United States Department of the Interior

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November 2, 2011

Memorandum

To: District Manager, Medford District BLM, Medford, Oregon.

From: Field Supervisor, Roseburg Fish and Wildlife Office, Roseburg, Oregon.

Subject: Endangered Species Act Section 7 Informal Consultation regarding Summer FY 2011 Activities that are not likely to adversely affect the northern spotted owl on Public Lands administered by the Medford District of the Bureau of Land Management.

This responds to your request for the U.S. Fish and Wildlife Service's (Service) written concurrence on the Medford District of the Bureau of Land Management's (District) determination that implementation of a suite of management activities may affect, but are not likely to adversely affect, the threatened northern spotted owl (*Strix occidentalis caurina*) (spotted owl) or its designated critical habitat. The basis for your determination was provided in your biological assessment (Assessment) (USDI BLM 2011), dated October 4, 2011, and received in our office on October 5, 2011.

This response was prepared in accordance with the implementing regulations for section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1536 et seq.) (Act), as amended, and is based on information provided in the Assessment, phone discussions and meetings between Service and District staff.

DESCRIPTION OF THE ACTION AREA

The Action Area is defined in the implementing regulations for section 7 of the Act 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). For this consultation, the District used section seven watersheds as the analysis area, within which the action area occurs. The action area includes all project units, all areas subject to increased ambient noise levels caused by activities associated with the proposed action, as well as all spotted owl habitat within all affected spotted owl home ranges. Activities associated with this proposed action occur within the Klamath Mountains physiographic province and six individual section seven watersheds (Rogue Upper, Rogue

Middle, Rogue Lower Wild, Cow Upper, Applegate and Illinois). Federal lands managed by the District encompass approximately 862,964 acres of public land in southwest Oregon, which generally occur in a checkerboard pattern of alternating sections of private and federal lands.

Private lands comprise approximately 50 percent of the action area. Private forested lands managed for timber production will typically be harvested between 40 and 60 years of age, in accordance with State Forest Practices Act standards. These lands are typically not expected to provide long-term spotted owl habitat, although some habitat occurs in private ownership. The conversion of intact habitat in the low elevation woodlands and grasslands into pastures, vineyards, orchards, and home sites is increasing throughout the Rogue River Valley.

DESCRIPTION OF THE PROPOSED ACTION

The Assessment's description of the proposed action is herein incorporated by reference. Projects are planned to comply with the standards and guidelines of the Northwest Forest Plan (NWFP), (USDA FS/USDI BLM 1994a, 1994b) and will conform and be implemented according to Project Design Criteria (Appendix A) and project descriptions (Appendix B), the latter of which are designed to reduce and avoid impacts to spotted owls. The District plans to complete the proposed action (Table 1) within ten years of the date of this memorandum.

Table 1. Proposed Action for the Medford District BLM Summer FY2011 Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Timber Harvest Projects		
Project ID	**Treatment type**	**Total Habitat acres**
North Trail	Timber Harvest	83
Williams Thin	Timber Harvest	300
London Peak Thin	Timber Harvest	130
Total Timber Sale Acres		**513**
Forest Health Projects/ Special Forest Products		
Silviculture Pre Commercial Thin/Density Management	Forest Health Treatment	2,825
Special Forest Products	Special Forest Products	60
Hazard Trees	Forest Health Treatment	90
French Flat Meadow Restoration	Forest Health Treatment	310
Brushy Battle Fuels	Forest Health Treatment	1,600
Total Forest Health/Special Forest Products Treatment Acres		**4,885**
Total All Project Acres		**5,398**

Project Design Criteria (PDC) (Appendix A)

PDC are conservation measures are developed by the Rogue Basin Level 1 Team to reduce or avoid impacts to listed species. Conservation measures may include seasonal restrictions to reduce impacts during critical breeding seasons, retention of known nest trees and/or restricting activities within a certain distance of known sites to reduce impacts of disturbance. The District plans to apply mandatory PDC, to all activities associated with this proposed action. The District will apply recommended PDC during project implementation when practical.

In addition to the PDC, all projects in the proposed action include Level 1 design features as provided below. The intent of these features is to have spotted owl habitat post-treatment function as it did pre-treatment and have essential spotted owl prey habitat features retained. Individual project descriptions are provided in Appendix B.

Project design features:

- Nesting, Roosting and Foraging (NRF) habitat will retain at least 60 percent canopy closure and spotted owl nest structures.
- Dispersal habitat will retain at least 40 percent canopy closure.
- Post-project NRF or dispersal habitats will reflect pre-treatment habitat composition and diversity with tree species and age classes retained, albeit at lower densities.
- Large snags will be retained and if felled due to safety or operational concerns, will be retained as down woody debris.
- Existing large, down wood will be retained.
- Project created small openings will be similar in size, condition and shape of natural openings in late seral forest.
- Projects occurring in spotted owl critical habitat will include the features described above and maintain Primary Constituent Elements of critical habitat.

Spotted Owl Recovery Plan

The Revised Recovery Plan for the Northern Spotted Owl (USDI FWS 2011) includes Recovery Actions (RA) relevant to the proposed action. According to the Assessment, the proposed action will meet the intent of the following recovery actions, as described below:

- RA 6: Treatments are designed to accelerate the development of structural complexity and biological diversity in young stands, hastening development of NRF habitat.
- RA 10: Spotted sites will be conserved because NRF and dispersal habitats will have treat and maintain prescriptions, therefore, extant habitat will be retained.
- RA 32: The District will utilize an interagency developed methodology (USDA/USDI 2010) to identify forest stands that meet the local characteristics of RA 32. The District has decided that the proposed action will not occur in older, structurally-complex, and multi-storied stands, meeting the intent of RA 32. The District however, may allow minor yarding corridors, hazard tree removal, the use of guyline or tail hold trees, or short (< 1000') temporary skid tracks or roads through stands classified as RA 32 if essential for logistical purposes. In keeping with the intent of RA 32, these activities, if any, will be extremely limited so as to conform to this informal consultation and developed with assistance of the Level 1 biologists.

EFFECTS OF THE ACTION

Effects to Spotted Owls

Collectively, the North Trail, Williams Thin, London Peak Thin, French Flat Meadow Restoration, and Brushy Battle Fuels projects are comprised of treatment units that intersect the home ranges of 19 individual spotted owl sites. The following text summarizes the project treatment activities and anticipated effects to the spotted owl sites.

Treat and Maintain NRF and Dispersal-Only Habitat

North Trail Timber Sale
Implementation of the North Trail timber harvest project will result in the treating and maintaining up to 83 acres of habitat comprised of 19 acres of NRF habitat and 64 acres of dispersal-only habitat affecting the home ranges of two predicted and one historic spotted owl site. Stand ages vary from approximately 80 to 110 years old and lay within the NWFP Matrix land-use allocation (LUA). The 19 acres of NRF habitat treatment occurs within the core-use area of a predicted spotted owl site, but outside the nest patch. These NRF acres actually have more characteristics of roosting and foraging habitat, with little nest structure present. Of the 64 acres of dispersal-only habitat, 21 acres of treatment will occur within the home range of a historical site.

While a spotted owl site is predicted where the19 acres of NRF treatment is planned, there are site specific conditions leading the Service to a determination that affects as a result of the proposed action will be insignificant. Further inspection in the field and of habitat maps show extremely little extant spotted owl habitat in the area and the habitat more closely resembles roosting/foraging habitat. These factors lead to a professional opinion of low likelihood of use or residency by spotted owls. This conclusion along with other information that the treatments will not remove spotted owl habitat and the District conducting the first year of protocol surveys for spotted owls and having no detections, facilitates a not likely to affect determination at this time.

Williams Thin
Implementation of the Williams Thin project will result in the treating and maintaining of up to 300 acres of dispersal-only habitat in the East IV/Williams Late Successional Reserve (LSR) (See LSR analysis below). Of the 300 acres, 181 acres of dispersal-only habitat will be treated within the home ranges of three known spotted owl sites, with these units distributed among the affected home ranges. These stands are all less than 80 years old. Up to 14 of these acres will be treated within the core-use area of one spotted owl site; no treatments are within the nest patch of any spotted owl sites. The remaining 119 acres will be implemented outside any known spotted owl home ranges.

London Peak Thin
Implementation of the London Peak Thin project will result in the treating and maintaining of up to 130 acres of dispersal-only habitat within the home ranges of two historic spotted owl sites. The units are located in second growth stands ranging from approximately 40 to 70 years old with Matrix LUA. No treatments are planned for the core-use or nest patches of these two sites.

Forest Health Treatments

French Flat Meadow Restoration
The objectives of this project are: 1) reduce conifer encroachment along the meadows and oak woodlands, and 2) create more fire resilient conifer stands. Implementation of the French Flat project will result in the treating and maintaining of up to 310 acres of habitat which is comprised of 100 acres of NRF and 210 acres of dispersal-only habitat. Approximately 90 acres (60 acres NRF and 30 acres dispersal-only) is planned for treatment within the home range of one predicted spotted owl site, but not in the core-use or nest patch areas. The remaining 220 acres of treated habitat (40 acres NRF and 180 acres dispersal-only) will be implemented outside any spotted owl home ranges. As of August, 2011, NRF habitat within the affected home range had been surveyed to protocol for two years. Spotted owls have not been detected during these survey efforts. The District plans a third year of protocol surveys during the 2012 survey season with this information being used to further refine project location.

Brushy Battle Fuels
Implementation of the Brushy Battle Fuels project, within the Wildland Urban Interface (WUI), will result in the treating and maintaining of up to 1,600 acres of spotted owl habitat comprised of 400 acres of NRF and 1,200 acres of dispersal-only habitat, affecting the home ranges of 10 spotted owl sites (8 known and 2 predicted). Of those 10 home ranges, treatments are proposed within the half-mile core-use area of five known sites and one generated site. No more than 20 percent of any half-mile (500 acre) core area will be treated. Less than 1 percent of the NRF and 8.5 percent of the dispersal-only habitat would be treated in the Evans Cree watershed. No nest patch treatments are planned.

Silviculture Pre-commercial Thinning/Density Management Thinning

According to the Assessment, this activity includes the removal of trees with diameters less than 8 inches to release larger trees and to increase vigor and growth potential of remaining younger trees (pages 21 and 25). The District has yet to determine the exact location of approximately 3,000 acres of silviculture treatments; therefore, the number of spotted owl sites that may be affected remains unknown; however, treatments will be designed to ensure that spotted owl habitat continues to function similarly post-treatment. The following project design criteria will be utilized in the treatments:

- The pre-commercial treatment of 1,540 acres of NRF and 1,375 acres of dispersal habitat would be dispersed among three of the District's Resource Areas (pg 25) and within six individual watersheds. Within each watershed, treatments would be distributed among land use allocations as well as within spotted owl designated critical habitat. No more than one percent of NRF habitat or four percent of dispersal habitat in any of six affected watersheds would be treated and maintained (Table 3).
- Nest patches and RA 32 habitat will not be treated.
- Treatment within NRF habitat will target stands with low overstory due to disease, past harvesting, low site productivity, or past fire, and habitat most likely functions as roosting and foraging habitat with dense understory.
- Treatment units will range in size from five to 40 acres, resemble the distribution pattern of past harvest units.

- Key components of spotted owl prey habitat will be retained such as snags, down wood, midstory and overstory layering, ground herbaceous growth, large diameter trees, decadence, and requisite canopy cover levels.

The density of known and predicted spotted owl sites within the action area indicate a high likelihood these actions may to occur with home ranges or core areas of known or predicted owl sites. District biologists anticipate the intensity level of effects to spotted owl sites is expected to be negligible due to the application of seasonal and disturbance distance restrictions (Appendix A), the dispersed nature of the proposed treatments, as well as the very light application of the forest treatments.

Special Forest Products

It is unknown how many spotted owl home ranges will be affected by Grants Pass Resource Area Special Forest Products projects because permits and small sales are the result of public requests. The Assessment anticipates that projects may include the treating and maintaining up to 60 acres of spotted owl dispersal-only habitat within three watersheds (Table 3). Special Forest Products (pg 27) includes projects such as commercial firewood, small pole harvest, salvage of small areas of disease or insect damage, and other specialty wood products. District wildlife biologists along with discussion with Level 1 representatives will design these projects to have an outcome of the stands functioning post-treatment as they did pre-treatment. In addition, the District will apply PDC (Appendix A) to further reduce any potential negative impacts along with excluding any activities from spotted owl nest patches. The small scale nature and light treatment of these projects across the Grants Pass Resource Area is expected to be discountable.

Hazard Tree Removal

The District anticipates the removal of up to 90 hazard trees (Table 2); however, the timing and location of hazard tree removal is difficult to anticipate and safety concerns may require the District to manage them promptly. At present, it is unknown how many spotted owl home ranges and/or unsurveyed spotted owl habitat would be affected by this activity. Given the relative high density of spotted owls on the District, it is likely that hazard tree removal will occur with some home ranges. However, the distribution and discrete nature of hazard tree removal in all likelihood reduces the level of anticipated effects to spotted owls.

Hazard trees removal typically occurs along active roadways or adjacent to private property where public safety is a concern. Removal may occur within any land use allocation or habitat classification, and may result from localized wind events, snow break damage, forest pathogens, environmental stress, or may be existing trees considered hazardous by Occupational Safety and Health Administration Guidelines. Hazard tree removal is expected to occur as dispersed, individual trees with input by the District's biologists. The period of disturbance, due to removal, above ambient noise levels is expected to be brief and would not cause significant interruption of feeding, breeding, sheltering, or dispersing activities. The District will initiate emergency consultation with the Service for hazard tree removal needs that exceed the effects analysis of the Assessment, or which may occur within the disturbance distances of known nesting spotted owl sites.

Summary of Effects to Spotted Owls

The Service believes implementation of the aforementioned projects may affect and are not likely to adversely affect up to 19 individual spotted owl sites. This reasoning is based upon the expected implementation of: 1) PDC, 2) spotted owl habitat project design features, and 3) conformance to the project descriptions.

To add support to this finding, a treat and maintain prescription generally consists of light-to moderate thinning that takes into account the site-specific silvicultural needs of the stand and the retention of spotted owl habitat features. For those activities that treat and maintain spotted owl NRF and dispersal type habitat, the prescriptions, if implemented as intended, should provide for the appropriate amount of canopy cover (at least 60 percent) and other attributes of spotted owl habitat such as multiple canopy layers, down wood, snags, and hardwoods. This should result in having the stand continue to function as NRF habitat post-treatment as well as providing for prey-habitat needs (see Effects to Prey section below). While there are no experimental studies currently available relating spotted owl response to thinning in NRF habitat, there are observational accounts that provide support to the relationship of spotted owl use of thinned NRF habitat (Solis 1983, Forsman et al. 1984, King 1993, Anthony and Wagner 1998, Hicks et al. 1999, and Irwin et al. 2010). However, a case study conducted by Meiman et al (2003) did show potential negative effects due to thinning of dispersal and/or foraging quality habitat to one owl that was radio-tracked in the Oregon Coast Range. It is unclear how these results translate to the habitat conditions and spotted owl habitat-use patterns in the Klamath Province.

Overall, it is the Service's opinion for this proposed action that implementation of pre-commercial thinning/density management thinning, special forest product activities or hazard tree removal may affect, but are not likely to adversely affect spotted owls or areas of un-surveyed suitable habitat for the reasons described above.

Effects to Spotted Owl NRF Habitat

According to the Assessment, the District proposes to implement timber harvest, forest health, special forest products, and hazard tree removal activities that will treat and maintain up to 1,794 acres of spotted owl NRF habitat (Table 2). All projects have been designed to maintain the amount of existing spotted owl NRF habitat.

Collectively, implementation of the projects will result in the treatment of less than one percent of the 289,741 acres of extant spotted owl NRF habitat within the analysis area (Table 2). The Assessment states that the quality of spotted owl NRF habitat, in some cases, will improve because the post-treatment stand will allow more space for residual trees to develop spotted owl NRF habitat characteristics. Treated stands are designed to be more resilient to withstand stand replacement fire, disease and suppression mortality.

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

treating and maintaining up to 1,794 acres of spotted owl NRF habitat will be insignificant and *may affect, are not likely to adversely affect* spotted owls for the following reasons:

- Canopy cover will be maintained at 60 percent or greater at the stand level, a value important to for the continued use of stands by spotted owls.
- Decadent woody material, such as large snags and down wood which provide habitat for spotted owl prey species, will remain post-treatment.
- All multi-canopy, uneven aged tree structure will remain post-treatment.
- Treatments will be distributed both spatially and temporally throughout the two affected physiographic provinces.
- No nest trees will be removed.
- Treatments are expected to improve the ecological health of treated stands, stimulate forage plants important to spotted owl prey species, reduce the chance of tree loss due to suppression mortality because the stand has more trees than the site can support over the long-term, and will reduce the intensity and risk of wildfire by removing excess fuels.
- Implementation of mandatory PDC within the critical breeding season (March 1 through June 30) as well as beyond the recommended disturbance/disruption thresholds (Appendix A) will avoid adverse disturbance to spotted owls.

Table 2. Effects to Spotted Owl NRF Habitat for the Medford District BLM Summer FY 2011 Activities, aggregated by watersheds (FWS Ref #: 01EOFW00-2012-I-0003).

Watershed	Spotted Owl NRF Habitat Baseline[1]	Number of Acres Spotted Owl NRF Habitat Treated and Maintained (Timber Harvest)	Number of Acres Spotted Owl NRF Habitat Treated and Maintained (Forest Health)	Number of Acres Spotted Owl NRF Habitat Treated and Maintained (Special Forest Products)	Number of Acres Spotted Owl NRF Habitat Treated and Maintained (Hazard Tree Removal)	Total Acres Spotted Owl NRF Habitat Treatments
Applegate	62,638	0	200	0	5	205
Cow Upper	45,589	0	250	0	5	255
Illinois	26,698	0	350	0	5	355
Rogue Middle	99,760	0	950	0	5	955
Rogue Upper	41,295	19	0	0	0	19
Rogue Lower Wild	13,761	0	0	0	5	5
Total	**289,741**	**19**	**1,750**	**0**	**25**	**1,794**

[1] From the Biological Assessment (USDI BLM 2011).

Effects to Spotted Owl Dispersal-Only Habitat

Spotted owl dispersal habitat is comprised of both spotted owl NRF habitat and spotted owl dispersal-only habitat. The analysis below however, reflects the effects to spotted owl dispersal-only habitat which is generally characterized as forest stands less than 80 years old with trees over 11 inches dbh and 40 percent canopy cover (Thomas et al. 1990).

The proposed action includes timber harvest and forest health treatments that, collectively, will result in the treatment and maintenance of up to 3,419 acres (Table 3) of spotted owl dispersal-only habitat. Implementation of the proposed action is not anticipated to diminish the ability of spotted owls to move through treated stands or the landscape. This is because at the stand level, the light thinning treatment prescriptions are expected to have stands retain their dispersal function post-treatment due to canopy cover meeting or exceeding 40 percent along with snag, down wood and other features of prey habitat being retained. At the landscape scale, the light thinning treatments are not expected to reduce or remove extant dispersal-only habitat. Therefore, spotted owls are anticipated to be able to disperse among watersheds and into adjacent provinces; current analysis (Davis tech. coord. 2011 *in press*) indicates that dispersal habitat is not limiting at the landscape scale.

Indirect beneficial effects of the treatments may result in accelerating the development of spotted owl habitat features such as large diameter trees, multiple canopy layers, flying space and hunting perches in the long term. The additional light in the stand improves vigor of residual trees, but can also provide light to some of the forage plants important to spotted owl prey, if structural components are retained to provide prey cover habitat. As per the PDC, snag and coarse woody debris remaining in treated stands post-treatment will help minimize impacts to spotted owl prey species that utilize these features. Suppression mortality, a condition where unnaturally crowded trees suppress growth and viability of those trees, will be avoided leading to improved wildfire resiliency.

Table 3. Effects to Spotted Owl Dispersal Habitat for the Medford District BLM Summer FY2011 Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Watershed	Spotted Owl Dispersal Habitat Baseline[1]	Number of Acres Spotted Owl Dispersal Habitat Treated and Maintained (Timber Harvest)	Number of Acres Spotted Owl Dispersal Habitat Treated and Maintained (Forest Health)	Number of Acres Spotted Owl Dispersal Habitat Treated and Maintained (Special Forest Products)	Number of Acres Spotted Owl Dispersal Habitat Treated and Maintained (Hazard Tree Removal)	Total Acres Spotted Owl Dispersal Habitat Treatments
Applegate	22,186	300	200	20	10	530
Cow Upper	9,092	0	260	0	0	260
Illinois	9,912	0	610	20	15	645
Rogue Middle	99,760	130	1500	20	10	1660
Rogue Upper	22,906	64	250	0	0	314
Rogue Lower Wild	55,604	0	0	0	10	10
Total	**219,460**	**494**	**2,820**	**60**	**45**	**3,419**

The Service has determined the effects to spotted owls, as a result of the implementation of up to 3,419 acres of timber harvest, forest health, special forest products, and hazard tree removal within spotted owl dispersal-only habitat *may affect, are not likely to adversely affect* spotted owls for the reasons provided above.

Effects to Spotted Owl Critical Habitat

A portion of the proposed action is planned for the Rogue Umpqua and Klamath Intra-province spotted owl designated critical habitat units (CHU). The Assessment states that the District planned all proposed treatments to maintain or improve the primary constituent elements (PCE) of critical habitat. These PCEs include, but are not limited to space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing (or development) of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

According to the final rule for the revised designation of critical habitat for the spotted owl (50 CFR Part 17 Vol. 173, No. 157 page 47349), "vegetation management, including timber management within critical habitat units should maintain or enhance the individual habitat components important to nesting, roosting, foraging, and dispersal, as well as provide adequate amounts and juxtapositions of nesting, roosting, foraging, and dispersal habitat."

The final rule describes the importance of these CHUs as follows:

> Rogue Umpqua (CHU 14): This 183,800 acre CHU provides for habitat connectivity and spotted owl movement from the West Cascades to the Oregon Coast Range across the Rogue-Umpqua divide.
> Klamath Intra-province (CHU 16): This 96,600 acre CHU provides essential habitat connections through an area of limited habitat in the Klamath Province.

Effects to Spotted Owl NRF Habitat within Two CHUs

The District plans to implement up to 720 acres of forest health treatments and up to 20 acres of hazard tree removal within spotted owl NRF habitat that occurs in CHU 14. Up to 10 acres of hazard tree removal may also occur in NRF habitat within CHU 16 (Table 4). The acres of NRF habitat treatments in CHUs represent a subset of the total acres of NRF habitat affected due to the implementation of the proposed action.

Table 4. Effects to Spotted Owl NRF Habitat within Designated Critical Habitat Units for the Medford District BLM Summer FY2011 Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Critical Habitat Unit Number	District Spotted Owl NRF Habitat Baseline	Number of Treatment Acres	Treatment Type	Percent of Spotted Owl NRF Habitat Affected
Rogue Umpqua CHU 14	59,515	700	Forest Health Treatments	1.21
		20	Hazard Tree Removal	0.03
Klamath Intra-province CHU 16	17,326	10	Hazard Tree Removal	0.06
Total	**76,841**	**740**		**1.30**

The Service agrees with the District's determination that implementation of the proposed action *may affect, and is not likely to adversely affect* spotted owl NRF habitat within designated critical habitat because PCEs of spotted owl critical habitat will not be destroyed or reduced and adverse modification is not expected because the habitat is expected to function as it did pre-treatment. This is due, in large part, to implementation the PDC and spotted owl habitat project-treatment design features as previously mentioned. Anticipated beneficial effects would include improvement in the ecological condition of treated stands because residual trees will be more resilient to loss from suppression mortality, leading to reduced risk of stand loss due to wild land

fires. Additionally, post-treatment will be on an accelerated trajectory toward late seral condition.

Effects to Spotted Owl Dispersal-Only Habitat within Two CHUs

Collectively, the proposed action includes activities expected to treat and maintain up to 1,060 acres of dispersal-only habitat within two individual CHUs (Table 5). The acres of dispersal habitat treatments in CHUs represent a subset of the total acres of dispersal habitat affected due to the implementation of the proposed action.

Table 5. Effects to Spotted Owl Dispersal Habitat within Designated Critical Habitat for Medford District BLM Summer FY2011 Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Critical Habitat Unit Number	District Spotted Owl Dispersal Habitat Baseline	Number of Treatment Acres	Treatment Type	Percent of Spotted Owl Dispersal Habitat Affected
Rogue Umpqua CHU14	13,278	700	Forest Health Treatments	5.27
		40	Hazard Tree Removal	0.01
Klamath Intra-province CHU 16	6,264	300	Timber Harvest	4.79
		20	Hazard Tree Removal	0.32
Total	**19,542**	**1,060**		**10.39**

[1] Klamath Mountains Physiographic Province
[2] Cascades West Physiographic Province

The Service agrees with the District's determination that the effects of this proposed action will be insignificant and may affect, but are not likely to adversely affect spotted owl dispersal habitat within designated critical habitat. The Service bases this determination for similar reasons as provided in the NRF Critical Habitat section above.

Effects to Late Successional Reserves

The District anticipates up to 130 acres of spotted owl NRF habitat in three different Late Successional Reserves (LSRs) may be treated through light thinning and hazard tree removal, resulting in a treat and maintained condition of spotted owl habitat (Table 6). Approximately 505 acres of dispersal-only habitat is also anticipated to be treated in a similar fashion within the same LSRs (Table 7). The Service believes the activities may affect but are not likely to adversely affect spotted owls for reasons provided in the critical habitat section above.

Table 6. Effects to Spotted Owl NRF Habitat within Late Successional Reserves for the Medford District BLM Summer FY 2011 Summer Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Late Successional Reserve Number	District Spotted Owl NRF Habitat Baseline	Number of Treatment Acres	Treatment Type	Percent of Spotted Owl NRF Habitat Affected
RO 223	15,307	50	Forest Health Treatment	0.34
		5	Hazard Tree Removal	0.03
RO 249	23,247	25	Forest Health Treatment	0.11
RO 258	47,177	50	Forest Health Treatment	0.01
		5	Hazard Tree Removal	0.01
Total	**85,731**	**135**		**0.16**

Table 7. Effects to Spotted Owl Dispersal Habitat within Late Successional Reserves for the Medford District BLM Summer FY 2011 Activities (FWS Ref #: 01EOFW00-2012-I-0003).

Late Successional Reserve Number	District Spotted Owl Dispersal Habitat Baseline	Number of Treatment Acres	Treatment Type	Percent of Spotted Owl Dispersal Habitat Affected
RO 223	3,019	50	Forest Health Treatment	1.66
		5	Hazard Tree Removal	0.17
RO 249	2,793	50	Forest Health Treatment	1.79
		10	Hazard Tree Removal	0.36
		20	Special Forest Products	0.72
		300	Timber Harvest	10.74
RO 258	10,827	50	Forest Health Treatment	0.46
		5	Hazard Tree Removal	0.05
		15	Special Forest Products	0.14
Total	**16,639**	**505**		**4.66**

Effects to Spotted Owls due to Disturbance

As detailed in the Assessment, portions of this proposed action may occur in non-habitat for spotted owls, yet have the potential to result in noise which could carry into occupied spotted

owl habitat. The application of mandatory PDC by is anticipated to result in the avoidance of adverse noise disturbance to spotted owls. Additional conservation measures may be implemented at the site specific, project level by interdisciplinary teams during project reviews.

According to the Assessment, the District has planned the projects included in the proposed action in a manner that avoids adverse impacts from noise and disturbance to spotted owls. The District plans to implement mandatory PDC (Appendix A), which require distance and timing restrictions designed to reduce disturbance to spotted owls. The opportunistic application of recommended PDC will provide additional conservation benefits to spotted owls. District biologists evaluated all projects included in the proposed action against known and predicted spotted owl sites (USDI/USDA 2008). Only those projects that would occur outside the critical breeding period (March 1 to June 30) or outside the appropriate disturbance distance (Appendix A), or both, were included in the proposed action. Therefore, the District has determined effects to spotted owls due to disturbance associated with the implementation of the proposed action may affect, are not likely to adversely affect spotted owls.

Based on the above information, the Service agrees with the determination disturbance associated with the proposed action may affect, is not likely to adversely affect spotted owls.

Effects to Spotted Owl Prey Species

The Assessment presents a finding that the proposed harvest and vegetation treatments are likely to maintain or improve foraging habitat conditions for spotted owl prey species. This is because treatments are designed to retain snags, down wood debris, and promote understory development, all essential habitat elements of spotted owl prey. For example, Lemkuhl et al. (2006) confirmed the importance of maintaining snags, down wood, canopy cover, and mistletoe to support populations of spotted owl prey species. Gomez et al. (2005) noted that commercial thinning in young stands of coastal Oregon Douglas-fir (35-45 yr) did not have a measurable short-term effect on density, survival or body mass of northern flying squirrels, an important prey species for spotted owls. Gomez et al. (2005) also noted the importance of fungal sporocarps, which were positively associated with large down wood. However, other research indicates negative effects of vegetation treatments of flying squirrels (Wilson 2010, Holloway and Smith 2011). It is unknown how these negative results translate to the more xeric dry forest conditions in the Klamath Province.

Residual trees, snags and down wood that are retained in the thinned stands will provide some cover for prey species over time, and will help minimize harvest impacts to some prey species. Some arboreal prey species will venture into harvest units a short distance for food. Spotted owls seldom venture far into non-forested stands to hunt. However, edges can be areas of good prey availability and potentially increased vulnerability (i.e., better hunting for spotted owls) (Zabel et al. 1995). The retained trees may respond favorably to more light and resources and gain height and canopy over time. Removal of some tree canopy, provided it is not too extreme, will bring more light and resources into the stand, stimulating forbs, shrubs and other prey food. Once the initial impact of disturbance recovers (6 months to two years), the understory habitat conditions for prey food would increase over the next few years, until shrubs and residual trees respond to close in the stand.

Overall, the spacing, timing and standards and guidelines for proposed projects described in the Assessment are likely to avoid adverse impacts to spotted owls with respect to prey availability by retaining habitat features in treated stands that support prey species populations although localized, short-term changes in prey species distribution and abundance may occur within a treated stand. The dispersion of treatment sites over a large area, as is the case here, is especially important in maintaining spotted owl prey populations within the action area. On this basis, the Service has determined effects to spotted owls, as described here, would be insignificant.

Concurrence

This response is prepared in accordance with section 7(a)(2) and 7(c) of the Act, and concludes informal consultation on the project pursuant to 50 CFR 402. The Service concurs with the effects determination made by the District that the Medford District BLM Summer FY 2011 Activities, as provided in the Assessment and further detailed in this concurrence letter, may affect, are not likely to adversely affect the spotted owl and is not likely to adversely modify designated critical habitat for the spotted owl. This concurrence is based on the expectation that all projects, both individually and collectively, will: 1) comply with the standards and guidelines of the NWFP (USDA FS/USDI BLM 1994a), 2) comply with the District's RMP (USDI BLM 2008), 3) adhere to the PDC described in Appendix A and herein, 4) project design features herein will be fully implemented so that spotted owl NRF and dispersal-only habitat is anticipated to provide a similar function post-treatment, 5) landscape condition post-treatment will continue to provide for dispersing spotted owls, and 6) spotted owl critical habitat will not be destroyed or adversely modified.

Incidental take is not expected and is not authorized for this consultation. Consultation on this action should be reinitiated if 1) new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not considered in this consultation; 2) the action is subsequently modified in a manner that causes an effect to a listed species or designated critical habitat that was not considered in this consultation; 3) a new species or critical habitat is designated that may be affected by this project.

Because the proposed action is not likely to adversely affect spotted owls or spotted owl designated critical habitat within the action area, it is not necessary to consider whether the action will jeopardize the species or adversely modify the value of their designated critical habitat.

If any questions arise concerning the contents of this concurrence letter, please contact Cynthia Donegan at 541-618-2374.

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Appendix A: Project Design Criteria

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

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

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

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

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

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 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 (Table A-1) of any documented or projected owl site between March 1 and June 30 (or until two weeks after the fledging period) – unless protocol surveys have determined the activity center to be not occupied, non-nesting, or failed in their nesting attempt. The distances may be shortened if significant topographical breaks or blast blankets (or other devices) muffle sound traveling between the work location and nest sites.

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

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

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

(I) Trees already on the ground in areas where large woody material is adequate;
(II) Trees lacking suitable nesting structure for spotted owls.

Table A-1. Mandatory Restriction Distance to Avoid Disturbance to Spotted Owl Sites.

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

* 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 ether negligible effects or no effect to spotted owls. The types of reactions that spotted owls could have to noise that the Service considers to have a negligible impact, include flapping of wings, the turning of a head towards the noise, hiding, assuming a defensive stance, etc. (USDI FWS 2003).

Appendix B. Detailed Project Descriptions (copied from the Assessment).

Timber Harvest
Timber harvest activities included in this proposed action include stewardship and commercial thinning activities. Harvest treatments described in this BA are designed to ensure that NRF and dispersal habitat for owls retains characteristics post-treatment. Harvest activities that meet these criteria include various levels of: commercial thinning, selective harvest, and density management. Proposed timber projects will reduce density in forest stands through thinning or individual tree selection. Some larger trees may be removed in areas of insect, root rot, mistletoe or other forest pathogen infestation, or to favor dominance of dry site or fire tolerant trees species, while also maintaining the important broken topped, defective and structurally-complex trees important to owls.

Yarding and Other Activities: Timber harvest activities include the pre-project planning, surveys and marking; implementation activities such as roads, skidtrail and corridor development, anchor trees adjacent to treatment units, involve the removing and yarding of trees to facilitate the selected logging system; and the follow-up activities related to clearing slash including preparing the ground for planting or site restoration.

Commercial Thinning: This treatment is prescribed for even-aged stands with a single canopy layer. In these stands, growth rates are beginning to decline due to competition. These treatments would typically thin stands by spacing the residual trees based on the crown radius of the healthiest dominant and co-dominant trees to achieve an average relative density of 35 percent with some variation for site differences (range between 25 and 45 percent relative density).

Density Management: This treatment is prescribed for even or uneven-aged stands for the primary purpose of widening the spacing of residual trees to promote growth and structural development of the remaining stand. These treatments proportionally thin stands by spacing the residual trees based on the crown radius of the healthiest dominant and co-dominant trees to achieve an average relative density of as low as 35 percent relative density, but generally would be closer to 40-45 percent relative density to maintain NRF habitat. (Treatment to reduce inter-tree competition is recommended when a stand reaches 55 percent relative density). This treatment involves the selective thinning of some trees within a stand to reduce moisture stress on the remaining large trees, allow for reintroduction of low intensity fire in the understory, and increase growth in the remaining trees.

Density management in young stands (approximately 20-40 years old) offers the best opportunity for developing the conditions most suitable for future development of old growth characteristics. Density management in older stands is primarily driven by the need to reduce stress, increase species diversity, and increase the forest's ability to survive the inevitable exposure to large-scale wildfire, insects, and disease.

Density Management (North Trail TS): The density management prescription in North Trail is similar as described above. More specifically, basal area would be reduced to approximately 90 to 160 with canopy retention of at least 40 percent in dispersal habitat and 60 percent in NRF habitat. Tree diameters would be thinned approximately proportional to the existing occurring density of size classes of 8" through 24" diameter at breast height (dbh). The majority (99%) of

trees marked for harvest are 8" through 24" diameter classes. Less than 1 percent of marked trees are from 28" through 36" diameter classes, favoring retention of the larger diameter classes.

Select Harvest (North Trail TS): This prescription is planned for a six acre unit lightly to moderately burned by the Wall Fire (2002). Fire-killed and damaged conifers will be removed to reduce the possibility of future insect damage and mortality. A range of diameters (8"-40"dbh) will be cut. A few larger trees killed by the fire will be harvested with the select harvest. Tree diameters would be thinned approximately proportional to the existing occurring density of size classes of 8" through 24" dbh. The majority (94%) of trees marked for harvest are from 8" through 24" diameter class, while 6 percent of the trees marked are from 28" through 40" diameter classes. The majority of the trees left in the unit will be healthy, large-diameter, full-crowned trees, without disease or insect problems. The select harvest will result in a fully stocked stand and would retain at least 40 percent canopy cover in the unit.

Variable Density Thinning (Williams Thin): is prescribed to accelerate tree growth, retard crown recession and introduce structural diversity through the use of gaps and leave patches. Variable spacing is accomplished by adjusting spacing by tree diameter and crown width to achieve an average canopy retention of 40 percent. Trees $\geq$ 20" dbh would not be cut in any treatments in this project. Approximately 5 to 10% of the acres of each individual stand will have all conifer trees less than 20" dbh removed to create gaps that vary in size from ¼ acre to ½ acre. Another 5 to 10 percent of each stand will have leave patches which vary from ¼ acre in size to 5 acres.

Understory Reduction Treatments: primarily thin (the smallest diameter trees) from below to achieve a minimum target canopy closure of 60 percent in stands of spotted owl NRF habitat, and 40 percent in stands of spotted owl dispersal habitat. The prescription for these areas includes the retention of the most vigorous, large trees in patches, while thinning lower and intermediate tree layers in an effort to accelerate development of multi-layered tree structure**.**

Silviculture PCT/Density Management: removes diameters less than 8 inches to release larger trees and increase vigor and growth potential of remaining young trees. It may include removing other competing vegetation, pruning lower branches to improve wood quality, and selectively retaining tree desired species such as oaks or maples that may be limited within treatment areas.

Modified Group Selection: the removal of trees (usually Douglas-fir) that are competing with vigorous pines and non-tanoak hardwoods with greater than 30 percent live crown ratio. Typically, openings created by these treatments would be between one quarter to one half acre in size, with the occasional openings of up to one acre in size if the pines and non-tanoak hardwoods require more release.

Small Group Selection: a silvicultural treatment that harvests small groups of trees within a stand in order to create regeneration openings. Generally, openings are between 0.25 and 0.75 acre. The gaps within each unit would not exceed 20 percent of the total unit area unless disease conditions require larger areas to be regenerated (see sanitation-salvage). Small group selection is intended to introduce structural diversity in an otherwise large homogeneous stand by mimicking the effects of a variety of natural disturbance processes (fire, wind, disease, etc.) that are essential for maintaining a healthy ecosystem. Natural seeding and/or planting would occur in each opening to insure that the desired mix of species is obtained. Though the

regeneration in the small groups matures under even-aged conditions, the 0.25-0.75 acre or larger openings permit establishment of shade intolerant species such as ponderosa pine, and the result is a larger uneven-aged, more species-diverse forest. Small group selection allows stands and landscapes to stay continuously forested while regeneration of each stand takes place over a long period of time.

Detailed Timber Project Descriptions

All projects may extract biomass unless specified within descriptions. The prescriptions in these thinning units will maintain 60 percent canopy in NRF habitat and 40 percent in dispersal habitat. Riparian treatment may occur and will maintain 50 percent in dispersal and at least 60 percent in NRF. Primary constituent elements present would be retained in critical habitat. Prescriptions would include retaining the largest vigorous trees with large crowns, and thinning the remaining commercial size diameters. Down wood and snags would be retained, unless snags are required to be felled for safety and operational feasibility. Thinning would retain some of the suppressed or deformed type trees if they occur. Trees with potential for future nest trees or snags would be favored for retention. Some of the vigorous midstory perching or potential roosting trees will be retained. The diversity in tree species including hardwoods would be retained. Most landings will be restricted to the road prism. The units will be yarded with a combination of ground-based tractors and skyline cable yarders. Known and potential (generated) spotted owl nest patches will not be treated unless specified in project descriptions. No RA 32 habitat will be treated with these sales. It is possible that skid trails, yarding corridors, tailhold/anchor trees, existing road renovation or improvements, temporary road construction, will be located in RA 32 habitat if the function and integrity of the RA 32 habitat is maintained.

London Peak Thin

Current conditions: The London Peak timber sale is located in the Glendale Resource Area and will treat up to 130 acres of dispersal habitat. The units are in second growth stands ranging from approximately 40 to 70 years old, on matrix land allocation, on ridgetops, middle and upper slopes. Tree diameters are heavily dominated in the 8” to 16” diameters, with commercial size tree diameters ranging from approximately 8 to 30 inches, as growth rates vary due to site conditions. Scattered remnant trees are present throughout the units. Canopy cover exceeds 60 percent, but lacks consistent larger diameter trees, vegetative layering, ground cover, and large coarse woody debris and snags, that would provide features to support prey, nesting habitat, or roosting and foraging habitat for spotted owls. This project does not contain RA32 habitat because the stands are less than 80 years old and lack complexity and decadence.

Project description: The project will utilize Commercial Thinning and Density Management. Cable yarding and/ or tractor yarding methods would be used. Temporary road construction on or near ridgetops may occur. Treatments would retain approximately 40 percent canopy closure, and retain the most vigorous and fire resilient trees, hardwoods, and down wood. Majority of trees thinned would occur within the 8” to 28” diameters, heavily dominated by the 8” to 16” diameter classes. The larger diameters selected for removal would not exhibit fire-tolerant characters such as thick furrowed bark. Larger fire-tolerant trees would be favored for retention. Clearing adjacent trees around selected remnant trees would occur. Second-growth trees up to 24” that are ingrowth on road bank and slopes since original road construction may be cleared along access roads as part of Glendale Resource Area London Peak thin. No units are within nest patches or core areas.

North Trail Timber Sale

Current conditions: The North Trail Timber Sale is in the Butte Falls Resource Area and will treat 19 acres of NRF and 64 acres of dispersal habitat. Stand ages vary from approximately 80 to 110 years old, with canopy closure exceeding 60 percent. Douglas-fir generally dominates the overstory of most stands with sugar pine, Ponderosa pine, and incense cedar occurring on a scattered basis. Elevations range from 2,200 to 3,300 feet. At elevations below 2,500 feet, plant communities tend toward the moderate to dry end of the Douglas-fir series. Much drier Ponderosa pine and white oak communities are common as well. At elevations above 3,000 feet, the plant communities are at the moderate to moist end of the environmental gradient for the Douglas-fir series with some sites grading into the white fir series. Pacific madrone is common throughout the analysis area and often competes with developing conifers where openings have been created. Douglas-fir and incense cedar are the primary conifer species regenerating within un-managed conifer stands. The stands being analyzed have a history of wildfire and/or logging, and generally have a single to two-storied structure with canopy closures greater than 60 percent. The 19 acres of NRF, actually meets the subset of roosting, foraging, and dispersal habitat (Mckelvey 2). Canopy cover exceeds 60%, but lacks larger diameter trees, vegetative layering, ground cover, coarse woody debris, and snags that would provide features to support prey, and nesting habitat for spotted owls. One unit (31-1) has some trees greater than 16" dbh, but has been simplified by the 2002 Wall Creek fire, and now qualifies as dispersal habitat. RA32 surveys were completed and no RA32 habitat was found.

Project description: This project will use Density Management and Select Harvest prescriptions as described above. Prescriptions ensure projects will retain NRF and dispersal function post treatment. The unit would be treated using tractor and cable logging methods. No new roads or temporary roads would be constructed**.** Activity slash will be lop and scattered and hand-piled and burned in denser stands.

Williams Thin

Current conditions: The Williams Thin project occurs in the East IV/ Williams Late Successional Reserve/AMR in the Grants Pass Resource Area. These stands are all less than 80 years old and the average dbh is 12" and currently function as dispersal habitat. Tree densities are extremely high in much of the project area, and canopy closure is generally greater than 80-90 percent. The overcrowding is causing density dependent mortality, crown recession, reduced individual tree vigor, shading of large hardwoods, exclusion of new regeneration, and delayed structural development. This project does not contain RA32 stands because the stands are less than 80 years old and no remnant trees are present in these units.

Project description: LSR thinning guidelines will be implemented for this project. Variable density thinning (VDT) is prescribed to accelerate tree growth, retard crown recession and introduce structural diversity through the use of gaps and leave patches. Variable spacing is accomplished by adjusting spacing by tree diameter and crown width to achieve average canopy retention of 40 percent post treatment. Trees $\geq$ 20" DBH would not be cut in any treatments in this project. Approximately 5 to 10% of the acres of each individual stand will have all conifer trees less than 20" dbh removed to create gaps that vary in size from ¼ acre to ½ acre. Another 5 to 10% of each stand will have leave patches which vary from ¼ acre in size to 5 acres. In this project area anchor trees would likely be < 20 dbh. If larger trees are used because they are a hazard to the logging operation, then the tree would be cut and left in the stand for coarse woody

debris to meet LSR guidelines. The exact number of anchor trees that would be cut is unknown, but likely several would be cut above each unit. The effects from the loss of these trees would be NLAA since only a few trees would be cut within the larger stand, and they would contribute to habitat function and complexity as large down wood.

Forest Health

Forest health projects include hazardous fuels reduction, restoration, and young stand development. Forest Health treatments are designed to ensure that NRF and dispersal habitat for owls retains characteristics post-treatment. Forest Health projects designed to restore ecological function may have long-term beneficial effects to owls.

Fuels Reduction and Young Stand Development includes manual and/or mechanical treatments using chainsaws or mechanical equipment followed up with prescribed fire (pile burning or under-burns. Broadcast burning without pre-treatment (brush fields) can also occur. Mechanical treatment is designed to reduce abnormally high amounts of shrubs and ladder fuels so that subsequent prescribed burning or wildfire won't be as severe. The material may be piled or may be left dispersed, and is usually burned once that material dries out. Biomass could be removed using low impact ground-based equipment or cable yarding systems if the biomass removal also maintains habitat. A small portion of the acres may also be burned or brushed again. These fuel treatments are generally implemented over a period of years. The acres in the proposed action are the acres of the fuels treatment "footprint", and impacts are assessed for the entire treatment period.

Prescribed Fire use is dependent upon management objectives. The primary role of prescribed fire has traditionally been for site preparation and fuels reduction. Recently, natural fuels reduction and ecological "improvement" have become end goals of prescribed fire, particularly in areas managed for owls. The effects of prescribed natural fire, when limited to the prescription, can usually be controlled or manipulated. The resultant fuel is treated in one or more of the following methods.

Hand Piling and Burning: is typically used when under-burning is not possible due to heavy fuel loads. Sticks one to seven inches in diameter and longer than two feet will be piled by hand.

Understory Burning (Under-Burning): used where the objective is to maintain greater than or equal to 80 percent of the overstory. Typically, burning occurs between fall and spring outside of the breeding season for spotted owls.

Lop and Scatter is a method of fuels reduction where accumulations of wood and brush and are broken up (usually with chain saws) and dispersed away from dense locations.

Leave Tops Attached is a method, sometimes referred to as whole tree yarding or logging with tops attached, would effectively reduce fuel loading within units and would transfer most of the slash to landings, where it would be treated. This practice is just what its name indicates: a tree, or the last bucked log, is yarded to the landing without cutting off the unmerchantable top and leaving it in the forest, as is usual practice.

Biomass is referred to as the product that can be removed from a unit for off-site purposes and can occur in a timber harvest, stewardship, forest health, or salvage project. The District does

not consider decadent woody material, such as large snags and pre-existing large down wood as biomass material. Large standing dead and down wood will be retained within harvest units. Biomass utilizes material that would otherwise be treated as slash or yarding debris. It is any dead or living vegetation in a unit that is less than or equal to eight (8) inches in diameter for conifers or less than or equal to 12 inches for hardwoods. On slopes less than 35 percent, mechanized low ground-pressure machinery would cut, skid, haul or chip that material. On slopes greater than 35 percent, biomass would be cable yarded.

Detailed Forest Health Project Descriptions

Brushy Battle Fuels
Approximately 400 acres of NRF, 1200 acres of dispersal, and 260 acres of non-habitat will be treated to reduce the risk of fire in the Wildland Urban Interface (WUI). Fuels management has three primary purposes: fuels reduction to reduce wildfire hazard, site preparation/slash reduction for improving conifer planting, and restoration of ecosystem function where wildfire has been excluded. Treatments consist of the removal of surface fuels, brush or small trees, and the removal of ladder fuels or crowded conifers or hardwoods and will be spread throughout the Evans Creek fifth field watershed. Less than 1 percent of the NRF and 8.5 percent of the dispersal habitat in this watershed would be treated. NRF and dispersal habitat would be retained post-treatment. The project will take up to five years to complete.

There will be no fuels reduction or roadside treatments in nest patches or in high-quality, structurally complex (RA 32) habitat. RA 32 habitat will be identified in the field and dropped from consideration for treatment. Approximately 300 acres of the total project acres are within no-treatment riparian buffers. Each proposed treatment area will have riparian buffers, providing patches and corridors of untreated dispersal and NRF habitat. No treatment or pile burning will occur within 60 feet, each side, of fish-bearing or perennial streams; no treatment will occur within 35 feet, each side, of long-duration, intermittent streams; and no treatment will occur within 60 feet from the edge of springs, seeps, wetlands, and ponds.

Fuel treatment units range from 20 acres to 240 acres in size. Conifers and hardwoods more than 1 foot tall and less than 8 inches dbh (diameter at breast height) will be cut to a 25-foot by 25-foot spacing. Conifers 6 to 14 inches dbh will be pruned up to 10 feet above ground level. Shrub species more than 1 foot tall and less than 12 inches in diameter (at 1 foot above ground level) will be cut to 45-foot by 45-foot spacing with the rest cut, piled and burned. Slashed material that measures 1 to 8 inches in diameter and more than 2 feet long will be hand piled. The size of the slash pile will normally be 6 feet by 6 feet with an average of 50 piles per acre. Approximately 5 piles per acre, or 10 percent, on average, of the piles do not burn and remain to provide habitat for spotted owl prey. Slash pile burning will generally occur within 1 to 1.5 years after cutting, or when fuels have cured to allow for a hotter, cleaner burn. Slash piles will generally be burned between October 15 and May 1 after significant precipitation has occurred to limit the fire from creeping between piles and to minimize the potential of fire escape and damage to residual stands.

Silviculture PCT/DM- *Glendale, Grants Pass, Butte Falls RAs*
The project aims to move 2,825 acres (1,540 acres NRF, 1,375 acres dispersal) of dense young stands or older stands with dense understories on developmental paths toward improved vigor, greater resistance to disturbance, and desired species composition and structure. Stand management treatments would occur in young plantation stands that are generally 30 to 40 years

old that may be functioning as dispersal habitat, but overstocked with small diameter (<8") trees or hardwoods. Treatments would also occur in older, natural, or previously entered stands functioning as dispersal habitat. Roosting and foraging habitat, or nesting habitat, with low density overstory or patch openings as a result of past harvesting, or natural occurrences, with dense understory trees may be non-commercially thinned. Treatments include young stand thinning, vegetation competition release, pruning, and/or treatment of created slash. Mechanized equipment would be limited to chainsaws. These young stands would be implemented on sites located throughout the Butte Falls, Glendale and Grants Pass Resource Areas on Matrix, Critical Habitat Units, and Late Successional Reserve management areas.

The primary purpose of early stand thinning and vegetation competition release is to make additional moisture, light, nutrients, and growing space available for desired conifers and hardwoods by cutting the competing vegetation (excess conifers, hardwoods, and shrubs). A secondary purpose of these treatments would be to shift stand species composition and structure to desired conditions. Pruning treatments are primarily to lessen the impact of white pine blister rust (*Cronartium ribicola*) and to enhance clear wood production and tree value. Silvicultural practices in Riparian Reserves would be proposed to reach desired vegetation characteristics needed to attain Aquatic Conservation Strategy and Riparian Reserve objectives.

Site specific treatments would be prescribed for each stand. Prescriptions include removing and spacing conifer and hardwood trees of diameters less than 8 inches, crown spacing, or variable density thinning including creating openings up to a ½ acre within the treatment area by leaving fewer trees per acre), Vegetation competition release (100 percent brushing, cutting of all non-reserved species that are over one foot tall and seven inches or less dbh in the entire treatment area, and radius brushing cutting of all non-reserve species that are over 1 ft tall and 7 inches dbh or less in a cylindrical area surrounding all leave trees extending 4 ft from the end of the lateral branch tips). Both types of competition release could prescribe tree formed hardwoods 7-10 inches dbh to be girdled where hardwood densities are high to release favored conifers. Reserved species typically include big-leaf maple and black or white oak where occurrence is very low. Treatment method would be determined based on site specific conditions. Pruning treatments to reduce mortality from white pine blister rust in sugar pine would involve removing lower live limbs to a maximum height of 8 feet. Pruning treatments in the uplands would improve wood quality and fuels hazard reduction and remove the bottom portion of the live crowns up 8-12 feet.

French Flat ACEC Restoration

Current conditions: The proposed meadow restoration project is planned in the French Flat Area of Critical Environmental Concern (ACEC). French Flat ACEC was designated for its unique natural system and abundance of cultural sites, specifically for the wide array of valley bottom ecosystems within the ACEC and the presence of the numerous sensitive serpentine plants including the now federally listed Cook's desert parsley (*Lomatium cookii*). The pattern of frequent, low intensity fire which helped form the plant communities at French Flat has been replaced with the era of fire exclusion. Fire exclusion in the French Flat area has created vegetative and fuel conditions with a high potential for large and destructive wildland fires that can be difficult to suppress. Modification of the fire regime due to prolonged fire exclusion has increased fuel loads and fuel continuity, resulting in more severe fire effects (Agee 1993). Dead and down fuel and understory vegetation are no longer periodically removed. This creates a trend of ever increasing amounts of available fuels. The project area includes 210 acres of dispersal and 100 acres NRF habitat treatment adjacent to the serpentine meadows. RA32

surveys will be completed prior to implementation and stands identified as RA 32 habitat will dropped from consideration for treatment.

Project description: There are two objectives for this project: 1) reduce conifer encroachment along the meadows and oak woodlands and 2) create fire resilient conifer stands. The proposed treatment for the first objective would include selectively thinning conifers $\leq$ 12" dbh within 100' of the meadows and oak woodlands. The proposed treatment for the 2nd objective would include understory thinning, hand piling, and then burning of the piles. Understory vegetation would be thinned using manual and mechanical techniques (slashing, pruning) to the desired tree densities and stocking levels. Understory vegetation density would be reduced by cutting and spacing of conifers <12" dbh and hardwoods <12" dbh. Most hardwoods above 6 inches would be retained in order to reduce stump sprouting. Retained vegetation would be spaced 14-45' apart. Within this range, wider spacing would be used for larger leave trees or for species such as pine or oak which thrive in less dense conditions. Vegetation diversity would be obtained by maintaining species occurring at low frequencies in the stand (i.e. Pacific yew, pine, vine maple). Untreated vegetation groups ranging in size from 0.1 to 2 acres would be retained in each treatment unit. Woody material that has been cut 1-6" in diameter and greater than two feet in length would be piled by hand. The piles would be covered with plastic to create a dry ignition point and would be burned during the wet season when the risk of fire spread (scorch or mortality) to nearby residual trees and shrubs is minimized.

Special Forest Products

Special Forest Products projects proposed in this BA will take place in the Grants Pass Resource Area. Projects propose treat and maintain activities in up to 60 acres of northern spotted owl dispersal habitat. Miscellaneous special forest products is a program that covers assorted projects, including commercial firewood, small pole harvest, salvage of small areas of disease or insect damage, and other specialty wood products. These projects would be designed to "treat and maintain" existing northern spotted owl habitat.

Hazard Tree Removal

Hazard tree removal is difficult to anticipate, but safety concerns require them to be dealt with promptly. Hazard trees can occur along active roadways, may occur in any land allocation or habitat classification, and may result from localized wind, snow break damage, forest pathogens, environmental stress, or may be existing trees considered hazardous by OSHA guidelines for contractors working in adjacent areas or an issue of public safety. Most hazard tree removal will occur along the road prism of roads commonly used by the general public and will involve dispersed individual trees. BLM sells some merchantable hazard trees that are located on O&C lands. Hazard trees in LSRs and other reserves on O&C lands may be sold if coarse woody debris targets have already been met for the stand. When targets have not been met, hazard trees in these areas may be left on site within the adjacent stand for down wood, or be used for stream improvement projects at other locations. The amount of hazard tree removal proposed in this biological assessment is estimated at 90 acres (estimated at one hazard tree per acre) within the Grants Pass and Glendale Resource Areas. Hazard tree removal will take place in northern spotted owl habitat, northern spotted owl critical habitat, and Late Successional Reserves.