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US Fish and Wildlife Service
2900 NW Stewart Parkway
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Dear Field Office Supervisor:

This Biological Assessment (BA) describes and evaluates the potential effects from the Medford Douglas Post-Fire Project. The project plans to salvage timber on Matrix Land Use Allocation on the Medford District within the Douglas Fire Complex. The two main objectives for the salvage project are Economic Recovery and Roadside Safety and Fire Planning. The project "may affect and is likely to adversely affect" (LAA) spotted owls. A portion of the project is in the 2012 Revised Designated Northern Spotted Owl (NSO) critical habitat (77 Federal Register 233:71876-72068). The project "may affect and is likely to adversely affect" (LAA) critical habitat. No other listed wildlife species or critical habitats are affected. Listed plants and fish are evaluated under other consultation documents.

The Medford BLM Biological Assessment for the Medford Douglas Post-Fire Project is attached. The BA also includes Appendix A which lists project design criteria for northern spotted owls; and Appendix B, the proposed action maps; Appendix C, additional NSO site analysis information; and Appendix D, NSO site history information. GIS project, habitat, and spotted owl site layers will be hand delivered to Cindy Donegan at the Medford Interagency Office.

We request formal consultation with the US Fish and Wildlife Service on all projects in this BA. We look forward to working with the US Fish and Wildlife Service to meet our joint obligations under the Endangered Species Act 7(a) 1 and 7(a) 2.

For further information, please contact Robin Snider 541-618-2496.

Sincerely,

Dayne Barron
District Manager

Enclosure

Biological Assessment
for the
Medford Douglas Post Fire Projects
(Cite as Medford Douglas Post Fire BA)

*An Assessment of Effects to the
Northern Spotted Owl*

*Medford District
Bureau of Land Management
April 2014*

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1. INTRODUCTION

1.1 Purpose of the Assessment

The Medford District of the Bureau of Land Management (BLM) is submitting this Biological Assessment (BA) to the US Fish and Wildlife Service (Service) pursuant to Section 7 (a)(2) of the Endangered Species Act (ESA). Section 7 (a)(2) requires federal agencies to consult with the Service to ensure their actions will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats. Conservation measures described in this BA are also intended to meet obligations under Section 7 (a)(1) to conserve listed species.

This Biological Assessment (BA) describes and evaluates the potential effects from the Medford Douglas Salvage Project (Economic Recovery and Roadside Safety and Fire Planning) in the Grants Pass Resource Area (GPRA) on the Medford District BLM. The need for this project resulted from the 2013 fires in Southwest Oregon, specifically from the Douglas Fire Complex, which included the Dad's Creek, Farmer Gulch, and Rabbit Mountain Fires. The Medford Douglas Salvage Project is proposing 1,612 acres of salvage of dead and dying trees on Matrix land use allocation within the Dad's Creek and Rabbit Mountain Fires. This project is designed to meet the BLM's need to manage Matrix lands in a manner that provides for a sustainable supply of timber and help meet the Medford BLM's annual timber volume target. The two main objectives for this salvage project are Economic Recovery and Roadside Safety and Fire Planning. The project is described in more detail in Section 2.2 below. This project will be consistent with the project descriptions and Project Design Criteria (PDC) described in this BA. If any changes to the proposed projects occur after the Biological Assessment has been submitted, the new proposals will be presented to Level 1 for evaluation to see if reinitiation is necessary.

A portion of the Medford Douglas Salvage Project (Economic Recovery and Roadside Safety and Fire Planning) is within the 2012 Revised Designated Northern Spotted Owl (NSO) Critical Habitat (77 Federal Register 233:71876-72068). BLM requests formal consultation for this project because we have determined the proposed action *may affect, and is likely to adversely affect (LAA)* the northern spotted owl and their designated critical habitat.

No other listed wildlife species or designated critical habitat will be affected by the activities identified in this BA. Consultation for federally listed plants is not needed because the project is outside of the range of the three listed plants found in the Grants Pass Resource Area (*Fritillaria gentneri*, *Limnanthes floccosa* ssp. *grandiflora*, and *Lomatium cookii*). Consultation with NOAA Fisheries Service is not needed since the proposed action would not affect listed species or their habitat.

1.2 Consultation History

The Medford Douglas Salvage Project is a new project. However, 123 acres of the Wolf Pup Timber Sale units that were burned in the fire are also included because they are now part of the Medford Douglas Salvage Project. The 123 acres of the Wolf Pup Timber Sale were consulted on in the Medford Summer 2009 NLAA BA (LOC Tail #13420-2009-I-0159). These acres are being included in this consultation because the units burned at a high severity in the Douglas Fire

Complex before the logging was completed and the original prescription is no longer feasible. The effects determination for the original project was NLAA because the proposed action planned to treat and maintain NRF and dispersal habitat. No removal of habitat was planned in the original project. The new prescription for the majority of these acres would remove Post-Fire Foraging habitat in the vicinity of owl activity centers, resulting in adverse effects to northern spotted owls. These adverse effects were not analyzed in the original consultation. There are patches of NRF habitat within three units (total of 15 acres) where the original treat and maintain prescription would still be implemented. There are four acres of dispersal habitat within one unit where the original treat and maintain prescription would still be implemented. Seven acres within these original Wolf Pup units were typed as capable habitat after the fire because they burned at a high severity and do not function as spotted owl habitat at this time. All 123 acres are considered a new action and will be analyzed with the Medford Douglas Salvage Project. New consultation was not needed for the other Wolf Pup units where the fire burned at a low burn severity because the prescription was still valid and able to be logged after the fire. Since the overstory was still intact in these units, the original prescription as analyzed in the original BA, which was to treat and maintain NRF and dispersal habitat, was still implemented.

The projects in this BA were presented to the Level 1 team at a briefing meeting on December 19, 2013. The Level 1 team includes the Rogue River-Siskiyou National Forest Biologist, the Medford BLM District Biologist, and the Roseburg Fish and Wildlife Office Biologist. Follow-up meetings with the Level 1 team and managers occurred on January 31, 2014 and March 5, 2014. A field trip to the Medford Douglas Salvage (Economic Recovery and Roadside Safety/Fire Planning) Project occurred on January 28, 2014. The combined Roseburg District and SW Oregon Level 1 teams also held meetings on December 5, 2013, December 16, 2013, January 8, 2014, and January 10, 2014 to discuss fire related consultation and analysis.

The BLM is also working on completing Emergency Consultation for suppression activities related to the 2013 Douglas Complex and Big Windy Fires. The Emergency Consultation will also include the felling of imminent hazard trees created from the fire along roads used by the public, BLM employees, and contractors. These trees need to be felled to provide safe working conditions for employees, contractors, or the public working in active projects or traveling on major roads. Hazard trees with imminent failure potential are defective or rotten trees, snags, or their parts, and would likely fail within one year of their rating. The failure potential describes the lack of stability in the tree and the probability of when the entire tree or a large part of the tree could fall and potentially strike someone traveling the roads. The Biological Assessment for fire suppression activities and post-fire imminent hazard tree felling will cover actions on both the Medford and Roseburg BLM Districts. The suppression activities and the imminent hazard tree projects meet the description of emergency situations as described in chapter eight of the section 7 Consultation Handbook:

“a situation involving an act of God, disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property.”

The habitat baseline was updated within the fire perimeters in the fall of 2013 to account for the habitat loss due to the recent fires and utilized post-fire aerial photos. These updates were submitted to the Service with Medford’s annual consultation monitoring reports on December 23,

2013. An updated monitoring report for the Douglas Fire Complex was sent to Cindy Donegan on April 2, 2014. This updated form was based on the new geographic information system (GIS) data used in this Biological Assessment.

1.3 Definitions

Table 1. Northern Spotted Owl Breeding Periods		
Entire Breeding Period	Critical Breeding Period	Extended Breeding Period
March 1-September 30	March 1-June 30	July 1-September 30

Nesting, Roosting, and Foraging (NRF) Habitat for the northern spotted owl consists of habitat used by owls for nesting, roosting, and foraging. Generally, this habitat is multistoried, 80 years old or older (depending on stand type and structural condition), has high canopy cover, and has sufficient snags and down wood to provide opportunities for nesting, roosting, and foraging. 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 owls to fly (Thomas *et al.*, 1990).

In southwest Oregon, NRF habitat varies greatly, but is typified by mixed-conifer habitat, recurrent fire history, patchy habitat components, and a higher incidence of woodrats. It may consist of somewhat smaller tree sizes. One or more important habitat components, 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. NRF habitat also functions as dispersal habitat.

Currently, the SW Oregon Level 1 team uses NRF habitat typed in the Biological Assessment to represent both NRF and Roosting/Foraging habitat. Roosting and foraging habitat is different than nesting habitat because even though the stands might have larger trees and higher canopy, they are often single storied, and lack decadent features. NRF and roosting/foraging habitat is often separated in the field by BLM biologists and used to inform more specific project effects determinations. However, due to the large scale of this project, units were not field verified. The NRF determinations were made from the pre-fire habitat baseline information and post-fire aerial photos.

Dispersal Habitat at a minimum, consists of stands with adequate tree size and canopy closure to provide protection from avian predators and at least minimal foraging opportunities. Dispersal habitat may include younger and less diverse forest stands than foraging habitat, such as even-aged, pole-sized stands, but such stands should contain some roosting structures and foraging habitat to allow for temporary resting and feeding for dispersing juveniles (USDI FWS 1992). Dispersal habitat is generally forest stands with canopy cover of 40 percent or greater and an average diameter at breast height (DBH) of 11 inches or greater. It provides temporary shelter for owls moving through the area between NRF habitats and some opportunity for owls to find prey; but it does not provide all of the requirements to support an owl throughout its life. NRF habitat

can also function as dispersal habitat. However, dispersal (or dispersal-only) 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.

Post-Fire Foraging habitat for the northern spotted owl is habitat that was typed as NRF in the habitat baseline before the fire and burned at high and moderate burn severity levels (BARC soil severity data). As stated above, the SW Oregon Level 1 team uses NRF habitat typed in the Biological Assessment to represent both NRF and Roosting/Foraging habitat. Even with the loss of canopy cover and key habitat components typically found in NRF habitat, studies indicate that burned areas will still function as foraging habitat after the fire, depending on patch size, edge type, and proximity to known owl sites (Bond et al 2002, Bond et al. 2009; Clark 2007, Clark et al. 2011, and Clark et al. 2013). During post-fire habitat updates, areas that were typed as NRF prior to the fire and still had structure present were typed as PFF post-fire. The Level 1 team felt it was important to track this habitat and analyze the effects from post-fire salvage because foraging habitat is essential for providing a food supply necessary for spotted owl survival and reproduction. Additionally, spotted owl post-fire landscape research using radio-telemetry indicated spotted owls use these burned forests and may be affected by post-fire salvage (USFWS 2011).

Capable Habitat for the northern spotted owl is forestland that is currently not habitat but can become NRF or dispersal in the future, as trees mature and the canopy closes.

Non-habitat does not provide habitat for northern spotted owls and will not develop into NRF or dispersal in the future.

Treat and Maintain NRF or Dispersal Habitat is the treatment defined when an action or activity in NRF or dispersal habitat removes some trees, but does not change the intended function because the conditions that would classify the stand as NRF or dispersal would remain post-treatment. The treated stand will still function as NRF because it will continue to provide at least 60 percent canopy cover, large trees, multistoried canopy, standing and down dead wood, diverse understory adequate to support prey, and may have some mistletoe or other decay. The treated stand will still function as dispersal habitat because it will continue to provide at least 40 percent canopy cover, flying space, and an average of trees 11 inches diameter at breast height (dbh) or greater.

Remove NRF or Dispersal alters known spotted owl NRF or dispersal-only habitat so the habitat no longer functions as nesting, roosting, foraging, or dispersal habitat. Removal generally drops canopy cover to less than 40 percent, alters the structural diversity and dead wood in the stand or otherwise changes the stand so it no longer provides nesting, roosting, foraging, or dispersal habitat for owls.

Remove PFF alters habitat so it no longer functions as PFF or other spotted owl habitat. Most salvage treatments would remove significant amounts of the post-fire structure that provides foraging opportunities, such as large snags for perching and coarse woody debris for prey, so it would no longer function as foraging habitat or provide necessary hunting perch sites.

2. DESCRIPTION OF THE PROPOSED ACTION

2.1 Douglas Fire Complex Summary

Since the proposed actions are a result of the fires that burned in SW Oregon in 2013, this section is included to provide a summary of the total acres burned, as well as burn severities, within the fire perimeters. This information will help set the stage and provide some context to the total salvage project acres described in more detail later in this assessment. The fires that comprise the Douglas Complex began on July 26, 2013 as a result of an early morning lightning storm. The fires burned a total of 48,671 acres across all land ownerships (Table 2) and 25,348 of these acres occurred on Medford and Roseburg District BLM managed lands. The fires burned with a mixed severity (Table 3). Many of the lowest cooler draw bottoms experienced relatively lower burn severity than upper sloped areas throughout the fire. The areas of highest severity occurred within the Perkins Creek and Poorman Creek drainages where the fire had the most significant growth during the first four days of the Dad's Creek Fire. Approximately eight spotted owl territories were associated with these areas of high fire severity, which resulted in large reductions of NRF habitat at the home range and 0.5 mile core area scales (See Table 9 for post-fire changes to NRF habitat).

Table 2. Total Acres Burned within Fire Perimeters by Ownership						
Ownership	BLM (Medford)	BLM (Roseburg)	Forest Service	State	Private	TOTAL
Douglas Complex						
Dad's Creek Fire	12,621	0	0	320	11,498	24,439
Farmers Gulch Fire	245	0	0	0	3	249
Rabbit Mtn. Fire	6,216	6,266	0	0	11,502	23,984
TOTAL	19,082	6,266	0	320	23,003	48, 671

Burn Severity Determination

Burned Area Reflectance Classification (BARC) data was used to determine preliminary Soil Burn Severity. BARC data rates fire impacts on soil productivity and erosion rate, and the potential for vegetation recovery. Burn severity is delineated on maps as polygons in four classes of burn severity High, Moderate, Low, and Unburned to Very Low. While the BARC data is not an exact match for vegetation mortality, High and Moderate burn severity categories can be used estimate the amount of vegetation mortality as a result of the fire. The analysis for this BA used the BARC data to display fire severity. Table 3 below displays the burn severity for all fires using the BARC data. See Appendix B Map 1 for a display of the burn severity for the Douglas Complex Fire.

Table 3. Burn Severity by Fire (all ownerships on Medford and Roseburg Districts)

	High	Moderate	Low	Unburned to Very Low	Total
Douglas Complex					
Dad's Creek Fire	3,068	4,692	5,186	11,492	24,438
Farmers Gulch Fire	5	13	57	174	248
Rabbit Mtn. Fire	4,410	5,355	4,425	9,794	23,984
Total	7,483	10,060	9,668	21,460	48,671

Douglas Fire Complex Pre-Fire Vegetation Conditions:

The Douglas Complex is located within the Mixed Evergreen Zone of vegetation. This zone is synonymously referred to as mixed conifer and hardwood vegetation pattern and is generally characterized by an upper layer of conifers and a lower layer of hardwoods (Franklin and Dyrness 1973). Douglas-fir is the dominant conifer species in the Douglas Complex with ponderosa pine, sugar pine, and incense cedar often present. Of these species, Douglas-fir is found in all stand layers (top, middle, and bottom), whereas the latter three species appear far less frequent in the lower two layers. Hardwood species of tanoak, California black oak, madrone, and golden chinquapin are frequently found in the bottom two layers of stands, often in high percentages, and often dominating suitable commercial forestland allocated to timber production. Hardwoods sometimes form pure or nearly pure stands in the Douglas Complex. The mixed evergreen conifer and hardwood pre-fire vegetation pattern differed by slope, aspect, elevation and soils (USDI 1999a, USDI 1999b). Elevation ranges between 1,000 and 5,100 feet with a rugged and highly dissected topography of steep narrow canyons, with slopes averaging 45-55 percent.

Prior to the fire, high stand densities affected individual tree vigor and stand health. Overstocked stands contain more trees than the site has resources (e.g., moisture, nutrients, and growing space) to provide. This leads to increased tree stress, particularly during prolonged hot summer days without any precipitation. Pre-fire tree vigor influences the ability of fire-injured trees to resist insect attacks and to recover from fire injuries.

2.2 Proposed Action Overview

The Medford Douglas Salvage project was designed to conform to the 1995 Medford District Resource Management Plan (USDI 1995) and the Northwest Forest Plan (NWFP) (USDA USDI 1994a). The Medford Douglas Salvage (Economic Recovery and Roadside Safety/Fire Planning) Project occurs in Matrix and Connectivity/Diversity Block land use allocations. No treatments are proposed in Known Spotted Owl Activity Centers (KSOAC) or Riparian Reserve land use allocations. Matrix lands are Federal lands outside of reserves and special management areas that are available for scheduled timber harvest at varying levels (USDI 1995). Connectivity/Diversity Blocks are a sub-set of Matrix lands. They are 640-acre blocks located north of Grants Pass that are managed on 150-year rotation. Each block must contain 25 to 30 percent of late-successional forest at any point in time. 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. KSOACs are to be managed as LSRs. Riparian Reserves are areas along all streams, wetlands, ponds, lakes, and unstable and potentially

unstable areas where riparian-dependent resources receive primary emphasis (USDA USDI 1994a)

We expect the projects to be implemented soon after the Biological Opinion is received and National Environmental Policy Act (NEPA) compliance is completed. The Medford Douglas Salvage project covering units for economic recovery and roadside safety and fire planning will be analyzed under the Medford Douglas Fire Recovery EA, which is scheduled to be released for public review in May 2014. Timber sales associated with this project are scheduled to be implemented in Fiscal Year 2014 and FY2015. For consultation tracking and monitoring purposes, the Level 1 team defines implementation of timber sales as the date a project is sold. It is anticipated the projects could take multiple years to complete. However, the BLM anticipates the majority of the salvage would occur within the next 2-3 years. Project completion includes stand treatments for slash and reforestation post harvest.

2.3 Detailed Project Objectives and Descriptions

Medford Douglas Salvage Project

(Economic Recovery and Roadside Safety and Fire Planning)

The Douglas Fire Complex burned approximately 19,082 acres in the Matrix, Connectivity/Diversity Block, and KSOAC land use allocations (LUAs) within the Medford District. Approximately 1,612 (8 percent) of the acres burned within the Medford BLM District are proposed for salvage (or associated road and landing construction). Table 4 below outlines the process the BLM used to identify final acres proposed for salvage on Medford BLM managed lands. Approximately 34 percent of the total high and moderate severity burn areas on Medford BLM lands are proposed for salvage. Salvage of dead or dying trees on Matrix would allow the Grants Pass Resource Area to retrieve some economic value from these trees while retaining sufficient levels of coarse woody debris and standing snags according to the Medford Resource Management Plan.

Areas Proposed for Treatment:

In early December, BLM foresters started the process of determining areas for salvage. Initial efforts were accomplished by using GIS and post-fire aerial photos to look for areas greater than 3 acres where trees were dead or would die soon and were ≥ 12 inches DBH in size. The initial assessment focused on high and moderate severities across the landscape with very few resource sideboards. All logging systems were considered, including helicopter. After the office assessment was complete, field crews were sent out to verify and assess the proposed units. The field crews delineated unit boundaries using GPS technology and dropped units if they were non-economical or riparian dominant.

After all of the units were identified in the field, the Grants Pass Resource area biologists followed principles in the SW Oregon Recovery Action 10 Guidance Document (2013) and worked with the Medford Douglas interdisciplinary core team to reduce impacts to spotted owl sites in the project area. The GPRA biologists used NSO survey data to prioritize sites for

protection based on occupancy and reproduction history (See Appendix C - RA 10 Site Prioritization Summary). This effort resulted in approximately 1,612 acres of proposed salvage to be analyzed in this Biological Assessment. The units are scattered across BLM managed lands in the fire perimeter, with the highest concentration in the Perkins Creek and Poorman Creek drainages where large areas of high fire severity occurred. Additional acres will likely be dropped due to red tree voles (RTVs), botany, and cultural buffers, as well as logging feasibility issues.

Table 4. Summary of the Process for Determining Treatment Acres within the Medford Douglas Salvage Project (Economic Recovery and Roadside Safety and Fire Planning)

Assessment Category	Acres subtracted from treatment	Total acres
Total Acres in the Douglas Fire Complex (<i>all ownerships across both districts</i>)		48,671
Total Medford BLM Burned Acres in the Douglas Fire Complex		19,082
Total Matrix, Connectivity/Diversity Block (Medford District)		19,069
Low severity burn acres (not salvaged)	14,286	
Initial field reconnaissance acres (high and moderate burn severity on Medford BLM lands)		4,783
Acres excluded low volume	681	
Acres dropped within high priority 0.5 mile core areas	1,115	
Acres dropped from KSOAC	346	
Withdrawn lands	93	
Riparian Reserve Acres	879 ²	
Net Matrix,Connectivity Diversity Block acres available for salvage		1,669
Additional adjustments to BA Project Units Layer	57	
Final Matrix, Connectivity/Diversity Block proposed for salvage in this BA		1,612¹

1 - Final acres include approximately 26 acres of green tree removal proposed for landing and road/route construction

2- Acres through Riparian Reserve Acres are from the draft Environmental Assessment

2.3.1 Project Objectives

There are two main objectives for salvage treatments in the Matrix for this project: 1) Economic Recovery and 2) Roadside Safety and Fire Planning. Of the 1,612 total acres proposed for salvage, 638 are for only economic recovery, 874 for both economic recovery and roadside safety planning, and 100 acres are proposed for only roadside safety and fire planning as the objective. See Appendix B Map 2 for a display of the Medford Douglas Salvage units with corresponding objectives.

Salvage for Economic Recovery Objectives:

This project is designed to meet the BLM's need to provide a sustained yield of timber in addition to other forest commodities to provide jobs and contribute to community stability as defined by the Medford District RMP, ROD 1995. Fire killed and damaged trees have resulted in reduced lumber quality and merchantable value. Timely salvage is crucial to capture remaining merchantable timber values before further deterioration occurs. As directed in the Medford RMP, salvage on Matrix LUA, would only harvest mortality above the level needed to meet snag

retention and other habitat goals and provide desired levels of coarse woody debris (USDI 1995). Salvage harvesting for economic recovery would not occur in Riparian Reserves, mapped LSRs, or KSOACs.

Another goal of this project is to reduce the risk of stand mortality from insects and disease. Fire-injured trees are at greater risk of damage or mortality from bark beetles or borers because these trees lack the ability or have a reduced ability to produce defensive compounds to resist attack (SWOFIDSC 2014). Bark beetles and woodborers are the two insects that have been detected inside the fire area and within one mile of the fire area. Most of the insect activity in fire-affected areas occurs during the first three years following the fire, most of it within the first year or two (SWOFIDSC 2014). Salvage of fire-injured trees on Matrix lands would reduce but not eliminate the potential for the build-up of insect populations. With the reduced amount of breeding habitat, there would be a corresponding reduction of insects and reduced potential for additional green tree mortality near areas salvaged prior to beetle emergence. Insect populations are expected to increase in areas where salvage is not proposed, which could affect healthy green trees adjacent to the burned areas resulting in additional post-fire mortality. These areas include Riparian Reserves, nest patches, and KSOACs.

Salvage for Road Safety and Fire Planning Objectives:

Burned trees have compromised the safety of roads used by the BLM, other agencies, private land owners, forest workers and the general public. This safety concern has been raised by state and county government, private industrial landowners and timber companies, residents, and Oregon Occupational Safety and Health Administration (Oregon OSHA). Existing conditions have also increased fuel loading in areas, as well as the potential for re-burn. The objectives are to reduce the fuel loading, eliminate the safety hazards, and provide safe access to manage future wildfires. The proposed treatments would also meet federal (29 CFR 1960.8) and state OSHA regulations (OAR 437-0025,0200, 0225, and 0500) for providing safe employment conditions, as well as safe travel conditions for the public, contractors, and adjacent land owners with reciprocal rights to transport timber or minerals on BLM roads. Hazard trees with likely failure potential within 1-10 years of their rating (Toupin et al 2008) would be targeted for removal. Potential failure describes the lack of stability of the tree and the probability of when the entire tree or a large part of the tree could fall and potentially strike someone traveling the roads.

Road Safety and Fire Planning objectives would be met within the Medford Douglas Project by implementing the salvage prescription, as described below, on approximately 14 miles of primary mainline roads and one mile of a key ridge within the fire perimeter. The majority of the Roadside Safety/Fire Planning units also overlap acres identified for economic recovery objectives. The following areas are targeted for Roadside Safety and Fire Planning objectives:

- Primary mainline roads and one key ridge were selected that occurred in moderate and high severity burn areas. These areas were identified for future fire suppression operational needs. The hazard tree removal in these areas would improve safety for fire fighters, provide greater flexibility in suppression tactics, and enhance the probability of success for stopping future fires. By decreasing the hazards, the proposed action would allow for a more direct attack of potential fires by allowing engine and personnel access

closer to the fire. The key ridge was identified as a tactical north/south running ridge to use as a fire break for future fire suppression of uncontrolled wildfires.

- Treatment along mainline roads include:
 - 1.5 times the existing tree height (as opposed to site potential tree height) below the road
 - 2.5 times the existing tree height above roads on slopes greater than 35%
 - 1.5 times the existing tree height above roads on slopes less than 35%
- Salvage harvesting for roadside safety and fire planning would not occur in Riparian Reserves, Late Successional Reserves, or KSOACs.

2.3.2 Salvage Description and Prescription (Economic Recovery and Roadside Safety/Fire Planning):

The silvicultural prescriptions will be the same for the Medford Douglas Project, regardless of the different objectives, economic recovery or roadside safety and fire planning. Treatments would focus on Matrix forest land within the fire perimeter and would follow the Medford RMP Management Direction for Salvage in Matrix. Only mortality above the level needed to meet snag retention and other habitat goals and provide desired levels of coarse woody debris would be harvested (120 feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long) (USDI 1995). Prescriptions on Matrix lands would be designed to:

- Provide a sustainable supply of timber and other forest products (USDI 1995).
- Provide for salvage harvest of timber killed or damaged by events such as wildfire (USDI 1995).
- Restore the vigor, resiliency, and stability of forest stands that are necessary to meet land use allocations objectives (USDI 1995).
- Conifer planting would be done where appropriate and safe to assure that reforestation objectives are promptly met (USDI 1995).
- Implement silvicultural treatments that reduce the potential for epidemic levels of insects and wood borers.
- Accelerate the reestablishment and growth of conifer seedlings in stands that had fire damage that resulted in stocking less than the site potential. A mix of conifer species would be planted followed by maintenance treatments to insure the growth potential of the stand is maximized and desirable tree species, including fire resilient species, are established.

The proposed action plans to harvest dead and dying trees due to wildfire and initiate a stand with species suited to the natural plant community including drought resistant tree species. Only fire-injured or fire-killed trees considered dead, dying, or high risk (tree health condition indicates that the tree death would occur within 4 years) would be harvested. However, to facilitate removal of these dead and dying trees, some incidental live trees may be felled and removed through yarding corridors, landings, and road/route construction. Green tree removal would be minimized through PDC and sale administrator approval.

Dead and dying trees to be harvested would be determined by analyzing the amount of crown scorch. Crown scorch is a measure of the proportion of foliage that has been killed by the fire relative to the entire amount of foliage present before the burn (SWOFIDSC 2001). Using crown scorch alone (excluding cambium inspections) is a conservative measure for determining post-fire mortality in trees, with a high probability of dying within the next 4 years (SWOFIDSC 2001, USDA 2014, Fowler and Seig 2004, Filip et al. 2007). Tree planting would take place after harvest in order to restore necessary stocking levels in a timely manner for the land use allocation.

Retained legacy structures would generally occur as aggregated residuals. A legacy of the previous stand large live green trees, standing dead, and coarse woody debris would remain to meet the needs of species and provide for ecological functions. Overstory fire-killed trees (as defined above) would be retained at a unit average of 2 snags per acre of the largest available diameters within salvage units in Matrix LUA. In Matrix LUA, a minimum of 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long would be left per the 1995 ROD/RMP management direction. Where naturally occurring merchantable coarse woody debris exceeds 120 linear feet per acre, additional merchantable coarse woody debris may be removed as a commercial product provided that a minimum of 280 linear feet of non-merchantable down woody debris would be retained. Where present, the total retention for coarse woody debris per unit would be 400 linear feet on average. When stands are deficient in coarse woody debris (less than 120 feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long), merchantable material would be used to make up the deficit (USDI 1995). This merchantable material would generally be left standing unless it needs to be felled for safety considerations.

Additional retention above Matrix standards would occur in spotted owl 0.5 mile core use areas of high priority sites, critical habitat, and Del Norte salamander areas (see below). All existing coarse woody debris in units within 0.5 mile core areas of high priority sites, critical habitat, and Del Norte salamander areas would be retained.

Prescription Summary:

- Within stands burned at a high and moderate burn severity, fire-killed and fire-injured trees 8 inches DBH and greater that exhibit a high probability of mortality be targeted for salvage. Targeted trees would be based on a species specific crown scorch amounts which would result in a 75% probability of mortality.
- Fire-killed hardwoods 8-16 inches DBH may be cut and removed for reforestation site preparation. Live or dead standing material (hardwoods and conifers) < 8 inches DBH would be slashed and/or hand pile burned where they impede establishment of conifers.
- An average of two dead/dying trees (snags) per acre would be retained within each salvage unit. Retained snags would generally be grouped in clusters and would reflect the species mix of the original stand. Emphasis would be placed on retaining the largest snags available (USDI 1995). Large wolf trees or trees with heavy branching or poor form would be targeted for retention because they provide habitat for numerous wildlife species. Snags that exhibit a greater chance of remaining on the landscape and surviving future windstorms would also be targeted for retention, where safety allows.

- Non-hazardous older decay class snags (3, 4, and 5) would be retained where available and protected to the greatest extent possible from disturbance. If a retention snag needs to be felled for safety concerns another snag of similar size would be retained in substitution.
- Even spacing of the retention trees is not required and the leave trees/snags would generally be clustered in groups of 3 or more. These trees are meant to act as wildlife trees/snags and future coarse woody debris on the harvested areas. The untreated clusters would be selected in a location within the unit to avoid felling the trees to meet federal and state safety laws.
- In Matrix LUA, a minimum of 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long would be left per the 1995 ROD/RMP management direction. Merchantable material would be used to make up the deficit (USDI 1995).
- Generally, live trees without a high probability of mortality would be retained. However, some live trees would need to be felled and extracted for landing construction, road/route construction, and road widening for suitable haul widths. Yarding corridors would minimize going through patches of live trees to reduce the effects to unburned forest stands. However, all potential yarding corridors were factored into the effects to habitat for each unit.

Additional retention in high habitat suitability areas within Critical Habitat (according to the Relative Habitat Suitability (RHS) output from the MaxEnt model), 0.5 mile core areas of high priority sites, and Del Norte salamander areas:

- Where available, retain a minimum of 4 dead/dying trees (snags) per acre over 16 inches DBH would be retained. Retained trees would reflect the species mix of the original stand and emphasize retention of the largest snags available (USDI 1995). Large wolf trees or trees with heavy branching or poor form would also be targeted for retention
- All existing down coarse wood would be retained. When stands are deficient in coarse woody debris (less than 120 feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long), merchantable material would be used to make up the deficit (USDI 1995).

2.3.3 Proposed Action Implementation Methods

The salvage treatments described above will be implemented using a variety of manual and mechanical tools. They are described below because each method has a different impact to existing vegetation and have been considered in the overall effects determinations for the salvage project, including the effects analysis for each unit. For example, the openings created from proposed yarding corridors, landings, and road/routes were assessed and added to the potential treatment effects determination for each unit. Reinitiation will occur if the actual effects from these tools exceed our anticipated effects during analysis.

Ground based extraction: On slopes averaging < 35 percent, woody biomass and saw log material created from salvage operations would be cut, and skidded to landings or road sides using low ground pressure machinery. Skidding machinery would be restricted to approved skid

trails. This method requires narrow skid trails, up to 12 feet in width as measured from the outer edges of the standard width dozer blade in the straight position (yarding tractor). Existing skid trails would be used where possible. Skid trail locations would be approximately 150 feet apart, but vary depending on the site-specific terrain, and would be thereby, minimizing soil disturbance. Openings from skid trails will be assessed for the overall unit effects determination.

Cable based extraction: On slopes ≥ 35 percent, woody biomass and saw log material created from salvage operations would be yarded to landings or road sides. Cable yarding drags trees with one end suspended and one end on the ground. Corridors would be generally less than 15 feet wide, depending on the size of trees to be removed and the terrain. Corridor locations would be pre-approved by the BLM Contract Administrator. Landings would generally be a minimum of 150 feet apart. Openings from corridors and landings will be included in the overall effects analysis for each project, and may include some green tree removal. When the corridor and landings are located in a unit, the additional openings will be assessed for the overall unit effects determination. However, when the landings are located outside of a unit, then those will be assessed as an extended portion of the unit or a separate unit. Approximately 16 acres of openings outside of units would occur from landing construction (6 acres of NRF removal, 0.5 acres of PFF removal, 4 acres dispersal removal, and 5.5 acres in capable habitat).

Guy line anchor and tailhold trees used for anchors will likely be green trees but may be burned trees. If needed to ensure the safety of logging operations, as specified under Oregon OSHA laws, these trees may be felled and removed. Anchor trees are selected to match the size of the yarder. Trees with suitable spotted owl habitat features will be avoided when possible, and anchor trees (i.e. tailhold trees) will be left standing when appropriate with safety considerations. The majority of the spotted owl nest trees or center of activities have been located and mapped within the Action Area. The nest tree locations were compared with the draft cable corridor GIS layer and no known nest trees are located near potential guy line anchor or tailhold tree estimated locations, so it is unlikely that any known nests would be removed. Additionally, in areas where anchor trees need to be placed in live tree patches a wildlife biologist or wildlife field crew member would review the anchor tree location in the field to ensure known spotted owl nest trees would not be removed. Trees felled in Riparian Reserves, LSRs, KSOACs, Critical Habitat, and RA32 stands will remain on site. These measures would help to reduce impacts to spotted owl habitat. The exact number of guy or tailhold trees that would be cut is unknown, but likely several could be cut adjacent to each unit. However, according to Oregon OSHA Regulations, felled trees would be removed from the site if they cannot be stabilized and pose an additional threat of sliding or rolling onto the roadways (OAR 437-007-0225 and OAR 437-007-0500). As mentioned above, the effects from anchor tree removal will be considered in the overall effects analysis for the Medford Douglas Salvage Project.

Helicopter Based Extraction: This is an aerial system that uses helicopters to extract logs off the landscape. A cable suspended from the underside of a helicopter would be lowered to the forest floor. The cable is then attached to logs and lifted upwards until the logs are fully suspended. The logs are then flown to the most advantageous path back to a large landing. Once at the landing the logs are lowered to the ground and released for processing. Typically log landings for helicopter based extraction are approximately one acre in size. Helicopter extraction also requires service landings. These landings must be large enough to land a helicopter and have access for a

fuel truck to approach the equipment for refueling. Some landings proposed for this project are in spotted owl NRF, PFF, or dispersal habitat. The effects from the construction of the landings in suitable spotted owl habitat have been incorporated into the total effects from the projects. Polygons representing the landings were included in the proposed units GIS layer used to determine effects from the proposed action.

Access Route Construction

Access route and landing construction would be needed to extract timber for salvage. The habitat effects from the road/route construction that occur outside of treatment units are analyzed as a separate treatment area and have been incorporated into the total habitat effects for the project (Table 12). The roads were buffered to create polygons to represent the effects from the road building and included in the proposed units GIS layer used to determine effects from the proposed action. Approximately 10 acres of spotted owl habitat would be removed from road/route construction. All other roads and openings are within treatment units or existing road beds.

Permanent Road Construction: A permanent route is an access road constructed on undisturbed terrain. These are intended for long-term use and will stay on the landscape. Construction includes clearing, grubbing, removing, and disposing of vegetation and debris from within established clearing limits. Work also includes construction of a width of approximately 40-60 foot wide area by excavation, embankment placement, leveling, grading, and outsloping. The proposed road would be designed per the *BLM Manual 9113-1 Roads Design Handbook (Rel. 9-388)*. The new permanent road will be part of the designated transportation network system.

Temporary Route Construction: A temporary route is an access road constructed to minimum standards on undisturbed terrain, or existing footprints when feasible. These are intended for short-term use. Construction includes clearing, grubbing, removing, and disposing of vegetation and debris from within established clearing limits. Work also includes construction of a minimum width subgrade by excavating, placing embankment, leveling, grading, and outsloping. After use, the route would either be decommissioned (partially or fully), or obliterated. Partial decommissioning would include ripping and/or roughing up the surface, water barring, seeding, mulching and blocking. Some green tree removal will occur where the proposed temporary routes are proposed and are incorporated into the effects analysis below.

Reconstruction of Existing Routes: Reconstruction of existing routes would occur on existing road prisms that were previously blocked, closed, or decommissioned, or are overgrown, and have not received periodic road maintenance. These routes also include re-opening fire lines that were blocked and rehabbed after the fire. The road would be made suitable for timber hauling by removing encroaching vegetation, repairing narrowed sections, and blading the road surface. The route would be made suitable for log haul by clearing, grubbing, and disposing of vegetation along with excavating and grading operations to establish a minimum width road prism. After use, the route would be decommissioned by ripping and/or roughing up the surface, water barring, seeding, mulching and blocking. This may involve clearing small diameter conifers within the road prism to allow for better hauling conditions.

2.4 Project Design Criteria and Conservation Measures

Project Design Criteria (PDC) are conservation measures developed to reduce disturbance impacts to listed species (Appendix A). Disturbance of listed wildlife species occurs when noise, smoke, vibration, or visual stimuli cause impairment of normal behavior. PDC are measures applied to project activities designed to avoid the potential adverse disturbance effects to nesting birds and their young. PDC that restrict activities to outside of the critical breeding season (Table 1) and/or occur beyond recommended disturbance distance thresholds will be incorporated into the Medford Douglas Salvage Project (Economic Recovery and Road/Fire Planning). PDC involving seasonal restrictions will be implemented unless surveys, following approved protocols, indicate either non-occupancy or non-nesting of target species. Seasonal restriction PDC will also be applied to unsurveyed NRF habitat (northern unsurveyed suitable habitat block) within the disturbance distance of proposed units.

Conservation measures for the Medford Douglas Salvage Project *(Economic Recovery and Roadside Safety and Fire Planning):*

- Higher retention of large snags, including burned wolf trees, and large CWD would occur within high RHS habitat in critical habitat, 0.5 mile core areas of high priority sites (See Appendix C - RA 10 Site Prioritization Summary), and Del Norte salamander areas within the Douglas Fire Complex. Snag retention would be 1-5 snags/acre higher than the 1995 RMP standards for Matrix. In the Matrix LUA, CWD would be retained in order to meet RMP CWD standards. When stands are deficient in coarse woody debris (less than 120 feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long), merchantable material would be used to make up the deficit (USDI 1995). Down wood is an important habitat feature for spotted owl prey species in southwest Oregon. Dusky-footed woodrats build stick nests, sometimes incorporating logs or the base of trees as part of the structure. Retained CWD in salvage units areas would provide some cover for prey species over time, and would help minimize harvest impacts to some prey species, such as dusky-footed woodrats, and provide long-term source of habitat structure.
- No salvage treatments are proposed in Known Spotted Owl Activity Centers (KSOAC) or Riparian Reserve land use allocations. Avoiding treatment in riparian will help mitigate potential adverse effects to northern spotted owls associated with this project because these areas may serve as important refugia in the post-fire environment. Clark (2007) reported that in burned landscapes, owls were more likely to select habitats in areas of lower elevation and/or close to perennial streams where available.
- Project design followed the SW Oregon RA10 Principles to prioritize historical spotted owl sites to minimize effects to spotted owls (USDA USDI 2013). This prioritization of sites based on reproduction and occupancy, provides conservation of sites that provide the most support to spotted owl demography (USDI 2011)
- RA 32 field evaluations are planned in areas with green tree removal (road and landing construction, anchor trees, yarding corridors, etc.). Attempts would be made to minimize potential yarding corridors and skid trails through RA32 stands. However, it is estimated that up to 2 acres of RA32 may be affected from yarding corridors and skid trail construction which would the function of the RA 32 stand. If more RA32 acres are located over this estimate, the BLM would attempt to re-located the yarding corridor or

skid trail, or reinitiate consultation if the function of the RA32 would be compromised from the proposed action. Salvage would not occur in RA32 stands because the salvage units are planned in areas that burned at high and moderate burn severities and no longer have adequate numbers of habitat characteristics such as high canopy cover, multi-layers, large snags, large coarse woody debris, and decadence required to classify as RA32 (USDA USDI 2010).

- If new spotted owl sites are located during surveys, biologists will review PDC and the BO to confirm the ESA analysis remains valid. Timber sales have a contract clause (E-4) that authorizes stop work when threatened and endangered species are found in the timber sale or to comply with court orders. If or when a spotted owl or other listed species is found in the project area the timber operators are authorized to stop the work until the issue is evaluated further. If the impacts to the new site is no longer consistent with the analysis, the project will remain stopped until BLM completes one or more of the following:
 - Modifies the proposed action to ensure that impacts remain as described in the consultation documents. The BLM would evaluate if replacement acres could be added to the project if the owls moved from sites in this BA and the new impacts would be consistent with the analysis.
 - Imposes seasonal protections (if necessary);
 - Reinitiates and completes new consultation

3. ENVIRONMENTAL BASELINE

3.1 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 402.02). For northern spotted owls, the Action Area is usually based on the radius of a circle that would capture the provincial home range, which is 1.3 miles for the Klamath province (Thomas et al. 1990 and Courtney et al. 2004). Therefore, the Action Area represents all lands within 1.3 miles of proposed treatment units and all lands within any overlapped associated provincial home ranges of known spotted sites that could be directly, indirectly or cumulatively impacted by the proposed action. For the Medford Douglas Complex Project, the Action Area was developed by buffering the fire perimeters within the Medford District by 1.3 miles. The area to be buffered was cut at the Medford District boundary because treatments on the Medford BLM would not affect spotted owl sites on the Roseburg District beyond 1.3 miles of district boundary. See Appendix B Map 3 to see a display of the Action Area. Table 5 below in Section 3.3 provides habitat baseline data for the Action Area.

3.2 Status of Northern Spotted Owls Range-wide

ESA regulations (50 CFR 402.02) state that *the environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the Action Area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultation, and the impacts of state and private actions*

which are contemporaneous with the consultation in progress. Such actions include, but are not limited to, previous timber harvests and other land management activities.

A detailed account of the taxonomy, ecology, and reproductive characteristics of the spotted owl can be found in the *2011 Revised Recovery Plan for the Northern Spotted Owl* (USDI FWS 2011), the SEI 2004 Northern Spotted Owl Status Review (Courtney *et al.* 2004); the Interagency Scientific Committee Report (Thomas *et al.* 1990); Forest Service Ecosystem Management Report (USDA *et al.* 1993), final rule designating the spotted owl as a threatened species (1990), and several key monographs (e.g., Anthony *et al.* 2006 and Forsman *et al.* 2011). These documents are incorporated by reference.

Eleven demographic study areas have been established to represent owl status across the range of the northern spotted owl (Forsman *et al.* 2011). Owl sites and productivity are annually monitored within these areas to:

- *Assess changes in population trend and demographic performance of spotted owls on federally administered forest lands within the range of the owl and*
- *Assess changes in the amount and distribution of nesting, roosting, and foraging habitat and dispersal habitat for spotted owls on federally administered forest lands.*

Medford shares one demographic study area, the Klamath, with Roseburg BLM and the Rogue River Siskiyou National Forest. The Southern Cascades Demographic Study Area is also near the Medford District. The majority of the Medford Douglas Salvage Project (Economic Recovery and Roadside Safety and Fire Planning) is within the Klamath Demography Study area. Metadata analysis evaluates population statistics of the owls in the demographic study areas. The last metadata analysis was completed in 2011, which found that fecundity, the number of female young produced per adult female, is declining in the Klamath Demographic Study Area. Forsman 2011 concluded that fecundity, apparent survival, and/or populations were declining on most study areas, and that increasing numbers of Barred Owls and loss of habitat were partly responsible for these declines.

Two years of annual monitoring reports have been published or drafted since the 2011 the metadata analysis was completed. According to the 2012 Annual Report for the Klamath Demography Study Area, at least one spotted owl was detected at 79 (50.0 %) of the sites. In recent years there has been a steady decline in the number of non-juveniles detected and an even larger decrease in the number of pairs detected in the study area. The number of non-juveniles detected in 2012 (134) was the lowest ever documented on the study area. The number of individual spotted owls during 2012 was 39.6% less than the high of 222 during 2002. The decline in the number of pairs was even more sizeable, with 48.4% fewer detected in 2012 than the high of 97 during 2005. The 50 pairs detected during 2012 was the lowest number documented during the study period. The number of pairs detected at sites has declined within the study area and the number of unoccupied sites has increased. While the recent meta-analysis (Forsman *et al.* 2011) indicated that survival on the KSA was stable through 2006, the most recent data regarding occupancy has shown a rapid decline, which suggests the stability of the survival rate may no longer be valid. The fecundity rate in 2012 was 0.191, which was lower than the average for the years 1990-2012 (0.320). Forsman *et al.* (2011) noted that the fecundity rate on the KSA was declining and the most recent data agrees with this conclusion. The number of

juveniles detected within the KSA during 2012 (12) was much lower than the overall median (44) (Davis et al, 2013)

Preliminary 2013 data indicates the occupancy and fecundity rates haven't improved. At least one spotted owl was detected at 78 (49.3 %) of the sites and there were no new sites documented within the study during 2013. The fecundity rate for 2013 was 0.160. Fifteen juveniles were detected in the study area in 2013 (Davis et al 2014).

3.3 Status of Northern Spotted Owl Habitat in the Action Area

The environmental habitat baseline for spotted owls on the Medford BLM administered lands for the Action Area was current as of January, 2014. The Medford environmental baseline was initially developed in 2008 using field assessments by experienced wildlife biologists, the Interagency Vegetation Mapping Project (IVMP) imagery from 1996 (as corrected through 2003), and additional stand data. IVMP data is the source for information for non-BLM managed lands. The baseline is updated annually for each BLM project area and was updated in the fall of 2013 to account for the habitat loss due to the recent fires and utilized post-fire aerial photos. Due to the large size of this project, the Medford Douglas habitat updates and effects determinations were primarily based on post-fire aerial photos. Field verification of habitat was conducted when feasible and when extra information was needed that could not be obtained from the photos.

The proposed projects are within the Klamath Mountains physiographic province. Atzet and Wheeler (1982) discuss fire as a key natural disturbance in the Klamath Province in southwestern Oregon. Spotted owl habitat patterns in these drier portions of its range are not continuous, but occurred naturally in a mosaic pattern (USDI USFWS 2008). Agee (1993, 2003) and Hessburg and Agee (2003) characterized the historical wildfire regime as low- to mixed-severity with fire return intervals of less than 10 to 50 or more years, depending on local conditions. In the Douglas Fire Complex, fire behavior was extreme early in all of these fires due to steep terrain, dry and heavy fuel loads (timber, slash, brush, and reproduction), and extreme fire indices.

Table 5 summarizes baseline habitat and ownership information for the Medford Douglas Action Area.

Table 5. Environmental Baseline for the Medford Douglas Project Action Area							
	ACRES	NSO NRF HABITAT ACRES (% TOTAL)	POST FIRE FORAGING (% TOTAL) ⁶	CAPABLE ⁴ NSO HABITAT ACRES (% TOTAL)	RESERVED ACRES ¹ (% OF TOTAL)	NON- RESERVED ACRES (% OF TOTAL)	DISPERSAL ^{2,4} (NRF+Dispersal- Only) ACRES (% OF TOTAL)
OWNERSHIP							
-All Ownerships	98,717	39,619 (40%)	3,327 (3%)	11,708 (12%)	9,837 (10%)	89,978 (91%)	46,124 (47%)
- Non-Federal (Private, State)	47,480	11,059 (23%)	N/A ⁴	N/A ⁴	N/A ⁴	N/A ⁴	11,059 (23%)
-Federal (BLM, USFS)	51,237	28,559 (56%)	3,327 (65%)	11,708 (23%)	9,837 (19%)	42,498 (83%)	35,604 (69%)

Table 5. Environmental Baseline for the Medford Douglas Project Action Area

	ACRES	NSO NRF HABITAT ACRES (% TOTAL)	POST FIRE FORAGING (% TOTAL)	CAPABLE ⁴ NSO HABITAT ACRES (% TOTAL)	RESERVED ACRES ¹ (% OF TOTAL)	NON-RESERVED ACRES (% OF TOTAL)	DISPERSAL ^{2,4} (NRF+Dispersal-Only) ACRES (% OF TOTAL)	
LAND ALLOCATION - FEDERAL (<i>hierarchal, no acres double-counted</i>)								
- Administratively Withdrawn Areas (Congressionally Reserved)	538	302 (56%)	0	173 (32%)	9,837 (100%)	0	354 (66%)	
-Late-Successional Reserves (mapped)	8,166	4,270 (52%)	9 (0.1%)	2,637 (32%)			5,248 (64%)	
- KSOAC in the Matrix	1,133	623 (55%)	328 (29%)	35 (3%)			769 (69%)	
-Matrix ³	42,498	23,970 (56%)	3,318 (8%)	8,889 (21%)	0	42,498 (100%)	29,443 (69%)	
Spotted Owl Critical Habitat								
Critical Habitat Unit	Sub-unit	Acres ⁵	NRF Habitat Acres	Post Fire Foraging Acres	Capable NSO Habitat Acres	RESERVED	NON-RESERVED	DISPERSAL
KLW 9	KLW1	30,383	17,306 (57%)	1,406 (5%)	6,749 (22%)	6,195 (20%)	27,188 (89%)	21,554 (71%)
KLW 9	KLW2	3,381	2,360 (70%)	0	459 (14%)	3,103 (92%)	278 (8%)	2,774 (82%)
Notes: 1. Protected = land allocation with no programmed timber harvest which includes Congressionally Reserved land, LSRs, Owl Cores and Wild and Scenic River Corridors. 2. Dispersal includes NRF habitat. 3. Matrix/AMA includes Riparian Reserves (no Riparian Reserved layer is available) 4. Capable and dispersal-only acres are primarily calculated on federal lands only in this BLM layer (BLM used the same layer to be consistent with the BA data). 5. Includes CH on state lands 6. Post-Fire Foraging created from 2013 fires.								

Habitat Baseline Changes within the Fires

The current habitat acres in Tables 6 and 7 are a result of habitat updates after the Douglas Complex fires. Table 6 shows the pre- and post-fire habitat acres by fire and Table 7 demonstrates the burn severity to pre-fire NRF habitat within each fire. As mentioned above, BARC data, records soil burn severity, but can also be used to correlate vegetation mortality, which can then be used to determine potential effects to spotted owl habitat. High and moderate burn severity categories of the BARC data were combined to estimate the amount of northern spotted owl habitat that were impacted as a result of the fire. Based on aerial reconnaissance the fire in these areas generally resulted in a high loss of canopy cover and key habitat components so the stands no longer function as Nesting, Roosting, Foraging, or Dispersal habitat. However, depending on the size, small isolated areas that burned at a moderate severity to high level within larger stands of lower severity burn areas may not alter the function of the habitat at the stand level. Areas classified as low or unburned to very low severity, likely maintained, to some degree, NRF and dispersal function because the overstory was not removed. However, low severity burned areas could result in negative effects to northern spotted owl prey species

Table 6. Pre and Post Fire Habitat on Federal Lands within the Fire Perimeters (Medford/Roseburg Districts)

FIRE	Pre-Fire Habitat Conditions (acres)				Post-Fire Habitat Conditions							
	NRF	Dispersal -Only	Cap.	Non-Hab	NRF		PFF (acres)	Dispersal-Only.		Cap.		Non-Hab ¹
					Acres	% change		Acres	% change	Acres	% change	
Dads Creek	8,536	1,448	2,262	375	6,062	- 30%	2,326	1,446	-0.1%	2,414	+ 7%	374
Farmers Gulch	229	10	0	6	214	- 7%	16	10	NC ²	0	NC	6
Rabbit Mtn	9,035	1,343	1,922	182	6,005	- 34%	1,279	1,714	+ 28%	3,344	+ 74%	135
Douglas Complex Total	17,800	2,801	4,185	563	12,281	-31%	3,620	3,169	+29%	5,758	+38%	514

1 = changes to non-habitat acres are a result of updating habitat in areas that were not updated prior to the fire. Generally, the fire wouldn't change non-habitat conditions.

2 = NC = No Change

Table 7. Burn Severity to Pre-Fire NRF on Federal Lands within the Fire Perimeters (Medford/Roseburg Districts)

FIRE	High		Moderate		Low		Unburned to Very Low		Total
	Acres	% of total fire	Acres	% of total fire	Acres	% of total fire	Acres	% of total fire	
Douglas Complex									
Dads Creek	633	7%	1,495	18%	1,783	21%	4,625	54%	8,536
Farmers Gulch	5	2%	13	6%	53	23%	159	69%	229
Rabbit Mtn	1,003	11%	1,491	17%	1,857	21%	4,685	52%	9,035
Total	1,641	9%	2,999	17%	3,692	21%	9,468	53%	17,800

Table 8 estimates the post-fire habitat within the Section 7 watersheds associated with the Medford Douglas Salvage Project. Section 7 watersheds were developed by the Level 1 team shortly after the spotted owl was listed for a qualitative evaluation for dispersal function using the concepts of Thomas et al. as described below. They are similar, but not identical, to fifth-field watersheds. This landscape level provides a general dispersal condition. Thomas et al. (1990) along with Lint et al. (2005) and Davis et al. (2011) suggested using a landscape level approach to analyze the effects to dispersal. Thomas et. al (1990) originally recommended assessing dispersal habitat conditions on the quarter-township scale. Since then the Service has generally recommended using a fifth field or larger landscapes for assessing dispersal habitat conditions because watersheds or provinces offer a more biological meaningful way to evaluate dispersal function.

Section 7 Watershed	Total Watershed Acres	Total Acres (%) within the Douglas Complex	Total NRF Habitat Acres	Total Dispersal-Only Habitat Acres¹	Total Dispersal Acres (NRF+ Dispersal Only)	% Watershed Dispersal Habitat¹ (NRF +Dispersal-only)
Cow-Upper	703,977	(33,088) 5%	276,940	30,075	307,014	44%
Rogue-Middle	600,311	(15,328) 3%	181,738	44,276	226,014	38%

¹= Private dispersal habitat acres not included

3.4 Status of Northern Spotted Owl Sites in the Action Area

Northern spotted owl site occupancy is defined as locations with evidence of continued use by spotted owls, including breeding, repeated location of a pair or single birds, presence of young before dispersal, or some other strong indication of continued occupation. Spotted owl sites used in this BA are based on historic information, protocol surveys, or incidental observations. These sites can also be referred to as territories because several alternate nest locations are often associated with each individual site. Spotted owls are generally monogamous and primarily mate for life (Courtney 2004). They are also known to exhibit a high site fidelity. However, owls often switch nest trees and use multiple core areas over time, possibly in response to fluctuations of prey availability, loss of a particular nest tree, or presence of barred owls. These shifts are especially evident in this project area because individual owls have been banded with unique color combinations. In many cases, the survey crew has been able identify the same pair of owls using multiple nest locations in alternate years and therefore establishing the potential territory.

Medford Douglas Action Area

The Medford Douglas Action Area overlaps the home range of 45 historic NSO sites on the Medford BLM and adjacent Roseburg BLM Districts. Forty-two of these sites are in the Klamath Demography Study area so they have been surveyed extensively over the past 15 or more years. The additional three sites are adjacent to the demography study area, so they have been surveyed just as extensively to capture movement of owls outside of the study area. See Appendix D for a summary of the survey history, as well as occupancy and reproductive status. The survey history was used to determine whether the original or alternate nest locations would be analyzed in this BA to represent the territory. In some cases only one location was used because survey data indicated the owls had only been using one location in the past several years. However, in other cases, multiple locations were included in the analysis because surveys indicated owls were using the original and alternate locations equally over the last several years. Each location has been analyzed at the nest patch, 0.5 mile core, and home range scales, but only one effects determination was made for the combined site or territory.

Unsurveyed Suitable Habitat

Since the majority of the Medford Douglas Action area is within the Klamath Demography Study Area, extensive surveys have been done throughout the area, which has resulted in an almost complete coverage of known sites within the Action Area. However, there are approximately

3,593 acres of NRF habitat on federal lands within the Medford Douglas Action Area that occur outside of known spotted owl home ranges. These occur primarily in small patches that are unlikely to support owl occupancy, but there are four larger blocks on the north, west, southwest, and southeast edges of the Action Area (Appendix B Map 4). Salvage units are only proposed in two of the four blocks within the Action Area. These two blocks (northern and southeastern) will be evaluated in more detail to determine the potential for occupancy by northern spotted owls.

Northern Block

The northern block is within the home range of site 2622O, which has been vacant since 2005. Prior to 2005, the last resident single or pair status occurred in 1995. A male was observed in 1998 and a male and female were observed in 1999, but not enough times to for resident single or pair status according to the spotted owl protocol. The owls at this site were confirmed at the new alternate location in 2001 (2622A), which is outside of the fire perimeter and on the outer edge of the action area. Owls have consistently been at this alternate location since 2001, so the alternate site, and not the original site, was used in the analysis for this assessment (See Appendix D for NSO site history information). Within the core of 2622O, approximately 72 acres of NRF habitat was lost from the fire. This reduced the total available 257 acres of NRF (51%) from before the fire to 185 acres (37%) after the fire. Even with the reduction of NRF habitat, the remaining habitat is actually above the amount (35%) available at the core scale at the alternate site which was not affected at the core scale from the fire.

There is an approximately 150 acre contiguous block of NRF habitat south of the original site (2622O) that could potentially support nesting owls. Models developed by Swindle et al. (1997) and Perkins et al. (2000) showed that the 200-300 meter radius (and sometimes greater), encompassing approximately up to 70 acres, around a nest is important to spotted owls. While this area was within the fire perimeter, it burned at a lower severity, and aerial photos indicate it could still function as NRF habitat. Based on the Forest Operation Inventory (FOI) stand data, the stand ages of the majority of these stands are between 250 and 300 years old. Additionally, this contiguous block of habitat is in high habitat suitability according to the Relative Habitat Suitability (RHS) output from the MaxEnt model, on a north facing slope, and lower on the slope. These abiotic factors increase the likelihood of supporting nesting owls compared to other locations across the landscape. The BLM conducted a GIS analysis by placing a point in the 300 year old stand and buffered the location by 0.5 miles to determine if the amount of NRF habitat on federal lands could support owls. The 0.5 mile buffer was used because it is the distance defended by territorial owls and generally do not overlap the core areas of other owl pairs (Wagner and Anthony 1998, Dugger et al. 2005, Zabel et al. 2003, Bingham and Noon 1997). Approximately 184 acres (37%) of NRF habitat is located on federal lands within the 0.5 mile buffer. However, if the point was moved down slope into the 250 year old stand, the 0.5 core area would encompass more federal land, resulting in 207 acres (41%) of NRF habitat within the core area. The amount of habitat within an approximate 0.5 mile radius provides reliable predictor of occupancy, and the quantity and configuration have been shown to provide reasonable inferences into survival and reproduction. Generally survival and reproduction are supported when there is between 40 and 60 percent older forest within the core (Dugger et al 2005), but local conditions and possibly pair experience, contribute to large variance in actual amounts for individual owls. Sites on the Medford District have shown to have high rates of occupancy and reproduction when only 35% NRF habitat exists at the core scale. Site 2622A described above is an example of this.

Therefore, since there is enough NRF habitat to support nesting owls, this area will be analyzed as Unsurveyed Suitable Habitat in the Effects Section (4.2.2).

Southeastern Block

The southeastern area contains approximately 2,909 acres across all ownerships, with approximately 774 acres of NRF habitat on federal lands. There is an active site (0916A, nested in 2013) located in the southern edge of this block. The 0.5 mile core area is an area where territories do not overlap. By subtracting the NRF habitat in the portion of the 0916A core area overlapping the unsurveyed habitat block (140 acres) from the NRF in the Southeastern unsurveyed block, 634 total acres of NRF would remain, but the NRF patches exist in small fragmented areas. No other large contiguous blocks (70 acres) which could represent a nesting area, are remaining in this block. There are smaller 60 acre patches that are typed as NRF habitat. However, looking at the aerial photos and the stand data in the FOI layer, these stands would qualify as Roosting or Foraging habitat, but do not have habitat characteristics to support Nesting habitat. Additionally, this area is heavily fragmented by non-habitat meadows and younger stands created from the fire and past management on adjacent private lands. Due to the low amount of available habitat (outside of 0916A core area) and the fragmented landscape, it is unlikely this Southeastern Block of unsurveyed suitable habitat outside of known home ranges in the Medford Douglas Action Area would be occupied. Therefore this area will not be analyzed in the Unsurveyed Suitable Habitat Effects Section.

NSO Site Post-Fire Habitat Conditions

The pre-and post- fire NRF habitat acres for spotted owl sites in the Medford Douglas Action Area are displayed in Table 9. This table demonstrates the degree of change from the fires at the home range and 0.5 mile core area scales and will provide the current habitat baseline on Federal lands and to help with effects determinations from the proposed actions. Only pre- and post- fire NRF habitat is displayed because research has indicated that the quantity and configuration of “older forest” (analogous to NRF Habitat) provides a valid inference into the likelihood of occupancy (Hunter et al 1995), survival, and reproduction (Franklin et al 2000, Zabel et al 2003, Olson et al 2004, Dugger et al, 2005, Dugger et al 2011). Post-fire foraging habitat doesn’t provide “older forest” conditions described in the research. Appendix C has even more detailed site information including burn severity, and a breakdown of NRF and Post Fire Foraging Habitat percentages at the home range and 0.5 mile core area scales.

SITE (Territory) ¹	Pre-Fire NRF on Federal Lands				Post-Fire NRF on Federal Lands					
	Home Range Acres	Home Range %	0.5 Mile Core Acres	0.5 Mile Core %	Home Range Acres	Home Range %	% Change from pre-fire	0.5 Mile Core Acres	0.5 Mile Core %	% Change from pre-fire
03760 ²	609	18%	30	6%	558	16%	- 8%	30	6%	NC
0377B ²	734	22%	196	39%	734	22%	NC	196	39%	NC
0895B ²	857	25%	205	41%	851	25%	-1%	205	41%	NC
08960 ²	1020	30%	164	33%	1003	29%	- 2%	164	33%	NC
09030 ²	915	27%	242	48%	767	23%	- 16%	240	48%	-1%

Table 9. Medford Douglas Action Area NSO Pre-Fire / Post-Fire Habitat Analysis

SITE (Territory) ¹	Pre-Fire NRF on Federal Lands				Post-Fire NRF on Federal Lands					
	Home Range Acres	Home Range %	0.5 Mile Core Acres	0.5 Mile Core %	Home Range Acres	Home Range %	% Change from pre-fire	0.5 Mile Core Acres	0.5 Mile Core %	% Change from pre-fire
0906A ²	854	25%	180	36%	708	21%	- 17%	173	35%	-4%
0907A ²	733	22%	313	63%	210	6%	- 71%	35	7%	-89%
0911O	932	27%	230	46%	932	27%	NC	230	46%	NC
0919O ²	715	21%	74	15%	641	19%	- 10%	23	5%	-69%
1911C	1147	34%	185	37%	548	16%	- 52%	79	16%	-57%
1913C ²	1078	32%	164	33%	1068	31%	- 1%	164	33%	NC
1989O ²	892	26%	214	43%	790	23%	- 11%	214	43%	NC
2013O	1900	56%	246	49%	1900	56%	NC	246	49%	NC
2016A ²	1103	32%	323	65%	1015	30%	- 8%	323	65%	NC
2023O	630	19%	249	50%	630	19%	NC	249	50%	NC
2080A ²	1178	35%	168	34%	1105	32%	- 6%	151	30%	-10%
2080C ²	1203	35%	305	61%	1185	35%	-1%	305	61%	NC
2211O ²	1438	42%	262	52%	1361	40%	-5%	253	51%	-3%
2212A ²	730	21%	97	19%	387	11%	-47%	75	15%	-23%
2212B ²	794	23%	77	15%	483	14%	-39%	77	15%	NC
2212O ²	795	23%	263	53%	416	12%	-48%	64	13%	-76%
2213O ²	741	22%	204	41%	550	16%	- 26%	148	30%	-27%
2216O	562	17%	90	18%	561	17%	NC	90	18%	NC
2274O ²	1058	31%	354	71%	716	21%	- 32%	172	34%	-51%
2298A ²	1093	32%	176	35%	939	28%	- 14%	175	35%	-1%
2619O ²	2253	66%	368	74%	2237	66%	-1%	368	74%	NC
2622A ²	965	28%	173	35%	851	25%	-12%	173	35%	NC
2664O ²	1352	40%	385	77%	563	17%	-58%	256	51%	-34%
3271O ²	1138	33%	322	64%	953	28%	-16%	318	64%	-1%
3928O ²	2006	59%	346	69%	1994	59%	-1%	346	69%	NC
3930A	1675	49%	233	47%	1675	49%	NC	233	47%	NC
3930O	1361	40%	130	26%	1361	40%	NC	130	26%	NC
2248O ²	1256	37%	151	30%	1046	31%	-17%	113	23%	-25%
4071O ²	1047	31%	353	71%	926	27%	-12%	302	60%	-14%
4511O	410	12%	268	54%	410	12%	NC	268	54%	NC
4515O ²	911	27%	201	40%	858	25%	-6%	199	40%	-1%
4534A ²	405	12%	116	23%	396	12%	-2%	114	23%	-2%
4534O ²	920	27%	158	32%	866	25%	-17%	157	31%	-1%
4565O ²	746	22%	152	30%	489	14%	-34%	151	30%	-1%
4575A ²	976	29%	155	31%	789	23%	-19%	155	31%	NC
4575O ²	1174	35%	274	55%	1172	34%	NC	275	55%	NC
0965O ²	1214	36%	368	74%	373	11%	-69%	83	17%	-77%
4577A ²	1425	42%	299	60%	525	15%	-63%	81	16%	-73%

Table 9. Medford Douglas Action Area NSO Pre-Fire / Post-Fire Habitat Analysis

SITE (Territory) ¹	Pre-Fire NRF on Federal Lands				Post-Fire NRF on Federal Lands					
	Home Range Acres	Home Range %	0.5 Mile Core Acres	0.5 Mile Core %	Home Range Acres	Home Range %	% Change from pre-fire	0.5 Mile Core Acres	0.5 Mile Core %	% Change from pre-fire
<i>45770</i> ²	1381	41%	297	59%	535	16%	-61%	55	11%	-81%
<i>45780</i> ²	998	29%	213	43%	977	29%	-2%	199	40%	-7%
<i>4579A</i> ²	1107	33%	160	32%	941	28%	-15%	149	30%	-7%
<i>4579O</i> ²	1514	45%	163	33%	1463	43%	-3%	163	33%	NC
<i>4603B</i> ²	1012	30%	162	32%	870	26%	-14%	140	28%	-14%
<i>4603O</i> ²	1155	34%	226	45%	963	28%	-17%	182	36%	-19%
<i>4604O</i> ²	833	24%	124	25%	529	16%	-36%	101	20%	-19%
<i>4605O</i> ²	942	28%	111	22%	521	15%	-45%	51	10%	-54%
<i>4606A</i> ²	1031	30%	226	45%	826	24%	-20%	137	27%	-39%
<i>4606B</i> ²	888	26%	173	35%	694	20%	-22%	115	23%	-34%
<i>4606O</i> ²	797	23%	94	19%	490	14%	-39%	50	10%	-47%
<i>4607O</i> ²	747	22%	152	30%	699	21%	-6%	150	30%	-1%
<i>4623O</i> ²	848	25%	101	20%	829	24%	-2%	101	20%	NC
<i>4670O</i> ²	967	28%	193	39%	751	22%	-22%	169	34%	-12%
<i>4690A</i> ²	1693	50%	303	61%	1557	46%	-8%	284	57%	-6%
<i>4690O</i> ²	1348	40%	204	41%	1166	34%	-14%	187	37%	-8%

1 - grouped italicized sites are considered as one territory for analysis purposes

2 - treatments within the home range, 0.5 mile core area, or nest patch

NC = No Change

3.5 Spotted Owl Prey Species

The composition of the spotted owl's diet varies geographically and by forest type. Generally, flying squirrels are the most prominent prey for spotted owls in Douglas-fir and western hemlock forests in Washington and Oregon (USDI 2011). In southwest Oregon, dusky-footed woodrats are a primary prey species for spotted owls. They are typically found in high densities in early-seral or edge habitat (Sakai and Noon 1993, 1997), but are also abundant in old growth and complex forests (Carey et al 1997). Northern flying squirrels are another major source of owl prey in southwest Oregon, while red tree voles (RTVs) may comprise only approximately 2.6 % of the diet of spotted owls in this area (Forsman 2004). Other important prey items include deer mice, red-backed voles, gophers, snowshoe hare, bushy-tailed wood rats, birds, and insects, although these species comprise a small portion of the spotted owl diet (USDI 2011).

3.6 Barred Owls

The 2011 Revised Recovery Plan for the Northern Spotted Owl identifies competition from the barred owl as a threat to the spotted owl (USDI FWS 2011). Barred owls (*Strix varia*) are native

to eastern North America, but have moved west into spotted owl habitat. Existing evidence suggest that barred owls compete with northern spotted owls for habitat and prey with near total niche overlap and that interference competition (Dugger et al. 2011, Van Lanen et al. 2011, Wiens 2014) is resulting in increased northern spotted owl site abandonment, reduced colonization rates, and likely reduction in reproduction (Olson et al. 2005, Dugger et al. 2011, Forsman et al. 2011, Wiens 2014).

Barred owls are detected opportunistically because the BLM does not conduct barred owl surveys across the District. These incidental observations are increasing within the Medford District, which matches the trend of increasing numbers of barred owls across the range of the northern spotted owl. Incidental observations across the District, as well as information from the Klamath and South Cascades Demography Study Areas indicate that barred owls are increasing in this area. Local populations of barred owls are likely to increase over time. Observational data suggests direct competition with and aggressive displacement of spotted owls from prime nesting habitat.

Prior to the fire, the BLM did not conduct surveys specifically for barred owls in these areas. However barred owls were detected during spotted owl surveys and recorded when detected. Approximately 32 of the 45 spotted owl sites associated with the Douglas Fire on the Medford District have had at least one barred owl detected in the NSO home ranges, and at least one site has had nesting barred owls in the last 6 years. Approximately four of the six NSO sites on the Roseburg District within the Action Area have had barred owl detections.

3.7 Status of Northern Spotted Owl Critical Habitat

Critical habitat for the northern spotted owl was designated in 1992 in *Federal Register* 57, and includes the primary constituent elements that support nesting, roosting, foraging, and dispersal. Designated critical habitat also includes forest land that is currently unsuitable, but has the capability of becoming NRF habitat in the future (57 FR 10:1796-1837). Critical habitat was revised for the northern spotted owl and the final designation was published by the USFWS in the *Federal Register* (signed on August 12, 2008, 73 Federal Register 157:47326) and became effective on September 12, 2008. The 2008 USFWS's Critical Habitat delineations were challenged in court and the 2008 designation of northern spotted owl CHU was remanded. The USFWS was ordered to revise the CHU designation. On February 28, 2012, the Service released the proposed critical habitat in the form of maps and the draft form of the *Federal Register* publication. The proposed rule was published in the *Federal Register* on March 8, 2012 (77 *Federal Register* 46:14062-14165). The final CH rule was published in the Federal Register on December 4, 2012 (77 Federal Register 233:71876-72068) and became effective January 3, 2013.

Section 4(a)(3) of the Act specifies that the Service shall designate critical habitat for endangered or threatened species and may, from time-to-time thereafter as appropriate, revise such designation. Critical habitat is defined as (1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features that are essential to the conservation of the listed species and 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 that are essential for the conservation of a listed species. Regulations

focus on the “primary constituent elements,” or PCEs, in identifying these physical or biological features. The physical or biological features essential to the conservation of the northern spotted owl are forested lands that are used or likely to be used for nesting, roosting, foraging, or dispersing.

Primary Constituent Elements of Critical Habitat

Based on current research on the life history, biology, and ecology of the northern spotted owl and the requirements of the habitat to sustain its essential life history functions, as described above, the Service has identified the following PCEs for the northern spotted owl which are as follows:

- 1) Forest types that may be in early-, mid-, or late-seral states and support the northern spotted owl across its geographical range
- 2) Habitat that provides for nesting and roosting. This habitat must provide:
 - a) Sufficient foraging habitat to meet the home range needs of territorial pairs of northern spotted owls throughout the year.
 - b) Stands for nesting and roosting that are generally characterized by:
 - (i) Moderate to high canopy cover (60 to over 80 percent),
 - (ii) Multilayered, multispecies canopies with large (20- 30 in (51-76 cm) or greater dbh) overstory trees,
 - (iii) High basal area (greater than 240 ft²/acre (55 m²/ha)),
 - (iv) High diversity of different diameters of trees,
 - (v) High incidence of large live trees with various deformities (e.g., large cavities, broken tops, mistletoe infections, and other evidence of decadence)
 - (vi) Large snags and large accumulations of fallen trees and other woody debris on the ground, and
 - (vii) Sufficient open space below the canopy for northern spotted owls to fly.
- 3) Habitat that provides for foraging, which varies widely across the northern spotted owl’s range, in accordance with ecological conditions and disturbance regimes that influence vegetation structure and prey species distributions.
- 4) Habitat to support the transience and colonization phases of dispersal, which in all cases would optimally be composed of nesting, roosting, or foraging habitat (PCEs (2) or (3)), but which may also be composed of other forest types that occur between larger blocks of nesting, roosting, and foraging habitat. In cases where nesting, roosting, or foraging habitats are insufficient to provide for dispersing or nonbreeding owls, the specific dispersal habitat PCEs for the northern spotted owl may be provided by the following:
 - a) Habitat supporting the transience phase of dispersal, which includes:
 - (i) Stands with adequate tree size and canopy cover to provide protection from avian predators and minimal foraging opportunities; in general this may include, but is not limited to, trees with at least 11 in (28 cm) dbh and a minimum 40 percent canopy cover; and

- (ii) Younger and less diverse forest stands than foraging habitat, such as even-aged, pole-sized stands, if such stands contain some roosting structures and foraging habitat to allow for temporary resting and feeding during the transience phase.
- b) Habitat supporting the colonization phase of dispersal, which is generally equivalent to nesting, roosting, and foraging habitat as described in PCEs (2) and (3), but may be smaller in area than that needed to support nesting pairs.

Approximately 495 acres of the proposed Medford Douglas Salvage Project (Economic Recovery and Roadside Safety and Fire Planning) are within Critical Habitat Unit (CHU) 9, sub-unit K LW-1. The following descriptions for the Critical Habitat Unit (CHU) 9, sub-unit K LW-1 are directly out of the final rule in the *Federal Register* (77 Federal Register 233:71931-71935).

Unit 9: Klamath West (K LW)

Unit 9 contains nine subunits, and consists of the western portion of the Klamath Mountains Ecological Section M261A, based on section descriptions of forest types from Ecological Subregions of the United States (McNab and Avers 1994, Section M261A). A long north-south trending system of mountains (particularly South Fork Mountain) creates a rainshadow effect that separates this region from more mesic conditions to the west. This region is characterized by very high climatic and vegetative diversity resulting from steep gradients of elevation, dissected topography, and the influence of marine air (relatively high potential precipitation). These conditions support a highly diverse mix of mesic forest communities such as Pacific Douglas-fir, Douglas-fir tanoak, and mixed evergreen forest interspersed with more xeric forest types. Overall, the distribution of tanoak is a dominant factor distinguishing the Western Klamath Region. Douglas-fir dwarf mistletoe is uncommon and seldom used for nesting platforms by northern spotted owls. The prey base of northern spotted owls within the Western Klamath is diverse, but dominated by woodrats and flying squirrels.

K LW-1

The K LW-1 subunit occurs in Douglas, Josephine, Curry, and Coos Counties, Oregon, and comprises lands managed by the State of Oregon and the BLM. Of this subunit 7,682 ac (3,109 ha) are managed by the State of Oregon for multiple uses including timber revenue production, recreation, and wildlife habitat according to the Southwest Oregon State Forests Management Plan (ODF 2010b, entire). Federal lands are managed as directed by the NWFP (USDA and USDI 1994, entire). Special management considerations or protection are required in this subunit to address threats to the essential physical or biological features from current and past timber harvest, losses due to wildfire and the effects on vegetation from fire exclusion, and competition with barred owls. This subunit is expected to function for demographic support to the overall population and for north-south and east-west connectivity between subunits and critical habitat units. This subunit sits at the western edge of an important connectivity corridor between coastal Oregon and the western Cascades.

There are approximately 109 total historic spotted owl sites in this critical habitat sub-unit on BLM and FS lands.

The final 2012 Critical Habitat Rule (77 Federal Register 233:71876-72068) does not make specific recommendations regarding salvage in critical habitat. However, the final rule did address public comments regarding post-fire logging activities. The USFWS responded in the final rule by explaining post-fire logging is addressed in the Recovery Plan for the Northern Spotted Owl (USDI 2011). Specifically, Recovery Action 12 summarizes the post-fire literature on post-fire logging and recommending conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood). The information provided in the Recovery Plan and in Recovery Action 12 was used to influence the Medford Douglas proposed action in critical habitat and for a basis for effects determinations.

Northern Spotted Owl Critical Habitat Baseline Data

Table 10 summarizes the NSO habitat baseline for the entire critical habitat sub-unit KLV-1. The habitat baseline acres were created by the USFWS by clipping the NWFP Interagency Regional Monitoring Program NSO habitat layer to the December 2012 critical habitat layer. The USFWS then created a spreadsheet on 12/19/2012 with the baseline habitat acres by CHUs and sub-units. For this BA, the BLM then subtracted NSO habitat removed from the fire, as well as other habitat altering projects (from USFWS monitoring database), to come up with the current CHU habitat baseline for sub-unit KLV1. Project specific habitat calls are based on field verification, GIS habitat layers, and photo interpretation. Table 11 displays the burn severity to NRF and dispersal (primary constituent elements) within KLV-1. High and moderate burn severity categories of the BARC data were combined to estimate the amount of northern spotted owl habitat that was impacted from the fire. Based on aerial reconnaissance the fire in these areas generally resulted in a high loss of canopy cover and key habitat components so the stands no longer function as Nesting, Roosting, Foraging, or Dispersal habitat.

CHU / Sub-Unit	NRF	Dispersal - Only	Dispersal (NRF + Dispersal Only)	Capable	Non-Habitat	Total (Dispersal + Unsuitable + Non-Habitat)
9 - KLV1	72,396	46,649	119,045	27,396	560	147,001

* Total Unit acres, *Source: NRF/Dispersal removal and downgrade acres from Medford BAs and changes from fires, subtracted from the USFWS NSOCH_2012_Baseline_Summaries_Dec19_2012 Data.*

	Pre-Fire Habitat Acres	High (acres)	Moderate (acres)	Low (acres)	Unburned to Very Low (acres)	Post-Fire Acres	% Change to Habitat from the Fire
KLV1							
NRF	12,171	1,044	1,769	2,572	6,786	8,656	-29 %
Dispersal-Only	1,811	29	96	389	1,297	2,182	+20 %

4. EFFECTS OF THE PROPOSED ACTION

4.1 Effects to Northern Spotted Owls Analyzed by Habitat

The effects to NRF, PFF, and dispersal habitats are summarized in Table 12 and displayed in Map 5 of Appendix B. The projects listed in this BA represent the maximum potential areas proposed for treatment. It is likely that the effects to habitat described below would be reduced at the time of the NEPA Decision Record because it is anticipated that acres will be deferred for various reasons including logging feasibility issues, resulting in less acres offered in the associated Timber Sale.

Table 12. Effects to NSO Habitat from the Proposed Actions

	NRF Removed (acres)	NRF Downgrade (acres)	NRF T&M (acres)	PFF Removed (acres)	Dispersal- Only Removed (acres)	Dispersal- Only T&M (acres)	Capable Treated (acres)	Total Acres Treated
<i>AA Baseline Habitat</i>	39,619			3,327	46,124 (NRF+Dispersal Only)		11,708	98,717 ¹ (total AA)
Medford Douglas Economic Recovery (ER)	13	13	8	498	5	0	101	638
Medford Douglas Safety/Fire Planning (SFP)	0	0	9	87	0	0	4	100
Medford Douglas (ER/ SFP)	0	8	42	700	0	4	120	874
TOTAL	13	21	59	1,285	5	4	225	1,612
% Change to AA Baseline Habitat	-0.03%	-0.05%	No Change	-39%	-0.01 %	No Change	No Change	2% of AA treated

1- Total Action Area acres across all ownership, including 37,553 acres of non-habitat.

Table 13 compares the amount of salvage (and associated road/route and landing construction) of NRF, PFF, and dispersal habitat from the Medford Douglas projects with the amount of untreated habitat that will remain throughout the landscape. Only the acres burned within the Medford District are used for comparison since at the time of this analysis it is unknown what proposed actions may occur within the Roseburg portion of the Douglas Complex.

Table 13. Habitat Proposed for Medford Douglas Salvage (ER/SFP) Compared to Untreated Habitat on Medford BLM Lands within the Douglas Fire Complex

	PFF	NRF	Dispersal- Only	Capable	Total
Total Post-Fire Acres (Medford BLM lands)	3,309	9,299	2,646	3,412	18,665
Treatment Acres ¹	1,285	93	9	225	1,612
Percent of Fire Perimeter (on BLM) Treated	39%	1%	0.3%	7%	9%

¹= Economic Recovery, Safety/Fire Planning

The determinations below describe the general effects to the habitat from the proposed actions. They represent the total acre effects as summarized in Table 12. The determinations cover NRF removal, NRF downgrade, NRF treat and maintain, PFF removal, dispersal removed, dispersal treat and maintained, and capable treated collectively for each project unit. These general effect determinations serve as a starting point for the more detailed analysis for effects to each NSO site within the Action Area and (Section 4.2) and for effects to critical habitat (Section 4.3).

The BLM has determined the removal of 13 acres of NRF habitat associated with the road/route and landing construction (removal of green trees) may affect and is likely to adversely affect (LAA) northern spotted owls because:

- The removal of NRF habitat through road/route, and landing construction would remove key habitat elements, including large-diameter trees with nesting cavities or platforms, multiple canopy layers, adequate cover, and hunting perches.
- No canopy would exist after the construction. These treatment acres would not be expected to provide suitable NRF habitat for many years post-treatment, especially in areas where the road and landings will not be decommissioned.
- The removal of these key habitat features would reduce the nesting, roosting, foraging, and dispersal opportunities for owls in the project area, and lead to increased predation risk.
- Loss of habitat will reduce opportunities for future reproduction and survival of young.
- Removal of NRF would reduce the amount of existing NRF in the Action Area by 0.03%.

The BLM has determined the downgrading of 21 acres of NRF habitat associated with the Medford Douglas Salvage Project (*removal of green trees in yarding corridors and small pockets of salvage within larger NRF stands*) may affect, and is likely to adversely affect (LAA) northern spotted owls because:

- Removal of dead trees in NRF stands on top of added yarding corridor openings would downgrade suitable NRF habitat to dispersal habitat by removing key habitat elements (high percent of canopy cover, multiple canopy layers, and hunting perches).
- Downgrading of habitat may also occur where small pockets of salvage are located in a larger NRF stand. Generally, during post-fire habitat updates, habitats were not changed when small burned pockets less than five acres occurred in a larger NRF stand. Treatments of these pockets would downgrade the overall function of the NRF stand primarily because canopy would be reduced below 60% and key habitat features would be removed.
- The removal of these key habitat features would reduce NRF habitat within the Action Area by 0.05%

The BLM has determined the maintenance of 59 acres of NRF habitat associated with salvage units (*Economic Recovery and Roadside Safety and Fire Planning*) may affect, but is not likely to adversely affect (NLAA) northern spotted owls because:

- The conditions that characterize a stand as NRF would be retained following treatment.
- Canopy cover in treated NRF stands will be retained at or above 60 percent, which would provide the minimum canopy to function as NRF habitat.

- Multiple canopy layers would be retained in stands with more than one layer present prior to treatment, which would provide canopy layering necessary to function as NRF habitat.
- Decadent components important to owls such as large snags, large down wood, and large hardwoods would be retained within the stands, in adjacent stands, and across the landscape.
- Typically, NRF treat and maintain in salvage units would occur in small pockets of high to moderate burn severity within the larger NRF stand. These burned pockets are likely less than 3 acres and did not change the overall habitat determination call when the habitat was updated after the fire.
- Only burned trees would be targeted for removal in these projects. Salvage would only remove individual dead or dying trees or small pockets of dead or dying trees in stands burned at a mixed severity.
- Salvage would not occur in unburned patches of trees in identified units. Especially in units burned at a mixed severity, only the small 1-2 acre patches that burned at a high severity in the units would be salvaged, which would result in < 20% of canopy openings across the overall unit. CWD and snag retention requirements would still be met within the unit.
- No spotted owl nest trees would be removed.

The BLM has determined that the removal of 1,285 acres of post-fire foraging habitat associated with Medford Douglas Salvage units (*Economic Recovery and Roadside Safety and Fire Planning*) and associated road/route and landing construction may affect, and is likely to adversely affect (LAA) northern spotted owls because:

- Adverse impacts are anticipated because foraging habitat is essential to provide a food supply for survival and reproduction.
- Salvage treatments, road/route construction, and landing construction, would remove these key habitat features that may facilitate post-fire foraging for spotted owls.
- Studies of spotted owls in post-fire landscapes indicate that spotted owls use forest stands that have been burned, but generally do not use stands that have been burned and logged. Studies suggest a negative influence of high severity wildfire on spotted owl occupancy and survival may be compounded by prior forest management or post-fire management activities.
- The removal proposed treatment would reduce the amount of PFF habitat within the Action Area by 39%

The BLM has determined that the removal of 5 acres of dispersal-only habitat associated with the Medford Douglas Salvage Project (landing and road/route construction) may affect, but is not likely to adversely affect (NLAA) northern spotted owls because:

- No dispersal habitat will be removed in nest patches.
- The proposed treatments will be dispersed throughout the Action Area which will minimize the potential for adversely affecting spotted owl dispersal.
- Although these watersheds may be low in dispersal habitat, dispersal habitat is widely distributed and abundant throughout the Action Area. The removal of dispersal habitat would not preclude owls from dispersing throughout the Action Area. Removal of

dispersal-only habitat would result the reduction of 0.01 percent of the total dispersal habitat (NRF and dispersal-only) in the Action Area.

- The removal of 1 acre and 4 acres of dispersal-only habitat within the Rogue-Middle and Cow Upper Section 7 watersheds would not preclude owls from dispersing throughout these watersheds. The removal of dispersal habitat would be 0.03 percent in the Rogue-Middle and 0.0001 percent in the Cow Upper Section 7 watersheds. The stands selected for dispersal removal would be expected to re-gain dispersal characteristics within 15-20 years, at which time the stand would be healthier, more suited to ecological site conditions and have less standing mortality.
- Removal of 5 acres (from eight small landings or portions of road construction scattered throughout the action area) would not affect dispersal patterns or create barriers to dispersal outside of CHU.
- Forest landscapes traversed by dispersing owls typically include fragmented mosaic of roads, clear-cuts, non-forested areas, and a variety of forest age classes ranging from fragmented forests on cutover areas to old-growth forests (Forsman et al., 2002).
- One of the five acres of dispersal-only removal is within critical habitat and is discussed in more detail in Section 4.3.

The BLM has determined that the maintenance of 4 acres of dispersal-only habitat associated with the Medford Douglas Salvage Project (*Economic Recovery and Roadside Safety and Fire Planning units*) may affect, but is not likely to adversely affect (NLAA) northern spotted owls because:

- Only burned trees would be targeted for removal. Salvage would only remove individual dead or dying trees or small pockets of dead or dying trees in stands burned at a mixed severity. However, to facilitate the safe removal of these dead or dying trees, some of the adjacent trees (live and dead) may also need to be felled.
- These treatment acres would be expected to continue to provide dispersal opportunities post-treatment.
- Unburned patches in and adjacent to the units would not be treated, which will continue to allow for dispersal in the project area.
- The proposed treatments will be dispersed throughout the Action Area to minimize the potential for adversely affecting spotted owl dispersal.
- Decadent components important to owls such as large snags, large down wood, and large hardwoods would be retained in adjacent stands and across the landscape.

The BLM has determined that the treatment of 225 acres of capable habitat associated with Medford Douglas Salvage (*Economic Recovery and Roadside Safety and Fire Planning units*) project is a No Effect to northern spotted owls because:

- The units do not contain suitable habitat or structure post-fire, so they do not classify as post-fire foraging. The fire burned at the highest severity level that eliminated the structure in these stands in most units. In other units, the structure did not exist prior to the fire because the stands were young plantations or small diameter dispersal stands.
- Seasonal restrictions would be implemented for salvage units to avoid disturbance to adjacent nesting owls from the proposed action.

4.2 Effects to Spotted Owls

4.2.1 Analysis Methods

This section summarizes the analysis used for this consultation. For this particular consultation the BLM developed a set of factors based on NSO resource use across the landscape at various spatial scales (home range, core use area, and nest patch) to inform the effects analysis. Additionally, since the latest science indicates spotted owls use post-fire areas, we have summarized the science below and applied it to the analysis. The spatial scales and general factors are described below, followed by the effects to individual owl sites, which are separated into sites that would be adversely affected (LAA) and sites that are not likely to be adversely affected (NLAA) by the proposed action.

Habitat reduction from the proposed action, including PFF will be analyzed at the home range, core, and nest patch scales. These scales are described in more detail below:

Home Range Circle is an approximation of the median home range size used by spotted owls in the Klamath Province. Medford District uses the median home range estimated for southwestern Oregon of 3,340 acres or a circle with a radius of 1.3 miles. The Home Range Circle provides a coarse but useful analogue of the median home range for northern spotted owl (Lehmkuhl and Raphael, 1993, Raphael et al 1996). Although it provides an imprecise estimate of actual home ranges, the home range circle approach has been used to show that stand age/structure, patch size, and configuration within the circle influences the likelihood of occupancy. When less than 40 to 60 percent of the circle is in NRF habitat, the likelihood of spotted owl presence is lower, and survival and reproduction may be reduced (Thomas et al. 1990, Bart and Forsman 1992, Bart 1995, and Dugger et al. 2005). Therefore, the home range circle is a useful analytical scale for the purpose of quantifying habitat and the impact to owl sites from proposed habitat modification. The provincial home ranges of several owl pairs may overlap.

Core Area Circle has a radius that captures the approximate core use area, defined as the area around the nest tree that receives disproportionate use (Bingham and Noon 1997). The Medford District uses a 0.5 mile radius (~500 acre) circle to approximate the core area. Research has indicated that the quantity and configuration of “older forest” (analogous to NRF Habitat) provides a valid inference into the likelihood of occupancy (Hunter et al 1995), survival, and reproduction (Franklin et al 2000, Zabel et al 2003, Olson et al 2004, Dugger et al, 2005, Dugger et al 2011). Generally survival and reproduction are supported when there is between 40 and 60 percent older forest within the core (Dugger et al 2005), but local conditions and possibly pair experience, contribute to large variance in actual amounts for individual owls. The amount of habitat within an approximate 0.5 mile radius provides reliable predictor of occupancy, and the quantity and configuration have been shown to provide reasonable inferences into survival and reproduction. Core areas represent the areas that are defended by territorial owls and generally do not overlap the core areas of other owl pairs (Wagner and Anthony 1998, Dugger et al. 2005, Zabel et al. 2003, Bingham and Noon 1997).

Nest Patch is the 300-meter radius (70 acres) around a known or likely nest site and is included in the core and home range area. Nest area arrangement and nest patch size have been shown to be an important attribute for site selection by spotted owls (Swindle et al. 1997, Perkins et al. 2000, Miller et al. 1989, and Meyer et al. 1998). Models developed by Swindle et al. (1997) and Perkins et al. (2000) showed that the 200-300 meter radius (and sometimes greater), encompassing approximately up to 70 acres, around a nest is important to spotted owls. The nest patch size also represents key areas used by juveniles prior to dispersal. Miller et al. (1989) found that on average, the extent of forested area used by juvenile owls prior to dispersal averaged approximately 70 acres.

Analysis Approach

Using best available habitat and spatial use information on northern spotted owls, the BLM developed a general approach, informed by local conditions, to evaluate effects determination for individual sites affected by the proposed action. Table 14 provides the general approach, while recognizing site specific conditions may provide exceptions to the factors.

Table 14. Medford BLM General Factors for NSO Site Effect Determinations

LAA Determination Factors	NLAA Determination Factors
<ul style="list-style-type: none"> • NRF Removal or Downgrade in a home range with < 40% pre-treatment NRF on federal lands. • NRF Removal or Downgrade in a 0.5 mile core area with < 50% pre-treatment NRF on federal lands. • NRF Removal or Downgrade that would reduce the pre-treatment NRF amounts below 40% at the home range and 50% at the core scale. • NRF treatment in the nest patch. • High amounts of PFF removal in the nest patch, 0.5 mile core, or home range that could reduce foraging opportunities resulting in effects to survival and reproduction • Sites occupied prior to the fire, where owls may exhibit site tenacity and remain at the site. • Site has strong occupancy and reproduction history. 	<ul style="list-style-type: none"> • Protocol surveys have determined the site has been vacant for at least 6 years. • The fire reduced the amount of NRF on federal lands within the 0.5 mile and home range scales well below 40%. However, this factor is weighed with local conditions in that many owl sites on the Medford District have years of sustained occupancy and reproductive history even though they may only have approximately 30% NRF at the home range scale. • Proposed units are on the outer edge of the approximated home range and/or in combination with (below): <ul style="list-style-type: none"> ○ Proposed units are in low Relative Habitat Suitability (RHS) areas from the MaxEnt model, indicating an areas less likely to support owls. ○ PFF removal in the home range is relatively small and outside of the 0.5 mile core areas.

As indicated above in the NSO Site Baseline Section, there are approximately 45 owl sites within the action area. Of these 45 sites, there are 39 owl sites that have proposed treatment units in their home ranges. Salvage, road/route construction, and landing construction would occur in these 39 home ranges of the Medford Douglas sites. Effect determinations to NSO sites will be based on habitat alteration and potential noise disturbance outside of the critical breeding season.

Table 9 in the NSO Site baseline section shows the changes to NRF habitat at the home range and core scales from the fire for all owl sites in the Medford Douglas Action Area. The reduction of NRF habitat from the fire demonstrates the sites that were potentially adversely affected from the fire. The habitat baseline was revised after the fires and the BLM is basing the effects determinations from the changes in the baseline habitat quantity and quality from the proposed action.

Results from many studies were used to inform anticipated effects to NSO sites from the proposed action. Even with the loss of canopy cover and key habitat components typically found in NRF habitat, studies indicate that burned areas will still function as foraging habitat after the fire, depending on patch size, edge type, and proximity to known owl sites (Bond et al 2002, Bond et al. 2009; Clark 2007, Clark et al. 2011, and Clark et al. 2013). As mentioned in the Definition section, during post-fire habitat updates, we created a habitat type called Post-Fire Foraging to represent these areas that could still serve as foraging after the fire. Studies also indicate that in mixed severity burns, spotted owls will select the best available post-fire suitable habitat. Activity centers with these conditions may persist into the future (Clark 2007). However, when high-severity fire affects a significant portion of the suitable habitat in the core and home range, available literature suggests that Activity Centers are no longer functional and the spotted owls were either killed during the fire, move significantly, or perish soon after the fire (Clark 2007, Gaines et al. 1997, King et al. 1998). In some instances spotted owls were observed temporarily returning to these territories, though the territory no longer functioned to support spotted owl occupancy into the future (Clark 2007). Essentially site fidelity was overridden by the lack of suitable habitat remaining in the historic use area.

Spotted owl post-fire landscape research using radio-telemetry indicated spotted owls use forest stands that have been burned, and may be affected by post-fire salvage (USFWS 2011). For this reason, impacts from planning salvage in PFF habitat in NSO 0.5 mile core areas were factored into design of the project to reduce impacts to spotted owl sites. The GPRA biologists used the extensive survey history for the sites within the Douglas Fire Complex to prioritize sites into three categories (high, medium, low) (See Appendix C - RA 10 Site Prioritization Summary). Efforts were made to reduce the number of owl sites affected by the proposed salvage by eliminating treatment of post fire foraging in many of the 0.5 mile core areas of high priority sites by following RA10 principles (See Section 4.7). Twelve of the 45 sites in the Medford Douglas Fire Action area were determined to be higher priority for protection because they had long term pair responses and multiple years with recent successful reproduction. These higher priority sites based on reproduction and occupancy indicate the sites that would provide the most support to spotted owl demography (USDI 2011). Thirteen of the 45 sites were identified as middle priority sites. Some of these middle ranking sites also had a long history of occupancy and reproduction, but in the last six years experienced declines in pair occupancy rates and reproduction. The eight lower priority sites have been vacant for the last 6 years.

The BLM focused on reducing salvage in the core areas because Bingham and Noon (1997) reported that a spotted owl core area is the area that provides the important habitat elements of nest sites, roost sites, and access to prey, benefiting spotted owl survival and reproduction. Rosenberg and McKelvey (1999) reported that spotted owls are “central place” animals with the core area (the area closest to the nest) being the focal area. Several studies (Wagner and Anthony 1998, Dugger *et al.* 2005, Zabel *et al.* 2003, Bingham and Noon 1997) indicate the core area size for the Klamath and Western Cascades provinces is 0.5 miles (or 500 acres) of the nest site. While the emphasis was on protecting these sites, approximately three sites will still be adversely affected in areas where roadside safety was the highest priority for treatment. Efforts were also made to minimize the amount of removal or downgrading of NRF habitat due to road/route, yarding corridor, and landing construction.

While the proposed action is expected to adversely affect northern spotted owls, the BLM is attempting to reduce these impacts by applying the following design features throughout the entire project: 1) retaining untreated patches of burned trees/snags in all salvage units, 2) retaining higher amounts of snag and coarse woody debris in critical habitat and the 0.5 mile core area of high priority sites, and 3) avoiding salvage in Riparian Reserves within the project area. Avoiding treatment in riparian will help mitigate potential adverse effects to northern spotted owls associated with this project because these areas may serve as important refugia in the post-fire environment. Clark (2007) reported that in burned landscapes, owls were more likely to select habitats in areas of lower elevation and/or close to perennial streams where available.

NSO site level effects discussed in detail below are based on results from extensive survey history done at the sites in or adjacent to the Klamath Demography Study Area prior to the fire, including through 2013, up to the start of the fire. Many of the sites have more than 15 years of consecutive demographic protocol surveys. New sites discovered in the past several years have fewer years of surveys; however, these surveys have still been done to protocol standards in consecutive years. The GPRA wildlife team started surveying these sites in mid-March 2014, with the goal to get 3 visits in by June 2014. At the time of this assessment each site has received one survey visit, and only four sites have been occupied by spotted owls. Each year, the crew typically surveys the past known historic locations first, and expands their search areas on subsequent visits if owls are not observed during the initial survey visits. The crew also plans to establish new survey routes outside of typical expanded search areas to capture the possible shift in habitat use patterns at these sites as a result of reduction of habitat from the fire. As discussed in the PDC section above, if new owl sites are located in unsurveyed suitable habitat, the BLM will review the PDC and the BO to confirm the ESA analysis remains valid. If the impacts to the new site are no longer consistent with the analysis, the BLM will modify or drop units, or reinitiate consultation.

4.2.2 Effects to Individual Owl Sites

The effects to the owl sites are analyzed below and summarized in Tables 15 and 16. Additional information for each site can be found in the data tables in Appendix C. Maps displaying owl sites, home ranges, 0.5 mile core areas, nest patches, and proposed units are found in Appendix B, Maps 6-9).

Summary of Sites Likely to be Adversely Affected from Habitat Modification:

Table 15 describes the 13 known sites (territories) that would be adversely affected from NRF downgrade, NRF removal, or PFF removal a result of the proposed action. As indicated above in the NSO baseline section, multiple site locations can represent one territory. Territories are grouped together in Table 15 by alternating row shaded colors. Table 15 also summarizes adverse effects to unsurveyed suitable habitat in the action area. The sites are discussed in more detail below Table 15.

Adverse effects to owls are primarily based on four factors 1) if NRF habitat is reduced at the home range and core scales to levels that based on best available information would reduce occupancy and impact survival and reproduction, 2) if significant PFF is reduced at the home

range and core scales to levels that based on best available information would reduce occupancy and impact survival and reproduction, 3) if treatments occur in the nest patch, and 4) likelihood of occupancy based on survey data. Effect determinations for this BA were based on results from recent post-fire studies on spotted owls. Results from the three radio-telemetry studies of spotted owls in post-fire landscapes indicate that spotted owls use forest stands that have been burned, but generally do not use stands that have been burned and logged. Studies suggest a negative influence of high severity wildfire on spotted owl occupancy and survival may be compounded by prior forest management or post-fire management activities (Clark et al. 2011, Clark et al. 2013, Jenness et al. 2004, and Roberts et al. 2011). Therefore, these potential added effects from large acres of post-fire salvage are likely to result in adverse effects to the spotted owl sites listed in Table 15. Many of these sites were also very productive sites prior to the fire. All of the LAA determinations described below would be measurable and are expected to adversely impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. When foraging habitat is removed, especially in areas deficient of NRF habitat, the pair may not be able to obtain enough food to successfully fledge their young.

Table 15. Medford Douglas Sites Adversely Affected from the Proposed Action

Site (Territory)	PFF removed (acres)			NRF Reduced ¹ (acres)			Post-Fire NRF Habitat Limited ²		Site Activity in last 6 years ³	General Reason for LAA Determination
	HR	Core	NP	HR	Core	NP	HR	Core		
0903O	101	5	0	4	0	0	YES	YES	Active	High amounts of PFF removal and NRF removal in a deficit home range
0907A	195	110	18	0	0	0	YES	YES	Active	High amounts of PFF removal
0965O	395	106	4	0.8	0.4	0	YES	YES	Active	High amounts of PFF removal
4577A	444	108	19	0.8	0	0	YES	YES	Active	
4577O	442	137	0.4	0.8	0	0	YES	YES	Active	
2212A ⁴	29	0	0	1	0	0	YES	YES	Active	High amounts of PFF removal and NRF removal in a deficit home range
2212B ⁴	102	0	0	3	0	0	YES	YES	Active	
2212O ⁴	108	45	0	2.6	0	0	YES	YES	Active	
2274O	129	38	1.6	11	0	0	YES	YES	Active	High amounts of PFF removal
2248O	31	0	0	11.1	0	0	YES	YES	Active	NRF removal and downgrade in a deficit home range
4071O	8	0	0	11.4	0	0	YES	NO	Active	
2664O	417	88	2	6	0	0	YES	NO	Unoccupied	High amounts of PFF removal
3271O ⁴	102	2	0	1	0	0	YES	NO	Unoccupied	High amounts of PFF removal and NRF removal in a deficit home range
4515O	0.7	0.2	0	4	4	0	YES	YES	Active	NRF downgrade at deficit home range and core scales
4603B ⁴	37	8	0	0.4	0	0	YES	YES	Active	High amount of PFF removal and NRF removal in a deficit home range
4603O ⁴	91	9	0	1.3	0	0	YES	YES	Active	
4604O	148	9	0	4	0	0	YES	YES	Active	High amounts of PFF removal
4605O	181	24	0	0	0	0	YES	YES	Active	High amounts of PFF removal

Table 15. Medford Douglas Sites Adversely Affected from the Proposed Action

Site (Territory)	PFF removed (acres)			NRF Reduced ¹ (acres)			Post-Fire NRF Habitat Limited ²		Site Activity in last 6 ³ years	General Reason for LAA Determination
	HR	Core	NP	HR	Core	NP	HR	Core		
4606A	52	12	0	1.8	0.9	0	YES	YES	Active	High amount of PFF removal and NRF removal in a deficit home range
4606B	55	17	2.6	1.8	0.9	0	YES	YES	Active	
4606O	125	30	0.7	1.8	0	0	YES	YES	Active	
Unsurveyed Suitable Habitat	126			0			N/A		No Surveys	High amount of PFF removal

1 - NRF reduced = NRF removed or downgraded from the proposed action

2 - Habitat Limited = Home range < 40% NRF on federal lands, Core < 50% NRF on Federal Lands.

3 - More information in Appendix D

4 - Site centers are within Critical Habitat

Site #09030

- This site is one of the high priority sites based on the high pair and reproductive rates. Pairs have been detected at this site in 21 of the 26 years the site was surveyed and nesting occurred in 12 of these years. Based on demographic analysis, this site has a pair occupancy rating of 81% and produced 6 young.
- This site is on the edge of the fire perimeter, but some NRF reduction occurred at this site (16 % of the NRF on federal lands at the home range and no reduction of NRF occurred at the core area scale).
- The proposed action would remove 101 acres of PFF at the home range scale and 5 acres at the core scale, which would result in a 66% and 100% reduction of PFF at the home range and core scales. The majority of the units in the home range and all of the units in the core area occur within low habitat suitability according to the Relative Habitat Suitability (RHS) output from the MaxEnt model, indicating locations on the landscape that would not support owls over the long term. PFF would not be removed in the nest patch.
- Four acres of NRF removal would occur outside of the core area, but within the home of this site from landing and route construction. The core still has contiguous NRF that extends west beyond the fire perimeter.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site due to the NRF removal in a deficit home range and the large amounts of PFF removal at the home range. The effects from the proposed action would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #0907A

- This site has had one pair in 10 of the last 22 years. Recently there has been a pair detected at the site in 5 of the last 6 years and the site nested once in the last 6 years. No owls were detected during the 2013 survey season, but a female was located in the nest patch in late September after the fire. This demonstrates the potential site tenacity as suggested in the literature that may occur at spotted owl sites post fire. Clark (2007) found that in some instances spotted owls were observed temporarily returning to territories even though the territory no longer functioned to support spotted owl occupancy into the future.
- The majority of this site burned at high and moderate severity levels. After the fire only 6% of the home range and only 7% of the core area on federal lands contains NRF habitat, which is a reduction of 71% at the home range and 89% at the core scale.
- The majority of the pre-fire NRF that burned at high severity now serves as PFF. The proposed action would remove 195 acres of PFF at the home range scale and 110 acres at the core scale, which would result in a 38% and 40% reduction of PFF at the home range and core scales. Approximately 18 of the 32 acres of PFF in the nest patch would be removed.
- NRF would not be removed at the home range, core, or nest patch scales at this site. Only 23 acres of NRF remain in the nest patch post-fire, compared to 62 acres of NRF before the fire.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site because high amounts of PFF removal within the nest patch, core, and home range scale would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls at the site. Additionally, even with the high reduction of NRF from the fire, the owls may still occupy this site temporarily as indicated by presence of the female at the site after the fire.

Site #09650/4577A,O

- These multiple alternate and original site locations are analyzed as one territory based on the owl pattern of use at all three locations. Since owls are banded within the demography study area, the GPRAs biologists were able to determine the same owls have been using these multiple site locations. Pairs have been detected at this territory in 8 of the last 13 years. Based on demographic analysis, this site has a pair occupancy rating of 62%, and has nested 2 times and produced 2 young in the last 6 years.
- Most recently this site was unoccupied in 2012-2013 and barred owls have been present.
- The majority of the core and home range area associated with this territory burned at high and moderate severity levels, resulting in high losses to NRF habitat (See Table 9).
- The majority of the pre-fire NRF that burned at high severity now serves as PFF. The proposed action would remove large amounts of PFF at the home range and core scales at this territory (see Table 9). The reduction of PFF at the home range would be 50, 53, and 56 % at 09650, 4577A, and 4577O, respectively. The reduction of PFF at the core scale would be 38, 50, and 59 % at 09650, 4577A, and 4577O, respectively. The largest amounts of PFF removal at a nest patch at this territory would occur at the 04577A location, where 19 acres would be removed.

- The proposed action would remove approximately 0.8 acres and 0.4 acres of NRF habitat at the home range scale and core scales. NRF habitat is below thresholds at the home range and core scales at this territory.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site because the effects from high amounts of PFF removal in the nest patch, core, and home range scale would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site.

Site #22740

- This site is one of the high priority sites based on the high pair and reproductive rates. The site has had pairs in 22 of the last 24 years. Most recently pairs have been observed at the site in 4 of the last 6 years and two young have been produced. Based on demographic analysis, this site has a pair occupancy rating of 92% and nesting has occurred in 11 of the last 24 years.
- Contiguous amounts of NRF still exist at the home range, core, and nest patch scales after the fire.
- The proposed action would downgrade approximately 11 acres of NRF habitat at the home range scale, which would result in a 1.5 % reduction of NRF at the home range scale. No NRF would be removed at the core or nest patch scales.
- The proposed action would remove 129 acres of PFF at the home range scale and 38 acres at the core scale, which would result in a 41% and 25% reduction of PFF at the home range and core scales. Approximately 1.6 acres would also be removed within the nest patch.
- The proposed action **may affect, and would likely adversely affect (LAA)** this highly productive site because the effects from high amounts of PFF removal in the core and home range scales would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #22480/40710

- These multiple alternate and original site locations are analyzed as one territory based on the owl pattern of use at both locations. Since owls are banded within the demography study area, the GPRA biologists were able to determine the same owls have been using these multiple site locations. Pairs have been detected at this territory in 16 of the last 24 years. Based on demographic analysis, this site has a pair occupancy rating of 67%, and has nested 8 times in the past 24 years, producing 6 young. Most recently, pairs have been present 6 of the past 6 years, but have not produced young.
- The most recent NSO activity has been at site 22480, while barred owls have been present most recently at site 40710.
- These sites are on the SW edge of the Dad's Creek fire perimeter where primarily low to moderate burn severity occurred, so NRF habitat reduction from the fire was minimal compared to other sites (See Table 9).
- The proposed action would remove a total of 39 acres of PFF at the home range scale between these two sites. PFF would not be removed at the core or nest patch scales.

- The proposed action would downgrade approximately 10 acres and remove 1.4 acres of NRF habitat at the home range scale of these sites, which would be a reduction of 1%. NRF habitat is below thresholds at the home range of sites in this territory. However, contiguous amounts of NRF still exist at the home range, core, and nest patch scales after the fire.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site because the effects from NRF downgrade and removal in a deficit home range would be measurable and would negatively impact essential habitat for nesting and foraging, which could affect reproduction and survival of the owls the site.

Site #45150

- This site has had a pair in 6 of the last 17 years. Recently there has been a pair detected at the site in 3 of the last 6 years and only one young was produced at the site in the last 6 years. No owls were detected during the 2013 survey season. Based on demographic analysis, this site has a pair occupancy rating of 35% and has nested 3 times in the past 17 years.
- This site has had a heavy barred owl presence in the past few years.
- Contiguous amounts of NRF still exist at the home range, core, and nest patch scales after the fire.
- The proposed action would downgrade approximately 4 acres of NRF habitat at the home range scale and 4 acres of NRF at the core scale, which would result in a 0.5 % and 2% reduction of NRF at the home range and core scales. While these acres are relatively small they occur in contiguous patches of NRF and NRF levels are deficit at both the home range and core scales. No NRF would be removed at the nest patch scale.
- The proposed action would remove 0.7 acres of PFF at the home range scale and 0.2 acres at the core scale. No PFF would be removed at the nest patch scale.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site because the effects from NRF downgrade at deficit home range and core scales would be measurable and would negatively impact essential habitat for nesting and foraging, which could affect reproduction and survival of the owls the site.

Site #4603B,O

- These multiple alternate and original site locations are analyzed as one territory based on the owl pattern of use at both locations. Pairs have been detected at this territory in 6 of the last 12 years. Based on demographic analysis, this site has a pair occupancy rating of 50%, and has nested 6 times, producing 4 young in the last 12 years.
- Most recently this site has not had a pair since 2008. After 2008, the site was vacant in 2009, singles were present in 2010-2011, and vacant again from 2012-2013. This site was unoccupied in 2012-2013. Multiple barred owl responses have also occurred at this site in the past few years.
- NRF habitat levels were already low at the core and home range scales of these sites and were reduced even more from the fire (See Table 9).
- The proposed action would remove a total of 128 acres and 17 acres of PFF at the home range and core scales at this territory (between the two sites). PFF would not be removed within the nest patch.

- The proposed action would remove a combined total of 1.7 acres of NRF habitat at the home range scale of these sites and NRF habitat is below thresholds at the home range scale. NRF removal would also occur within high habitat suitability according to the Relative Habitat Suitability (RHS) output from the MaxEnt model, indicating locations on the landscape to support owls over the long term. NRF would not be removed or downgraded at the core or nest patch scale.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site due to the NRF removal within a deficit home range. Since this territory still has contiguous stands of NRF and singles have been present in the past few years, the site could still be occupied in the future, so effects from the proposed action would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site.

Site #4605O

- This site is one of the high priority sites based on the high pair and reproductive rates. Pairs have been detected at this site in 12 of the last 12 years and nesting occurred in 5 of these years. Based on demographic analysis, this site has a pair occupancy rating of 100% and produced 3 young in the past 12 years. The male has been located during early surveys in 2014 and the female has moved to site #4606.
- This site was heavily impacted from the fire with a reduction of 55% and 46% of the NRF on federal lands at the home range and core area scales.
- The majority of the pre-fire NRF that burned at high severity now serves as PFF. The proposed action would remove 181 acres of PFF at the home range scale and 24 acres at the core scale, which would result in a 49% and 44% reduction of PFF at the home range and core scales. PFF would not be removed in the nest patch.
- NRF would not be removed at the home range, core, or nest patch scales at this site.
- The proposed action **may affect, and would likely adversely affect (LAA)** this productive site because the effects from high amounts of PFF removal in the core and home range scales would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #4606A,B,O

- These multiple alternate and original site locations are analyzed as one territory based on the owl pattern of use at all three locations. Pairs have been detected at this territory in 12 of the last 12 years. Based on demographic analysis, this site has a pair occupancy rating of 100%, and has nested 6 times and produced 4 young in the last 12 years. Pairs have been present at this territory 6 of the last 6 years and have produced 4 young. The same pair has been located early in the 2014. The female has moved from site #4605. To date, one non-nesting protocol visit has been completed.
- NRF habitat levels were already low at the core and home range scales of these sites and were reduced even more from the fire, especially at the original site location (See Table 9).

- The proposed action would remove large amounts of PFF at the home range and core scales at this territory (see Table 9). The reduction of PFF at the home range would be 33, 37, and 49% at 4606A, 4606B, and 4606O, respectively. The reduction of PFF at the core scale would be 18, 34, and 73% at 4606A, 4606B, and 4606O, respectively. The largest amounts of PFF removal at a nest patch at this territory would occur at the 4606B location, where 2.6 acres would be removed. PFF would not be removed at the nest patch of the 4606A location.
- The proposed action would remove a 1.8 acres and 0.9 acres of NRF habitat at the home range and core scales of these sites. These are the same unit, road and landing construction acres that are shared by all three site locations. NRF habitat is below thresholds at the home range scale and core scales prior to treatment. NRF would not be removed or downgraded in the nest patch.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site due to the NRF removal in a deficit home range and core area and the large amounts of PFF removal at the home range and core scales. Since this has been an active site recently, the effects from the proposed action would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #2212A, B, O

- These multiple alternate and original site locations are analyzed as one territory based on the owl pattern of use at all three locations. This site is one of the high priority sites based on the high pair and reproductive rates. Pairs have been detected at this site in 18 of the 24 years of surveys and nesting occurred in 11 of the years. Based on demographic analysis, this site has a pair occupancy rating of 75%. A pair has been detected in 6 of the last 6 years, and the pair nested 3 of the last six years, producing 3 young.
- NRF habitat levels were already low at the core and home range scales of these sites and were reduced even more from the fire, especially at the original site location (See Table 9). Even though this site was productive with low NRF amounts within the core and home range prior to the fire, the current post-fire percentage of NRF at home range on federal lands ranges from 11-14%. Additionally, the current post-fire percentage of NRF at the core scales on federal lands ranges from 13-15%. The low habitat amounts within the home range and core scales reduces the future viability of this site.
- The proposed action would remove large amounts of PFF at the home range scale. The reduction of PFF at the home range would be 29, 33, and 28% at 2212A, 2212B and 2212O, respectively. The reduction of PFF at the core scale would be 4 and 23% at 2212A and 2212O, respectively. PFF would not be removed within the core of 2212B or within any of the nest patches. The majority of the PFF removal is located on the upper slopes/ridgetops and is within low habitat suitability according to the Relative Habitat Suitability (RHS) output from the MaxEnt model.
- The proposed action would remove 3, 3, and 2.6 acres of NRF habitat respectively at the home ranges of 2212A, 2212B, and 2212O from road/route and landing construction. NRF would not be removed or downgraded in the core or nest patch.

- Even though salvage has been dropped within the core areas, the proposed action **may affect, and is likely adversely affect (LAA)** this site because the effects from high amounts of PFF removal in the home range would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #46040

- This site is one of the high priority sites based on the high pair and reproductive rates. Pairs have been detected at this site in 12 of the last 12 years and nesting occurred in 5 of the years. Based on demographic analysis, this site has a pair occupancy rating of 100% and has nested 6 times in the past 12 years, producing 4 young. A pair has been detected in 6 of the last 6 years.
- NRF habitat levels were already low at the core and home range scales of these sites and were reduced even more from the fire, especially at the original site location (See Table 9). Even though this site was productive with low NRF amounts within the core and home range prior to the fire, after the fire only 16% of the home range and 20% of the core area contain NRF on federal lands. The remaining NRF habitat post -fire, is also distributed in patchy conditions. The low habitat amounts and NRF configuration within the home range and core scales may make this site unlikely to be occupied in the future.
- The proposed action would remove 148 acres of PFF at the home range scale and remove 9 acres of PFF at the core scale. This would result in a 52% reduction of PFF at the home range. PFF would not be removed within nest patch.
- The proposed action would downgrade approximately 4 acres of NRF habitat at the home range scale. NRF would not be removed or downgraded in the core or nest patch.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site due to the NRF removal in a deficit home range and the large amounts of PFF removal at the home range. Since this has been an active site recently, the effects from the proposed action would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls the site. Even though this site was identified as a high priority site, salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety) (See RA10 description in Section 4.7).

Site #2664

- This site has only had a pair once (2007) in the last 13 years, and no resident owls have been observed in the last 6 years. Based on demographic analysis, this site has a pair occupancy rating of 15% and has never produced young.
- Barred owls have also been present at this site.
- After the fire only 17% of the home range on federal lands contains NRF habitat. However, 51% of the 0.5 mile core area on federal lands contains NRF habitat.
- The proposed action would downgrade approximately 6 acres of NRF habitat at the home range scale, which would result in a 1 % reduction of NRF at the home range scale. No NRF would be removed at the core or nest patch scales.

- The proposed action would remove 417 acres of PFF at the home range scale and 88 acres at the core scale, which would result in a 57% and 76% reduction of PFF at the home range and core scales. Approximately 2 acres would also be removed within the nest patch.
- The proposed action **may affect, and is likely adversely affect (LAA)** this site because the effects from high amounts of PFF removal in the core and home range scales would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls.

Site #32710

- This site has only had a pair in four of the last 22 years, and no resident owls have been observed in the last 6 years. Based on demographic analysis, this site has a pair occupancy rating of 18%. Only two nesting attempts occurred at this site and only one young was produced.
- This site has had a heavy barred owl presence in the past several years.
- The fire burned at a lower severity in the majority of this home range. After the fire 28% of the home range and 64% of the core area on federal lands contains NRF habitat.
- Only one acre of NRF removal would occur in the home range from landing construction. NRF would not be removed at the core or nest patch scales.
- The proposed action would remove 102 acres of PFF at the home range scale and 2 acres at the core scale, which would result in a 55% and 50% reduction of PFF at the home range and core scales. PFF would not be removed within the nest patch.
- The proposed action **may affect, and would likely adversely affect (LAA)** this site due to the NRF removal in a deficit home range and the large amounts of PFF removal at the home range. The effects from the proposed action would be measurable and would negatively impact essential habitat for foraging, which could affect reproduction and survival of the owls.

Summary of Sites Not Likely to be Adversely Affected from Habitat Modification:

Table 16 summarizes the effects to the 26 sites that are not likely be adversely affected by the proposed action. More detailed site specific information can be found in the various data tables in Appendix C. The proposed action is not expected to adversely impact essential habitat for nesting or foraging, which could affect reproduction and survival of the owls associated with the sites listed in Table 16.

The sites are grouped in the table in two categories:

- 1) The proposed actions may affect, but would not likely adversely affect (NLAA) the site because they are unoccupied or have a low likelihood of occupancy (sufficient amounts of older forests on federal lands do not exist to support a pair of northern spotted owls).
 - Sites in the Douglas Fire have been surveyed extensively, so data is available to indicate when sites have not been occupied for several years and likely would not be occupied in the future. Many of the low occupancy sites are also combined with having low amounts of NRF on federal lands within the home range and core scales.

- As mentioned above, at the home range scale, when less than 40 to 60 percent of the circle is in NRF habitat, the likelihood of spotted owl presence is lower, and survival and reproduction may be reduced (Thomas et al. 1990, Bart and Forsman 1992, Bart 1995, and Dugger et al. 2005). For the analysis, only NRF on federal lands is considered because the BLM does not track habitat on private lands. Additionally, adjacent private lands have already salvaged logged their lands, including the removal of green trees. Therefore, we cannot assume private lands are contributing to the older forest conditions in these home range and core areas in the fire area. Many of these sites were already below NRF habitat levels (as indicated above from the best available science) before the fire, and then the fire reduced the NRF even more, reducing the likelihood of future occupancy. See Table 9 for habitat amounts before and after the fire.

2) The proposed actions may affect, but would not likely adversely affect (NLAA) spotted owl sites based on the unit location as it relates to spatial scales and habitat suitability rating, as well as other factors such as unit size.

- NLAA when units are located on the upper portion of the slope, on the ridge, and in low habitat suitability according to the Relative Habitat Suitability (RHS) output from the MaxEnt model. These locations would not cause adverse impacts because the frequency of owl use and likelihood of nesting is much lower in these areas compared to lower on the slope and in the draws.
- NLAA when the units are on the outer edge of the home range where the removal of PFF or NRF would not affect the breeding and foraging that is more likely to occur at the 0.5 mile core area scale.
- NLAA when PFF removal in the home range is relatively small (generally less than 100 acres, or 3% of the home range) and outside of the 0.5 mile core areas. Studies indicate that as distance from cover increases, spotted owl foraging use declines such that limited use of the interior of high-severity burns is expected. The maximum distance from cover that spotted owls will forage remains unknown; however, spotted owls seem to select for the edges of high-severity burns rather than the interior. Additionally, as noted above spotted owls are "central place" animals. Bingham and Noon (1997) reported that a spotted owl core area is the area that provides the important habitat elements of nest sites, roost sites, and access to prey, benefiting spotted owl survival and reproduction. Rosenberg and McKelvey (1999) reported that spotted owls are "central place" animals with the core area (the area closest to the nest) being the focal area. So, it is assumed that PFF outside of the core area would not provide the ideal foraging opportunities.

Sites (Territories)	Reason for Determination	Supporting Information
0896O ^{1,2}	Unoccupied/Low Likelihood of Occupancy	Low habitat amounts post-fire (see Table 9) and site has only been occupied once in 21 years. Heavy barred owl presence.
0906A ²	Unoccupied/Low Likelihood of Occupancy	Low habitat amounts post-fire (see Table 9). PFF removal occurs outside of the core

Table 16. Medford Douglas Sites Not Adversely Affected

Sites (Territories)	Reason for Determination	Supporting Information
0919O ²	Unoccupied/Low Likelihood of Occupancy	Low habitat amounts post-fire (see Table 9) and site has not been occupied in 21 years. Last pair was in 1983.
2213O ²	Unoccupied/Low Likelihood of Occupancy	Low habitat amounts post-fire (see Table 9) and site has not been occupied in the last 6 years. Barred owls present.
4579A,O ²	Unoccupied/Low Likelihood of Occupancy	Only 1 pair response in the last 6 years and limited single responses in other years. Low habitat amounts post-fire (see Table 9). No NRF removed or downgraded. 55 (4579A) and 12 (4579O) acres of PFF removed at the home range scale.
4607O ²	Unoccupied/Low Likelihood of Occupancy	Low habitat amounts post-fire (see Table 9) and low occupancy rate. No pair responses in 21 years and no responses in last 6 years.
4670O ²	Unoccupied/Low Likelihood of Occupancy	The site center is the outer edge of the fire perimeter. The site is low productive owl site, with limited single male responses in the past several years. Barred owls are also present at this site. 1.2 acres and 0.6 acres of NRF removed at the home range and core scales from landing and road construction. 61 acres and 4 acres of PFF removed at the home range and core scales. One nesting protocol visit has been confirmed at the alternate site location in 2014. The alternate location is located outside of the fire perimeter and on the edge of the action area.
0376O ^{1,2}	Unit Location	19 acres of PFF removed and the unit is on the outer edge of the home range. Approximately half of these 19 acres are also in low RHS.
0377B ^{1,2}	Unit Location	Only 0.1 acres of PFF removed and the unit is on the outer edge of the home range and in low RHS. The majority of the home range is outside of the fire
0895B ²	Unit Location	3 acres of PFF removed and the unit is on the outer edge of the home range.
1911C ^{1,2}	Unit Location	3 acres of PFF removed and the unit is on the outer edge of the home range
0913C ^{1,2}	Unit Location	6 acres of PFF removed and 1 acre of NRF removed and the units are on the outer edge of the home range and in low RHS.
1989O ^{1,2}	Unit Location	25 acres of PFF removed and the units is on the outer edge of the home range. Only 2/3 of this home range is in the fire perimeter, so habitat exists outside of the fire perimeter.
2016A	Unit Location	38 acres of PFF removed, but outside of the core area. This site is on the outer edge of the fire perimeter, so the core is still very intact, with approximately 65% of the core on federal lands containing NRF habitat. Approximately 0.6 acres of NRF would be removed for landing and road/route construction, but the locations are on the outer edge of the HR or outside of the core in low RHS.

Table 16. Medford Douglas Sites Not Adversely Affected

Sites (Territories)	Reason for Determination	Supporting Information
2080A/C ²	Unit Location	23 and 1.4 acres of PFF removed at the home range and core scales of 2080A. The majority of the units are in low RHS. Contiguous and intact NRF still present at the 2080A core. Only 2 acres of PFF removal in the HR of 2080C and no PFF removal within the core and nest patch. Barred owls have been at this territory.
2211O ²	Unit Location	17 acres of PFF removal in the HR and only 0.7 in the core areas. HR treatments are in low RHS. All treatments, including the core area treatments are away from the high use areas, which are still intact after the fire.
2298A ^{1,2}	Unit Location	2.4 acres of PFF removal and units are on the outer edge of HR. Most of the HR is outside of fire and still plenty of contiguous NRF available.
2619O ²	Unit Location	Only 1.4 acres of PFF removed and 0.4 acres of NRF removed. The units are on the outer edge of the home range and in low RHS. The majority of the home range is outside of the fire
2622A ²	Unit Location	29 acres of PFF removed at the HR scale and outside of the 0.5 mile core areas. Most of the HR and contiguous NRF is outside of the fire
3928O ²	Unit Location	1.5 acres of PFF and 0.4 acres of NRF removed and the units are on the outer edge of the home range and in low RHS
4534A,O	Unit Location	This has been a productive owl site. Efforts were made to reduce impacts at the core scale of 4534A, where the most recent activity has been. The majority of the PFF removal in the HR is in low RHS. 7 acres and 37 acres of PFF would be removed at the home ranges of sites 4534A and 4534O. 0.1 acres and 0.6 acres of PFF would be removed within the core areas.
4565O	Unit Location	82 acres of PFF removed will be removed at HR, but not in core. Units are either on the edge of the home range or in low RHS. The core still has contiguous NRF. This site is on the edge of the fire perimeter and half of the home range was not burned.
4575A,O ²	Unit Location	23 (4575A) and 2.5 (4575O) acres of PFF removed in the HR, but outside of the core. The majority of the units are in low RHS. The core will still be intact with contiguous NRF. This is a productive site so efforts were made to eliminate effects at the core scale.
4578O	Unit Location	6 acres of PFF removed and the unit is on the outer edge of the home range. The site has only had a pair response 1 year out of the last 13 years.
4623O	Unit Location	4 acres of PFF removed and the unit is on the outer edge of the home range. No owls have been detected in the last 6 years.

Table 16. Medford Douglas Sites Not Adversely Affected

Sites (Territories)	Reason for Determination	Supporting Information
4690A,O ²	Unit Location	2.6 (4690A) and 34 (4690O) acres of PFF removed at the home range scales. The unit is on the outer edge of the home range of 4690A and in low RHS. 0.9 acres of NRF removal at the home range scale of 4690O. This site nested and had 1 young in 2013 at 4090A. So far one nesting confirmation has been made in 2014, close to the 4690A location.

1= Sites on the Roseburg BLM District with home ranges on the Medford BLM District. This assessment is only for post-fire projects on the Medford District.

2= Site centers are in critical habitat.

Effects from Disturbance

Mandatory PDC that restrict activities to outside of the breeding season and/or occur beyond recommended disturbance distance thresholds will be incorporated into the Medford Douglas Salvage Project (Economic Recovery and Road/Fire Planning units) (Appendix A). Applying the Mandatory PDC should avoid noise or activity which would adversely affect nesting owls and their young. Nesting owls are confined to an area close to the nest, but once the young fledge, they can move away from noise and activities that might cause adverse effects.

4.2.2 Effects to Unsurveyed Suitable Habitat

As mentioned above, there is only one block (northern block) of unsurveyed NRF outside of known home ranges in the Medford Douglas Action area that has a high likelihood of occupancy by northern spotted owls. The proposed action may affect, and is likely to adversely affect (LAA) potential owls at this location because 126 acres of PFF would be removed in this area. The concentration of units could reduce foraging opportunities within a potential core area. Disturbance to potential owls is not anticipated at this location because the harvest activities within the disturbance distance of NRF habitat would be restricted during the critical breeding period.

4.3 Effects to Northern Spotted Owl Critical Habitat

Portions of the Medford Douglas Salvage Project are in the 2012 designated critical habitat and the effects to critical habitat are addressed below. Table 17 summarizes effects to the primary constituent elements (Forest Habitat, Nesting Roosting, Foraging, and Dispersal Habitat) from the proposed action.

The consultation process evaluates how a proposed action is likely to affect the capability of the critical habitat to support northern spotted owl nesting, roosting, foraging, or dispersal (primary constituent elements) by considering the scales at which the life-history requirements of the northern spotted owl are based regardless of the species’ presence or absence (USDI 2012).

Sub Unit	Project	NRF Removed (acres)	NRF Downgrade (acres)	NRF T&M (acres)	PFF Removed (acres)	Dispersal Removed (acres)	Dispersal T&M (acres)	Capable Treated (acres)	Total Acres Treated
KLW 1	Medford Douglas Economic Recovery (ER)	8	10	3	352	1	0	19	393
	Medford Douglas Safety/Fire Planning (SFP)	0	0	0	23	0	0	0	23
	Medford Douglas ER and SFP	0	0	0	79	0	0	0	79
CHU 9 TOTAL		8	10	3	454	1	0	19	495

Effects from NRF Removal, NRF Downgrade, and Post-Fire Foraging Removal

The proposed access road construction and landing construction associated with the Medford Douglas Fire Salvage Project (Economic Recovery and Roadside Safety and Fire Planning units) would remove 8 acres of NRF habitat. Areas in the Medford Douglas Salvage Project with yarding corridors through NRF to access burned units would downgrade 10 acres of NRF. These proposed actions in NRF habitat would contribute to a reduction of suitable NRF habitat in one designated critical sub-unit (KLW1). The proposed Medford Douglas Salvage (Economic Recovery and Roadside Safety/Fire Planning) Project would remove an additional 454 acres of PFF in sub-unit KLW1.

According to the 2012 Final CHU rule (77 *Federal Register* 46:14062-14165), Section 7 consultations need to consider the temporal and spatial scale of impacts a proposed action may have on the PCEs. The USFWS recommends using a scale that is relevant to the needs and biology of the spotted owl and believes the 500 acre core area scale is a reasonable metric for land managers to use as a screen when assessing effects on critical habitat. This 500 acre analysis approach was recommended in the proposed critical habitat rule, and to be consistent with recent critical habitat effects analyses, the 500 acre analysis will be used in this BA. To conduct this recommended analysis, the BLM delineated 500 acre (0.5 mile radius) circles around centroids of proposed treatment units that would remove or downgrade NRF or PFF habitat acres in critical habitat. These units represent the areas of critical habitat that would be most impacted by the proposed action and were used to determine potential localized effects to the critical habitat. Pre- and post-treatment NRF (PCE2) and PFF (PCE3) habitat amounts in the 500 acre analysis areas were compared to determine effects to primary constituent elements and primary biological features of critical habitat (Table 18).

Table 18. Pre and Post Treatment NRF and PFF Habitat Amounts in 500 acre buffers

Project	CHU Sub-unit	Unit ID	NRF Acres Pre-Treat	NRF Acres Post-Treat	Percent Changed	PFF Acres Pre-Treat	PFF Acres Post-Treat	Percent Changed	Effects to CH
Medford Douglas Salvage - NRF Assessment	KLW 1	12-5a (plus 2 acres of landings)	307	292	- 5%	33	28	- 15%	LAA
Medford Douglas Salvage - PFF Assessment	KLW 1	27-2a (plus 1 acre in a landing)	50	49	-2%	257	171	-33%	LAA

NRF Removal and Downgrading

Based on the 500 acre analyses the Medford District has determined the NRF downgrading and removal associated with the Medford Douglas Salvage Project in the KLW1 sub-unit may affect and would **likely adversely affect (LAA)** spotted owl critical habitat because the amount of NRF treatment relative to the existing NRF at the 500 acre scale would be measureable. The removal and downgrading of NRF habitat in the 500 acre landscape surrounding the treatment area could reduce spotted owl foraging opportunities (see Section 4.4, Effects to Spotted Owl Prey below) . Also, reducing canopy cover below 60 percent will likely introduce ecological edge effects to the affected stands as well as to adjacent stands of NRF habitat, extending the area of impact beyond the treated areas. These impacts to critical habitat primary constituent elements and principle biological features important to the conservation of spotted owls are measurable and likely to occur.

Post-Fire Foraging Removal

The proposed salvage in the Medford Douglas project will remove 454 acres of post-fire foraging habitat in designated critical habitat. Based on the 500 acre analyses the Medford District has determined the PFF removal associated with the Medford Douglas Salvage Project in the KLW1 sub-unit may affect and would **likely to adversely affect (LAA)** spotted owl critical habitat because the amount of PFF treatment relative to the existing PFF at the 500 acre scale would be measureable. The removal of PFF habitat in the 500 acre landscape surrounding the treatment area is likely to available spotted owl foraging opportunities. As mentioned above, even with the loss of canopy cover and key habitat components, post-fire foraging habitat still provides foraging opportunities after the fire, depending on patch size, edge type, and proximity to known owl sites (Bond et al 2002, Bond et al. 2009; Clark 2007, Clark et al. 2011, and Clark et al. 2013). Clark (2007) determined that diffuse edges resulting from the fire are likely to be good habitat for woodrats, which are more likely to occur at high densities in early seral (brushy/sapling to pole-sized trees) and old-growth forests (Sakai and Noon 1993). Bond et al. (2009) also found that spotted owls were foraging in all burn severities, with a stronger selection for the edges of high-severity burns, presumably taking advantage of an increase in prey (particularly woodrats) during a period of abundant regrowth of shrub and herbaceous vegetation after the fire. Since foraging

habitat is essential to provide a food supply for survival and reproduction, removal of PFF would result in a Likely to adversely affect (LAA) to foraging habitat (PCE 3).

Effects from NRF Treat and Maintain

The BLM has determined that the proposed maintenance of 3 acres of NRF habitat (Economic Recovery Salvage unit) in critical habitat will have an insignificant effect to spotted owl critical habitat and is **not likely to adversely affect (NLAA)** critical habitat because:

- Canopy cover within affected stand will be maintained at 40 percent or greater post-treatment.
- In the Medford Douglas Salvage Project, this includes three acres where only scattered dead and dying trees within the mixed severity portion of the proposed units would be targeted for removal.
- Decadent components important to owls such as large snags, large down wood, and large hardwoods would be retained in adjacent stands and across the landscape.

Effects from Dispersal Removal

The Medford Douglas Fire Salvage Project (landing construction) would remove one acre of dispersal-only habitat in one designated critical habitat sub-unit (KLW1) and will contribute to a reduction of suitable dispersal habitat. The District has determined the removal of one acre of dispersal-only habitat may affect, but would **not likely adversely affect (NLAA)** spotted owl critical habitat because it would result in an insignificant amount of removal of a primary constituent element. The removal of dispersal-only habitat will not affect the intended north-south and east-west connectivity conservation function of this sub-unit because the proposed removal of dispersal-only habitat would result in a reduction of less than 0.001 percent of the dispersal habitat within sub-unit KLW1. Additionally, this one acre of dispersal-only habitat removal would not preclude owls from dispersing through the adjacent landscape because it is small in scope. Forest landscapes traversed by dispersing owls typically include fragmented mosaic of roads, clear-cuts, non-forested areas, and a variety of forest age classes ranging from fragmented forests on cutover areas, to old-growth forests (Forsman et al., 2002). Additionally, when looking at a smaller landscape than the sub-unit, the reduction would still be low. The removal of one acre of dispersal-only habitat would be a reduction of 0.03 percent in the Rogue-Middle Section 7 watershed.

Effects to the Sub-unit

KLW1

Even with the proposed NRF removal, NRF downgrading, and PFF within the critical habitat, KLW1 is still expected to maintain the intended function of providing demographic support for spotted owls because only three of the 109 total historic spotted owl sites this critical habitat sub-unit would be adversely affected by the proposed action (see footnote in Tables 15 and 16 for sites located in critical habitat). The remaining 106 sites (97 %) of the sites in the sub-unit would not be adversely affected by the proposed action and would continue to provide demographic support in the sub-unit.

Even with the removal of NRF and dispersal-only habitat, the proposed action will not affect the intended conservation function of north-south and east-west connectivity between subunits and critical habitat units because the proposed removal of NRF and dispersal-only habitat would result in a reduction of less than 0.001 percent of the dispersal habitat within sub-unit KLW1. The one acre of dispersal removal would not preclude owls from dispersing through the adjacent landscape because it is small in scope and would not affect the surrounding habitat.

There are still large contiguous blocks of NRF/dispersal within this sub-unit post fire, so the fire did not create a barrier to dispersal. Even the high severity burn areas on the border of the Medford District would not restrict dispersal in the CHU because there are unburned/low burn areas to the east and west within the fire perimeter and on the outside of the fire perimeter. The proposed salvage, road/route construction, and landing construction units are in the smaller pockets of high/moderate burn severities on the NW edge of the fire on the Medford District. Habitat supporting the transience phase of dispersal contains stands with adequate tree size and canopy closure to provide protection from avian predators and minimal foraging opportunities. This may include younger and less diverse forest stands than foraging habitat, such as even-aged, pole-sized stands, but such stands should contain some roosting structures and foraging habitat to allow for temporary resting and feeding during the movement phase (USDI 2011). Since PFF habitat has very little canopy cover to provide protection from avian predators, PFF likely does not function as dispersal habitat. Therefore, the removal of PFF within the sub-unit would not affect dispersal within and outside of the critical habitat unit. Additionally, spotted owls are able to move successfully through highly fragmented landscapes typical of the mountain ranges in western Washington and Oregon (Forsman *et al.* 2002).

4.4 Effects to Northern Spotted Owl Prey

The northern flying squirrel, red tree vole, dusky-footed woodrat, and bushy-tailed woodrat are important prey of the northern spotted owl in this action area (Forsman *et al.* 2004). Spotted owl prey relationships are complex and prey-switching may be important (Courtney *et al.* 2004). Salvage harvest projects may impact spotted owl foraging by changing habitat conditions for different species of prey.

Bingham and Noon (1997) reported that a spotted owl core area is the area that provides the important habitat elements of nest sites, roost sites, and access to prey, benefiting spotted owl survival and reproduction. Rosenberg and McKelvey (1999) reported that spotted owls are “central place” animals with the core area (the area closest to the nest) being the focal area. Therefore, effects to prey species are likely most critical at the nest patch and core areas. Effects to spotted owl sites at the nest patch and core areas are analyzed in Section 4.2.2 above and the effects to prey species can also be derived from this data. Sites with salvage removing post-fire foraging habitat within cores will have the greatest effect to potential prey habitat and reduction of foraging opportunities for spotted owls. The BLM anticipates that impacts to prey within the Medford Douglas Salvage Project (Economic and Road Safety/Fire Planning units) will adversely affect spotted owls in the area, especially where NRF and PFF is removed within the 0.5 mile core scale.

While the proposed action is expected to adversely affect spotted owl prey, the BLM is attempting to reduce impacts to spotted owls and their prey by retaining some amounts of key habitat features important to prey species. Various amounts of large standing and coarse woody debris, hardwoods, and untreated green and burned patches would be retained within the project area, which are important to spotted owl prey species. Additionally, approximately 12,247 (99.7%) and 3,164 (99.2%) acres of NRF and dispersal habitat on BLM managed lands within the Douglas Complex Fire perimeter will not be treated, which will reduce the impacts to potential prey and foraging habitat for northern spotted owls. These untreated areas will continue to provide foraging opportunities for owls located within the project area and within the fire perimeter. In the long term, snags in the untreated high burn severity areas will fall and be converted to down logs. This may have a positive or neutral effect on NSO because it will contribute to CWD, improving habitat for NSO prey species, but the availability of perch sites for NSO would decrease.

It is not likely that prey, such as flying squirrels, would be negatively affected by the proposed salvage units actions, which is the majority of the project, because large dead wood would be retained and some canopy diversity will be maintained. Additionally, the areas proposed for salvage are in heavily burned areas with low canopy cover and do not serve as quality flying squirrel habitat. Several habitat components that have been associated with high-quality flying squirrel habitat, including understory cover, large snags, large trees, shrubs, high canopy cover, abundant down wood, large down wood, increased litter depth, and availability of fungi (Wilson and Forsman 2013) are no longer present in these stands. Additionally, the mid-story structure is missing in these stands, which provides sufficient protection for squirrels to sustain population levels (Wilson 2010). Flying squirrel predation pressure increases and their survival and reproduction decrease in stands with too many gaps, large gaps, lacking a mid-story canopy layer, and low overall stem densities (Wilson and Forsman 2013). Residual trees, snags, and down wood that are retained in the units will provide some cover for prey species over time, and will help minimize long term salvage impacts to some prey species. Approximately 34 acres of NRF habitat would be removed or downgraded from landing and route construction. These proposed actions would remove flying squirrel habitat, which could decrease flying squirrel abundance (Wilson 2010, Manning et al. 2011) and reduce spotted owl foraging opportunities in these areas.

Edges created from fires can be areas of good prey availability and potentially increased vulnerability (i.e., better hunting for owls) (Zabel 1995). Clark (2007) determined that diffuse edges resulting from the fire are likely to be good habitat for woodrats, which are more likely to occur at high densities in early seral (brushy/sapling to pole-sized trees) and old-growth forests (Sakai and Noon 1993). Bond et al. (2009) also found that spotted owls were foraging in all burn severities, with a stronger selection for the edges of high-severity burns, presumably taking advantage of an increase in prey (particularly woodrats) during a period of abundant regrowth of shrub and herbaceous vegetation after the fire. Prey animals may be more exposed in the disturbed area or may move away from the disturbed area for 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 hawks, other owls, 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.

4.5 Interrelated and Interdependent Effects

Interrelated actions are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that might occur independently of the larger action, but have no independent utility apart from the action under consideration. Interdependent actions depend on the federal action and would otherwise not take place.

All proposed projects in this BA have interrelated and interdependent effects, such as noise, road construction or timber hauling on existing system roads, and post-harvest brush disposal. Brush disposal activities can include chipping and slashing, but vary according to conditions post-treatment, fuels management objectives, requirements for retention of coarse woody debris, and other resource management goals. Post project fuels reduction of the activity fuels may include biomass removal and pile burning.

4.6 Cumulative Effects

Cumulative effects under ESA are “those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the Action Area of the federal action subject to consultation” (50 CFR 402.02). The effects of future Federal actions will be evaluated during future section 7 consultations and are not included in cumulative effects.

The Medford Douglas Action Area has a checkerboard pattern of ownership of private land interspersed with BLM. Management practices occurring on private lands range from residential home site development to intensive industrial timber management. Salvage logging has already begun on private timber companies by removing trees killed by the 2013 fires on their lands within the Douglas Complex fire perimeter. There are approximately 47,480 acres of non-federal land within the Douglas Complex within the Action Area (Table 5) that may be harvested. Of these 47,480 acres, 6,091 acres (some overlapping) are within the 0.5 mile core area of 45 NSO sites within the Douglas Complex Action Area, which could add to the impacts to these NSO sites from the federal actions (See Appendix C). The BLM does not track pre-harvest habitat on non-BLM managed lands, so it is unknown how many of these acres functioned as NRF before and after the fire and would be removed through salvage on private land.

The majority of state and private forests in Washington, Oregon, and Northern California are managed for timber production. Non-Federal lands are not expected to provide demographic support for spotted owls across and between physiographic provinces (Thomas et al. 1990; USDA and USDI 1994a). Historically, non-Federal landowners practiced even-aged management (clear-cutting) of timber over extensive acreages. Private industrial forestlands are managed for timber production and will typically be harvested between 40 and 60 years of age, in accordance with State Forest Practices Act standards.

Reciprocal ROW permit holders may fell hazard trees and adjacent trees on BLM lands. Landowners or their agents are required to obtain Road Use Permits to build roads across BLM

managed land for commercial purposes or to haul commercial products on BLM maintained road systems. Reciprocal ROWs with private parties already cover many existing road activities in the Action Area. According to BLM Information Bulletin (IB) # OR-2000-174, this is a non-discretionary action, including the disposal of the logs. If these areas occur in LSR or Riparian Reserves, the BLM cannot ask the permittees to leave these trees as CWD. In the most hazardous situations, especially for roads within high to moderate burn severity areas, a 700 feet clearing width may occur along the road. Based on a GIS mapping exercise, a total of 245 acres of NRF, PFF, and dispersal habitat could be removed from this action. All roads within the Medford District located in the Douglas Fire Complex fire perimeters were buffered by 350 feet, clipped to high and moderate burn severity on BLM managed lands, erased out units analyzed in this BA, and then merged with the project habitat layer. However, the amount of potential habitat affected is likely an overestimate because the ROW holders may decide not to pursue this action.

4.7 Consistency with NSO Recovery Plan Recommendations

On June 30, 2011, the US Fish and Wildlife Service (Service) released the *Revised Recovery Plan for the Northern Spotted Owl (Strix occidentalis caurina)* (USDI FWS 2011). The Notice of Final Revised Recovery Plan Availability was published in the Federal Register on 07/01/2011 (76 FR 38575-38576) for the Northern Spotted Owl. Recovery plans are not regulatory documents; rather, they provide guidance to bring about recovery and establish criteria to be used in evaluating when recovery has been achieved. The BLM continues to work with the Service to incorporate Recovery Goals and Actions consistent with BLM laws and regulations. The BLM is a participant in the inter-organizational spotted owl working group (Recovery Action 1) and will continue demographic monitoring to address Recovery Actions 2 and 3. Projects in this BA also follow the intent of other Recovery Actions listed in the Revised Recovery Plan, such as Recovery Action 10, 12, and 32.

Recovery Action 10

The BLM worked to meet the intent of Recovery Action 10 because the projects were planned to minimize effects to spotted owl sites. BLM incorporated RA10 to the extent it was compatible with the primary purpose and need of the project: economic recovery and safety. The SW Oregon Recovery Action 10 Guidance Document (USDA USDI 2013) was used to evaluate sites. High priority sites were identified based on site occupancy and reproduction history as well as post-fire habitat conditions. Protective measures (e.g. reductions in area proposed for salvage, moving landings, and moving route construction) were focused on the core area circle since this area is believed to be most important to spotted owl occupancy and reproduction. Within the core area of high priority sites, salvage units with only economic recovery objectives were dropped and only the minimum habitat removal necessary for safety/fire planning, and access would occur. Economic recovery actions would still occur in home range circles of high priority sites.

The GPRA biologists followed principles in the SW Oregon Recovery Action 10 Guidance Document (USDA USDI 2013) and worked with the interdisciplinary core team to reduce impacts to spotted owl sites within the project area. The area of the Douglas Fire complex had extensive spotted owl surveys prior to the fire since it was part of the Klamath Demography Study Area. The GPRA biologists were able to use this survey data to prioritize sites based on occupancy and

reproduction history (See Appendix C - RA 10 Site Prioritization Summary). The BLM designed the Medford Douglas Salvage project to reduce effects to the higher priority sites with higher occupancy and reproduction rates. As indicated in Table 4, approximately 1,115 acres were dropped from potential salvage treatments in the high priority core areas. PFF salvage units were dropped in many of the 0.5 mile core areas of high priority sites by following RA10 principles. In many cases, proposed salvage was dropped at the nest patch and core scales at high priority pair and reproduction sites. However, some salvage units for safety objectives remained in these areas. The BLM focused on the reducing the impacts to the core areas, because it is the area that provides the important habitat elements of nest sites, roost sites, and access to prey, benefiting spotted owl survival and reproduction (Bingham and Noon1997). Since the fire occurred on Matrix land, one of the objectives for this salvage project was for economic recovery by providing a sustained yield of timber, to provide jobs, and contribute to community stability. The majority of the salvage units for economic recovery would remove high amounts PFF within the home range, but outside of the core area. Additionally, primarily NSO sites with very little NRF habitat left within the home range and core scales and were vacant several years prior to the fire, were targeted for salvage for economic objectives. Table 19 separates the NSO sites that could be adversely affected from the proposed action (identified in Table 15) by the different salvage objectives. Table 19 includes six high priority sites (indicated in bold font), where salvage units were retained, especially at the home range scale, in order to meet the purpose and need of the project (economic recovery and safety).

Table 19. Summary of NSO Sites Adversely Affected by Project Objective

Sites Adversely Affected primarily by Economic Recovery (only) Units (5)	Sites Adversely Affected primarily by both Economic Recovery and Safety and Fire Planning Units (8)	Sites Adversely Affected primarily by Safety and Fire Planning (only) Units (0)
<p style="text-align: center;">2212 A,B,C, 2248O (4071O), 3271O, 4515O, 4603B (4603O)</p>	<p style="text-align: center;">0903A, 0907A, 0965 (4577A, 4577O), 2274O, 2664O, 4604O, 4605O, 4606A, B,O</p>	<p style="text-align: center;">0 sites</p>

Bold sites were identified by the GP biologists as high priority sites.

Recovery Action 12

In lands where management is focused on the development of spotted owl habitat, Recovery Action 12 recommends that post-fire activities should focus on the conservation and restoration of habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood). These areas should promote habitat elements to support spotted owls and their prey, including retention of large trees, snags, defective trees, and coarse woody debris. The BLM worked to meet the intent of Recovery Action 12 because higher retention of snags and coarse woody debris are being left in critical habitat and 0.5 mile core areas of high priority sites compared to BLM administered land with only Matrix land use allocation management considerations. Snag retention would be 1-5 snags/acre higher than the 1995 RMP standards for Matrix. The largest snags and coarse woody debris will be targeted for retention and left in aggregates in order to help conserve these NSO habitat elements that take a long time to develop.

At the landscape level, approximately 17,470 acres (92%) of the total 19,082 habitat acres (Nesting Roosting Foraging, Post-Fire Foraging, dispersal, and capable habitats) on Medford BLM managed lands within the Douglas Complex would not be salvaged which would leave both burned and green legacy features across the landscape. Additional information about habitat reduction amounts is displayed in many of the above tables and throughout the document, but is summarized in Table 20 below. Even with the high amount of PFF removed within the Action area, approximately 99 % of the NRF and dispersal habitat would not be treated within the Action area and other important scales. These areas would continue to provide the necessary legacy features important to owls across the landscape.

Scale	Change to NRF Habitat	Change to Dispersal Habitat	Change to PFF Habitat	Associated Tables
Action Area	- 0.8%	-0.01 %	-39%	5 & 12
Douglas Fire Perimeter Area	-0.4%	-0.2%	- 39%	12 & 13
KLW-1 Sub-unit	-0.02%	-0.001%	N/A	10 & 17
KLW-1 within the Action Area	-0.1%	-0.005%	-32%	5 & 17

N/A – Baseline PFF acres are not calculated at the Sub-Unit Scale

Reforestation would also occur in the Medford Douglas Fire Complex in salvage units and in areas outside of the proposed action, such as previous plantations. The total acres planted would be based on available funding and the prescriptions would be based on site conditions, land use allocations, and other resource objectives.

Recovery Action 32

The BLM is also a collaborator in Recovery Actions that address barred owl issues, such as Recovery Action 32 (RA 32). The intent of RA 32 is to maintain the older and more structurally complex multi-layered conifer forests on federal lands in order not to further exacerbate the competitive interactions between spotted owls and barred owls. Within the administrative units of the Rogue River-Siskiyou National Forest and the Medford District BLM, an interagency, interdisciplinary team was created to develop a methodology for identifying Recovery Action 32/ structurally complex forest for project level planning and NSO consultation needs in SW Oregon (USDA USDI 2010).

RA 32 surveys are not necessary in the Medford Douglas Salvage Project in harvest units located in areas burned at a high severity because they no longer have adequate numbers of habitat characteristics such as high canopy cover, multi-layers, large snags, large coarse woody debris, and decadence required to classify these units as RA32. However, areas with green tree removal (road and landing construction, anchor trees, yarding corridors, etc.) will be reviewed in the field to determine if RA32 stands are present and to ensure these areas would be avoided. The majority these potential green tree removal areas have already been surveyed and approximately 23 acres (in four patches) of RA32 have been identified. Salvage, road construction, or yarding corridors will not occur in these 23 acres of identified RA32 stands. However, some areas are still yet to be evaluated and it is estimated that up to 2 acres of RA32 may be affected by reducing the function of the stand from yarding corridors and skid trail construction. If more RA32 acres are located over this estimate, the BLM would attempt to re-located the yarding corridor or skid

trail, or reinitiate consultation if the function of the RA32 would be compromised from the proposed action.

5. BIOLOGICAL ASSESSMENT CONCLUSIONS

It is the conclusion of this biological assessment that proposed actions may affect the spotted owl species as documented above. Formal consultation is requested for the Medford Douglas Salvage project.

Table 21. Effects Determination Summary			
Project	Effects to NSO	Effects to NSO CHU	Comments
Medford Douglas Salvage (Road Safety/Fire Planning)	LAA	LAA	LAA due to NRF removal, NRF downgrade, PFF removal, and adverse effects to NSO Sites and CHU

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Appendix A: Project Design Criteria (PDC)

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 that 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 that might have otherwise been determined to be likely to adversely affect. The goal of project design criteria is to reduce adverse effects to listed or proposed threatened or endangered species.

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

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

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

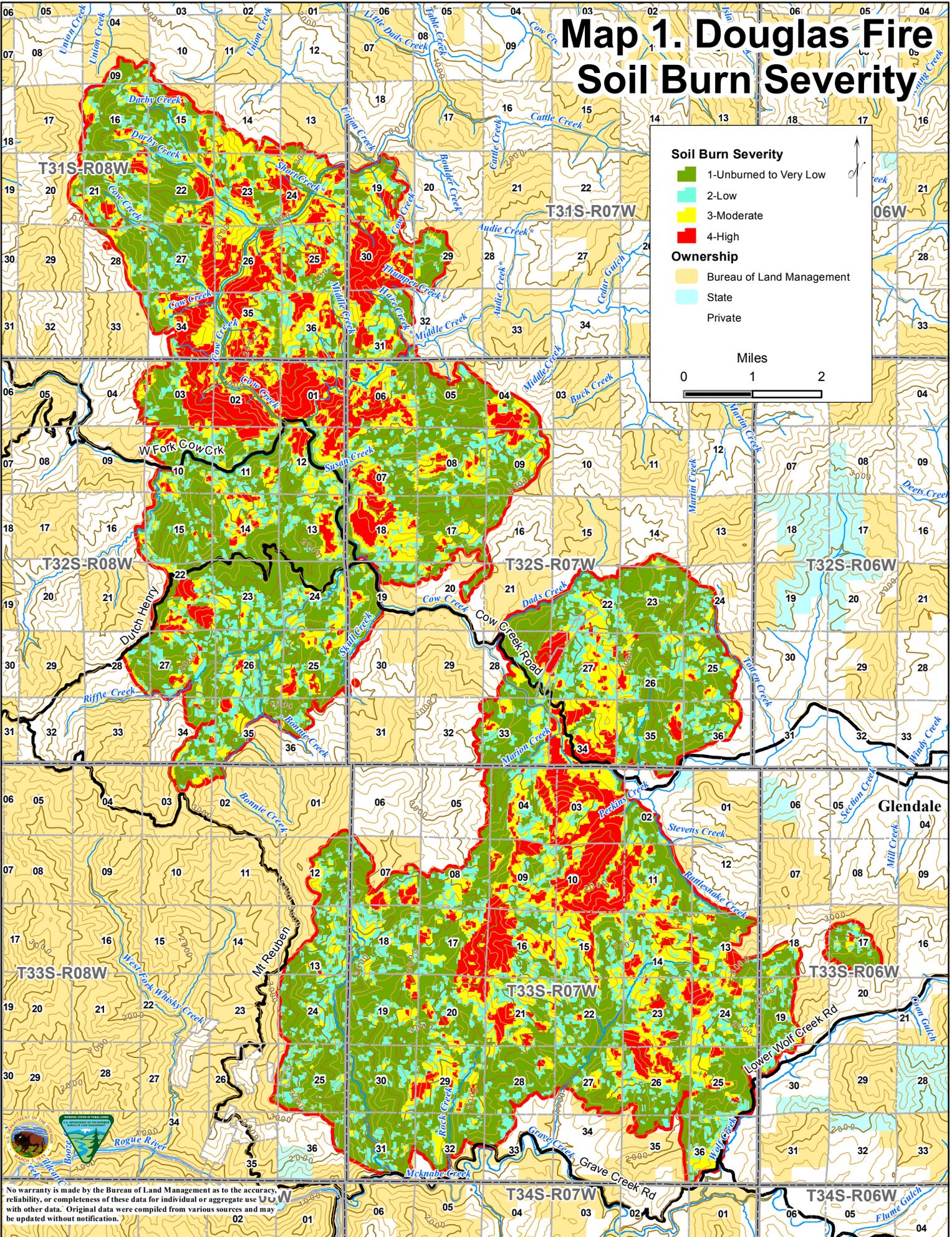
PDC for disturbance are intended to reduce disturbance to nesting spotted owls. For this consultation, potential disturbance could occur near either documented owl sites or projected owl sites. To estimate likely occupied habitat outside of known home ranges, nearest-neighbor distances and known spotted owl density estimates were utilized to “place” potential spotted owl occupied sites in suitable habitat

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

Mandatory Project Design Criteria

A. Activities (such as tree felling, yarding, road/route 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 owl site or NRF habitat in the Northern unsurveyed suitable habitat block between March 1 and June 30 (or until two weeks after the fledging period) – unless protocol surveys have determined the activity center is non-

Map 1. Douglas Fire Soil Burn Severity

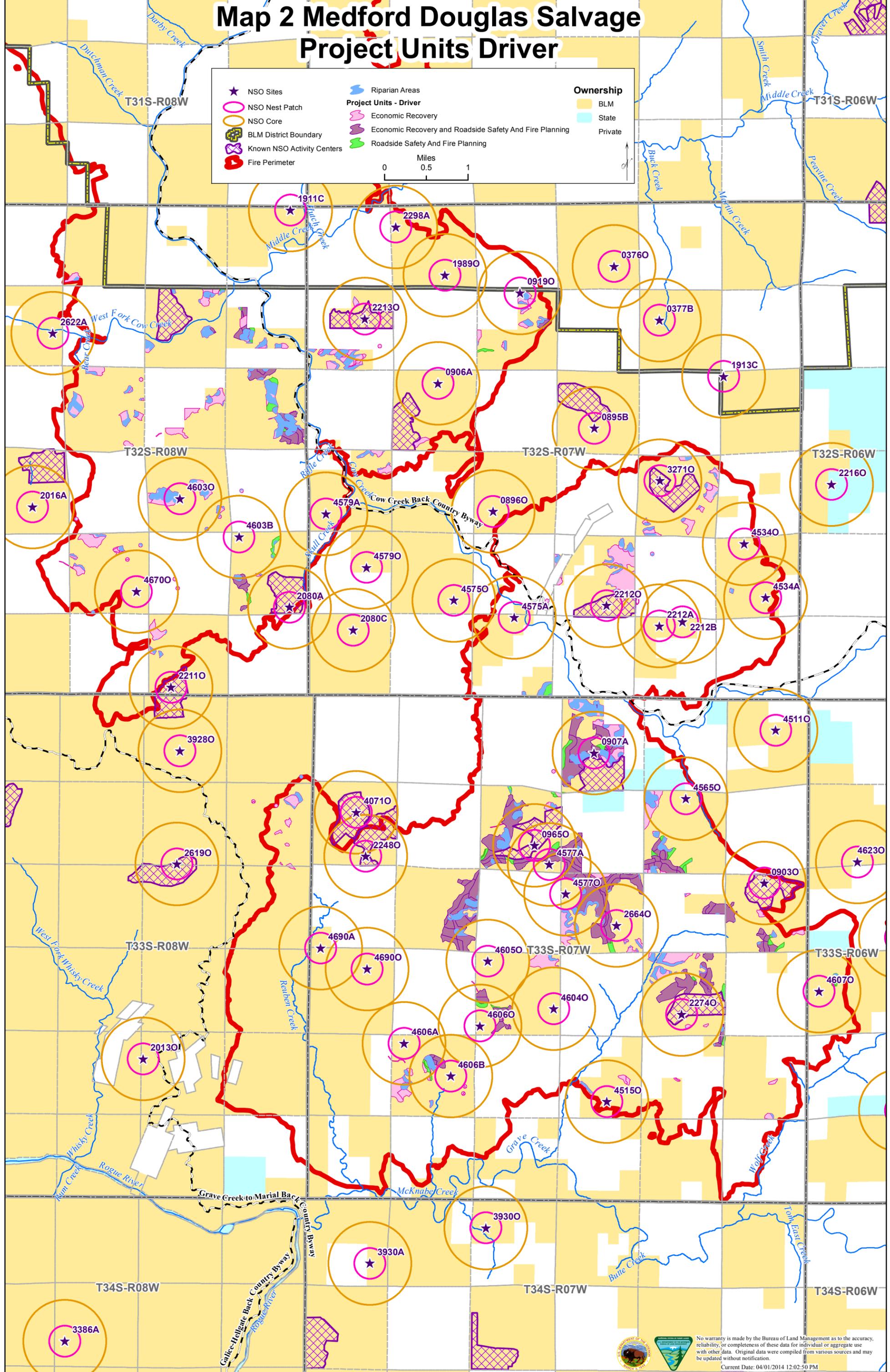


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Map 2 Medford Douglas Salvage Project Units Driver

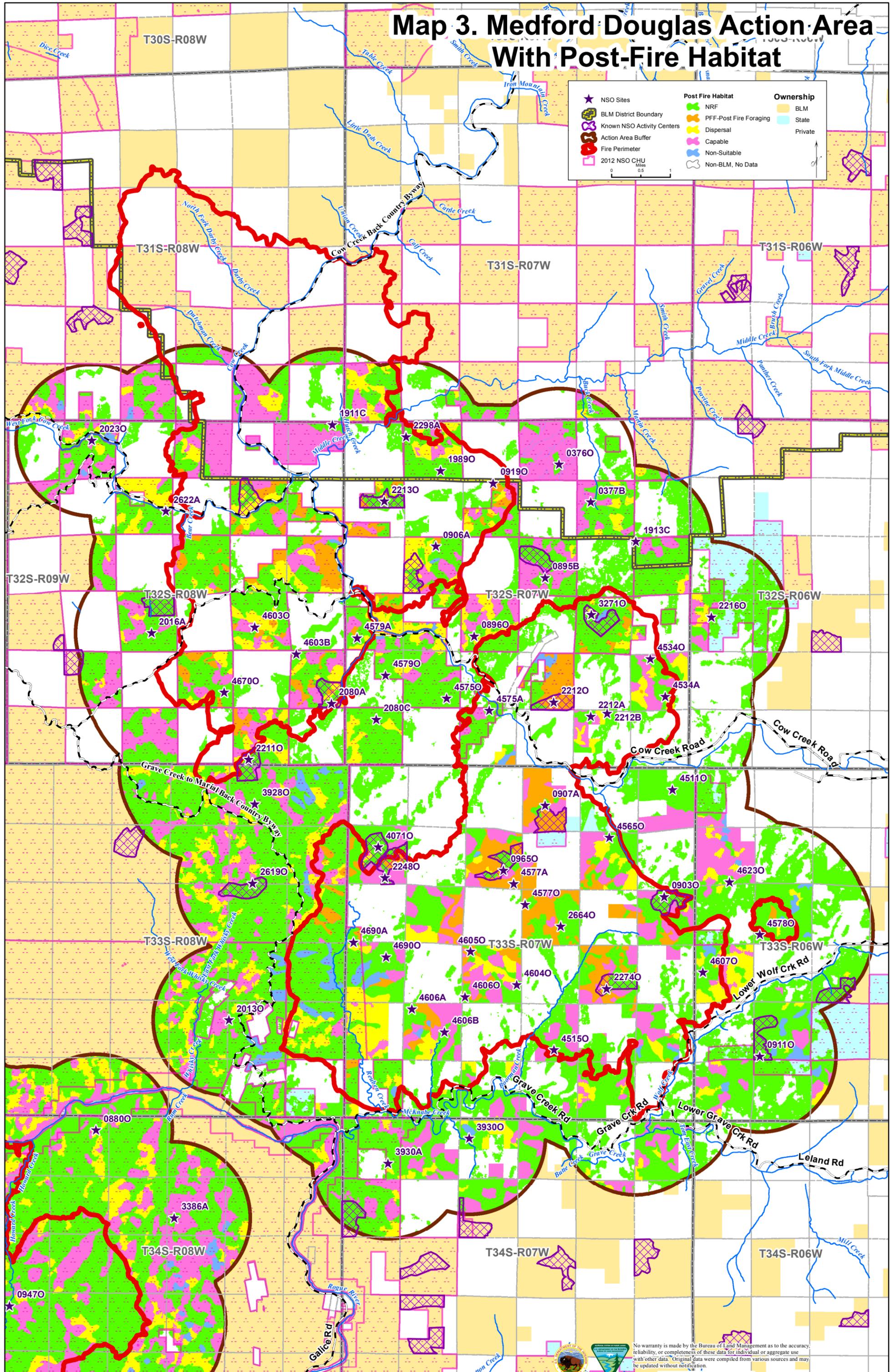
★ NSO Sites	Blue wavy line Riparian Areas	Ownership
○ NSO Nest Patch	Project Units - Driver	Yellow BLM
○ NSO Core	Light pink Economic Recovery	Light blue State
Black dashed line BLM District Boundary	Dark pink Economic Recovery and Roadside Safety And Fire Planning	White Private
Green star Known NSO Activity Centers	Green Roadside Safety And Fire Planning	
Red dashed line Fire Perimeter		

Miles
0 0.5 1



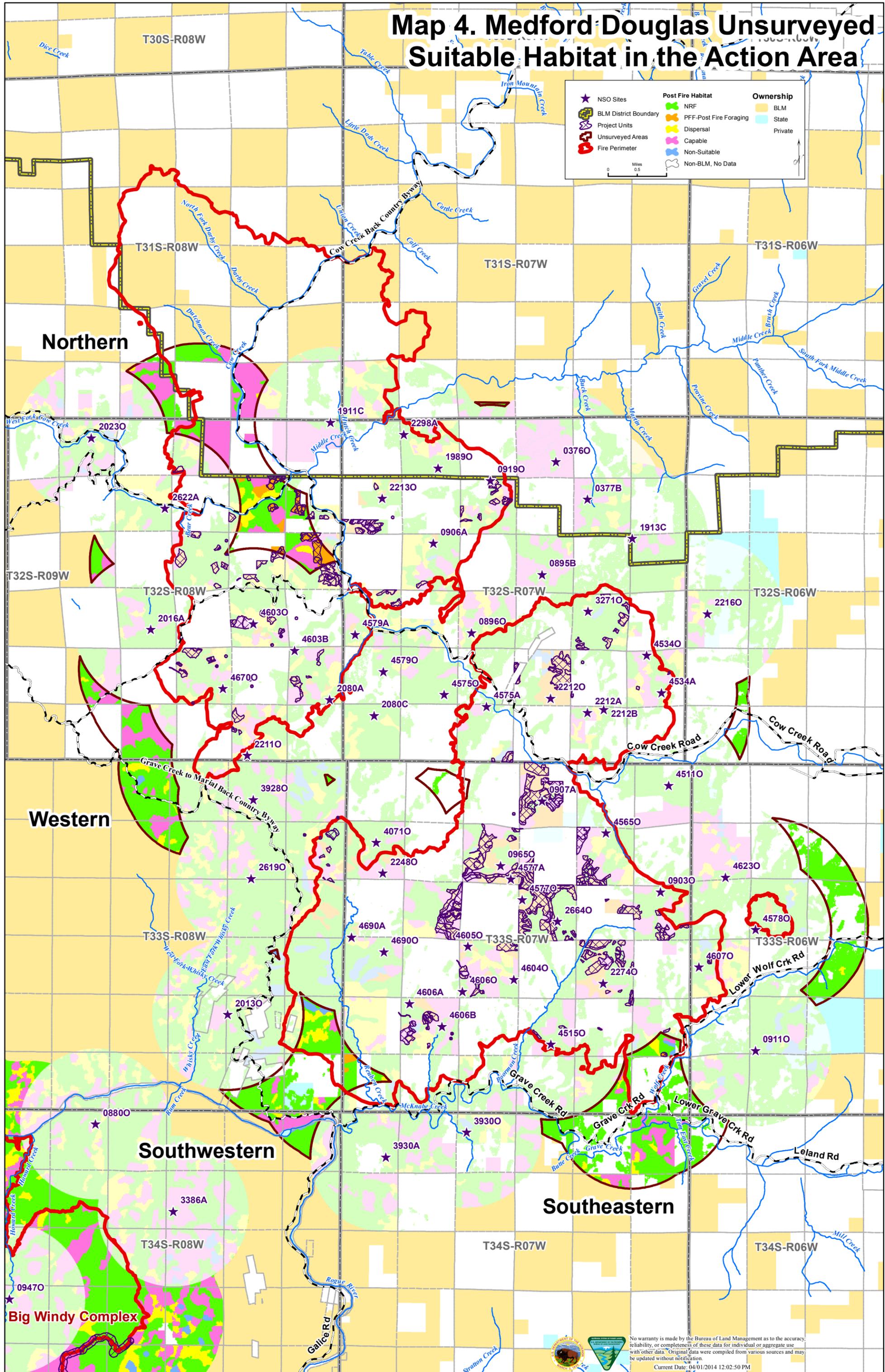
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Map 3. Medford Douglas Action Area With Post-Fire Habitat



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Map 4. Medford Douglas Unserved Suitable Habitat in the Action Area



Post Fire Habitat		Ownership
★	NSO Sites	BLM
📏	BLM District Boundary	State
📐	Project Units	Private
🔴	Unserved Areas	
🔴	Fire Perimeter	
🟢	NRF	
🟡	PFF-Post Fire Foraging	
🟠	Dispersal	
🟡	Capable	
🟠	Non-Suitable	
🟡	Non-BLM, No Data	

Northern

Western

Southwestern

Southeastern

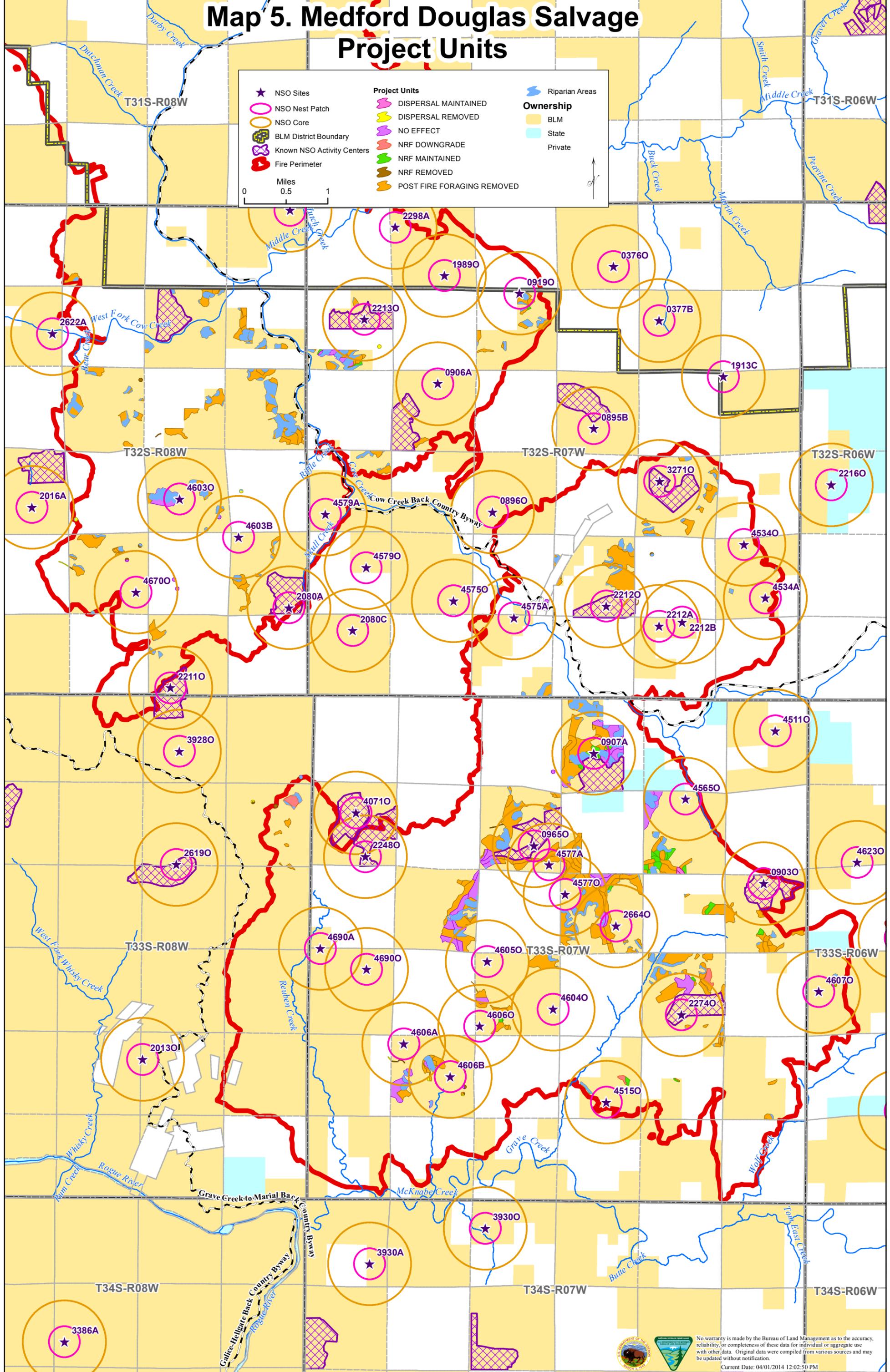
Big Windy Complex

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Map 5. Medford Douglas Salvage Project Units

<ul style="list-style-type: none"> NSO Sites NSO Nest Patch NSO Core BLM District Boundary Known NSO Activity Centers Fire Perimeter 	<p>Project Units</p> <ul style="list-style-type: none"> DISPERSAL MAINTAINED DISPERSAL REMOVED NO EFFECT NRF DOWNGRADE NRF MAINTAINED NRF REMOVED POST FIRE FORAGING REMOVED 	<p>Riparian Areas</p> <p>Ownership</p> <ul style="list-style-type: none"> BLM State Private
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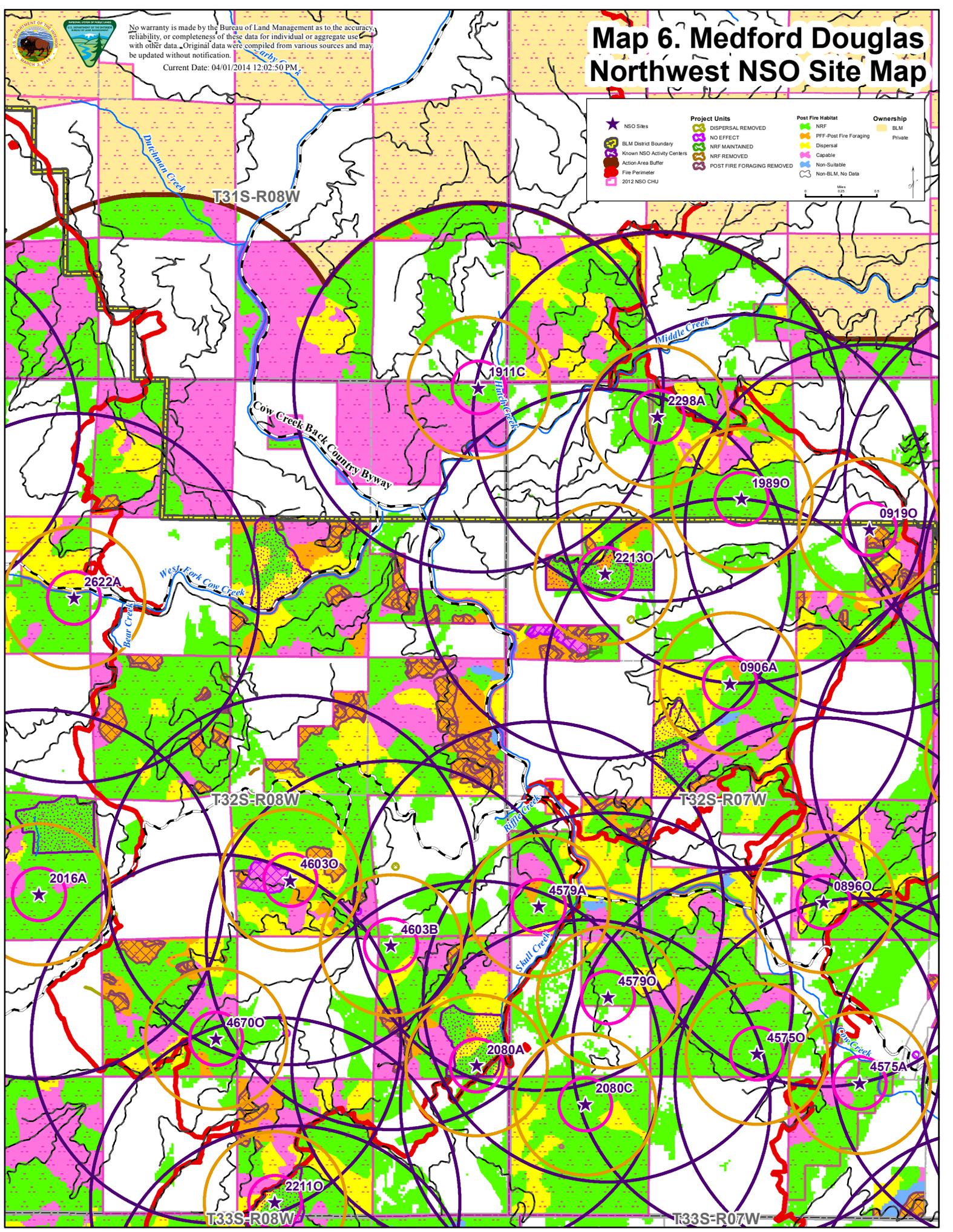




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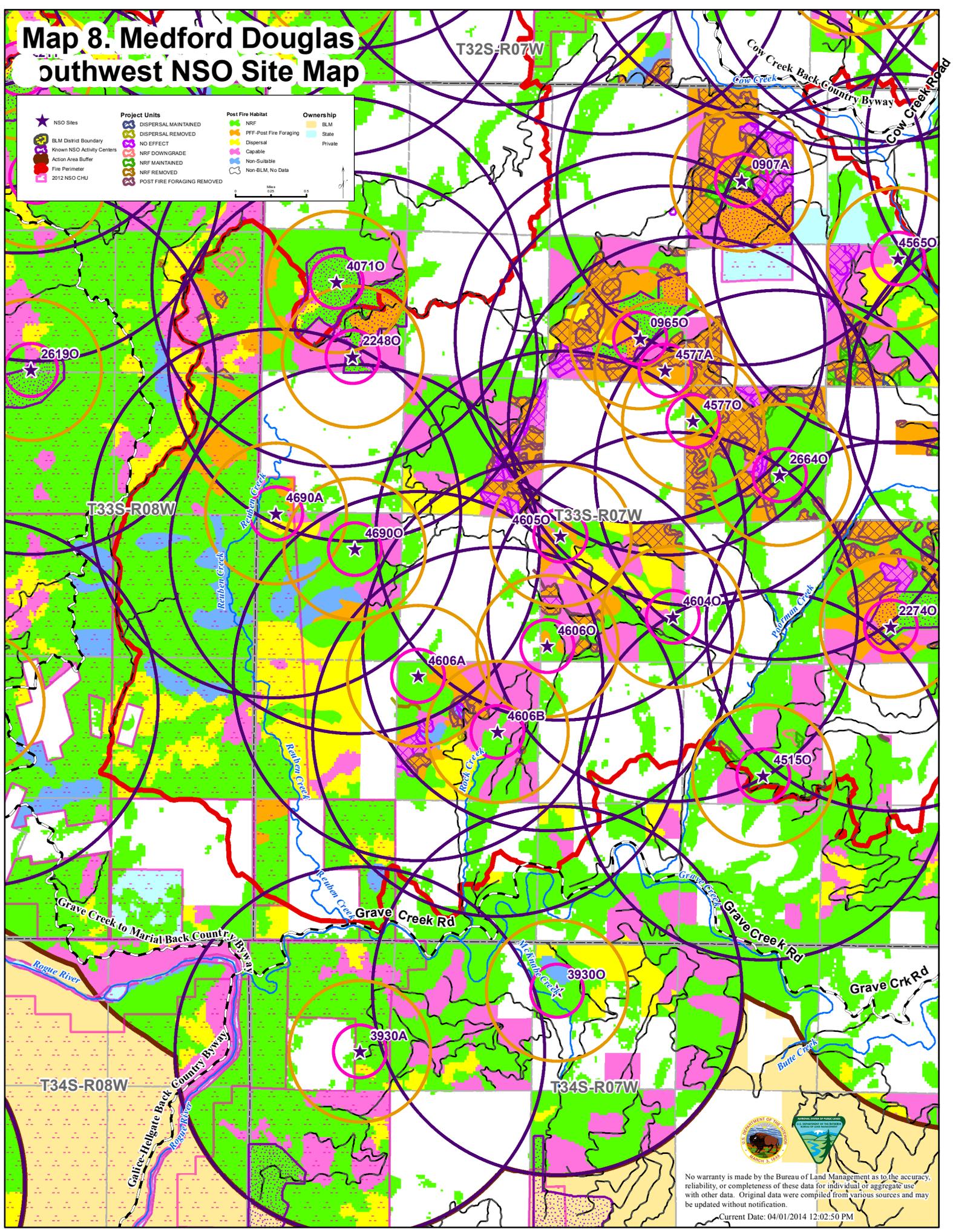
Map 6. Medford Douglas Northwest NSO Site Map

★ NSO Sites	Project Units	Post Fire Habitat	Ownership
○ BLM District Boundary	DISPERSAL REMOVED	NR - Post Fire Foraging	BLM
○ Known NSO Activity Centers	NO EFFECT	Dispersal	Private
○ Action Area Buffer	NR MAINTAINED	Capable	
○ Fire Perimeter	NR REMOVED	Non-Suitable	
○ 2012 NSO CHU	POST FIRE FORAGING REMOVED	Non-BLM, No Data	



Map 8. Medford Douglas outhwest NSO Site Map

<ul style="list-style-type: none"> NSO Sites BLM District Boundary Known NSO Activity Centers Action Area Buffer File Perimeter 2012 NSO CHU 	Project Units <ul style="list-style-type: none"> DISPERSAL MAINTAINED DISPERSAL REMOVED NO EFFECT NRF DOWNGRADE NRF MAINTAINED NRF REMOVED POST FIRE FORAGING REMOVED 	Post Fire Habitat <ul style="list-style-type: none"> NRF PF-Post Fire Foraging Dispersal Capable Non-Suitable Non-BLM, No Data 	Ownership <ul style="list-style-type: none"> BLM State Private
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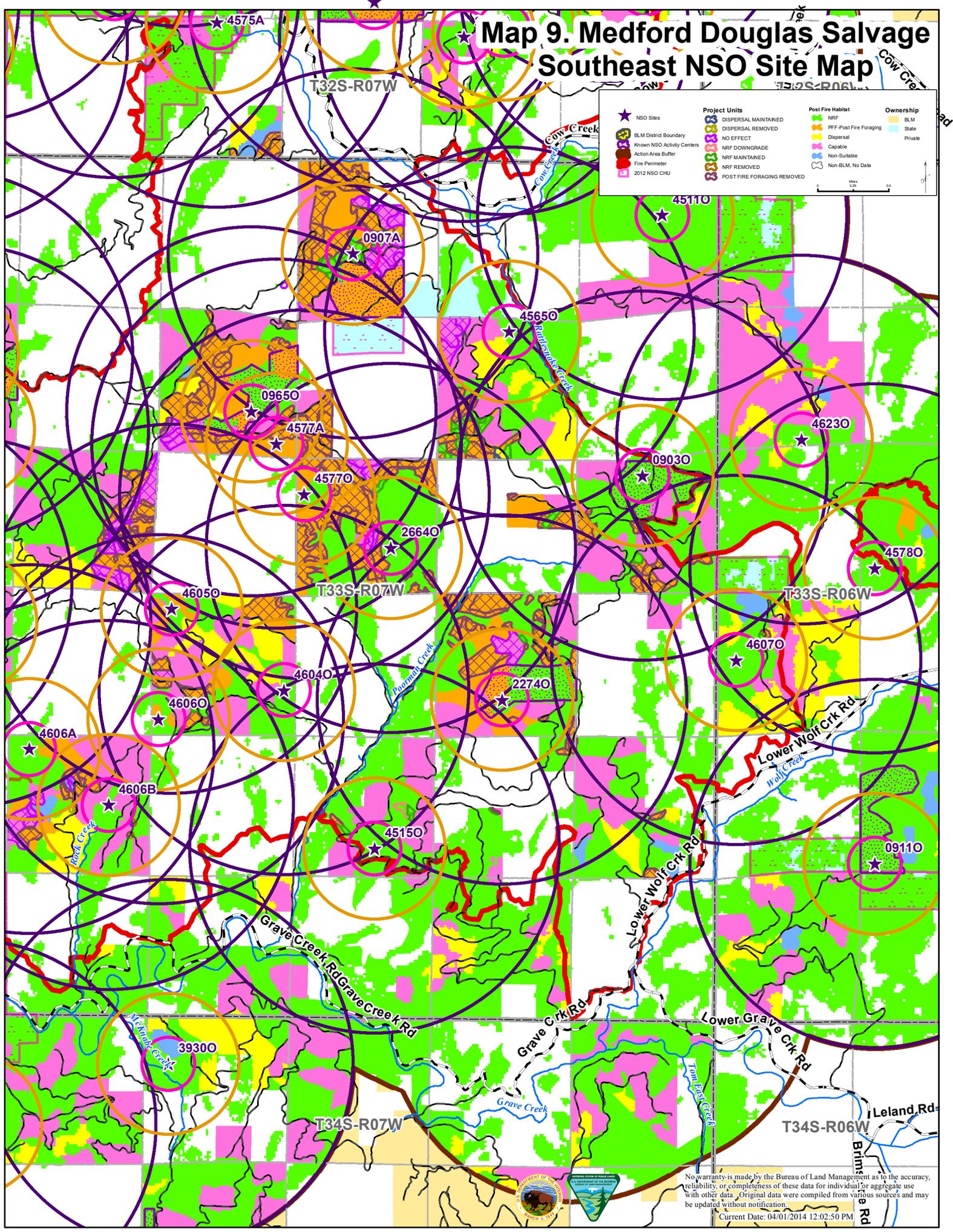


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Map 9. Medford Douglas Salvage Southeast NSO Site Map

★ NSO Sites	Project Units	Post Fire Habitat	Ownership
○ BLM District Boundary	DISPERSAL MAINTAINED	NRF	BLM
○ Known NSO Activity Centers	DISPERSAL REMOVED	PPF-Post Fire Foraging	State
○ Action Area Buffer	NO EFFECT	Dispersal	Private
○ Fire Perimeter	NRF DOWNGRADE	Capable	
○ 2012 NSO CHU	NRF MAINTAINED	Non-Suitable	
	NRF REMOVED	Non-BLM, No Data	
	POST FIRE FORAGING REMOVED		



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nesting or failed in their nesting attempt. The distances may be shortened if significant topographical breaks or blast blankets (or other devices) muffle sound traveling between the work location and nest sites.

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

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

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

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

Appendix A-1. Mandatory Restriction Distances to Avoid Disturbance to Spotted Owl Sites

Activity	Buffer Distance Around 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

* If below 1,500 feet above ground level

Above-ambient noises further than these Table B-1 distances from spotted owls are expected to have either negligible effects or no effect to spotted owls. The types of reactions that spotted owls could have to noise that the Service considers to have a negligible impact, include flapping of wings, the turning of a head toward the noise, hiding, assuming a defensive stance, etc. (SERVICE 2003).

Recommended PDC

Recommended PDC will be incorporated during project implementation when practical. If recommended PDC cannot be incorporated, the project will still be in compliance with this BA.

- No NRF habitat removal will occur within 0.25 miles of any spotted owl site from March 1 through September 30, or until two (2) weeks after the fledging period, unless protocol surveys have determined owls are not present, are non-nesting, or nesting has failed.

Appendix B: Maps

Map 1: Douglas Fire Soil Burn Severity

Map 2: Medford Douglas Proposed Action by Objectives

Map 3: Medford Douglas Action Area with Post-Fire Habitat

Map 4: Unsurveyed Suitable Habitat in the Action Area

Map 5: Medford Douglas Project Unit Habitat Effects

Map 6: Northwest NSO Site Map

Map 7: Northeast NSO Site Map

Map 8: Southwest NSO Site Map

Map 9: Southeast NSO Site Map

Appendix C: Detailed NSO Site Assessments

- 1) Burn Severity at NSO Sites by Home Range, Core, and Nest Patch
- 2) Habitat Treatment Acres by Home Range , Core, and Nest Patch
- 3) NSO Site Effects (Post-Fire and Post-Treatment NRF/PFF percentages)
- 4) RA10 NSO Site Priority List
- 5) Ownership Acres at NSO 0.5 Mile Core Areas

Appendix C: Burn Severity at NSO Sites by Home Range, Core, and Nest Patch Scales

	HR Burn Severity (all ownerships)									Core Burn Severity (all ownerships)								NP Burn Severity (all ownerships)									
	High		Moderate		Low			Outside of Fire		High		Moderate		Low			Outside of Fire		High		Moderate		Low			Outside of Fire	
	Acres	% of total HR	Acres	% of total HR	AcresLow	Acres Unburned to Very Low	% of Total HR	Acres	% of total HR	Acres	% of total Core	Acres	% of total Core	AcresLow	Acres Unburned to Very Low	% of Total Core	Acres	% of total Core	Acres	% of total NP	Acres	% of total NP	Acres Low	Acres Unburned to Very Low	% of Total NP	Acres	% of total NP
0376O	46	1%	81	2%	38	50	3%	3,183	94%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
0377B	0	0%	0	0%	0	0	0%	3,398	100%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
0895B	14	0%	115	3%	216	466	20%	2,587	76%	0	0%	0	0%	4	6	2%	487	97%	0	0%	0	0%	0	0	0%	70	100%
0896O	120	4%	151	4%	238	638	26%	2,251	66%	0	0%	0	0%	0	107	21%	390	78%	0	0%	0	0%	0	2	3%	67	96%
0903O	224	7%	522	15%	404	700	32%	1,549	46%	7	1%	46	9%	59	174	47%	211	42%	2	3%	3	4%	3	55	83%	7	10%
0906A	221	7%	563	17%	497	1,304	53%	813	24%	1	0%	61	12%	65	370	87%	0	0%	0	0%	4	6%	13	52	93%	0	0%
0907A	1,192	35%	816	24%	435	634	31%	322	9%	317	63%	148	30%	26	6	6%	0	0%	18	26%	32	46%	15	5	29%	0	0%
0911O	0	0%	18	1%	46	44	3%	3,290	97%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
0919O	145	4%	268	8%	278	800	32%	1,907	56%	105	21%	115	23%	90	84	35%	103	21%	29	41%	26	37%	5	10	21%	0	0%
1911C	1,218	36%	1,020	30%	487	594	32%	78	2%	158	32%	154	31%	96	89	37%	0	0%	11	16%	24	34%	17	18	50%	0	0%
1913C	2	0%	9	0%	23	127	4%	3,237	95%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
1989O	256	8%	513	15%	463	1,291	52%	876	26%	12	2%	33	7%	73	378	90%	1	0%	0	0%	0	0%	6	64	100%	0	0%
2013O	0	0%	7	0%	71	105	5%	3,215	95%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2016A	144	4%	146	4%	187	560	22%	2,360	69%	0	0%	0	0%	0	1	0%	496	99%	0	0%	0	0%	0	0	0%	70	100%
2023O	0	0%	1	0%	0	1	0%	3,396	100%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2080A	59	2%	215	6%	365	828	35%	1,930	57%	11	2%	27	5%	44	163	41%	252	50%	0	0%	2	3%	3	43	66%	22	31%
2080C	18	1%	63	2%	97	262	11%	2,957	87%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2211O	39	1%	160	5%	344	604	28%	2,251	66%	5	1%	42	8%	62	100	32%	288	58%	0	0%	8	11%	3	5	11%	54	77%
2212A	338	10%	779	23%	675	1,257	57%	349	10%	16	3%	116	23%	105	261	73%	0	0%	0	0%	10	14%	17	43	86%	0	0%
2212B	247	7%	667	20%	620	1,333	57%	531	16%	24	5%	40	8%	95	337	86%	0	0%	0	0%	0	0%	3	67	100%	0	0%
2212O	488	14%	857	25%	683	1,323	59%	48	1%	76	15%	240	48%	110	70	36%	0	0%	7	10%	35	50%	18	11	41%	0	0%
2213O	668	20%	855	25%	522	1,347	55%	6	0%	28	6%	126	25%	101	242	69%	0	0%	0	0%	3	4%	27	40	96%	0	0%
2216O	1	0%	17	1%	58	113	5%	3,209	94%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2274O	435	13%	873	26%	757	1,289	60%	43	1%	144	29%	141	28%	81	131	42%	0	0%	11	16%	30	43%	21	8	41%	0	0%
2298A	399	12%	531	16%	415	1,048	43%	1,005	30%	12	2%	54	11%	63	228	58%	140	28%	0	0%	1	1%	6	62	97%	1	1%
2619O	0	0%	39	1%	39	103	4%	3,217	95%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2622A	141	4%	186	5%	295	785	32%	1,991	59%	6	1%	20	4%	21	33	11%	417	83%	0	0%	0	0%	0	0	0%	70	100%
2664O	626	18%	1,043	31%	792	936	51%	0	0%	55	11%	143	29%	131	168	60%	0	0%	9	13%	10	14%	22	29	73%	0	0%
3271O	50	1%	306	9%	489	1,047	45%	1,505	44%	1	0%	15	3%	75	327	80%	79	16%	0	0%	1	1%	7	62	99%	0	0%
3928O	7	0%	82	2%	111	197	9%	3,000	88%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%

Appendix C: Burn Severity at NSO Sites by Home Range, Core, and Nest Patch Scales

	HR Burn Severity (all ownerships)									Core Burn Severity (all ownerships)								NP Burn Severity (all ownerships)									
	High		Moderate		Low			Outside of Fire		High		Moderate		Low			Outside of Fire		High		Moderate		Low			Outside of Fire	
	Acres	% of total HR	Acres	% of total HR	AcresLow	Acres Unburned to Very Low	% of Total HR	Acres	% of total HR	Acres	% of total Core	Acres	% of total Core	AcresLow	Acres Unburned to Very Low	% of Total Core	Acres	% of total Core	Acres	% of total NP	Acres	% of total NP	Acres Low	Acres Unburned to Very Low	% of Total NP	Acres	% of total NP
3930A	0	0%	12	0%	54	128	5%	3,204	94%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
3930O	0	0%	31	1%	57	212	8%	3,098	91%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
2248O	132	4%	395	12%	668	1,244	56%	960	28%	64	13%	65	13%	91	195	57%	82	16%	17	24%	15	21%	10	29	56%	0	0%
4071O	95	3%	278	8%	462	743	35%	1,819	54%	6	1%	20	4%	44	88	26%	338	68%	0	0%	0	0%	0	0	0%	70	100%
4511O	22	1%	45	1%	107	257	11%	2,968	87%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
4515O	200	6%	268	8%	340	1,026	40%	1,564	46%	6	1%	46	9%	48	158	41%	239	48%	0	0%	1	1%	0	49	70%	20	29%
4534A	44	1%	196	6%	391	961	40%	1,806	53%	7	1%	66	13%	76	183	52%	165	33%	0	0%	4	6%	9	47	80%	10	14%
4534O	28	1%	226	7%	439	1,241	49%	1,464	43%	1	0%	62	12%	122	184	61%	128	26%	1	1%	14	20%	15	36	73%	4	6%
4565O	711	21%	481	14%	278	482	22%	1,446	43%	41	8%	61	12%	64	176	48%	155	31%	6	9%	8	11%	9	47	80%	1	1%
4575A	381	11%	490	14%	403	971	40%	1,152	34%	5	1%	75	15%	70	271	68%	76	15%	0	0%	10	14%	8	51	84%	0	0%
4575O	59	2%	132	4%	152	684	25%	2,371	70%	0	0%	0	0%	0	20	4%	476	95%	0	0%	0	0%	0	0	0%	70	100%
0965O	1,109	33%	890	26%	545	718	37%	136	4%	87	17%	179	36%	113	118	46%	0	0%	19	27%	23	33%	18	11	41%	0	0%
4577A	1,109	33%	925	27%	605	757	40%	2	0%	105	21%	171	34%	125	96	44%	0	0%	19	27%	37	53%	9	4	19%	0	0%
4577O	1,002	29%	947	28%	693	757	43%	0	0%	101	20%	244	49%	96	56	30%	0	0%	0	0%	31	44%	32	6	54%	0	0%
4578O	5	0%	77	2%	169	453	18%	2,695	79%	4	1%	11	2%	28	127	31%	327	65%	0	0%	0	0%	0	20	29%	50	71%
4579A	138	4%	416	12%	421	1,118	45%	1,305	38%	20	4%	83	17%	60	191	50%	143	29%	0	0%	5	7%	15	49	91%	0	0%
4579O	41	1%	156	5%	155	472	18%	2,575	76%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
4603B	114	3%	421	12%	748	1,826	76%	289	9%	6	1%	75	15%	133	283	83%	0	0%	1	1%	8	11%	25	36	87%	0	0%
4603O	216	6%	440	13%	720	1,955	79%	67	2%	9	2%	69	14%	154	265	84%	0	0%	1	1%	15	21%	26	28	77%	0	0%
4604O	338	10%	699	21%	709	1,479	64%	173	5%	31	6%	124	25%	108	234	68%	0	0%	7	10%	17	24%	15	31	66%	0	0%
4605O	652	19%	786	23%	720	1,240	58%	0	0%	194	39%	160	32%	102	41	29%	0	0%	12	17%	26	37%	22	10	46%	0	0%
4606A	213	6%	474	14%	642	2,068	80%	0	0%	31	6%	123	25%	108	235	69%	0	0%	1	1%	12	17%	15	42	81%	0	0%
4606B	191	6%	500	15%	586	1,698	67%	423	12%	24	5%	126	25%	120	227	69%	0	0%	6	9%	25	36%	18	21	56%	0	0%
4606O	411	12%	665	20%	684	1,525	65%	113	3%	66	13%	110	22%	106	215	64%	0	0%	9	13%	21	30%	13	26	56%	0	0%
4607O	164	5%	400	12%	416	884	38%	1,534	45%	2	0%	70	14%	121	254	75%	50	10%	0	0%	0	0%	13	57	100%	0	0%
4623O	19	1%	61	2%	118	393	15%	2,807	83%	0	0%	0	0%	0	0	0%	500	100%	0	0%	0	0%	0	0	0%	70	100%
4670O	196	6%	389	11%	708	1,231	57%	875	26%	30	6%	78	16%	115	247	72%	26	5%	0	0%	4	6%	20	47	96%	0	0%
4690A	83	2%	317	9%	800	1,855	78%	344	10%	0	0%	38	8%	153	305	92%	0	0%	0	0%	9	13%	16	44	86%	0	0%
4690O	201	6%	440	13%	835	1,922	81%	0	0%	23	5%	60	12%	81	332	83%	0	0%	1	1%	2	3%	5	62	96%	0	0%

Appendix C: Habitat Treatment Acres by Home Range, Core, and Nest Patch

NSO SITE	NRF Acres Removed			NRF Acres Downgraded			NRF Acres Maintained			PFF Acres Removed			Dispersal Acres Removed			Dispersal Acres Maintained			Capable Acres Treated		
	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP
0376O	0	0	0	0	0	0	1	0	0	19	0	0	0	0	0	0	0	0	0	0	0
0377B	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
0895B	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
0896O	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	1	0	0
0903O	0	0	0	4	0	0	19	0	0	101	5	0	0	0	0	4	0	0	0	0	0
0906A	0	0	0	0	0	0	2	0	0	42	0	0	1	0	0	0	0	0	6	0	0
0907A	0	0	0	0	0	0	17	17	12	195	110	18	0	0	0	0	0	0	58	32	3
0919O	0	0	0	0	0	0	1	1	0.1	28	19	8	0	0	0	0	0	0	0	0	0
1911C	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
1913O	1	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
1989O	0	0	0	0	0	0	0.8	0	0	25	0	0	1	0	0	0	0	0	0	0	0
2016A	0.6	0	0	0	0	0	0	0	0	38	0	0	2	0	0	0	0	0	0.1	0	0
2080A	0	0	0	0	0	0	0	0	0	23	1.4	0	0	0	0	0	0	0	0	0	0
2080C	0	0	0	0	0	0	0	0	0	2.0	0	0	0	0	0	0	0	0	0	0	0
2211O	0	0	0	0	0	0	0	0	0	17	0.7	0	0	0	0	0	0	0	1.4	0	0
2212A	3	0	0	0	0	0	0	0	0	101	0.9	0	0	0	0	0	0	0	0.2	0	0
2212B	3	0	0	0	0	0	0	0	0	102	0	0	0	0	0	0	0	0	0	0	0
2212O	2.6	0	0	0	0	0	0	0	0	108	45	0	0	0	0	0	0	0	1	0	0
2213O	0	0	0	0	0	0	2.5	0	0	25	9	0	1	1	0	0	0	0	8	0.7	0
2274O	0	0	0	11	0	0	5	1	0	129	38	1.6	0	0	0	0	0	0	19	19	0
2298A	0	0	0	0	0	0	0	0	0	2.4	0	0	0	0	0	66	0	0	0	0	0
2619O	0.4	0	0	0	0	0	0	0	0	1.4	0	0	0.6	0	0	0	0	0	0	0	0
2622A	1	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0
2664O	0	0	0	6	0	0	31	1.5	0	417	88	2	0	0	0	4	0	0	49	8	5
3271O	1	0	0	0	0	0	0	0	0	102	2	0	0	0	0	0	0	0	0	0	0
3928O	0.4	0	0	0	0	0	0	0	0	1.5	0	0	0.6	0	0	0	0	0	0	0	0
2248O	1.1	0	0	10	0	0	0	0	0	31	0	0	0	0	0	0	0	0	11	0	0
4071O	1.4	0	0	10	0	0	0	0	0	8	0	0	0.6	0	0	0	0	0	0	0	0
4515O	0	0	0	4	4	0	3	2.3	0	0.7	0.2	0	0	0	0	0	0	0	0	0	0
4534A	1.2	0	0	0	0	0	0	0	0	7	0.1	0	0	0	0	0	0	0	0	0	0
4534O	5	0	0	0	0	0	0	0	0	37	0.6	0	0	0	0	0	0	0	0	0	0
4565O	0	0	0	0	0	0	39	0	0	82	0	0	0	0	0	4	0	0	52	15	0
4575A	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	1	1	0
4575O	0	0	0	0	0	0	0	0	0	2.5	0	0	0	0	0	0	0	0	1	0	0
0965O	0.8	0.4	0	0	0	0	6	0	0	395	106	4.2	0	0	0	0	0	0	76	2.4	0

Appendix C: Habitat Treatment Acres by Home Range, Core, and Nest Patch

NSO SITE	NRF Acres Removed			NRF Acres Downgraded			NRF Acres Maintained			PFF Acres Removed			Dispersal Acres Removed			Dispersal Acres Maintained			Capable Acres Treated		
	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP	HR	Core	NP
4577A	0.8	0	0	0	0	0	13	0	0	444	108	19	0	0	0	0	0	0	81	0.1	0
4577O	0.8	0	0	0	0	0	18	0	0	442	137	0.4	0	0	0	0	0	0	73	12	0
4578O	0	0	0	0	0	0	1.2	0	0	6	0	0	0	0	0	0	0	0	0	0	0
4579A	0	0	0	0	0	0	0	0	0	55	0	0	0.5	0	0	0	0	0	0.5	0	0
4579O	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0
4603B	0.4	0	0	0	0	0	0	0	0	37	8	0	0.8	0.3	0	0	0	0	12	0.5	0
4603O	1.3	0	0	0	0	0	0	0	0	91	9	0	1.6	0.2	0	0	0	0	12	9	4
4604O	0	0	0	4	0	0	5	0	0	148	9	0	0	0	0	0	0	0	13	0	0
4605O	0	0	0	0	0	0	2.5	0	0	181	24	0	0	0	0	0	0	0	73	15	0
4606A	1.8	0.9	0	0	0	0	2.5	0	0	52	12	0	1.1	0.3	0	0	0	0	30	9	0
4606B	1.8	0.9	0	0	0	0	2.5	0	0	55	17	2.6	1.1	0.8	0	0	0	0	30	4	0
4606O	1.8	0	0	0	0	0	2.5	2.5	0	125	30	0.7	1.1	0	0	0	0	0	48	6.5	0
4607O	0	0	0	1	0	0	4	1.2	0.4	47	2	0	0	0	0	0	0	0	0	0	0
4623O	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
4670O	1.2	0.6	0	0	0	0	0	0	0	61	4	0	1.8	0	0	0	0	0	12	1.8	0
4690A	0	0	0	0	0	0	0	0	0	2.6	0	0	0	0	0	0	0	0	0	0	0
4690O	0.9	0	0	0	0	0	0	0	0	34	0	0	0.3	0	0	0	0	0	27	0	0

NSO site center is in CHU

RED indicates where units were dropped from the EA, but not yet updated in the BA GIS layer

Appendix C: NSO Site Effects (Post-Fire NRF/PFF amounts and Post-Treatment NRF/PFF amounts)

NSO SITE	Treatment Acres				Post Fire NSO NRF / PFF Habitat on Federal Lands												Post Treatment NSO NRF / PFF Habitat on Federal Lands											
	NRF Acres Removed and Downgraded		PFF Acres Removed		HR Post Fire NRF	%	Core Post Fire NRF	%	HR Post Fire PFF	%	Core Post Fire PFF	%	HR Post Fire NRF+PFF	%	Core Post Fire NRF+PFF	%	HR Post Treatment NRF	%	Core Post Treatment NRF	%	HR Post Treatment PFF	%	Core Post Treatment PFF	%	HR Post Fire NRF+PFF	%	Core Post Fire NRF+PFF	%
	HR	Core	HR	Core																								
0376O	0	0	19	0	558	16%	30	6%	51	2%	0	0%	609	18%	30	6%	558	16%	30	6%	32	1%	0	0%	590	17%	30	6%
0377B	0	0	0.1	0	734	22%	196	39%	0.1	0%	0	0%	734	22%	196	39%	734	22%	196	39%	0	0%	0	0%	734	22%	196	39%
0895B	0	0	3	0	851	25%	205	41%	6	0%	0	0%	857	25%	205	41%	851	25%	205	41%	3	0%	0	0%	854	25%	205	41%
0896O	0	0	11	0	1,003	30%	164	33%	18	1%	0	0%	1,021	30%	164	33%	1,003	30%	164	33%	7	0%	0	0%	1,010	30%	164	33%
0903O	4	0	101	5	767	23%	240	48%	153	5%	5	1%	920	27%	245	49%	763	22%	240	48%	52	2%	0	0%	815	24%	240	48%
0906A	0	0	42	0	708	21%	173	35%	133	4%	7	1%	841	25%	180	36%	708	21%	173	35%	91	3%	7	1%	799	24%	180	36%
0907A	0	0	195	110	210	6%	35	7%	520	15%	275	55%	730	21%	310	62%	210	6%	35	7%	325	10%	165	33%	535	16%	200	40%
0919O	0	0	28	19	641	19%	23	5%	72	2%	51	10%	713	21%	74	15%	641	19%	23	5%	44	1%	32	6%	685	20%	55	11%
1911C	0	0	3	0	548	16%	79	16%	15	0%	0	0%	563	17%	79	16%	548	16%	79	16%	12	0%	0	0%	560	16%	79	16%
1913O	1	0	6	0	1,068	31%	164	33%	11	0%	0	0%	1,079	32%	164	33%	1,067	31%	164	33%	5	0%	0	0%	1,072	32%	164	33%
1989O	0	0	25	0	790	23%	214	43%	100	3%	0	0%	890	26%	214	43%	790	23%	214	43%	75	2%	0	0%	865	25%	214	43%
2016A	0.6	0	38	0	1,015	30%	323	65%	83	2%	0	0%	1,098	32%	323	65%	1,014	30%	323	65%	45	1%	0	0%	1,059	31%	323	65%
2080A	0	0	23	1.4	1,105	32%	151	30%	74	2%	17	3%	1,179	35%	168	34%	1,105	32%	151	30%	51	2%	15.6	3%	1,156	34%	166.6	33%
2080C	0	0	2.0	0	1,185	35%	305	61%	18	1%	0	0%	1,203	35%	305	61%	1,185	35%	305	61%	16	0%	0	0%	1,201	35%	305	61%
2211O	0	0	17	0.7	1,361	40%	253	51%	77	2%	8	2%	1,438	42%	261	52%	1,361	40%	253	51%	60	2%	7.3	1%	1,421	42%	260.3	52%
2212A	3	0	101	0.9	387	11%	75	15%	343	10%	22	4%	730	21%	97	19%	384	11%	75	15%	242	7%	21.1	4%	626	18%	96.1	19%
2212B	3	0	102	0	483	14%	77	15%	310	9%	0	0%	793	23%	77	15%	480	14%	77	15%	208	6%	0	0%	688	20%	77	15%
2212O	2.6	0	108	45	416	12%	64	13%	379	11%	200	40%	795	23%	264	53%	413	12%	64	13%	271	8%	155	31%	684	20%	219	44%
2213O	0	0	25	9	550	16%	148	30%	146	4%	54	11%	696	20%	202	40%	550	16%	148	30%	121	4%	45	9%	671	20%	193	39%
2274O	11	0	129	38	716	21%	172	34%	311	9%	153	31%	1,027	30%	325	65%	705	21%	172	34%	182	5%	115	23%	887	26%	287	57%
2298A	0	0	2.4	0	939	28%	175	35%	29	1%	0	0%	968	28%	175	35%	939	28%	175	35%	27	1%	0	0%	965	28%	175	35%
2619O	0.4	0	1.4	0	2,237	66%	368	74%	15	0%	0	0%	2,252	66%	368	74%	2,237	66%	368	74%	14	0%	0	0%	2,250	66%	368	74%
2622A	1	0	29	0	851	25%	173	35%	78	2%	0	0%	929	27%	173	35%	850	25%	173	35%	49	1%	0	0%	899	26%	173	35%
2664O	6	0	417	88	563	17%	256	51%	737	22%	116	23%	1,300	38%	372	74%	557	16%	256	51%	320	9%	28	6%	877	26%	284	57%
3271O	1	0	102	2	953	28%	318	64%	185	5%	4	1%	1,138	33%	322	64%	952	28%	318	64%	83	2%	2	0%	1,035	30%	320	64%
3928O	0.4	0	1.5	0	1,994	59%	346	69%	13	0%	0	0%	2,007	59%	346	69%	1,993	59%	346	69%	12	0%	0	0%	2,005	59%	346	69%
2248O	11.1	0	31	0	1,046	31%	113	23%	194	6%	37	7%	1,240	36%	150	30%	1,035	30%	113	23%	163	5%	37	7%	1,198	35%	150	30%
4071O	11.4	0	8	0	926	27%	302	60%	120	4%	50	10%	1,046	31%	352	70%	914	27%	302	60%	112	3%	50	10%	1,026	30%	352	70%
4515O	4	4	0.7	0.2	858	25%	199	40%	51	2%	2	0%	909	27%	201	40%	854	25%	195	39%	50	1%	1.8	0%	904	27%	196.8	39%
4534A	1.2	0	7	0.1	396	12%	114	23%	10	0%	2	0%	406	12%	116	23%	394	12%	114	23%	3	0%	1.9	0%	397	12%	115.9	23%
4534O	5	0	37	0.6	866	25%	157	31%	54	2%	1	0%	920	27%	158	32%	861	25%	157	31%	17	1%	0.4	0%	878	26%	157.4	31%
4565O	0	0	82	0	489	14%	151	30%	249	7%	0	0%	738	22%	151	30%	489	14%	151	30%	167	5%	0	0%	656	19%	151	30%
4575A	0	0	23	0	789	23%	155	31%	188	6%	0	0%	977	29%	155	31%	789	23%	155	31%	165	5%	0	0%	954	28%	155	31%
4575O	0	0	2.5	0	1,172	34%	275	55%	3	0%	0	0%	1,175	35%	275	55%	1,172	34%	275	55%	1	0%	0	0%	1,173	34%	275	55%
0965O	0.8	0.4	395	106	373	11%	83	17%	783	23%	281	56%	1,156	34%	364	73%	372	11%	82.6	17%	388	11%	175	35%	760	22%	257.6	52%
4577A	0.8	0	444	108	525	15%	81	16%	842	25%	218	44%	1,367	40%	299	60%	524	15%	81	16%	398	12%	110	22%	922	27%	191	38%

Appendix C: NSO Site Effects (Post-Fire NRF/PFF amounts and Post-Treatment NRF/PFF amounts)

NSO SITE	Treatment Acres				Post Fire NSO NRF / PFF Habitat on Federal Lands												Post Treatment NSO NRF / PFF Habitat on Federal Lands											
	NRF Acres Removed and Downgraded		PFF Acres Removed		HR Post Fire NRF	%	Core Post Fire NRF	%	HR Post Fire PFF	%	Core Post Fire PFF	%	HR Post Fire NRF+PFF	%	Core Post Fire NRF+PFF	%	HR Post Treatment NRF	%	Core Post Treatment NRF	%	HR Post Treatment PFF	%	Core Post Treatment PFF	%	HR Post Fire NRF+PFF	%	Core Post Fire NRF+PFF	%
	HR	Core	HR	Core																								
4577O	0.8	0	442	137	535	16%	55	11%	790	23%	233	47%	1,325	39%	288	58%	535	16%	55	11%	348	10%	96	19%	883	26%	151	30%
4578O	0	0	6	0	977	29%	199	40%	23	1%	13	3%	1,000	29%	212	42%	977	29%	199	40%	17	1%	13	3%	994	29%	212	42%
4579A	0	0	55	0	941	28%	149	30%	165	5%	11	2%	1,106	33%	160	32%	941	28%	149	30%	110	3%	11	2%	1,051	31%	160	32%
4579O	0	0	12	0	1,463	43%	163	33%	51	2%	0	0%	1,514	45%	163	33%	1,463	43%	163	33%	39	1%	0	0%	1,502	44%	163	33%
4603B	0.4	0	37	8	870	26%	140	28%	129	4%	22	4%	999	29%	162	32%	869	26%	140	28%	92	3%	14	3%	961	28%	154	31%
4603O	1.3	0	91	9	963	28%	182	36%	176	5%	44	9%	1,139	33%	226	45%	961	28%	182	36%	85	3%	35	7%	1,046	31%	217	43%
4604O	4	0	148	9	529	16%	101	20%	285	8%	23	5%	814	24%	124	25%	525	15%	101	20%	137	4%	14	3%	662	19%	115	23%
4605O	0	0	181	24	521	15%	51	10%	373	11%	55	11%	894	26%	106	21%	521	15%	51	10%	192	6%	31	6%	713	21%	82	16%
4606A	1.8	0.9	52	12	826	24%	137	27%	158	5%	66	13%	984	29%	203	41%	824	24%	136.1	27%	106	3%	54	11%	930	27%	190.1	38%
4606B	1.8	0.9	55	17	694	20%	115	23%	149	4%	50	10%	843	25%	165	33%	692	20%	114.1	23%	94	3%	33	7%	786	23%	147.1	29%
4606O	1.8	0	125	30	490	14%	50	10%	256	8%	41	8%	746	22%	91	18%	488	14%	50	10%	131	4%	11	2%	619	18%	61	12%
4607O	1	0	47	2	699	21%	150	30%	54	2%	4	1%	753	22%	154	31%	698	21%	150	30%	7	0%	2	0%	705	21%	152	30%
4623O	0	0	4	0	829	24%	101	20%	20	1%	0	0%	849	25%	101	20%	829	24%	101	20%	16	0%	0	0%	845	25%	101	20%
4670O	1.2	0.6	61	4	751	22%	169	34%	191	6%	20	4%	942	28%	189	38%	750	22%	168.4	34%	130	4%	16	3%	880	26%	184.4	37%
4690A	0	0	2.6	0	1,557	46%	284	57%	134	4%	19	4%	1,691	50%	303	61%	1,557	46%	284	57%	131	4%	19	4%	1,688	50%	303	61%
4690O	0.9	0	34	0	1,166	34%	187	37%	161	5%	16	3%	1,327	39%	203	41%	1,165	34%	187	37%	127	4%	16	3%	1,292	38%	203	41%

Site Center locations are in Critical Habitat

Red Lettering - below habitat thresholds

Blue Lettering - Reduction of NRF or PFF reduced as a result of the proposed action

Medford Douglas NSO RA 10 Site Priority Summary

GPRA Biologists determined these 12 sites were the most productive. Efforts were made to reduce salvage in these core areas

GPRA Biologists determined these sites at a lower rate of occupancy and reproduction, so salvage was planned in the core areas

GPRA Biologists determined these 8 sites were likely unoccupied. More salvage was planned in these core areas

** This list doesn't include Roseburg sites or sites on the outer edge of the Action Area, where the core areas are not in the fire perimeter.*

*** See the Site Summary Table in Appendix D for more detailed survey information*

SITE IDNO	Years Surveyed	Years w/Pair Status	Pair Occupancy Ratio	Years Nested	%Pairs w/ young	Years w/ ≥ 1 young	#Pairs last 6 years	Young in last 6 years	Total young produced	Total avg young/nest attempt	Total avg young / year
4690A,O	12	7	0.58	5	0.71	5	4	4	7	1.40	0.58
0895B	28	19	0.68	13	0.47	9	6	5	15	1.15	0.54
4606A,B,O	12	12	1.00	6	0.33	4	6	4	7	1.17	0.58
2212A,B,O	24	18	0.75	11	0.44	8	6	3	10	0.91	0.42
2080A,C+	25	21	0.84	14	0.52	11	4	2	18	1.29	0.72
2274O	24	22	0.92	11	0.32	7	4	2	12	1.09	0.50
3928O+	23	22	0.96	11	0.32	7	5	1	12	1.09	0.52
0903O+	26	21	0.81	12	0.29	6	5	1	6	0.50	0.23
4534A,O	16	13	0.81	7	0.31	4	5	2	7	1.00	0.44
4604O	12	12	1.00	6	0.33	4	6	1	5	0.83	0.42
4605O	12	12	1.00	5	0.25	3	6	1	5	1.00	0.42
4575A,O	13	11	0.85	7	0.55	6	4	1	7	1.00	0.54
4565O	14	11	0.79	6	0.36	4	3	1	6	1.00	0.43
0907A	27	10	0.37	5	0.30	3	5	1	3	0.60	0.11
4071O/2248O++	24	16	0.67	8	0.38	6	6	0	12	1.50	0.50
2216O	24	19	0.79	12	0.37	7	5	0	12	1.00	0.50
0906A+	28	21	0.75	9	0.38	8	2	0	14	1.56	0.50
2016A	25	22	0.88	7	0.18	4	5	0	5	0.71	0.20
2622A	23	18	0.78	10	0.11	2	5	0	4	0.40	0.17
0911O	26	9	0.35	2	0.22	2	1	0	3	1.50	0.12
4577A, B/0965O+	13	8	0.62	6	0.63	5	2	2	7	1.17	0.54
4603B,O++	12	6	0.50	6	0.67	4	1	0	4	0.67	0.33
4579A,O	13	6	0.46	2	0.33	2	1	0	3	1.50	0.23
4515O++	17	6	0.35	3	0.50	3	3	1	5	1.67	0.29
4670A,O+	10	3	0.30	1	0.00	0	2	0	0	0.00	0.00
2213O+	23	14	0.61	7	0.36	5	0	0	8	1.14	0.35
4607O	12	7	0.58	2	0.00	0	0	0	0	0.00	0.00
4623O	11	4	0.36	0	0.00	0	0	0	0	0.00	0.00
3271O++	22	4	0.18	2	0.25	1	0	0	2	1.00	0.09
2664O+	13	2	0.15	0	0.00	0	0	0	0	0.00	0.00
0896O++	21	1	0.05	0	0.00	0	0	0	0	0.00	0.00
4578O+	13	1	0.08	1	1.00	1	0	0	2	2.00	0.15
0919O+	21	1	0.05	0	0.00	0	0	0	0	0.00	0.00

red lettering = no resident owls in the last 6 years

+ barred owl responses; ++ = multiple barred owl responses, and some pairs

Appendix C: NSO Sites - Ownership Percentages at the 0.5 Mile Core Areas

NSO Site #	BLM		Private		State	
	Acres	% of core	Acres	% of core	Acres	% of core
0376O	354	71%	143	29%	0	0%
0377B	360	72%	137	27%	0	0%
0895B	419	84%	78	16%	0	0%
0896O	316	63%	180	36%	0	0%
0903O	320	64%	177	35%	0	0%
0906A	343	69%	154	31%	0	0%
0907A	403	81%	82	16%	12	2%
0911O	255	51%	89	18%	153	31%
0919O	149	30%	347	69%	0	0%
1911C	249	50%	248	50%	0	0%
1913C	254	51%	242	48%	0	0%
1989O	317	63%	180	36%	0	0%
2013O	352	70%	145	29%	0	0%
2016A	428	86%	68	14%	0	0%
2023O	451	90%	46	9%	0	0%
2080A	274	55%	222	44%	0	0%
2080C	363	73%	133	27%	0	0%
2211O	441	88%	56	11%	0	0%
2212A	207	41%	290	58%	0	0%
2212B	128	26%	369	74%	0	0%
2212O	273	55%	223	45%	0	0%
2213O	226	45%	270	54%	0	0%
2216O	227	45%	54	11%	217	43%
2248O	299	60%	198	40%	0	0%
2274O	412	82%	85	17%	0	0%
2298A	266	53%	231	46%	0	0%
2619O	497	99%	0	0%	0	0%
2622A	295	59%	202	40%	0	0%
2664O	385	77%	112	22%	0	0%
3271O	350	70%	147	29%	0	0%
3930A	341	68%	156	31%	0	0%
3930O	250	50%	247	49%	0	0%
4071O	459	92%	38	8%	0	0%

NSO Site #	BLM		Private		State	
	Acres	% of core	Acres	% of core	Acres	% of core
4511O	306	61%	165	33%	26	5%
4515O	323	65%	173	35%	0	0%
4534A	290	58%	207	41%	0	0%
4534O	307	61%	190	38%	0	0%
4565O	305	61%	121	24%	71	14%
4575A	187	37%	310	62%	0	0%
4575O	297	59%	200	40%	0	0%
4577A	336	67%	161	32%	0	0%
4577O	302	60%	195	39%	0	0%
4578O	270	54%	227	45%	0	0%
4579A	314	63%	183	37%	0	0%
4579O	238	48%	259	52%	0	0%
4603B	255	51%	242	48%	0	0%
4603O	444	89%	53	11%	0	0%
4604O	260	52%	237	47%	0	0%
4605O	267	53%	230	46%	0	0%
4606A	289	58%	208	42%	0	0%
4606B	420	84%	77	15%	0	0%
4606O	255	51%	242	48%	0	0%
4607O	337	67%	157	31%	3	1%
4623O	338	68%	159	32%	0	0%
4670O	298	60%	199	40%	0	0%
4690A	376	75%	121	24%	0	0%
4690O	354	71%	143	29%	0	0%

Appendix D

Medford Douglas Action Area - NSO Site History

(last 15 years, but previous years available if needed)

Pair Status Codes

P = Pair and/or 1 adult/subadult with young
 U = Male/female or two birds any sex - pair relationship unknown
 A = Pair plus additional adults/subadults
 S = Single bird present 2 or more times, with 6 visits completed
 B = Single bird present 2 or more times, but 6 visits NOT completed
 Z = Unknown occupancy - based on <6 visits or 6 visits but < 4 of the 6 were night visits with no response
 K = Not Occupied - based upon at least 3 visits with ≥ 2 night visits with no response
 Q = Unknown occupancy - based on <3 visits or 3 visits but <2 at night with no response
 X = Unknown - does not meet any of the above criteria

Final Nest Codes

F = Fledglings observed
 I = Incubation observed, reproductive success undetermined
 O = Nestlings observed, but no fledglings found
 Z = Nested, but no young produced (failed)
 N = Not nesting
 V = Nesting status undetermined, no young produced
 U = Nesting Unknown

TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
ANNIKAI RIFFLE	4670A	2009	3	3	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670A	2007	3	3	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670A	2006	5	2	U	0	N	Medford BLM
ANNIKAI RIFFLE	4670O	2013	4	5	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670O	2012	1	3	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670O	2011	3	3	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670O	2010	2	7	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670O	2008	2	7	X	0	U	Medford BLM
ANNIKAI RIFFLE	4670O	2005	6	0	P	0	Z	Medford BLM
ANNIKAI RIFFLE	4670O	2004	2	1	P	0	N	Medford BLM
BABY RATTLE	4511O	2013	5	0	P	2	F	Medford BLM
BABY RATTLE	4511O	2012	2	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2011	4	0	P	0	U	Medford BLM
BABY RATTLE	4511O	2010	5	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2009	2	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2008	2	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2007	2	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2006	7	1	P	2	F	Medford BLM
BABY RATTLE	4511O	2005	2	0	P	0	U	Medford BLM
BABY RATTLE	4511O	2004	4	0	A	2	F	Medford BLM
BABY RATTLE	4511O	2003	4	0	P	1	F	Medford BLM
BABY RATTLE	4511O	2002	3	0	P	0	N	Medford BLM
BABY RATTLE	4511O	2001	4	0	P	2	F	Medford BLM
BABY RATTLE	4511O	2000	5	0	P	1	F	Medford BLM
BABY RATTLE	4511O	1999	5	4	P	0	U	Medford BLM
BAKER REUBEN	2248O	2013	3	0	P	0	N	Medford BLM
BAKER REUBEN	2248O	2012	2	0	P	0	N	Medford BLM
BAKER REUBEN	2248O	2011	3	2	U	0	N	Medford BLM
BAKER REUBEN	2248O	2010	4	1	P	0	N	Medford BLM
BAKER REUBEN	2248O	2009	5	0	P	0	Z	Medford BLM
BAKER REUBEN	2248O	2008	3	0	U	0	N	Medford BLM
BAKER REUBEN	2248O	2007	7	2	U	0	U	Medford BLM
BAKER REUBEN	2248O	2006	3	1	P	0	N	Medford BLM
BAKER REUBEN	2248O	2005	5	0	P	2	F	Medford BLM
BAKER REUBEN	2248O	2004	3	1	X	0	U	Medford BLM
BAKER REUBEN	2248O	2003	3	2	P	0	Z	Medford BLM
BAKER REUBEN	2248O	2002	0	0	Z	0	U	Medford BLM
BAKER REUBEN	2248O	2001	0	0	Z	0	U	Medford BLM
BAKER REUBEN	2248O	2000	0	0	Z	0	U	Medford BLM
BAKER REUBEN	2248O	1999	0	0	Z	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2013	0	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2012	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2011	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2010	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2009	1	3	X	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2008	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2007	2	3	X	0	U	Medford BLM

Medford Douglas Action Area - NSO Site History

(last 15 years, but previous years available if needed)

TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
BAKER REUBEN - RUE THE SAW	4071O	2006	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2005	0	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2004	4	0	P	2	F	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2003	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2002	3	3	B	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2001	0	4	X	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	2000	1	3	K	0	U	Medford BLM
BAKER REUBEN - RUE THE SAW	4071O	1999	1	3	K	0	U	Medford BLM
BEAR ROOST	2016A	2013	2	2	P	0	N	Medford BLM
BEAR ROOST	2016A	2012	2	3	P	0	N	Medford BLM
BEAR ROOST	2016A	2007	2	0	P	0	N	Medford BLM
BEAR ROOST	2016A	2006	4	0	P	0	Z	Medford BLM
BEAR ROOST	2016A	2005	2	0	P	0	N	Medford BLM
BEAR ROOST	2016A	2004	4	0	P	1	F	Medford BLM
BEAR ROOST	2016A	2003	5	0	P	1	F	Medford BLM
BEAR ROOST	2016A	2002	7	1	P	0	U	Medford BLM
BEAR ROOST	2016A	2001	5	1	P	2	F	Medford BLM
BEAR ROOST	2016A	2000	4	0	P	1	F	Medford BLM
BEAR ROOST	2016B	2008	4	1	P	0	Z	Medford BLM
BEAR ROOST	2016O	2011	4	4	U	0	N	Medford BLM
BEAR ROOST	2016O	2010	1	1	P	0	U	Medford BLM
BEAR ROOST	2016O	2009	6	0	P	0	N	Medford BLM
BEAR ROOST	2016O	2004	0	0	Z	0	U	Medford BLM
BEAR ROOST	2016O	2003	0	0	Z	0	U	Medford BLM
BEAR ROOST	2016O	2002	0	0	Z	0	U	Medford BLM
BEAR ROOST	2016O	2001	0	0	Z	0	U	Medford BLM
BEAR ROOST	2016O	2000	0	0	Z	0	U	Medford BLM
BEAR ROOST	2016O	1999	4	0	P	0	N	Medford BLM
BONNIE ROSE	2211O	2013	1	4	X	0	U	Medford BLM
BONNIE ROSE	2211O	2012	2	3	X	0	U	Medford BLM
BONNIE ROSE	2211O	2011	2	3	B	0	N	Medford BLM
BONNIE ROSE	2211O	2010	1	4	X	0	U	Medford BLM
BONNIE ROSE	2211O	2009	2	1	B	0	N	Medford BLM
BONNIE ROSE	2211O	2008	8	0	S	0	Z	Medford BLM
BONNIE ROSE	2211O	2007	2	2	B	0	N	Medford BLM
BONNIE ROSE	2211O	2006	4	1	B	0	N	Medford BLM
BONNIE ROSE	2211O	2005	6	4	P	1	F	Medford BLM
BONNIE ROSE	2211O	2004	3	1	P	0	N	Medford BLM
BONNIE ROSE	2211O	2003	2	0	P	0	N	Medford BLM
BONNIE ROSE	2211O	2002	6	0	P	2	F	Medford BLM
BONNIE ROSE	2211O	2001	2	1	P	0	N	Medford BLM
BONNIE ROSE	2211O	2000	4	0	P	2	F	Medford BLM
BONNIE ROSE	2211O	1999	5	2	P	0	V	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2013	3	1	P	0	N	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2012	4	2	P	0	N	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2011	1	4	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2010	4	0	P	1	F	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2009	1	3	K	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2008	1	3	K	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2007	2	3	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2006	2	3	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2005	1	3	K	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2004	1	3	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2003	2	1	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2002	1	3	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2001	0	2	X	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	2000	3	0	Z	0	U	Medford BLM
BONNIE ROSE - PETE ROSE	3928O	1999	5	2	Z	0	U	Medford BLM
BUCK CREEK	0376O	2013	0	4	K	0	U	Roseburg BLM

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(last 15 years, but previous years available if needed)

TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
BUCK CREEK	0376O	2012	0	4	X	0	U	Roseburg BLM
BUCK CREEK	0376O	2011	0	4	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2010	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2009	0	4	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2008	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2007	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2006	0	4	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2005	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2004	0	5	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2003	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2002	1	3	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2001	0	4	K	0	U	Roseburg BLM
BUCK CREEK	0376O	2000	0	2	Q	0	U	Roseburg BLM
BUCK CREEK	0376O	1999	1	2	X	0	U	Roseburg BLM
CAIN AND MABEL	2622A	2013	3	3	U	0	N	Medford BLM
CAIN AND MABEL	2622A	2012	4	4	S	0	N	Medford BLM
CAIN AND MABEL	2622A	2011	5	2	U	0	N	Medford BLM
CAIN AND MABEL	2622A	2010	1	3	P	0	V	Medford BLM
CAIN AND MABEL	2622A	2009	4	0	P	0	Z	Medford BLM
CAIN AND MABEL	2622A	2008	5	0	P	0	Z	Medford BLM
CAIN AND MABEL	2622A	2007	4	0	P	0	Z	Medford BLM
CAIN AND MABEL	2622A	2006	5	0	P	0	Z	Medford BLM
CAIN AND MABEL	2622A	2004	3	0	P	0	Z	Medford BLM
CAIN AND MABEL	2622A	2003	2	0	P	0	U	Medford BLM
CAIN AND MABEL	2622A	2002	7	1	P	0	U	Medford BLM
CAIN AND MABEL	2622A	2001	4	3	P	0	U	Medford BLM
CAIN AND MABEL	2622O	2005	8	1	P	0	O	Medford BLM
CAIN AND MABEL	2622O	2004	0	0	Z	0	U	Medford BLM
CAIN AND MABEL	2622O	2003	0	0	Z	0	U	Medford BLM
CAIN AND MABEL	2622O	2002	0	0	Z	0	U	Medford BLM
CAIN AND MABEL	2622O	2001	0	0	Z	0	U	Medford BLM
CAIN AND MABEL	2622O	2000	0	3	K	0	U	Medford BLM
CAIN AND MABEL	2622O	1999	0	3	U	0	U	Medford BLM
COOKED HOG	2212A	2013	1	0	P	0	U	Medford BLM
COOKED HOG	2212A	2012	8	0	P	2	F	Medford BLM
COOKED HOG	2212A	2006	2	1	P	0	N	Medford BLM
COOKED HOG	2212A	2005	3	0	P	1	F	Medford BLM
COOKED HOG	2212A	2004	2	0	P	0	N	Medford BLM
COOKED HOG	2212A	2003	3	2	P	1	F	Medford BLM
COOKED HOG	2212B	2010	4	0	P	1	F	Medford BLM
COOKED HOG	2212B	2009	4	0	P	0	Z	Medford BLM
COOKED HOG	2212B	2008	3	0	P	1	F	Medford BLM
COOKED HOG	2212B	2007	4	0	P	0	Z	Medford BLM
COOKED HOG	2212O	2011	2	0	P	0	U	Medford BLM
COOKED HOG	2212O	2010	1	1	X	0	U	Medford BLM
COOKED HOG	2212O	2009	1	3	X	0	U	Medford BLM
COOKED HOG	2212O	2008	1	3	K	0	U	Medford BLM
COOKED HOG	2212O	2007	1	4	K	0	U	Medford BLM
COOKED HOG	2212O	2006	1	3	K	0	U	Medford BLM
COOKED HOG	2212O	2004	0	0	Z	0	U	Medford BLM
COOKED HOG	2212O	2003	0	0	Z	0	U	Medford BLM
COOKED HOG	2212O	2002	2	0	P	0	N	Medford BLM
COOKED HOG	2212O	2001	2	3	X	0	U	Medford BLM
COOKED HOG	2212O	2000	1	3	X	0	U	Medford BLM
COOKED HOG	2212O	1999	1	4	K	0	U	Medford BLM
DADS CREEK NORTH	0895A	2004	0	0	Z	0	U	Medford BLM
DADS CREEK NORTH	0895A	2003	0	0	Z	0	U	Medford BLM
DADS CREEK NORTH	0895A	2002	0	0	Z	0	U	Medford BLM
DADS CREEK NORTH	0895A	2001	0	0	Z	0	U	Medford BLM

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(last 15 years, but previous years available if needed)

TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
DADS CREEK NORTH	0895A	2000	0	0	Z	0	U	Medford BLM
DADS CREEK NORTH	0895A	1999	0	3	K	0	U	Medford BLM
DADS CREEK NORTH	0895B	2013	7	0	P	2	F	Medford BLM
DADS CREEK NORTH	0895B	2012	5	1	P	0	F	Medford BLM
DADS CREEK NORTH	0895B	2010	4	0	P	0	I	Medford BLM
DADS CREEK NORTH	0895B	2009	5	0	P	2	F	Medford BLM
DADS CREEK NORTH	0895B	2008	2	0	P	0	U	Medford BLM
DADS CREEK NORTH	0895B	2006	1	0	U	0	N	Medford BLM
DADS CREEK NORTH	0895B	2005	4	0	P	2	F	Medford BLM
DADS CREEK NORTH	0895B	2004	4	0	P	0	Z	Medford BLM
DADS CREEK NORTH	0895O	2011	2	2	P	0	U	Medford BLM
DADS CREEK NORTH	0895O	2007	5	0	P	1	F	Medford BLM
DADS CREEK NORTH	0895O	2004	0	0	Z	0	U	Medford BLM
DADS CREEK NORTH	0895O	2003	4	3	P	0	U	Medford BLM
DADS CREEK NORTH	0895O	2002	5	0	P	2	F	Medford BLM
DADS CREEK NORTH	0895O	2001	4	2	P	0	I	Medford BLM
DADS CREEK NORTH	0895O	2000	3	0	P	1	F	Medford BLM
DADS CREEK NORTH	0895O	1999	0	3	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2013	0	3	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2012	0	4	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2011	0	4	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2010	0	4	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2009	0	4	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2008	2	4	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2007	2	5	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2006	1	3	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2005	1	3	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2004	1	4	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2003	1	3	K	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2002	2	2	P	0	N	Medford BLM
DADS CREEK SOUTH	0896O	2001	1	3	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	2000	0	3	X	0	U	Medford BLM
DADS CREEK SOUTH	0896O	1999	0	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2013	1	8	X	0	U	Medford BLM
FARMER RAMSEY	4578O	2012	1	4	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2011	1	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2010	2	3	X	0	U	Medford BLM
FARMER RAMSEY	4578O	2009	1	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2008	3	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2007	3	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2006	2	3	X	0	U	Medford BLM
FARMER RAMSEY	4578O	2005	4	1	Z	0	U	Medford BLM
FARMER RAMSEY	4578O	2004	3	0	X	0	U	Medford BLM
FARMER RAMSEY	4578O	2003	2	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2002	3	3	K	0	U	Medford BLM
FARMER RAMSEY	4578O	2001	5	0	P	2	F	Medford BLM
FOLLY	2274O	2013	1	3	K	0	U	Medford BLM
FOLLY	2274O	2012	1	3	K	0	U	Medford BLM
FOLLY	2274O	2011	2	2	N	0	N	Medford BLM
FOLLY	2274O	2010	4	0	P	0	N	Medford BLM
FOLLY	2274O	2009	9	0	P	2	F	Medford BLM
FOLLY	2274O	2008	3	3	P	0	N	Medford BLM
FOLLY	2274O	2007	2	0	P	0	N	Medford BLM
FOLLY	2274O	2006	4	0	P	0	Z	Medford BLM
FOLLY	2274O	2005	4	0	P	0	Z	Medford BLM
FOLLY	2274O	2004	4	1	P	0	N	Medford BLM
FOLLY	2274O	2003	10	0	P	0	I	Medford BLM
FOLLY	2274O	2002	5	0	P	2	F	Medford BLM
FOLLY	2274O	2001	6	0	P	2	F	Medford BLM

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FOLLY	2274O	2000	5	1	P	1	F	Medford BLM
FOLLY	2274O	1999	6	0	P	0	N	Medford BLM
GOLD HILL	1989A	2013	0	3	X	0	U	Roseburg BLM
GOLD HILL	1989A	2012	0	4	X	0	U	Roseburg BLM
GOLD HILL	1989A	2011	1	4	X	0	U	Roseburg BLM
GOLD HILL	1989A	2010	0	4	K	0	U	Roseburg BLM
GOLD HILL	1989A	2009	0	4	K	0	U	Roseburg BLM
GOLD HILL	1989A	2008	1	3	K	0	U	Roseburg BLM
GOLD HILL	1989A	2007	1	3	K	0	U	Roseburg BLM
GOLD HILL	1989A	2006	0	2	X	0	U	Roseburg BLM
GOLD HILL	1989A	2005	1	3	X	0	U	Roseburg BLM
GOLD HILL	1989A	2004	1	1	X	0	U	Roseburg BLM
GOLD HILL	1989A	2003	2	3	B	0	U	Roseburg BLM
GOLD HILL	1989A	2002	2	3	K	0	U	Roseburg BLM
GOLD HILL	1989A	2001	2	3	B	0	U	Roseburg BLM
GOLD HILL	1989A	2000	3	3	U	0	U	Roseburg BLM
GOLD HILL	1989A	1999	4	1	P	2	F	Roseburg BLM
GUTTA B	2213O	2013	0	3	X	0	U	Medford BLM
GUTTA B	2213O	2012	0	4	K	0	U	Medford BLM
GUTTA B	2213O	2011	1	4	K	0	U	Medford BLM
GUTTA B	2213O	2010	1	3	K	0	U	Medford BLM
GUTTA B	2213O	2009	1	3	K	0	U	Medford BLM
GUTTA B	2213O	2008	4	2	S	0	N	Medford BLM
GUTTA B	2213O	2007	2	0	P	0	N	Medford BLM
GUTTA B	2213O	2006	2	0	P	0	N	Medford BLM
GUTTA B	2213O	2005	3	0	P	0	Z	Medford BLM
GUTTA B	2213O	2004	4	0	P	2	F	Medford BLM
GUTTA B	2213O	2003	4	4	S	0	V	Medford BLM
GUTTA B	2213O	2002	6	0	P	1	F	Medford BLM
GUTTA B	2213O	2001	2	2	P	0	N	Medford BLM
GUTTA B	2213O	2000	1	2	U	0	U	Medford BLM
GUTTA B	2213O	1999	0	1	Q	0	U	Medford BLM
HARE CREEK	2298A	2004	5	1	P	2	F	Roseburg BLM
HARE CREEK	2298A	2003	4	0	P	0	V	Roseburg BLM
HARE CREEK	2298A	2002	4	1	P	0	Z	Roseburg BLM
HARE CREEK	2298A	2001	7	0	P	1	F	Roseburg BLM
HARE CREEK	2298A	2000	3	3	P	0	U	Roseburg BLM
HARE CREEK	2298B	2009	3	0	P	0	N	Roseburg BLM
HARE CREEK	2298B	2008	5	0	P	1	F	Roseburg BLM
HARE CREEK	2298B	2007	3	0	P	0	N	Roseburg BLM
HARE CREEK	2298B	2006	2	1	P	0	N	Roseburg BLM
HARE CREEK	2298B	2005	5	0	P	1	F	Roseburg BLM
HARE CREEK	2298C	2011	0	2	P	0	N	Roseburg BLM
HARE CREEK	2298C	2010	3	0	P	2	F	Roseburg BLM
HARE CREEK	2298O	2013	1	0	P	0	N	Roseburg BLM
HARE CREEK	2298O	2012	7	0	P	2	F	Roseburg BLM
HARE CREEK	2298O	1999	2	5	X	0	U	Roseburg BLM
HENRY RIFFLE	4603A	2006	7	2	P	0	Z	Medford BLM
HENRY RIFFLE	4603A	2005	5	0	P	0	Z	Medford BLM
HENRY RIFFLE	4603B	2013	1	3	K	0	U	Medford BLM
HENRY RIFFLE	4603B	2012	1	3	K	0	U	Medford BLM
HENRY RIFFLE	4603B	2011	2	3	X	0	U	Medford BLM
HENRY RIFFLE	4603B	2010	3	5	S	0	U	Medford BLM
HENRY RIFFLE	4603B	2008	4	9	X	0	U	Medford BLM
HENRY RIFFLE	4603B	2007	5	0	P	1	F	Medford BLM
HENRY RIFFLE	4603O	2009	1	3	K	0	U	Medford BLM
HENRY RIFFLE	4603O	2004	5	0	P	1	F	Medford BLM
HENRY RIFFLE	4603O	2003	4	0	P	1	F	Medford BLM
HENRY RIFFLE	4603O	2002	6	0	P	1	F	Medford BLM

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TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
HUNGRY ROCK	4604A	2010	6	0	P	1	F	Medford BLM
HUNGRY ROCK	4604O	2013	2	0	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2012	3	1	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2011	2	0	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2009	4	0	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2008	4	0	P	0	Z	Medford BLM
HUNGRY ROCK	4604O	2007	2	0	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2006	4	0	P	1	F	Medford BLM
HUNGRY ROCK	4604O	2005	2	0	P	0	N	Medford BLM
HUNGRY ROCK	4604O	2004	4	0	P	0	Z	Medford BLM
HUNGRY ROCK	4604O	2003	5	2	P	2	F	Medford BLM
HUNGRY ROCK	4604O	2002	4	0	P	1	F	Medford BLM
HUTCH CREEK	1911A	2008	2	2	U	0	N	Roseburg BLM
HUTCH CREEK	1911A	2007	1	2	P	0	U	Roseburg BLM
HUTCH CREEK	1911A	2006	7	1	P	0	O	Roseburg BLM
HUTCH CREEK	1911A	2005	2	0	X	0	N	Roseburg BLM
HUTCH CREEK	1911A	2004	6	0	P	2	F	Roseburg BLM
HUTCH CREEK	1911A	2003	6	0	U	0	N	Roseburg BLM
HUTCH CREEK	1911A	2002	6	0	P	2	F	Roseburg BLM
HUTCH CREEK	1911A	2001	7	0	P	1	F	Roseburg BLM
HUTCH CREEK	1911A	2000	6	0	P	1	F	Roseburg BLM
HUTCH CREEK	1911A	1999	3	1	P	0	N	Roseburg BLM
HUTCH CREEK	1911C	2013	0	3	K	0	U	Roseburg BLM
HUTCH CREEK	1911C	2012	0	4	K	0	U	Roseburg BLM
HUTCH CREEK	1911C	2011	0	4	P	0	U	Roseburg BLM
HUTCH CREEK	1911C	2010	1	3	X	0	U	Roseburg BLM
HUTCH CREEK	1911C	2009	5	0	P	2	F	Roseburg BLM
MALONE PEAK	0911O	2013	1	3	K	0	U	Medford BLM
MALONE PEAK	0911O	2012	2	3	K	0	U	Medford BLM
MALONE PEAK	0911O	2011	5	3	U	0	N	Medford BLM
MALONE PEAK	0911O	2010	4	4	X	0	U	Medford BLM
MALONE PEAK	0911O	2009	1	6	X	0	U	Medford BLM
MALONE PEAK	0911O	2008	1	4	X	0	U	Medford BLM
MALONE PEAK	0911O	2007	4	3	X	0	U	Medford BLM
MALONE PEAK	0911O	2006	1	3	K	0	U	Medford BLM
MALONE PEAK	0911O	2005	1	3	X	0	U	Medford BLM
MALONE PEAK	0911O	2004	1	4	K	0	U	Medford BLM
MALONE PEAK	0911O	2003	4	2	U	0	N	Medford BLM
MALONE PEAK	0911O	2002	3	0	P	0	N	Medford BLM
MALONE PEAK	0911O	2001	0	3	X	0	U	Medford BLM
MALONE PEAK	0911O	2000	0	0	Z	0	U	Medford BLM
MALONE PEAK	0911O	1999	0	3	K	0	N	Medford BLM
MARTIN II	1913A	2004	4	0	P	1	F	Roseburg BLM
MARTIN II	1913A	2002	7	0	P	1	F	Roseburg BLM
MARTIN II	1913A	2000	4	2	S	0	U	Roseburg BLM
MARTIN II	1913B	2001	1	3	B	0	U	Roseburg BLM
MARTIN II	1913C	2013	0	4	X	0	U	Roseburg BLM
MARTIN II	1913C	2012	0	2	X	0	U	Roseburg BLM
MARTIN II	1913C	2011	0	4	B	0	U	Roseburg BLM
MARTIN II	1913C	2010	0	3	X	0	U	Roseburg BLM
MARTIN II	1913C	2009	3	3	B	0	U	Roseburg BLM
MARTIN II	1913C	2008	2	1	U	0	N	Roseburg BLM
MARTIN II	1913C	2007	2	4	U	0	U	Roseburg BLM
MARTIN II	1913C	2006	1	1	X	0	U	Roseburg BLM
MARTIN II	1913C	2005	6	6	P	2	F	Roseburg BLM
MARTIN II	1913C	2003	5	1	P	0	Z	Roseburg BLM
ONE 4 ALL	2619A	2007	2	1	X	0	U	Medford BLM
ONE 4 ALL	2619A	2005	0	3	K	0	U	Medford BLM
ONE 4 ALL	2619A	2004	0	0	Z	0	U	Medford BLM

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ONE 4 ALL	2619A	2003	0	0	Z	0	U	Medford BLM
ONE 4 ALL	2619A	2002	6	0	A	0	I	Medford BLM
ONE 4 ALL	2619A	2001	3	0	P	2	F	Medford BLM
ONE 4 ALL	2619O	2008	0	1	Q	0	U	Medford BLM
ONE 4 ALL	2619O	2006	3	1	B	0	U	Medford BLM
ONE 4 ALL	2619O	2004	1	1	B	0	U	Medford BLM
ONE 4 ALL	2619O	2003	0	0	Z	0	U	Medford BLM
ONE 4 ALL	2619O	2002	0	0	Z	0	U	Medford BLM
ONE 4 ALL	2619O	2001	0	0	Z	0	U	Medford BLM
ONE 4 ALL	2619O	2000	2	0	P	0	U	Medford BLM
ONE 4 ALL	2619O	1999	0	0	Z	0	U	Medford BLM
PERKINS CREEK	0907A	2009	2	3	U	0	U	Medford BLM
PERKINS CREEK	0907A	2007	5	0	P	1	F	Medford BLM
PERKINS CREEK	0907O	2013	4	6	P	0	N	Medford BLM
PERKINS CREEK	0907O	2012	1	3	K	0	U	Medford BLM
PERKINS CREEK	0907O	2011	2	1	P	0	N	Medford BLM
PERKINS CREEK	0907O	2010	5	1	P	1	F	Medford BLM
PERKINS CREEK	0907O	2008	4	0	P	0	N	Medford BLM
PERKINS CREEK	0907O	2006	3	0	P	0	N	Medford BLM
PERKINS CREEK	0907O	2005	3	0	P	0	N	Medford BLM
PERKINS CREEK	0907O	2004	2	0	P	0	N	Medford BLM
PERKINS CREEK	0907O	2003	2	2	P	0	N	Medford BLM
PERKINS CREEK	0907O	2002	9	0	P	0	V	Medford BLM
PERKINS CREEK	0907O	2001	1	4	X	0	U	Medford BLM
PERKINS CREEK	0907O	2000	1	4	B	0	U	Medford BLM
PERKINS CREEK	0907O	1999	1	3	K	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2013	1	3	K	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2012	1	3	K	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2011	1	3	K	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2010	1	6	X	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2009	7	3	U	0	N	Medford BLM
PERKINS PRAIRIE	2664O	2008	5	3	S	0	U	Medford BLM
PERKINS PRAIRIE	2664O	2007	2	2	P	0	V	Medford BLM
PING GULCH	3271O	2013	0	3	K	0	U	Medford BLM
PING GULCH	3271O	2012	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2011	0	4	K	0	U	Medford BLM
PING GULCH	3271O	2010	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2009	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2008	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2007	1	4	K	0	U	Medford BLM
PING GULCH	3271O	2006	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2005	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2004	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2003	0	3	X	0	U	Medford BLM
PING GULCH	3271O	2002	1	3	K	0	U	Medford BLM
PING GULCH	3271O	2001	4	0	Q	0	U	Medford BLM
PING GULCH	3271O	2000	2	1	Q	0	U	Medford BLM
PING GULCH	3271O	1999	3	0	P	2	F	Medford BLM
POOR AND HUNGRY	4605O	2013	2	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2012	6	0	P	1	F	Medford BLM
POOR AND HUNGRY	4605O	2011	2	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2010	4	0	P	0	Z	Medford BLM
POOR AND HUNGRY	4605O	2009	3	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2008	4	0	P	2	F	Medford BLM
POOR AND HUNGRY	4605O	2007	2	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2006	2	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2005	5	0	P	2	F	Medford BLM
POOR AND HUNGRY	4605O	2004	2	0	P	0	N	Medford BLM
POOR AND HUNGRY	4605O	2003	5	1	P	0	N	Medford BLM

Medford Douglas Action Area - NSO Site History

(last 15 years, but previous years available if needed)

TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
POOR AND HUNGRY	4605O	2002	4	0	P	0	N	Medford BLM
POOR RUBE	4577A	2010	3	0	U	0	N	Medford BLM
POOR RUBE	4577A	2009	6	0	P	1	F	Medford BLM
POOR RUBE	4577O	2013	1	3	K	0	U	Medford BLM
POOR RUBE	4577O	2012	1	3	K	0	U	Medford BLM
POOR RUBE	4577O	2011	2	3	K	0	U	Medford BLM
POOR RUBE	4577O	2008	5	0	P	1	F	Medford BLM
POOR RUBE	4577O	2007	3	0	P	0	N	Medford BLM
POOR RUBE	4577O	2006	2	0	P	0	N	Medford BLM
POOR RUBE	4577O	2005	5	0	P	2	N	Medford BLM
POOR RUBE	4577O	2004	3	1	P	2	F	Medford BLM
POOR RUBE	4577O	2003	4	1	P	0	Z	Medford BLM
POOR RUBE	4577O	2002	5	0	U	0	N	Medford BLM
POOR RUBE	4577O	2001	5	3	P	2	F	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2013	1	3	K	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2012	1	3	K	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2011	1	3	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2010	1	6	N	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2009	1	4	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2008	1	3	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2007	1	3	K	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2006	0	3	K	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2005	0	3	K	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2004	0	3	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2003	1	3	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2002	0	4	Q	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2001	1	4	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	2000	0	4	X	0	U	Medford BLM
POOR RUBE - PERKINS DIVIDE	0965O	1999	2	4	X	0	U	Medford BLM
POORMAN CREEK	4515A	2004	0	0	Z	0	U	Medford BLM
POORMAN CREEK	4515A	2003	2	1	P	0	N	Medford BLM
POORMAN CREEK	4515A	2002	6	0	P	1	F	Medford BLM
POORMAN CREEK	4515A	2001	0	0	Z	0	U	Medford BLM
POORMAN CREEK	4515A	2000	5	0	P	2	F	Medford BLM
POORMAN CREEK	4515O	2013	1	3	K	0	U	Medford BLM
POORMAN CREEK	4515O	2012	9	0	P	2	F	Medford BLM
POORMAN CREEK	4515O	2011	1	2	X	0	U	Medford BLM
POORMAN CREEK	4515O	2010	1	6	N	0	U	Medford BLM
POORMAN CREEK	4515O	2009	1	3	X	0	N	Medford BLM
POORMAN CREEK	4515O	2008	2	4	X	0	U	Medford BLM
POORMAN CREEK	4515O	2007	1	3	K	0	U	Medford BLM
POORMAN CREEK	4515O	2006	2	3	X	0	U	Medford BLM
POORMAN CREEK	4515O	2005	3	2	X	0	U	Medford BLM
POORMAN CREEK	4515O	2004	2	4	X	0	U	Medford BLM
POORMAN CREEK	4515O	2003	0	0	Z	0	U	Medford BLM
POORMAN CREEK	4515O	2002	0	0	Z	0	U	Medford BLM
POORMAN CREEK	4515O	2001	6	1	S	0	U	Medford BLM
POORMAN CREEK	4515O	2000	0	0	Z	0	U	Medford BLM
POORMAN CREEK	4515O	1999	2	2	P	0	N	Medford BLM
RAT SKULL	4579A	2005	4	0	P	2	Z	Medford BLM
RAT SKULL	4579A	2004	2	0	P	1	F	Medford BLM
RAT SKULL	4579O	2013	1	3	X	0	U	Medford BLM
RAT SKULL	4579O	2012	0	2	P	0	N	Medford BLM
RAT SKULL	4579O	2011	0	3	X	0	U	Medford BLM
RAT SKULL	4579O	2010	1	3	K	0	U	Medford BLM
RAT SKULL	4579O	2009	1	3	K	0	U	Medford BLM
RAT SKULL	4579O	2008	0	4	X	0	U	Medford BLM
RAT SKULL	4579O	2007	3	5	S	0	U	Medford BLM
RAT SKULL	4579O	2006	8	3	P	0	U	Medford BLM

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TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
RAT SKULL	4579O	2004	0	0	Z	0	U	Medford BLM
RAT SKULL	4579O	2003	4	0	P	0	N	Medford BLM
RAT SKULL	4579O	2002	4	2	X	0	U	Medford BLM
RAT SKULL	4579O	2001	3	0	P	0	N	Medford BLM
RATTLESNAKE	0903O	2013	1	3	X	0	U	Medford BLM
RATTLESNAKE	0903O	2012	2	2	P	0	N	Medford BLM
RATTLESNAKE	0903O	2011	2	0	P	0	N	Medford BLM
RATTLESNAKE	0903O	2010	3	2	P	0	Z	Medford BLM
RATTLESNAKE	0903O	2009	4	0	P	0	Z	Medford BLM
RATTLESNAKE	0903O	2008	5	0	P	1	F	Medford BLM
RATTLESNAKE	0903O	2007	6	0	S	0	U	Medford BLM
RATTLESNAKE	0903O	2006	3	1	P	0	N	Medford BLM
RATTLESNAKE	0903O	2005	5	0	P	0	F	Medford BLM
RATTLESNAKE	0903O	2004	4	0	P	1	F	Medford BLM
RATTLESNAKE	0903O	2003	4	0	P	0	Z	Medford BLM
RATTLESNAKE	0903O	2002	4	0	P	0	U	Medford BLM
RATTLESNAKE	0903O	2001	4	0	P	0	Z	Medford BLM
RATTLESNAKE	0903O	2000	6	1	P	1	F	Medford BLM
RATTLESNAKE	0903O	1999	2	2	S	0	U	Medford BLM
REUBEN RATTLE	4565O	2013	1	4	K	0	U	Medford BLM
REUBEN RATTLE	4565O	2012	2	3	P	0	N	Medford BLM
REUBEN RATTLE	4565O	2011	1	3	K	0	U	Medford BLM
REUBEN RATTLE	4565O	2010	1	6	X	0	U	Medford BLM
REUBEN RATTLE	4565O	2009	4	0	U	0	N	Medford BLM
REUBEN RATTLE	4565O	2008	4	0	P	1	F	Medford BLM
REUBEN RATTLE	4565O	2007	2	0	P	0	N	Medford BLM
REUBEN RATTLE	4565O	2006	4	0	P	0	Z	Medford BLM
REUBEN RATTLE	4565O	2005	2	0	P	0	N	Medford BLM
REUBEN RATTLE	4565O	2004	4	0	P	2	F	Medford BLM
REUBEN RATTLE	4565O	2003	6	0	P	1	F	Medford BLM
REUBEN RATTLE	4565O	2002	5	0	P	0	N	Medford BLM
REUBEN RATTLE	4565O	2001	4	1	P	0	Z	Medford BLM
REUBEN RATTLE	4565O	2000	4	1	P	2	F	Medford BLM
ROLLING ROCK	4606A	2013	6	0	P	0	Z	Medford BLM
ROLLING ROCK	4606A	2012	4	0	P	0	N	Medford BLM
ROLLING ROCK	4606A	2011	5	0	P	2	F	Medford BLM
ROLLING ROCK	4606A	2010	3	0	P	0	N	Medford BLM
ROLLING ROCK	4606A	2005	3	0	P	0	N	Medford BLM
ROLLING ROCK	4606A	2004	6	0	P	2	F	Medford BLM
ROLLING ROCK	4606B	2009	2	0	P	0	N	Medford BLM
ROLLING ROCK	4606B	2009	2	0	P	0	N	Medford BLM
ROLLING ROCK	4606B	2008	5	0	P	2	F	Medford BLM
ROLLING ROCK	4606B	2008	5	0	P	2	F	Medford BLM
ROLLING ROCK	4606B	2007	2	0	P	0	N	Medford BLM
ROLLING ROCK	4606B	2007	2	0	P	0	N	Medford BLM
ROLLING ROCK	4606B	2006	7	0	P	1	F	Medford BLM
ROLLING ROCK	4606B	2006	7	0	P	1	F	Medford BLM
ROLLING ROCK	4606O	2004	0	0	Z	0	U	Medford BLM
ROLLING ROCK	4606O	2003	2	4	P	0	N	Medford BLM
ROLLING ROCK	4606O	2002	6	0	P	0	U	Medford BLM
SAWMILL GAP	4690A	2013	5	0	P	1	F	Medford BLM
SAWMILL GAP	4690A	2012	3	3	U	0	U	Medford BLM
SAWMILL GAP	4690A	2010	3	2	X	0	U	Medford BLM
SAWMILL GAP	4690A	2009	4	0	P	1	F	Medford BLM
SAWMILL GAP	4690A	2008	3	0	P	2	F	Medford BLM
SAWMILL GAP	4690O	2011	3	3	S	0	U	Medford BLM
SAWMILL GAP	4690O	2007	3	1	P	0	N	Medford BLM
SAWMILL GAP	4690O	2006	7	0	A	2	F	Medford BLM
SAWMILL GAP	4690O	2005	3	3	P	1	F	Medford BLM

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TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
SCOTTSMANS GRAVE	3930A	2013	3	0	X	0	U	Medford BLM
SCOTTSMANS GRAVE	3930A	2012	3	1	U	0	N	Medford BLM
SCOTTSMANS GRAVE	3930A	2011	2	2	B	0	V	Medford BLM
SCOTTSMANS GRAVE	3930A	2008	3	0	P	2	F	Medford BLM
SCOTTSMANS GRAVE	3930O	2007	3	0	B	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2006	1	0	Q	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2005	2	1	P	0	O	Medford BLM
SCOTTSMANS GRAVE	3930O	2004	4	1	P	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2003	1	1	B	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2002	2	0	B	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2001	0	3	K	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	2000	0	1	Q	0	U	Medford BLM
SCOTTSMANS GRAVE	3930O	1999	1	3	X	0	U	Medford BLM
SECTION CREEK	4623O	2013	1	3	X	0	U	Medford BLM
SECTION CREEK	4623O	2012	1	3	K	0	U	Medford BLM
SECTION CREEK	4623O	2011	1	3	K	0	U	Medford BLM
SECTION CREEK	4623O	2010	1	3	K	0	U	Medford BLM
SECTION CREEK	4623O	2009	1	4	X	0	U	Medford BLM
SECTION CREEK	4623O	2008	1	3	K	0	U	Medford BLM
SECTION CREEK	4623O	2007	3	2	S	0	U	Medford BLM
SECTION CREEK	4623O	2006	2	0	P	0	N	Medford BLM
SECTION CREEK	4623O	2005	6	1	U	0	N	Medford BLM
SECTION CREEK	4623O	2004	3	1	P	0	N	Medford BLM
SECTION CREEK	4623O	2003	2	1	P	0	N	Medford BLM
SKULL CREEK	2080A	2011	2	0	P	0	N	Medford BLM
SKULL CREEK	2080A	2009	5	0	P	0	Z	Medford BLM
SKULL CREEK	2080A	2008	3	1	P	0	N	Medford BLM
SKULL CREEK	2080A	2006	3	0	P	0	N	Medford BLM
SKULL CREEK	2080A	2005	7	0	P	1	F	Medford BLM
SKULL CREEK	2080A	2004	4	0	P	2	F	Medford BLM
SKULL CREEK	2080A	2003	4	0	P	0	Z	Medford BLM
SKULL CREEK	2080A	2002	6	0	P	0	Z	Medford BLM
SKULL CREEK	2080A	2001	4	0	P	2	F	Medford BLM
SKULL CREEK	2080A	2000	6	0	P	1	F	Medford BLM
SKULL CREEK	2080A	1999	4	0	P	2	F	Medford BLM
SKULL CREEK	2080B	2007	5	2	P	2	F	Medford BLM
SKULL CREEK	2080C	2010	6	2	P	2	F	Medford BLM
SKULL CREEK	2080O	2013	1	3	K	0	U	Medford BLM
SKULL CREEK	2080O	2012	1	3	K	0	U	Medford BLM
SKULL CREEK	2080O	2004	0	0	Z	0	U	Medford BLM
SKULL CREEK	2080O	2003	0	0	Z	0	U	Medford BLM
SKULL CREEK	2080O	2002	0	0	Z	0	U	Medford BLM
SKULL CREEK	2080O	2001	0	0	Z	0	U	Medford BLM
SKULL CREEK	2080O	2000	0	0	Z	0	U	Medford BLM
SKULL CREEK	2080O	1999	0	0	Z	0	U	Medford BLM
SLED CREEK	0906A	2009	1	3	K	0	U	Medford BLM
SLED CREEK	0906A	2008	3	1	P	0	N	Medford BLM
SLED CREEK	0906A	2007	2	0	P	0	N	Medford BLM
SLED CREEK	0906A	2006	3	1	P	0	N	Medford BLM
SLED CREEK	0906A	2005	4	0	P	2	F	Medford BLM
SLED CREEK	0906A	2004	2	0	P	0	N	Medford BLM
SLED CREEK	0906A	2003	5	0	P	1	F	Medford BLM
SLED CREEK	0906A	2002	6	1	U	0	V	Medford BLM
SLED CREEK	0906A	2001	4	0	P	2	F	Medford BLM
SLED CREEK	0906A	2000	3	0	P	0	N	Medford BLM
SLED CREEK	0906A	1999	2	1	P	2	F	Medford BLM
SLED CREEK	0906O	2013	0	3	K	0	U	Medford BLM
SLED CREEK	0906O	2012	1	3	K	0	U	Medford BLM
SLED CREEK	0906O	2011	1	4	X	0	U	Medford BLM

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TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
SLED CREEK	0906O	2010	2	4	X	0	U	Medford BLM
SLED CREEK	0906O	2004	0	0	Z	0	U	Medford BLM
SLED CREEK	0906O	2003	0	0	Z	0	U	Medford BLM
SLED CREEK	0906O	2002	0	0	Z	0	U	Medford BLM
SLED CREEK	0906O	2001	0	0	Z	0	U	Medford BLM
SLED CREEK	0906O	2000	0	0	Z	0	U	Medford BLM
SLED CREEK	0906O	1999	0	0	Z	0	U	Medford BLM
SLOTTED COW	2023O	2013	0	1	X	0	U	Medford BLM
SLOTTED COW	2023O	2012	4	3	X	0	U	Medford BLM
SLOTTED COW	2023O	2011	1	0	P	0	U	Medford BLM
SLOTTED COW	2023O	2010	3	1	P	1	F	Medford BLM
SLOTTED COW	2023O	2009	1	0	U	0	N	Medford BLM
SLOTTED COW	2023O	2008	4	0	P	1	F	Medford BLM
SLOTTED COW	2023O	2007	1	0	U	0	N	Medford BLM
SLOTTED COW	2023O	2006	1	0	P	0	N	Medford BLM
SUSAN CREEK	0919O	2013	0	3	K	0	U	Medford BLM
SUSAN CREEK	0919O	2012	0	4	K	0	U	Medford BLM
SUSAN CREEK	0919O	2011	1	5	S	0	N	Medford BLM
SUSAN CREEK	0919O	2010	0	4	K	0	U	Medford BLM
SUSAN CREEK	0919O	2009	0	4	K	0	U	Medford BLM
SUSAN CREEK	0919O	2008	0	5	X	0	U	Medford BLM
SUSAN CREEK	0919O	2007	1	3	X	0	U	Medford BLM
SUSAN CREEK	0919O	2006	1	3	K	0	U	Medford BLM
SUSAN CREEK	0919O	2005	1	3	K	0	U	Medford BLM
SUSAN CREEK	0919O	2004	1	3	X	0	U	Medford BLM
SUSAN CREEK	0919O	2003	0	3	X	0	U	Medford BLM
SUSAN CREEK	0919O	2002	2	3	X	0	U	Medford BLM
SUSAN CREEK	0919O	2001	0	3	X	0	U	Medford BLM
SUSAN CREEK	0919O	2000	0	0	Z	0	U	Medford BLM
SUSAN CREEK	0919O	1999	0	0	Z	0	U	Medford BLM
TANKED WOLF	4607O	2013	0	4	K	0	U	Medford BLM
TANKED WOLF	4607O	2012	1	3	K	0	U	Medford BLM
TANKED WOLF	4607O	2011	1	3	K	0	U	Medford BLM
TANKED WOLF	4607O	2010	2	7	U	0	U	Medford BLM
TANKED WOLF	4607O	2009	1	3	K	0	U	Medford BLM
TANKED WOLF	4607O	2008	4	2	B	0	N	Medford BLM
TANKED WOLF	4607O	2007	3	0	P	0	N	Medford BLM
TANKED WOLF	4607O	2006	6	0	P	0	Z	Medford BLM
TANKED WOLF	4607O	2005	6	0	P	0	N	Medford BLM
TANKED WOLF	4607O	2004	2	0	U	0	N	Medford BLM
TANKED WOLF	4607O	2003	4	1	P	0	N	Medford BLM
TANKED WOLF	4607O	2002	2	0	P	0	N	Medford BLM
TOTTEN BOTHERED	4534A	2006	4	1	P	0	N	Medford BLM
TOTTEN BOTHERED	4534A	2005	4	0	P	1	F	Medford BLM
TOTTEN BOTHERED	4534A	2004	4	0	P	1	F	Medford BLM
TOTTEN BOTHERED	4534A	2003	4	1	P	0	N	Medford BLM
TOTTEN BOTHERED	4534A	2002	7	0	P	2	F	Medford BLM
TOTTEN BOTHERED	4534A	2001	0	0	Z	0	U	Medford BLM
TOTTEN BOTHERED	4534A	2000	5	2	P	0	Z	Medford BLM
TOTTEN BOTHERED	4534O	2013	4	5	S	0	U	Medford BLM
TOTTEN BOTHERED	4534O	2012	5	2	P	0	N	Medford BLM
TOTTEN BOTHERED	4534O	2011	6	0	A	0	Z	Medford BLM
TOTTEN BOTHERED	4534O	2010	5	0	P	0	Z	Medford BLM
TOTTEN BOTHERED	4534O	2009	4	0	P	2	F	Medford BLM
TOTTEN BOTHERED	4534O	2008	3	0	P	0	N	Medford BLM
TOTTEN BOTHERED	4534O	2007	3	0	P	0	N	Medford BLM
TOTTEN BOTHERED	4534O	2004	0	0	Z	0	U	Medford BLM
TOTTEN BOTHERED	4534O	2003	0	0	Z	0	U	Medford BLM
TOTTEN BOTHERED	4534O	2002	0	0	Z	0	U	Medford BLM

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TERRITORY NAME	SITE ID	YEAR	# of DAY VISITS	# of NIGHT VISITS	Pair Status	Fledglings	FINAL NEST STATUS	OWNERSHIP
TOTTEN BOTHERED	4534O	2001	2	5	X	0	U	Medford BLM
TOTTEN BOTHERED	4534O	2000	0	0	Z	0	U	Medford BLM
TOTTEN BOTHERED	4534O	1999	7	2	P	0	N	Medford BLM
TULLERS RATTAIL	4575A	2010	5	0	P	0	I	Medford BLM
TULLERS RATTAIL	4575A	2009	2	0	P	0	N	Medford BLM
TULLERS RATTAIL	4575A	2008	4	1	P	1	F	Medford BLM
TULLERS RATTAIL	4575A	2006	3	2	U	0	N	Medford BLM
TULLERS RATTAIL	4575A	2004	0	0	Z	0	U	Medford BLM
TULLERS RATTAIL	4575A	2003	4	0	P	1	F	Medford BLM
TULLERS RATTAIL	4575A	2002	8	1	A	1	F	Medford BLM
TULLERS RATTAIL	4575O	2013	2	3	B	0	N	Medford BLM
TULLERS RATTAIL	4575O	2012	1	1	P	0	N	Medford BLM
TULLERS RATTAIL	4575O	2011	1	3	K	0	U	Medford BLM
TULLERS RATTAIL	4575O	2007	2	0	P	0	N	Medford BLM
TULLERS RATTAIL	4575O	2005	4	0	P	2	F	Medford BLM
TULLERS RATTAIL	4575O	2004	5	0	P	1	F	Medford BLM
TULLERS RATTAIL	4575O	2003	0	0	Z	0	U	Medford BLM
TULLERS RATTAIL	4575O	2002	0	0	Z	0	U	Medford BLM
TULLERS RATTAIL	4575O	2001	2	1	P	1	F	Medford BLM
WEST MCCULLOUGH CK	2216O	2013	3	2	P	0	N	Medford BLM
WEST MCCULLOUGH CK	2216O	2012	4	6	X	0	U	Medford BLM
WEST MCCULLOUGH CK	2216O	2011	1	6	P	0	U	Medford BLM
WEST MCCULLOUGH CK	2216O	2010	4	0	P	0	I	Medford BLM
WEST MCCULLOUGH CK	2216O	2009	4	0	P	0	Z	Medford BLM
WEST MCCULLOUGH CK	2216O	2008	5	1	P	0	Z	Medford BLM
WEST MCCULLOUGH CK	2216O	2007	2	0	B	0	U	Medford BLM
WEST MCCULLOUGH CK	2216O	2006	2	0	X	0	N	Medford BLM
WEST MCCULLOUGH CK	2216O	2005	5	0	P	2	F	Medford BLM
WEST MCCULLOUGH CK	2216O	2004	4	0	P	2	F	Medford BLM
WEST MCCULLOUGH CK	2216O	2003	0	0	Z	0	U	Medford BLM
WEST MCCULLOUGH CK	2216O	2002	0	0	Z	0	U	Medford BLM
WEST MCCULLOUGH CK	2216O	2001	6	2	P	2	F	Medford BLM
WEST MCCULLOUGH CK	2216O	2000	5	0	P	0	V	Medford BLM
WEST MCCULLOUGH CK	2216O	1999	3	4	U	0	U	Medford BLM
WHISKEY CREEK	2013O	2012	1	0	B	0	N	Medford BLM
WHISKEY CREEK	2013O	2009	2	0	B	0	U	Medford BLM
WHISKEY CREEK	2013O	2008	1	0	Q	0	U	Medford BLM
WHISKEY CREEK	2013O	2007	5	0	P	0	V	Medford BLM
WHISKEY CREEK	2013O	2006	2	0	B	0	U	Medford BLM
WHISKEY CREEK	2013O	2005	5	0	P	2	F	Medford BLM
WHISKEY CREEK	2013O	2004	0	0	Z	0	U	Medford BLM
WHISKEY CREEK	2013O	2003	1	0	Q	0	U	Medford BLM
WHISKEY CREEK	2013O	2002	0	1	Q	0	U	Medford BLM
WHISKEY CREEK	2013O	2001	4	3	S	0	U	Medford BLM
WHISKEY CREEK	2013O	2000	0	3	B	0	U	Medford BLM
WHISKEY CREEK	2013O	1999	0	0	Z	0	U	Medford BLM