areas where restoration to pine dominance is desired. In the Wagner Anderson, Shale City Salvage, Shale City Divide C, and MC Thin projects some areas of mistletoe infestation up to ¼ acre in size may be removed.

The Farout project occurs in marbled murrelet survey Zone A and B. This project will remove some trees from the understory. This harvest is designed to **treat and maintain marbled murrelet suitable habitat**. Treating trees in the understory—not the actual nest trees—is an example of treating and maintaining marbled murrelet nesting habitat.

Timber--Stewardship Sub-Set

Stewardship projects included in this BA would share the design features listed for the above Timber harvest projects. Stewardship is a contracting method that authorizes the value of commercial vegetative material to be applied as an offset against the cost of services received. Stewardship projects may be entered into with private persons or public or private entities, by contract or by agreement, to perform services to achieve land management goals for the public lands that meet local and rural community needs. Stewardship projects included in this BA would thin conifers, and remove shrubs from the forest understory. Thinning and shrub removal will follow spacing guidelines to ensure retention of a diverse mosaic of habitat post treatment.

Conifers selected for removal in the Fallback project would be predominately those less than 8 inches dbh, although less than 2 percent of trees harvested may be 20 inches or greater dbh.

Large tree removal would be limited to areas immediately surrounding dominant pines. In these cases Douglas-firs of greater than 20 inch dbh may be removed to facilitate regeneration of pines.

Ranch Stew II Stewardship project would thin within approximately 1530 acres of dense forest stands in two-storied ponderosa pine plantations and dense small diameter mixed conifer stands. The project would occur in forest stands that are 40-60 years old. The majority of the treated area is not NRF or Dispersal habitat for northern spotted owls. Sixty four acres of thinning would occur within NRF. Projects in NRF are designed to retain 60% canopy, large trees, snags, and down wood. One hundred forty nine acres of treatment would occur in northern spotted owl Dispersal habitat. Projects in Dispersal habitat are designed to retain 40% canopy and retain large trees, snags, and down wood.

Ranch Stew II Stewardship project would

- Thin conifers less than 8 inches DBH to 200 trees per acre,
- Remove shrubs greater than 1 foot high within 8 feet of a leave tree when the shrubs are more than ½ the height of the tree, and
- Leave all shrubs greater than 1 foot high within 8 feet of a leave tree when the shrubs are less than ½ the height of the leave tree.

Special Forest Products

Special Forest Products projects proposed in this BA will take place in the Butte Falls Resource Area and the Grants Pass Resource Area. Projects propose treat and maintain activities in up to 300 acres of northern spotted owl Dispersal habitat in the Klamath Mountains Physiographic Province. These projects will not occur in northern spotted owl critical habitat or marbled murrelet habitat.

Miscellaneous special forest products is a program that covers assorted projects, including the removal of hazard trees for public safety, commercial firewood, small pole harvest, salvage of small areas of disease or insect damage, and other specialty wood products. These projects would be designed to “treat and maintain” existing northern spotted owl habitat..

Fuels Reduction Projects

Fuels Reduction projects proposed in this BA are as follows:

Butte Falls Resource Area: Cascade Silviculture, Evans Silviculture, Ranch Stew II, Butte Falls Fuels Hazard Reduction

Grants Pass Resource Area: Scattered Apples Roadside Fuels, Lucky boy Roadside Fuels, O’Brien Fuels, Takilma Fuels

These projects will occur in northern spotted owl habitat, northern spotted owl critical habitat and northern spotted owl Late Successional Reserves, but will not occur in marbled murrelet habitat.

Fuels reduction projects include piling and prescribed burning, thinning, pruning, slashing, biomass removal, underburning, hand-piling, and shrub treatments via manual and mechanical methods. These activities usually consist of the removal of surface fuels, shrubs or small trees, and the removal of ladder fuels or crowded conifers or hardwoods. Actual prescriptions vary by project.

General Roadside Fuel Hazard Reduction Project Description (Grants Pass Resource Area)

These projects will thin vegetation within 200 feet of roads for fuel hazard reduction and the development of strategic fuel modification zones along strategic ridges. The total area covered by this project will not exceed 700 acres. Fuel hazard reduction may be extended further than 200' from roads where it is reasonable to extend to the top of strategic ridge systems.

Treatments would include a mix of thinning, slashing, biomass removal, underburning and handpile burning, depending on site specific conditions. Understory vegetation would be thinned using manual and mechanical techniques (slashing, pruning) to the desired tree densities and stocking levels. Understory vegetation density would be reduced by cutting and spacing of conifers <12" DBH and hardwoods <12" DBH. Retained vegetation would be spaced 14-45' apart. Within this range, wider spacing would be used for larger leave trees or for species such as pine or oak which thrive in less dense conditions. Vegetation diversity would be obtained by maintaining species occurring at low frequencies in the stand (i.e. Pacific yew, pine, vine maple). Untreated vegetation groups ranging in size from 0.1 to 2 acres would be retained in each treatment unit.

General Fuel Hazard Reduction Project Description (Grants Pass Resource Area)

These projects will reduce fuel loads using hand-tools, chainsaws, ATV's, trucks, and chippers on approximately 200 acres of private property. Total BLM treatment acres will not exceed 400. Small trees and shrubs would be thinned, and trees would be limbed to reduce ladder fuels. Slash would be hand piled, covered and burned, lopped and scattered, or removed from the sites. The intensity and nature of the treatments could vary based on individual landowner preference but would be consistent with the following project design features:

- Trees and other vegetation thinned / cut would be less than 12" DBH.
- Residual hardwood and conifer trees would be spaced approximately 14' by 30'.
- Thinning would be limited to 100' around structures.
- Thinning along roads would be limited to 30' from road bed edge. Conifers would be limbed from six to fourteen feet high.
- No vegetation would be cut within 50' any stream.
- Burning would occur in the most disturbed areas only.

Mechanized equipment off established roads would include chain saws and ATV's. Vehicles and heavy equipment would remain on established roads.

Hazardous Fuels Reduction (Butte Falls Resource Area)

The project would reduce hazardous fuels by thinning noncommercial-size vegetation on BLM-administered lands. Total acres treated by these projects will not exceed 4301. All work will be done manually (slashing, hand piling, and burning) with follow up under burning for maintaining the treated areas.

The fuels reduction would:

- Cut conifers more than one (1) foot tall and less than eight (8) inches dbh on a 25 by 25 ft spacing,
- Cut shrub species more than one (1) foot tall and less than 12 inches dbh,
- Prune conifers ranging six (6) to 13 inch dbh,
- Retain an average of ten (10) percent of the piles unburned,
- Cut and broadcast burn material in shrub fields,
- Remove some cut materials by hand to use as woody fuel(biomass) or special forest products, and
- Retain all dominant or co-dominant trees.

Restoration/Road Maintenance

Upper Cow Roadside

Roadside treatment is designed to remove conifer and hardwood vegetation that is shading roadways on BLM roads in the Glendale Resource Area. Approximately 34 miles of BLM road would be treated. Conifers and hardwoods with diameters up to 24 inches would be targeted for removal within approximately ten (10) feet of the road with a feller buncher. Open canopy conditions along roadsides have promoted vigorous second growth trees. These stands do not meet the definitions of NRF or Dispersal habitat for owls because they lack potential nest structures, possess excessive density, and exhibit impenetrable branch structure. The project would be designed to retain trees in buffered riparian areas, trees greater than 24 inch diameter (dbh), and old-growth trees that remain from the period of initial road construction. Treatment adjacent to the road returns the roadside to its former, more open condition. This project will take place adjacent to northern spotted owl habitat, in northern spotted owl critical habitat, and in a northern spotted owl Late Successional Reserve, but will not take place in marbled murrelet habitat.

Rogue Culvert (Replacement) (East and West)

Culverts would be replaced as part of the normal road maintenance regime in the Glendale Resource Area. In most cases, no habitat would be altered. In some instances, it would be necessary to remove select trees for safety or project logistics reasons. These projects would take place in northern spotted owl habitat, northern spotted owl critical habitat, northern spotted owl Late Successional Reserve, and marbled murrelet critical habitat.

Recreation Maintenance

Up to five (5) acres in and near recreation sites in the Butte Falls Resource Area would be treated. Recreation management includes trail construction and maintenance, campground and physical facilities maintenance, signing. PDC will avoid activities with the potential of disturbing 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 project would take place in northern spotted owl Dispersal habitat, but not in northern spotted owl NRF habitat, critical habitat, Late Successional Reserve, or marbled murrelet habitat.

Hazard Trees

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. BLM sells most hazard trees that are located in matrix. 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 and will not exceed 200 acres across the entire Medford District. Hazard tree removal will take place throughout all resource areas and in northern spotted owl habitat, northern spotted owl critical habitat, and a northern spotted owl Late Successional Reserve, but would not take place in marbled murrelet habitat.

Adaptive Management

Adaptive management allows minor project variations to meet site-specific conditions or landscape objectives. 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:

- > Project complies with the RMP to which it is tiered. In this BA, projects comply with the NWFP and the Medford RMP (USDI 1995).
- > Impacts and extent of the project are within parameters of described activities in this BA.
- > 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
- > 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).

IV EFFECTS

Effects to Northern Spotted Owls

Effects to NRF

Table 3 shows acres of NRF habitat proposed for treatment. 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.

<i>Table 3 Effects to NRF Habitat</i>			
<i>Klamath Mountains Province</i>			
<i>Treatment Type</i>	<i>NRF baseline acres</i>	<i>NRF treatment acres</i>	<i>Percent of baseline to be treated</i>
<i>Rights of Way</i>		<i>0</i>	<i>0 No change</i>
<i>Timber Harvest</i>		<i>1260</i>	<i>0.4 No change</i>
<i>Fuels</i>		<i>1302</i>	<i>0.4 No change</i>
<i>Special Forest Products</i>		<i>0</i>	<i>0 No change</i>
<i>Restoration</i>		<i>0</i>	<i>0 No change</i>
<i>Recreation</i>		<i>0</i>	<i>0 No change</i>
<i>Hazard Tree</i>		<i>30</i>	<i>0.01 No change</i>
<i>Klamath Mountains Province Totals</i>	<i>308,612</i>	<i>2592</i>	<i>0.8 No change</i>
<i>Cascades West Province</i>			
<i>Treatment Type</i>	<i>NRF baseline acres</i>	<i>NRF treatment acres</i>	<i>Percent of baseline to be treated</i>
<i>Rights of Way</i>		<i>0</i>	<i>0 No change</i>
<i>Timber Harvest</i>		<i>300</i>	<i>0.4 No change</i>
<i>Fuels</i>		<i>114</i>	<i>0.2 No change</i>
<i>Special Forest</i>		<i>0</i>	<i>0 No change</i>

Products			
Restoration		0	0 No change
Recreation		0	0 No change
Hazard Tree		20	0.03 No change
Cascades West Province Totals	74,832	414	0.6 No change
<i>District Combined Totals (both Provinces)</i>	383,444	3006	0.8 No change

Projects within NRF are designed to ensure NRF habitat will retain at least 60% canopy cover, and large trees and snags, large down wood and structural diversity important to northern spotted owls will be retained. 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 northern 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 northern spotted owls. Hazard tree removal will result in elimination of some scattered snags and potential nest trees along road edges. Ample potential nest trees will remain on the landscape. Effects to northern spotted owls as a result of the implementation of harvest and hazard tree removal treatments within northern spotted owl NRF habitat will be insignificant to northern spotted owls for the following reasons:

Canopy cover will be maintained at 60 percent or greater at the stand level.

Decadent woody material, such as large snags and down wood will remain post-treatment.

Multi-canopy, uneven aged tree structure that was present pre-treatment will remain post-treatment. Species diversity and composition will be retained, but at reduced density.

(Potential RA 32 stands will not be treated).

NRF habitat treatments will be distributed both spatially and temporally throughout the two affected Physiographic provinces.

Activities will be distributed both spatially and temporally across BLM.

No nest trees will be removed.

PDC will avoid adverse disturbance.

Fuels treatments will improve ecological health of the stand, stimulate forage plants important to northern spotted owl prey, reduce the chance of tree loss due to suppression mortality, and reduce the intensity and risk of wildfire by removing excess fuels.

Effects to Dispersal

<i>Table 3 Effects to Dispersal Habitat</i>			
<i>Klamath Mountains Province</i>			
<i>Treatment Type</i>	<i>Dispersal baseline acres</i>	<i>Dispersal treatment acres</i>	<i>Percent of baseline to be treated</i>
<i>Rights of Way</i>		<i>1 remove</i>	<i>0.001</i>
<i>Timber Harvest</i>		<i>1280</i>	<i>1.3 No change</i>
<i>Fuels</i>		<i>3786</i>	<i>3.8 No change</i>
<i>Special Forest Products</i>		<i>300</i>	<i>0.3 No change</i>
<i>Restoration</i>		<i>0</i>	<i>0 No change</i>
<i>Recreation</i>		<i>5</i>	<i>0.005 No change</i>
<i>Hazard Tree</i>		<i>90</i>	<i>0.1 No change</i>
<i>Klamath Mountains Province</i>	<i>99,602</i>	<i>5462</i>	<i>5.5</i>
<i>Cascades West Province</i>			
<i>Treatment Type</i>	<i>Dispersal baseline acres</i>	<i>Dispersal treatment acres</i>	<i>Percent of baseline to be</i>
<i>Rights of Way</i>		<i>0</i>	<i>0 No change</i>
<i>Timber Harvest</i>		<i>525</i>	<i>1.7 No change</i>
<i>Fuels</i>		<i>199</i>	<i>0.7 No change</i>
<i>Special Forest Products</i>		<i>150</i>	<i>0.5 No change</i>
<i>Restoration</i>		<i>0</i>	<i>0 No change</i>
<i>Recreation</i>		<i>0</i>	<i>0 No change</i>
<i>Hazard Tree</i>		<i>60</i>	<i>0 No change</i>
<i>Cascades West Province Totals</i>	<i>30,462</i>	<i>934</i>	<i>3.1 No change</i>
<i>District Combined Totals (Both</i>	<i>130,064</i>	<i>6396</i>	<i>4.9</i>

<i>Provinces</i>)			
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A small amount of Dispersal habitat will be removed by the proposed treatments (Table 3). The East McMullin ROW is routed across BLM administered land to access private lands in the center of the section. Approximately one linear acre of Dispersal habitat will be removed in the construction of the road authorized by this ROW agreement. Northern spotted owls will be able to disperse through the area after road construction because:

- > the road prism is a narrow, linear opening;
- > few trees would be removed; and
- > the area will continue to provide flying space and prey for dispersing owls following treatment.

(Forsman et. al., 2002)

The timber projects will treat 1805 acres (1.4 %) of Dispersal habitat on the Medford District BLM. Fuels projects will treat 3985 acres (3.5%) of Dispersal habitat (Table 3). Special Forest Products and Hazard Tree Removal may treat up to 150 acres and 60 acres respectively. Prescriptions are designed to maintain northern spotted owl habitat. The total amount of Dispersal habitat in the action area will not change as a result of these treatments. Trees over 11 inches dbh will retain 40 percent canopy cover, a value widely used as dispersal function threshold (Thomas *et al.* 1990). Selective harvest in northern spotted owl Dispersal habitat is not anticipated to diminish the ability of northern spotted owls to move through treated stands because flying space will be maintained or improved (Forsman et. al. 2002).

Treatments in Dispersal habitat will help restore a more ecologically-sustainable density in these stands. Selective harvest and forest health projects are planned within Dispersal habitat in densely-spaced stands. These treatments will accelerate the development of late-successional elements, such as large diameter trees, multiple canopy layers, flying space and hunting perches. Treatments will allow additional light to enter stands, improving vigor of residual trees. Suppression mortality, a condition where crowding of trees inhibits tree growth and viability, will be avoided. Residual young trees rapidly respond to increased space and light following treatment and develop increased bole and crowns. Additional light penetration into stands can also provide light for some of the forage plants important to northern spotted owl prey. Structural components will be retained to provide prey cover habitat. Post-project snag and coarse woody debris retention will help minimize impacts to northern spotted owl prey species that utilize these features. Wildfire resiliency will be improved through removal of select shrubs, small trees, and low limbs which could fuel the spread of fire. These treatments could have long-term beneficial effects to northern spotted owls by reducing the risks of loss to fire or suppression mortality of the stand, and setting the stand on a trajectory more favorable to development of northern spotted owl habitat and use by northern spotted owls.

Effects to northern spotted owls as a result of the implementation of treat and maintain actions within Dispersal habitat will be insignificant to northern spotted owls for the following reasons:

- There will be an insignificant decrease (1 acre) of Dispersal habitat in the Action Area as a result of these proposed activities.
- Canopy cover will be maintained at 40 percent (a value known to provide for the dispersal of spotted owls across a landscape (Forsman 2002).
- Decadent woody material, such as large snags and down wood (values important for prey species of spotted owls) will be maintained during these treatments except in the case of hazard tree removal and road construction.
- 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.
- Very dense stands will be opened by thinning, thereby improving conditions for dispersing northern spotted owls.
- Thinning Dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
- No nest trees will be removed; nest patches will be avoided.
- PDC will avoid adverse disturbance impacts
- Necessary components of Dispersal habitat will be retained.

Effects to Prey

Timber harvest and fuels 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 northern 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 most habitat for prey, although some understory vegetation will be altered for a period of time up to ten (10) years. 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 northern spotted owls.

Thinning may also 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, 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. The positive and negative changes to prey habitat are difficult to measure, and will be small scale in terms of owl home range and prey habitat. Patchiness and spacing will be built into projects at the stand scale to ensure impacts to prey habitat remain not likely to adversely affect owls.

Effects to Northern Spotted Owl Late Successional Reserves

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. Projects proposed in this BA include treatments in LSR. NRF proposed for treatment include 300 acres of fuel hazard reduction, 200 acres of thinning, and 20 acres of hazard tree removal for a total of 525 acres. Dispersal habitat proposed for treatment includes 450 acres of timber harvest, and 20 acres of hazard tree removal. All treatments are designed to treat and maintain habitat, resulting in no change in total acres of NRF or Dispersal habitat in LSRs post-treatment. All acres which occur in LSRs are included in Northern Spotted Owl Critical Habitat Units analyzed in detail in the following section. Treatments in LSR are designed to guide the stands to later seral habitat more conducive to long term use by northern spotted owls. Hazard tree removal and road maintenance activities are insignificant to this end.

LSR #	All BLM acres	Acres of NRF	Treatment Type	NRF T&M	% NRF treated by LSR
RO-249	18,666	8,575	Hazard Tree	10	0.1 no change
RO-258	84,544	47,177	Hazard Tree	5	0.01 no change
RO-258	84,544	47,177	Fuel Hazard	300	0.6 no change
RO-223	26,101	15,307	Timber Harvest	200	1.3 no change
RO-224	22,978	10,854	Hazard Tree	5	0.05 no change

Table 5 Effects to Dispersal Habitat in LSR

LSR #	All BLM acres	Acres of Dispersal	Treatment Type	Dispersal T&M	% Dispersal treated
RO-249	18,666	2,793	Hazard Tree	10	0.4 no change
RO-258	84,544	10,827	Hazard Tree	5	0.05 no change
RO-223	26,101	3,019	Timber Harvest	450	14.9 no change
RO-224	22,978	2,300	Hazard Tree	5	0.2 no change

Effects to Northern Spotted Owl Critical Habitat

The CHU of northern spotted owls is under litigation. BLM evaluated the effects to 1992 CHU and 2008 CHU for these projects. No NRF removal or downgrade will occur in 1992 CHU or 2008 CHU, nor will Dispersal habitat be removed. Tables 6 and 7 indicate habitat treatments that maintain habitat will occur in seven (7) 1992 and one (1) 2008 critical habitat units. A portion of the 2008 CHU project is also within 1992 CHU. None of the primary constituent elements of critical habitat will be removed or adversely affected with these treatments.

Table 6 Effects to NRF Habitat in 1992 CHU

1992 CHU #	All BLM acres	Acres of NRF	Treatment Type	NRF T&M	% NRF treated by CHU
OR-72	50,295	22,178	Hazard Tree	10	0.04
OR-65	84,554	49,717	Hazard Tree	5	0.01
OR-65	84,554	49,717	Fuel Hazard	300	0.6
OR-75	19,423	9,507	Hazard Tree	10	0.1
OR-32	43,012	24,543	Timber Harvest	200	0.8

OR-36	7,549	1,650	Hazard Tree	5	0.3
OR-38	41,578	13,698	Hazard Tree	5	0.04

Table 7 Effects to Dispersal Habitat in 1992 CHU

1992 CHU #	All BLM acres	Acres of Dispersal	Treatme nt Type	Dispersal T&M	% Dispersal treated
OR-72	50,295	7,555	Hazard Tree	10	0.1
OR-65	84,554	11,267	Hazard Tree	5	0.04
OR-75	19,423	1,789	Hazard Tree	10	0.6
OR-32	43,012	5,702	Timber Harvest	30	0.5
OR-32	43,012	5,702	Fuel Hazard	450	7.9
OR-36	7,549	2,984	Hazard Tree	5	0.2
OR-38	41,578	2,427	Hazard Tree	5	0.2
OR-62	5,341	354	Timber Harvest	40	11.3

Baseline habitat acres are from 2008 DA BA FH, Table 15, pg 42. (USDI, 2008b).

Table 8 Effects to NRF Habitat in 2008 CHU

2008 CHU #	All BLM acres	Acres of NRF	Treatme nt Type	NRF T&M	% NRF treated by CHU
14	95,606	59,800	Timber Harvest	150	0.3

Table 9 Effects to Dispersal Habitat in 2008 CHU

2008 CHU #	All BLM acres	Acres of Dispersal	Treatme nt Type	Dispersal T&M	% Dispersal treated
14	95,606	13,277	Timber Harvest	200	1.5

Baseline habitat acres calculated by Steve Haney, GIS on August 24, 2009.

These projects will not affect the NRF primary constituent element of CHU because:

Projects within NRF are designed to ensure NRF habitat will retain at least 60% canopy cover, and large trees and snags, large down wood, and structural diversity important to northern spotted owls will be retained. 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 northern 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 northern spotted owls. Effects to northern spotted owls as a result of the implementation of harvest treatments within northern spotted owl NRF habitat will be insignificant to northern spotted owls for the following reasons:

- Canopy cover will be maintained at 60 percent or greater at the stand level.
- Decadent woody material, such as large snags and down wood will remain post-treatment.
- All multi-canopy, uneven aged tree structure that was present pre-treatment will remain post-treatment. (Potential RA 32 stands will not be treated).
- NRF habitat treatments will be distributed both spatially and temporally throughout the two affected Physiographic provinces.
- Activities will be distributed both spatially and temporally across BLM.
- No nest trees will be removed.
- PDC will avoid adverse disturbance.

Treatments will improve ecological health of the stand, stimulate forage plants important to northern 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.

Treatments in 1992 and 2008 critical habitat will not adversely affect the dispersal primary constituent elements of CHU in those areas because:

- There will be no decrease of Dispersal habitat in 1992 or 2008 CHU as a result of these proposed activities.
- Canopy cover will be maintained at 40 percent.
- Decadent woody material, such as large snags and down wood will be maintained during these treatments.
- If thinned stands are allowed to develop into late-seral conditions, they will develop structural diversity more rapidly than an un-thinned stand because residual trees will grow more quickly in more ecologically-sustainable conditions.
- Very dense stands will be opened by thinning, thereby improving conditions for dispersing northern spotted owls.
- Thinning Dispersal habitat could reduce the rate of spread and intensity of wildland fires common to Medford BLM.
- No nest trees will be removed; nest patches will be avoided.
- PDC will avoid adverse disturbance impacts
- Necessary components of Dispersal habitat will be retained.

NRF also functions as high-quality Dispersal. The amount of All-Dispersal (NRF plus Dispersal) within each CHU remains the same.

Treatments in 1992 and 2008 critical habitat will not adversely affect the foraging primary constituent elements of CHU in those areas because:

- Foraging habitat will be maintained in 1992 and 2008 CHU.
- Treatments in CHU are designed to maintain or enhance the primary constituent elements of CHU, including foraging.
- Thinning will allow more light to reach plants important to many prey species, and is likely to improve fruit/nut bearing capability over time.
- Down wood, snags and some untreated patches will be retained in treatment areas to provide prey refugia during the treatment.

Northern Spotted Owl Recovery Plan

Recovery Action 8

Manage the Klamath Provinces in Oregon and California to meet northern spotted owl recovery while creating more fire-resilient forests. Fuel hazard reduction and thinning will be compatible

with reducing risk of wildfire while maintaining northern spotted owl habitat. Much of the forest in the Klamath Province experiences a frequent fire return interval.

Recovery Action 32

BLM has specifically avoided treating stands that could meet the description in Recovery Action 32: *Maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands outside of MOCAs (USDI 2008c, pg 34-35).*

None of the projects in this BA remove habitat from multi-storied and structurally complex forested stands. Projects were designed to avoid these types of stands.

Effects to Northern Spotted Owls Due to Potential for Disturbance

Treatment activities have the potential of some insignificant noise that could carry into adjacent stands. Mandatory PDC (Appendix B) will protect owl sites. Only activities designed to avoid adverse impacts from noise and disturbance are included in this BA. Standards and guides from the NWFP and the current Medford RMP will be applied. Additional conservation measures may be implemented at the site specific project level by the ID teams reviewing these projects. Projects will be designed 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.*" (US Fish and Wildlife Service ESA Handbook, version 3)(USDI 2002).

BLM biologists evaluated all projects in this biological assessment against the known and potential owl sites. 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. Nest patches are avoided.

Effects to Marbled Murrelets

The Farout timber sale will occur in marbled murrelet survey Zone A and B. In marbled murrelet survey Zone A, Farout has approximately 90 acres of 70 to 90 year old age class in five forest stands. Farout units within Zone B total approximately 40 acres of 70 to 90 year old age class in two forest stands.

No marbled murrelet suitable habitat will be treated. Field evaluations of proposed harvest stands within Zones A and B have been carried out to identify habitat patches that could support a marbled murrelet nest tree. These habitat patches will not be treated. Large dominant trees with large branches and crowns, and adjacent trees within ½ site potential tree height, and moderate to high canopy cover of 40-60% will be retained to preserve murrelet habitat suitability. Treatment of younger (70-90 year old) stands will retain structural and species complexity. There will be no disturbance due to seasonal and distance PDC (Appendix B).

Effects to Marbled Murrelet Critical Habitat

Six (6) culvert replacements will occur in marbled murrelet CHU #OR-07F. No habitat modification will occur. There will be “no effect” to marbled murrelet critical habitat. Seasonal and daily PDC will be applied to these activities (see Appendix C).

Effects to Marbled Murrelet Due to Potential for Disturbance

Seasonal and daily PDC will be applied to harvest in the marbled murrelet zone B units of the Farout timber harvest project (see Appendix C).

V. CONCLUSION

Medford BLM has determined that the combined treatments described in the BA will not reduce the amount of northern spotted owl 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. Treatments in 1992 and 2008 CHU are designed to maintain owl habitat, reduce suppression loss from crowding and improve the ecological condition and fire resiliency of these areas. Medford BLM has determined that the harvest of the Farout timber sale may affect, and will not likely adversely affect (NLAA) marbled murrelets. Culvert replacements in marbled murrelet CHU # OR-07F will have “no effect” on marbled murrelet critical habitat. Suitable marbled murrelet nest trees will be protected by established conservation measures. Potential disturbance will be avoided by applying PDC. To date (10/2009), no marbled murrelets have been documented on the Medford District, but protocol surveys, and appropriate PDC will ensure that implementing the project will not have noise or activity impacts to nesting marbled murrelets.

Medford BLM seeks concurrence from the Service that the projects described in this BA “may affect and will not likely adversely affect” (NLAA) northern spotted owls and northern spotted owl critical habitat, and “may affect and will not likely adversely affect” (NLAA) marbled murrelets.

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APPENDIX A: SUMMER 09 NLAA SPREADSHEET (separate document to facilitate formatting)

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 northern 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 northern 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 northern spotted owl density estimates were utilized to “place” potential northern spotted owl occupied sites in suitable habitat. Marbled murrelets are difficult to locate. No marbled 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 northern 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 A-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 northern spotted owl to flush. (See disturbance distance).

C. Burning will not take place within 0.25 miles of northern 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 northern spotted owl nest trees used for used for in-stream 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 northern spotted owls.

Activity	Documented Owl Site
Heavy Equipment (including non-blasting quarry operations)	105 feet
Chain saws	195 feet
Impact pile driver, jackhammer, rock drill	195 feet
Small helicopter or plane	360 feet*

Type 1 or Type 2 helicopter	0.25 mile*
Blasting; 2 lbs of explosive or less	360 feet
Blasting; more than 2 lbs of explosives	1 mile

APPENDIX B-1-MANDATORY RESTRICTION DISTANCES TO AVOID

Disturbance to Northern Spotted Owl Sites

*** If below 1,500 feet above ground level**

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

APPENDIX C: MANDATORY MARBLED MURRELET PROJECT DESIGN CRITERIA

Medford BLM conservatively evaluates possible marbled murrelet habitat at the programmatic level using NRF habitat for northern spotted owls. Projects that occur in NRF habitat within the area where marbled murrelet surveys are required will be evaluated in the field to locate the large trees and limbs necessary to support marbled murrelet nesting. If potential nest trees are located within the project area, either:

- 2) Potential structure would be excluded from the project area and the following measures (proposed by Roseburg and Coos Bay Level 1 Team to North Coast Level 2 Team 2004) applied for protection to ensure that the proposed action would not adversely affect marbled murrelets:
 - B) Prohibit the removal or damage of potential structure. This includes the removal or damage of trees with potential structure and the removal or damage of adjacent trees with branches that interlock the branches of any tree with potential structure.
 - D) Prohibit timber harvest and associated ground disturbances during the marbled murrelet nesting period (Seasonal restriction April 1 – August 5; Daily restriction August 6 –September 15) unless otherwise authorized by a biological opinion or letter of concurrence.
 - E) Maintain a ½ site potential tree height un-thinned buffer around all trees with potential structure. That is, within ½ site potential tree height of any tree(s) exhibiting potential structure, no trees would be removed for any reason associated with the timber harvest, including the placement of roads, landings or yarding corridors.

Apply additional, site-specific prescriptive measures to maintain or enhance habitat conditions, as deemed necessary by the decision maker or responsible action agency official, in excess of ½ site potential tree height from all trees exhibiting potential structure (See maintenance of northern spotted owl habitat in Farout project above).

Recommended Project Design Criteria--Marbled Murrelets

Restrict operations from March 1 through September 15 (through the extended breeding period) within disturbance distances (unless protocol surveys demonstrate non-nesting).

Protocol surveys are conducted according to: Evans Mack, D., W. P. Ritchie, S. K. Nelson, E. Kuo-Harrison, and T. E. Hamer. 2003. Methods for surveying Marbled Murrelets in forests: a revised protocol for land management and research. Pacific Seabird Group Technical Publication Number 2. Available from <http://www.pacificseabirdgroup.org>

Table C-1. Mandatory Marbled Murrelet Restriction Distances

Activity	Zone of Restricted Operation
Blasting: more than 2 pounds of explosive	1 mile
Blasting: 2 pounds or less of explosive	120 yards
Impact pile driver, jackhammer, or rock drill	120 yards
Type 3 or 4 Helicopter or single-engine airplane	120 yards
Type 1 or 2 Helicopter	0.25 miles
Chainsaws (hazard trees, tree harvest, etc.)	120 yards
Heavy equipment	120 yards

Impacts	Species: Marbled Murrelet
Disturbance	(II) Mandatory -For Survey Areas A and B work activities (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 will not occur within specified distances (see table below) of any occupied stand or un-surveyed suitable habitat between April 1 – August 5. For the period between August 6 and September 15, work activities will be confined to between 2 hours after sunrise to 2 hours before sunset. See Fuels management PDC for direction regarding site preparation and prescribed fire.
Disturbance	(III) Mandatory - Clean up trash and garbage daily at all construction and logging sites. Keep food out of sight so as to not attract crows and ravens (predators on eggs or young marbled murrelets).
Disturbance	(IV) Mandatory- Blasting (open air/un-muffled) – No blasting activities during the critical breeding period (1 April through 15 August) within 1.0 mile of occupied stands or un-surveyed suitable habitat. 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) Recommended - Delay project implementation until after September 15 where possible
Disturbance	2) Recommended - 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) Mandatory- Blasting (open air/un-muffled) – No blasting activities 1 April through 15 September within 1.0 mile of occupied stands or un-surveyed suitable habitat. 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) Recommended - Delay project implementation until after September 15 where possible

Disturbance	<p>2) Recommended - 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).</p>
Restoration projects	<p>Mandatory</p> <p>To minimize the number of potential northern spotted owl or marbled murrelet nest trees used for in-stream structures, only the following sources shall be used:</p> <p>(I) Trees already on the ground in areas where large woody material is adequate;</p> <p>(II) Trees lacking suitable nesting structure for northern spotted owls or marbled murrelets or contributing to trees with suitable nesting structure, as determined by an action agency wildlife biologist.</p>
Fuels	<p>Mandatory</p> <p>(I) Prescribed fire would not take place within 0.25 mile of known occupied marbled murrelet sites, or un-surveyed 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>
Wildfire	<p>Mandatory</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>
Wildfire	<p>Mandatory</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</p>

	<p>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 marbled murrelets.</p>
Quarries	<p>Mandatory</p> <p>For any occupied stands or un-surveyed 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>Recommended</p> <p>2) For active nest stands or un-surveyed 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>