

Final Environmental Assessment
addressing the
Proposed Issuance of an Endangered Species Act Enhancement of Survival Permit
for the
Oregon Department of Forestry Safe Harbor Agreement for the Northern Spotted Owl
in Lane County, Oregon

1.0 Introduction

The U.S. Fish and Wildlife Service (USFWS) is currently conducting a barred owl (*Strix varia*) removal experiment (Experiment) to determine its utility as a recovery tool for the threatened northern spotted owl (*Strix occidentalis caurina*; spotted owl)(USFWS 2013a). This action partially implements Recovery Action 29 of the *Revised Recovery Plan for the Northern Spotted Owl* (USFWS 2011).

The Experiment is being implemented on four study areas, including the Oregon Coast Ranges Study Area (Study Area) west of Eugene, Oregon. Although the Experiment is focused on Federal lands, the study areas include significant tracts of interspersed, non-Federal lands, including State lands administered by the Oregon Department of Forestry (ODF). Access to non-federal lands within the study areas is important to efficient and effective implementation of the Experiment. Information from the Experiment is critical to informing the development of a long-term management strategy to address the barred owl threat to the conservation of the spotted owl.

Pursuant to the requirements of the National Environmental Policy Act (NEPA), the USFWS prepared a Final Environmental Impact Statement (FEIS) and a Record of Decision (ROD) addressing the impacts of the Experiment on the human environment (USFWS 2013a,b). The information and analyses contained in the FEIS and the ROD are herein incorporated by reference and were relied upon by the USFWS, in part, in completing the NEPA compliance process for the USFWS's proposed Permit action discussed below.

The USFWS and ODF have prepared a Safe Harbor Agreement (Agreement) in support of the Experiment under which ODF will allow USFWS and U.S. Geological Survey (USGS) researchers or their contractors access to ODF lands within the Study Area to conduct barred owl survey and removal activities. Under the Agreement and an associated Endangered Species Act (ESA) Enhancement of Survival Permit (Permit), ODF will have authorization to incidentally take the spotted owl in conjunction with a return to baseline conditions for the spotted owl described in the Agreement, provided permit issuance criteria are met.

The USFWS's proposed issuance of the Permit is a Federal action that may affect the human environment and therefore is subject to the review requirements under NEPA. The USFWS prepared this final Environmental Assessment (EA) in accordance with those requirements. The scope of this EA is restricted in light of our reliance on and incorporation by reference of the information and analyses contained in the FEIS and the ROD on the Experiment referenced above. The focus of this EA is an assessment of the effects of timber harvest activities

associated with a return to baseline conditions, as provided for under the Agreement, on the spotted owl and its critical habitat (CH), and on the threatened marbled murrelet.

1.1 Background on the Barred Owl Threat to Spotted Owls

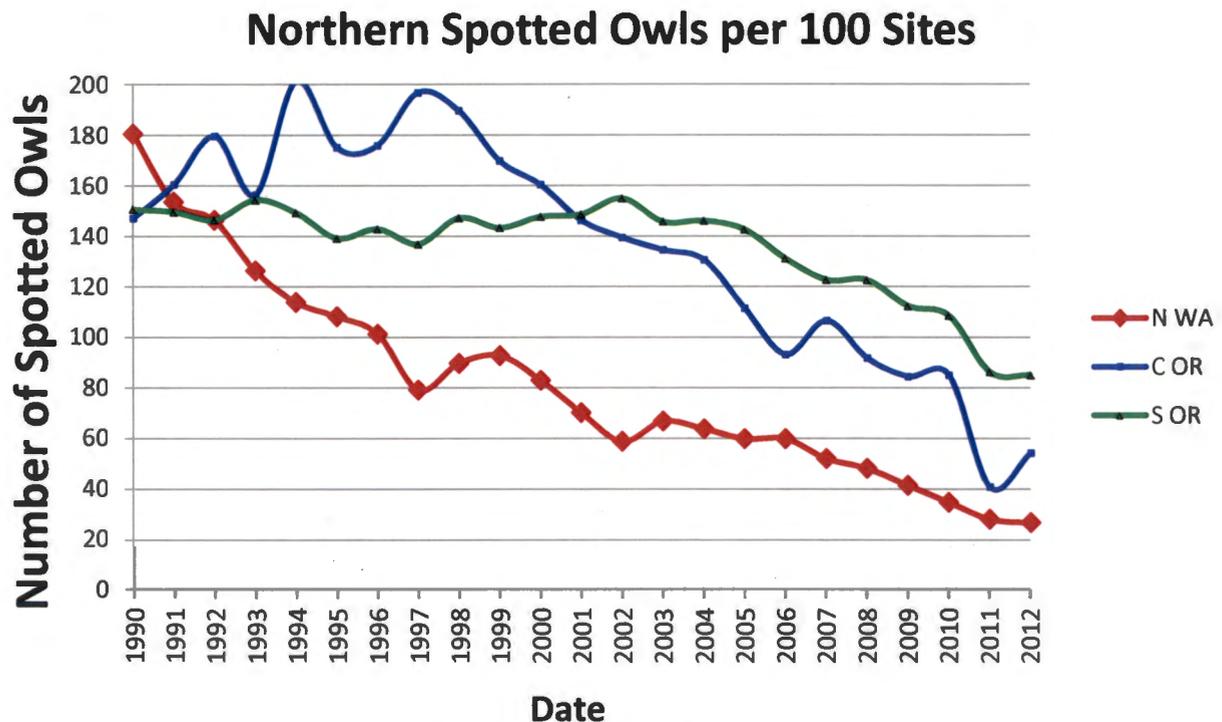
Because the Agreement is tied to implementation of the Experiment, understanding the approach to and value of the Experiment are important to understanding the effects of the Agreement and the Permit on the human environment, inclusive of listed species and CH.

The USFWS noted in the FEIS that spotted owl populations have been declining for many years, particularly in the northern part of its range. Spotted owl populations are being tracked by Federal agencies in conjunction with several demographic studies spread across its range. Those studies have documented the following population trends (see also Figure 1):

- The spotted owl population on the Cle Elum Demography Study Area in the Washington Cascades declined 85 percent between 1990 and 2013 (Dugger et al. 2016).
- The spotted owl population on the Oregon Coast Ranges Demography Study Area declined 73 percent between 1997 and 2013 (Dugger et al. 2016).
- The spotted owl population on the Klamath Demography Study Area in southern Oregon declined 45 percent from 2002 to 2013 (Dugger et al. 2016).

A portion of the above referenced declines is undoubtedly driven by habitat loss. Although the maintenance and enhancement of spotted owl nesting, roosting, and foraging habitat throughout its range remain an important component of conserving the spotted owl, not all of these areas experienced significant declines in habitat during the timeframes referenced above (USFWS 2013b).

Figure 1. Plot of the number of spotted owls located per 100 sites surveyed on ongoing spotted owl demography studies.



Many of the observed declines in spotted owl populations appear to correlate with the invasion of, and increase in, barred owls in the Pacific Northwest. Barred owls are not native to the Pacific Northwest, and likely dispersed from Canada into the Pacific Northwest sometime after the 1950s. Recent spotted owl population demography analysis shows that the presence of barred owls has a strong negative effect on spotted owl annual survival rates and on spotted owl colonization of new sites on some study areas (Dugger et al. 2016, USFWS 2013b).

The maintenance and development of spotted owl habitat are important to the long-term conservation of the spotted owl, but habitat management alone will not recover the spotted owl. In the short term, the effects of barred owl competition on the spotted owl are likely to overwhelm habitat management efforts, and may result in the extirpation of the spotted owl from large portions of its range. Thus, management of barred owl populations in the Pacific Northwest is crucial to the conservation of the spotted owl.

As early as 2005, scientist, biologists, and managers began exploring options for managing barred owl competition with spotted owls (Buchanan et al. 2007, Johnson et al. 2008). After several workshops and publications, it was determined the most feasible option for addressing the effect of barred owls on spotted owls is the removal of barred owls in areas to increase spotted owl populations (Gutiérrez et al. 2007, Johnson et al. 2008). While we continue to explore all options for spotted owl conservation, the USFWS identified the need to conduct an

experiment to test the effectiveness of barred owl removal on spotted owl populations, as described in Recovery Action 29 of the *Revised Recovery Plan for the Northern Spotted Owl* (USFWS 2011).

In September 2013, the USFWS signed a ROD to conduct experimental removal of barred owls to benefit threatened northern spotted owls (USFWS 2013a). The Experiment is being conducted on four study areas distributed across the range of the spotted owl, including the Oregon Coast Ranges Study Area where ODF manages land. The Experiment involves dividing the Study Area into treatment and control areas. Barred owls will be removed from the treatment area, and not removed from the control area. If spotted owls respond positively to the removal of barred owls, the USFWS anticipates that spotted owls are likely to reoccupy historic sites that are currently unoccupied, and their demographic parameters (e.g., reproduction, adult survival) are likely to improve, resulting in a spotted owl population increase in the treatment area. Spotted and barred owl populations in the control area are not anticipated to change as a result of the Experiment, although spotted owl populations may continue to decline as a result of increasing competition from barred owls.

To conduct the Experiment, researchers will survey the entire Study Area for barred owls. Barred owls will be removed from the treatment areas during the non-breeding season (approximately September to March). Ongoing spotted owl surveys conducted under the Northwest Forest Plan Monitoring program, and ongoing Bureau of Land Management (BLM) spotted owl monitoring will continue in the Study Area. The USFWS will use the data from these ongoing efforts to determine the effect of barred owl removal on spotted owls.

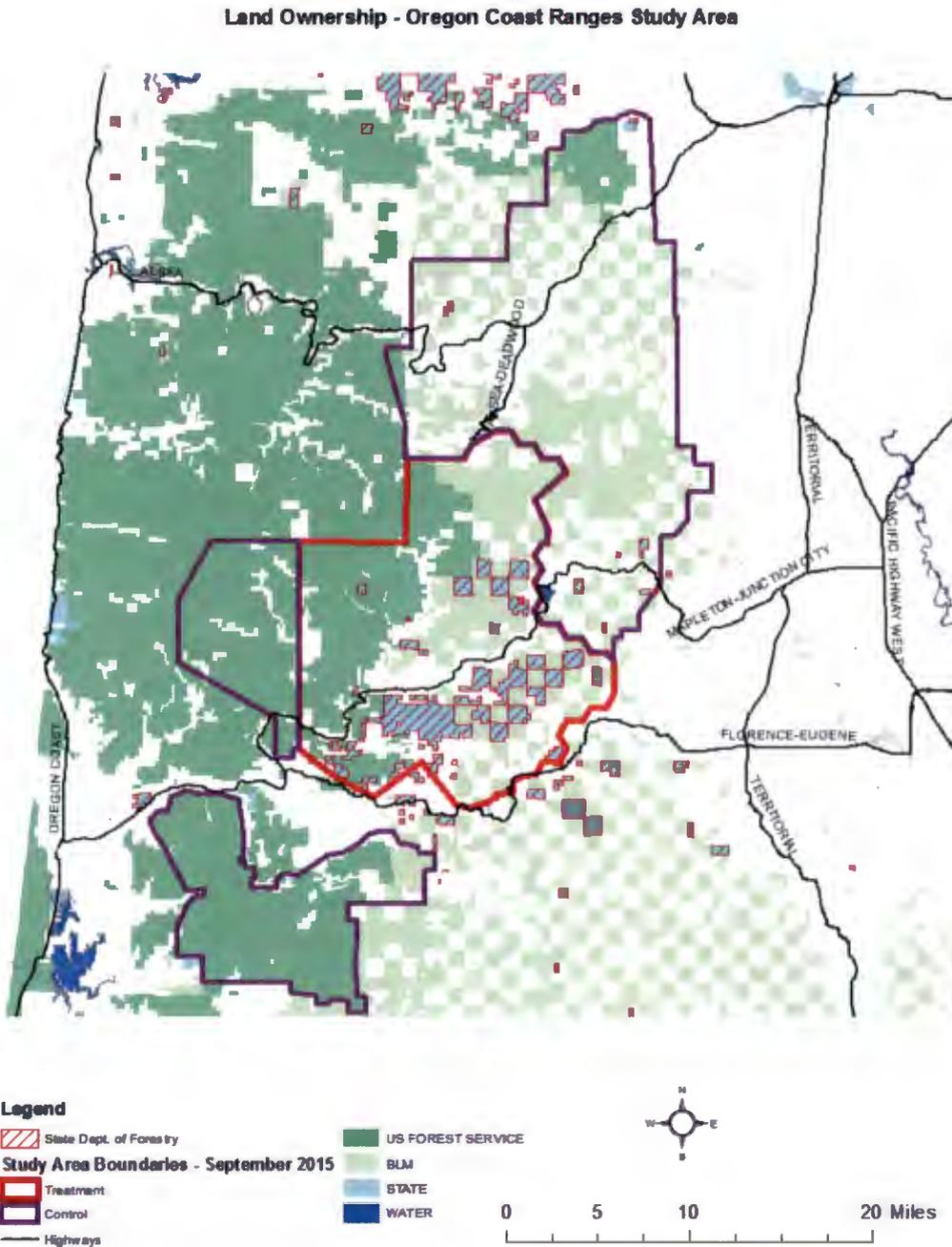
ODF lands are intermingled with Federal and other lands on the Study Area (Map 1). While the Experiment can be conducted by surveying from public roads and removing barred owls on Federal lands, the resulting scientific data will be stronger and the efficiency of implementing the Experiment will be greatly enhanced by researcher access to non-Federal lands. In the Study Area, the robustness of the results of the Experiment will be greatly enhanced by access to ODF survey data, access to ODF lands for surveys, and by ODF permission to remove barred owls from ODF lands.

1.2 Purpose and Need for Action

The USFWS' purpose for the proposed Agreement and Permit action is to gain researcher access to ODF survey data, access to ODF lands for surveys, and ODF permission to remove barred owls from ODF lands.

The USFWS's need for these actions is to enhance the credibility of the findings of the Experiment for this Study Area to help inform the development of a long-term strategy for management of barred owls that is necessary to conserve the spotted owl.

Map 1. General land ownership and Experiment treatment and control area boundaries within the Oregon Coast Ranges Study Area.



The need for access and information to complete the Experiment in the most efficient and effective manner in support of conserving the spotted owl is consistent with Recovery Action 29 of the spotted owl recovery plan (USFWS 2011, p. III-65). More specifically, the Experiment will allow the USFWS to: (1) obtain information regarding the effects of barred owls on spotted owl vital rates of occupancy, survival, reproduction, and population trend through experimental removal of barred owls; (2) determine the feasibility of removing barred owls from an area and the level of effort required to maintain reduced barred owl population levels for the duration of the Experiment; (3) estimate the cost of barred owl removal in different forested landscapes; and (4) develop the information necessary to contribute to developing future options for potential management of barred owls as expeditiously as possible.

ODF's objective for entering into the Agreement and obtaining a Permit is to demonstrate good faith cooperation with the USFWS regarding this recovery action while maintaining a reasonable level of certainty regarding the anticipated biological response of spotted owls to barred owl removal, and subsequent regulatory requirements impacting both forest operations and management during and soon after the Experiment period.

The mission of ODF is to serve the people of Oregon by protecting, managing, and promoting stewardship of Oregon's forests to enhance environmental, economic, and community sustainability. In alignment with this mission, management of State Forest lands is specifically aimed to provide the "Greatest Permanent Value" to the citizens of the State of Oregon as provided for in Chapter 530 of the Oregon Revised Statutes and further defined in Oregon Administrative Rule 629-035-0020. The definition of Greatest Permanent Value includes the protection, maintenance, and enhancement of habitat for native wildlife as well as managing lands for timber production.

ODF lands within the Study Area are an important part of ODF's overall operating plans from both a short- and long-term perspective. Therefore, in return for their cooperation in implementation of the Experiment, ODF is seeking an Agreement and Permit that allow for their normal forest operations and management activities on ODF lands in Lane County, including timber harvest operations that may result in the incidental take of spotted owls that would not occur on their lands over and above those spotted owls currently present, but for the experimental removal of barred owls.

1.3 Regulatory and Planning Environment

Several Federal and State regulations and/or laws govern the activities proposed under the Agreement. A brief summary of the relevant regulations is provided below.

1.3.1 Endangered Species Act

The ESA is intended to protect and conserve endangered and threatened species, and to conserve the habitats/ecosystems on which they depend. The ESA also mandates that all Federal agencies seek to conserve endangered and threatened species, and use their resources and authorities to further such purposes.

Section 9 of the ESA prohibits the “take” of federally-listed endangered and threatened species unless authorized under the provisions of Section 7, 10(a), or 4(d) of the ESA. Section 3 of the ESA defines take as “to harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 10 of the ESA allows the USFWS to enter into agreements and to issue permits to enhance the propagation and survival of listed species. Section 2 of the ESA states that encouraging interested parties to develop and maintain conservation programs through Federal financial assistance and a system of incentives is a key to safeguarding the Nation’s heritage in fish, wildlife, and plants. Section 7 of the ESA requires Federal agencies to utilize their authorities in carry out programs for the conservation of listed species. Section 7 also requires Federal agencies to insure that their actions are not likely to jeopardize the continued existence of listed species or to destroy or adversely modify CH.

A Safe Harbor Agreement under Section 10(a)(1)(A) of the ESA is a voluntary agreement between the USFWS and a non-Federal landowner whose land management actions provide a net conservation benefit to species listed under the ESA. In exchange for complying with the Agreement and permit conditions that are reasonably expected to provide a net conservation benefit to listed species, the landowner is assured that the USFWS will not require additional management activities without their consent. In addition, under the Agreement, landowners may return their lands to mutually agreed baseline conditions, as described in the Agreement.

In this case, the Permit associated with the Agreement would authorize incidental take of spotted owls that may re-occupy currently unoccupied sites once barred owls are removed while the permit holder and their agents conduct forest management activities under current State regulations.

1.3.2 Migratory Bird Treaty Act

The spotted owl is protected under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-711) (MBTA). It is USFWS policy that an ESA Section 10 Permit for listed migratory birds is sufficient to relieve the permittee from liability under the MBTA. For the MBTA, this is accomplished by having the Permit double as a Special Purpose Permit authorized under 50 Code of Federal Regulations (CFR) 21.27. For the Experiment, the direct take of barred owls is covered by a MBTA Scientific Take Permit issued to the USFWS.

1.3.3 National Environmental Policy Act

Issuance of an ESA Section 10 Permit is a Federal action as defined under NEPA, 42 U.S.C. 4331 *et seq.* and its implementing regulations (40 CFR 1500 *et seq.*). With respect to Safe Harbor Agreements in general, compliance with NEPA is not a direct obligation or requirement of an applicant for the ESA Section 10 Permit. However, the USFWS must comply with NEPA when making a Permit decision. Consequently, the appropriate environmental analyses must be conducted and documented before an ESA Section 10 Permit can be issued, provided the issuance criteria are met. The USFWS has prepared this EA to determine if there will be significant impacts to the human environment over and above those disclosed and analyzed in the FEIS and ROD for the Experiment likely to be caused by the effects of the Agreement and Permit on the spotted owl and its CH, and to the marbled murrelet.

1.3.4 Oregon Forest Practices Rules

In Oregon, the Forest Practices Act (ORS 527.610) identifies and regulates non-federal forest practices. The rules specifically state that compliance with the forest practices rules does not substitute for or ensure compliance with the ESA, however, the rules do not impose any state requirement to comply with the ESA. Landowners and operators are advised by the State that Federal law (the ESA) prohibits a person from taking threatened or endangered species, except as exempted or authorized under statutory and regulatory provisions.

1.3.5 State of Oregon Endangered Species Statutes

As a State agency, ODF complies with protection and conservation measures for State listed species as defined in ORS 496.182. Under ORS 496.182, for threatened species such as the spotted owl, if a state agency determines that a proposed action has the potential to violate the guidelines established by the Oregon Fish and Wildlife Commission; it shall notify the Oregon Department of Fish and Wildlife. That department will then recommend reasonable and prudent alternatives, if any, to the proposed action, which are consistent with the guidelines.

2.0 Alternatives

Two alternatives were developed as part of this EA: (1) the No Action Alternative; and (2) the Proposed Action Alternative.

2.1 No Action Alternative

Under the No Action Alternative, the proposed Agreement would not be signed and the USFWS would not issue a Permit for incidental take of spotted owls to ODF. In 2015, ODF provided permission for the USFWS and its contractors to survey for barred owls on open and gated ODF lands. The USFWS could conduct barred owl surveys from open roads through ODF lands, but would require permission to conduct surveys behind locked gates or in closed areas. However, based on discussions with ODF, we understand that ODF will not grant permission for the removal of barred owls from ODF lands without the regulatory certainty provided by a Permit that allows ODF to return their lands to current baseline conditions for the spotted owl. The USFWS will not remove barred owls from ODF lands for this Experiment without specific permission from ODF. Therefore, under the No Action Alternative: ODF would continue to manage their lands under current Federal and State regulations; the USFWS would not have access to gated ODF roads and lands within the Study Area for barred owls surveys and would not remove barred owls on ODF lands in the treatment area; and ODF forest management activities would not be covered for effects resulting in the incidental take of spotted owls that may reoccupy the currently unoccupied sites on or near their lands as a result of the Experiment.

Under the No Action Alternative, ODF forest management activities may affect currently unoccupied spotted owl habitat and CH on its lands. ODF lands in the Study Area are managed under the Northwest Oregon State Forests Management Plan and State Forests Division Operational Policies that addresses a variety of values, including habitat for threatened and

endangered species. Spotted owls are addressed through take avoidance measures that include survey of all suitable habitat prior to operations and take avoidance for occupied spotted owl sites. No specific requirements are included for unoccupied spotted owl habitat. ODF primarily complies with ORS 496.182 through its implementation of take avoidance policies designed to address the Federal ESA. This includes surveys and habitat protection around occupied spotted owl sites.

2.2 Proposed Action Alternative

Under the Proposed Action Alternative, the Agreement would be implemented in the Study Area and the USFWS would issue a Permit to ODF for a period of 13 years, assuming the Experiment is completed after 4 years of barred owl removal activities. All activities covered under the Agreement (discussed below) would be subject to the take authorization under the Permit, as needed, for the first 10 years of the Permit term. For the last 3 years of the Permit term, incidental take of spotted owls would only be authorized for covered activities in the Agreement related to the harvest of timber sales that are auctioned and sold with a contract signed on or before August 31, 2025.

In the FEIS and the ROD for the Experiment, the USFWS noted that if the spotted owl response to removal of barred owls is not as strong as anticipated, the Experiment could be extended to include up to 10 years of barred owl removal. On that basis, in this EA, we have analyzed the expected term of the Permit (13 years) and a Permit term of 18 years (with the limited take authorization in the last 3 years of the Permit term as described in the previous paragraph above) in the event the Experiment needs to be extended and ODF requests an extension of the Permit. The USFWS acknowledges that an amendment to extend the Permit may require additional NEPA compliance if we determine it would increase the amount of incidental take of listed species or cause effects on the human environment not previously considered.

For the USFWS to issue the Permit, the Agreement must contain conservation measures that are reasonably expected to provide a net conservation benefit to the spotted owl, and the Agreement must identify the baseline for the spotted owl that will be maintained over the term of the Agreement. The USFWS's Safe Harbor policy is available at:

http://www.fws.gov/endangered/policy/SAFE_HAR.HTM; and
http://www.fws.gov/endangered/pdfs/FR/FRnoticeCCAA_SHAreg_revision.pdf.

The following discussion briefly describes the conservation measures outlined in the Agreement (ODF 2015), which is herein incorporated by reference.

Under the Agreement, ODF will:

- Provide access and permission for USFWS and USGS biologists, or their contractors, to use roads managed by ODF, and to access ODF lands to survey barred owls throughout the Oregon Coast Ranges Study Area.

- Provide access to ODF lands and permission for USGS and USFWS biologists, or their contractors, to remove barred owls located on ODF lands within the treatment portion of the Study Area.
- Provide permission for USFWS and USGS biologists, or their contractors, to use roads owned or managed by ODF to access sites for the removal of barred owls located on Federal lands, and any other lands for which USFWS has landowner permission to removal barred owls within the treatment portion of the Experiment.
- Provide the USFWS with historic and current spotted owl survey data in the Study Area. This includes data on spotted owl presence, banding, and reproductive surveys, if available.
- Maintain habitat for nesting spotted owls that may reoccupy non-baseline sites during the nesting and rearing season (March 1 to September 30 of the year). During the spotted owl nesting and rearing season (March 1 to September 30 of the year), ODF will refrain from removal or alteration of spotted owl habitat within a 70-acre core (designated based on the “nearest, best most contiguous habitat”), which in all cases will include the nest tree or activity center. The intent of this measure is to allow spotted owls that initiate nesting to complete nesting and fledge young. At any time that biologists determine a spotted owl pair is no longer nesting, this seasonal restriction would no longer be in effect. The boundaries of the 70-acre core habitat polygon to be maintained will be determined by mutual agreement of the USFWS and ODF.

The above measures will contribute to the efficient and effective implementation of the Experiment, and minimize adverse effects to nesting spotted owls that may re-occupy non-baseline sites during the study. As noted above, the information derived from this Experiment is crucial to the development of a long-term barred owl management strategy that is essential to the conservation of the spotted owl.

As part of the proposed Agreement, the USFWS and ODF have mutually established the baseline condition of the spotted owl on covered lands. No incidental take of spotted owls in this baseline would be authorized under the Permit. In the treatment portion of the Study Area, 20 occupied spotted owl sites (represented by their Thiessen polygons) overlap ODF lands or lands where ODF holds easements and agreements that allow them to access the covered lands for timber haul and management (Tables 1 and 2). This baseline includes sites where spotted owls have responded in the past three years, and elevated baseline sites where spotted owls responded four or five years previously. Therefore, incidental take will not be authorized at the 20 currently or recently occupied sites identified in Tables 1 and 2.

Table 1. Baseline spotted owl sites identified in the ODF Safe Harbor Agreement, Oregon Coast Ranges Study Area.

BASELINE SPOTTED OWL SITES	
Master Site #	Spotted Owl Site Name
0812	Barber Creek
0776	East Taylor Creek
0762	Failor Creek
0160	Miller Creek
3553	Raleigh Creek
2721	Rock Creek
2723	San Antone Creek
3913	South Bear Creek
4680	Upper Greenleaf
4474	Upper Mcvey Creek
0159	Walker Creek West

Table 2. Elevated baseline for spotted owl sites identified in the ODF Safe Harbor Agreement, Oregon Coast Ranges Study Area. These sites are treated the same as the baseline sites under this Safe Harbor Agreement.

Elevated Baseline Spotted Owl Sites		
Master Site Number	Spotted Owl Site Name	Last Year With Resident Spotted Owl Response
2137	Bear Creek West	2012
0773	Cape Horn	2012
0524	Elk Mountain	2011
2549	January Creek	2012
2546	Knapp Creek	2011
2313	Lower Greenleaf	2010
4088	McVey Creek	2012
0519	Meadow Creek	2011
2722	Wheeler Creek	2011

The USFWS identified another 18 sites on ODF lands covered under the Agreement where spotted owls have not been detected in the past five years. These are considered the non-baseline sites (Table 3) for the purposes of the Experiment. If spotted owls reoccupy the non-baseline sites during or soon after the Experiment is implemented, they may be incidentally taken under the authority of the proposed Permit in conjunction with a return to baseline conditions caused by covered activities under the Agreement.

Table 3. Spotted owl sites on ODF lands on the Oregon Coast Ranges Study Area that are not considered baseline sites.

NON-BASELINE SPOTTED OWL SITES		
Master Site Number	Spotted Owl Site Name	Last year With Resident Spotted Owl Response
0779	Brush Creek	2008
2545	Chickahominy Creek	2010
4491	Chicken Creek	2010
2543	Druggs Creek	2009
0525	Greenleaf Creek	2006
4688	Iron Mountain	2008
3251	Lake Creek	2010
2552	Little Lake Creek	2007
3126	Lower Deadwood	2009
4492	Lower Nelson Creek	2011
2489	Misery Creek	2009
3554	Nelson Creek	2003
0814	Old Man Rock Canyon	2009
3362	Pat Creek	2007
0086	Upper Elk	2010
4686	Upper Hula	2006
4600	Upper San Antone	2008
0764	Velvet Creek	2008

3. Affected Environment and Environmental Consequences

The proposed Agreement and Permit are associated with implementation of the Experiment in a portion of the Study Area. Potential impacts on the human environment caused by the Experiment, including within the Study Area, were analyzed in the FEIS (USFWS 2013b). Those analyses and findings are herein incorporated by reference. The focus of this EA is on assessing the effects of authorizing the incidental take of spotted owls under the Agreement and the Permit in conjunction with a return to baseline conditions for the spotted owl that exist on ODF lands within the Study Area prior to barred owl removal activities; that analysis was not included within the FEIS. The return to baseline conditions would be associated with ODF's forest management activities involving timber harvest conducted in accordance with State law.

In the FEIS, the USFWS stated its intent to explore the development of Safe Harbor Agreements with interested, non-federal landowners:

“In the removal areas, the Service will explore the potential for Safe Harbor Agreements with nonfederal landowners willing to cooperate with the experiment. Safe Harbor Agreements are voluntary agreements under which landowners manage for listed species and their habitats with an assurance that they may later return their lands to the baseline

condition without regulatory ESA restrictions. This could reduce the impacts of this experiment on timber harvest to a very low or no effect by providing management flexibility. However, as these are voluntary on the part of the landowner, and each is developed relative to the specific conditions of the area, we did not attempt to assume any specific reduction in the maximum potential effect.” (USFWS 2013b, p 218)

This EA is tiered to the *Affected Environment and Environmental Consequences* section of the FEIS (USFWS 2013, Chapter 3), which is herein incorporated by reference. The effects of the proposed Agreement and Permit on the human environment are consistent with the findings of the effect analyses for the Preferred Alternative for the Experiment described and analyzed in the FEIS in the sections on barred owls, spotted owls, ongoing spotted owl demographic study areas, other species, the social environment, recreation and visitor use, costs of the Experiment, and the cultural environment. As noted in the *Effects to the Economy* section of the FEIS: “...[a]ny safe harbor agreements would lessen the effects described in the economic analysis...” (USFWS 2013b, p 452).

The types of actions covered by the Agreement and the Permit relative to incidental take of spotted owls may have the potential to indirectly affect resources such as water quality and other species. However, for the reasons discussed below, the Agreement and the Permit would only change the timing of such impacts, not influence whether they occur or not.

All activities covered under the Agreement could be carried out at any time under current State laws and regulations in spotted owl habitat on ODF lands that is not currently occupied by listed species. In the absence of issuance of the Permit, the non-baseline sites for the spotted owl and other areas of unoccupied spotted owl habitat, including spotted owl CH, are likely to remain occupied by barred owls and unavailable to spotted owls. With the absence of spotted owls, there is no prohibition against take and the covered activities would remain unrestricted relative to the legal requirements of the ESA. The take prohibitions under section 9 of the ESA do not address impacts to CH.

As discussed above, the removal of barred owls in the treatment portion of the Study Area may lead to spotted owl re-occupancy of some of the non-baseline sites. That re-occupancy would reestablish the applicability of the ESA section 9 take prohibitions at these sites. Absent an authorization for such take, the activities covered under the Agreement would need to avoid take of spotted owls to be otherwise legal. However, the Experiment is a short-term action involving a maximum of 10 years of barred owl removal. Over that period, activities would only be potentially restricted for as long as spotted owls remain on these sites. Once barred owl removal ceases, we fully expect barred owls from surrounding areas to invade the treatment area, barred owl populations to regain their current levels, and spotted owls to be again displaced within three to five years (USFWS 2013b, p 173). At that time, under those conditions, there would no longer be restrictions on any covered activities based on the take prohibition at these sites.

If the USFWS does not issue the Permit, barred owls will not be removed from ODF lands within the treatment area for the duration of the Experiment. Without the removal of barred owls, spotted owls are highly unlikely to reoccupy many, if any, of the previously occupied sites on ODF lands. Under those conditions, forest management activities on these lands that have the

potential to cause take of the spotted owl would not be subject to ESA take prohibitions because spotted owls are not likely to be present and affected. Therefore, ODF forest management activities could otherwise legally proceed at these and other unoccupied spotted owl sites, including within spotted owl CH. If spotted owls do manage to reoccupy some currently unoccupied sites on ODF lands due to the removal of barred owls on other adjacent ownerships, ODF may have to delay implementation of some activities until the Experiment ends and barred owls reclaim those areas by displacing spotted owls.

If the USFWS does issue the Permit, ODF covered activities could proceed on ODF lands at normal rates except at baseline-occupied sites or sites that are reoccupied due to barred owl removal. Therefore, the primary effect of the issuance of the Permit would be only to temporarily delay (for up to 15 years maximum) the implementation of some of the covered activities at sites that are reoccupied due to barred owl removal. For these reasons, the difference between the effects on the spotted owl of the No Action and the Proposed Action alternatives considered herein is the delay in implementing ODF covered activities at sites likely to be reoccupied by spotted owls following barred owl removal under the Proposed Action Alternative. In other words, the Agreement and the Permit would only change the timing of such impacts, not influence whether they occur or not because barred owls have currently displaced spotted owls from historically occupied, non-baseline sites on ODF lands and are very likely to do so again following completion of the Experiment.

3.1 Effects of the Experiment on the Spotted Owl

In the FEIS, the adverse effects of implementing the preferred alternative (i.e., the Experiment) on spotted owls across the subspecies' range were considered to be minimal. The small potential for the accidental killing of a spotted owl during barred owl removal efforts was acknowledged, although that outcome was considered unlikely given the rigorous protocol for removal of barred owls under the Experiment (USFWS 2013b, p 150).

In the FEIS, the USFWS noted the potential for an increase in spotted owl site occupancy as a result of the Experiment, and also noted that this was likely a short-lived improvement because barred owls are anticipated to reoccupy these sites soon after completion of the experimental removal.

“We anticipate decreased competition between spotted owls and barred owls on the treatment area for the duration of the Experiment, leading to a potential increase in spotted owl site occupancy rates following barred owl removal.” (USFWS 2013b, p148)

“Because the areas treated are small relative to the range of the northern spotted owl, the effect of barred owl removal on spotted owl site occupancy is expected to diminish after barred owl removal ceases. Barred owls are expected to increase to pre-removal levels after a lag of 3 to 5 years, resulting in subsequent declines in spotted owl site occupancy once the Experiment is concluded.” (USFWS 2013b, p149)

3.1.1 Effects to Spotted Owls under the No Action Alternative for the Proposed Agreement and Permit

Under this alternative, the USFWS would not issue a permit for incidental take of spotted owls to ODF that would cover a return to baseline conditions at historically occupied, but currently vacated spotted owl sites. Under this alternative, the ODF would not allow the USFWS and USGS access to their gated lands within the Study Area for barred owl surveys and would not grant permission to remove barred owls from any ODF lands without the certainty that they could return to baseline conditions. Thus, ODF would continue to manage their lands under current Federal and State regulations.

The non-baseline spotted owl sites (where resident spotted owls have not been detected in at least five years), and other areas where spotted owls have not been detected despite extensive surveys, are highly likely to remain unoccupied unless barred owls are removed from the area. Once verified, the unoccupied sites receive no protection under State or Federal ESA statutes or regulations. Even partial removal of barred owls from other ownerships in the area will likely leave enough barred owls in the area to potentially disrupt reoccupancy by spotted owls. Therefore, habitat on ODF lands associated with these non-baseline sites and areas could be harvested at any time under the No Action Alternative.

If the USFWS or its contractors cannot remove barred owls on ODF lands within the treatment portion of the Study Area, there will be substantial spatial gaps in our efforts to remove barred owl populations. This would lead to an imbedded population of barred owls within the treatment portion of the Study Area, providing an additional source of barred owls to recolonize recently cleared sites and affecting the ability of spotted owls to reoccupy non-baseline sites following barred owl removal.

The presence of an imbedded source population of barred owls could substantially reduce the power of the Experiment to detect the effect of barred owl removal on spotted owl populations, thus affecting our ability to meet the purpose and need of the Experiment. At the very least, this will complicate the analysis of the results of this Experiment. For example, if barred owls remain in an area, spotted owls may not be able to respond to the removal of only barred owls within a historic spotted owl site. Removing some, but not all, of the barred owls that are currently utilizing an historic spotted owl site may not be enough to allow the spotted owls to return, masking the result of the removal.

Lack of access and permission to remove barred owls from ODF lands could lead to the need to extend the duration of the Experiment to compensate for weaker responses or the complete masking of the results. If barred owls are not removed on ODF lands within the treatment area, young produced at barred owl sites within the treatment area may increase the likelihood that currently unoccupied spotted owl sites would be reoccupied by barred owls, rather than spotted owls. In all cases, the lack of a more complete removal of barred owls could mask some of the experimental results and complicate the analysis, reducing the quality of data available to contribute to the development of a long-term barred owl management strategy.

3.1.2 Effects to Spotted Owls under the Proposed Action Alternative for the Proposed Agreement and Permit

Under the Agreement and Permit, ODF would be authorized during the Experiment to incidentally take spotted owls that may reoccupy up to 18 historic, but currently unoccupied, spotted owl sites and other areas outside of baseline sites not known to have been previously occupied by spotted owls. ODF would be authorized to incidentally take spotted owls at these sites and areas during the Experiment and for an additional 5 years (for a total of 10 years) with allowances for an additional 3 years for timber sales at non-baseline spotted owl sites that have become occupied by spotted owls due to barred owl removal and that were sold with contracts signed prior to August 31, 2025. Spotted owls have not been detected on these non-baseline sites for five or more years.

If the spotted owl response to barred owl removal is not as strong as anticipated, the USFWS may extend the removal period for up to a total of 10 years, and in this case would consider extending the term of the Agreement and Permit for up to a total of 18 years with the same provisions in the last 3 years for timber sales at non-baseline sites that were sold with contracts signed prior to August 31, 2031. Spotted owls have not been detected on these non-baseline sites for five or more years. The USFWS acknowledges that an amendment to extend the Agreement and the Permit may require additional NEPA compliance if we determine it would increase the amount of incidental take of listed species or cause effects on the human environment not previously considered.

3.1.2.1 Duration of Spotted Owl Population Gains as a Result of Barred Owl Removal

The Experiment is short-term; barred owl removal is planned for a 4-year period. In our analysis of the effects of the Experiment in the FEIS, we estimated that barred owl populations would return to pre-removal levels within 3 to 5 years following the end of removal activities (USFWS 2013b, p 148-9). Any spotted owl population gains derived from the Experiment are expected to be reversed in this period. Thus, any spotted owls that do reoccupy non-baseline sites or areas on ODF lands as a result of barred owl removal would again be displaced within five years post-Experiment, regardless of ODF's actions.

The eventual loss of the re-occupying spotted owls was the expectation at the time of the decision to move forward with the Experiment and the analysis of effects in the FEIS. The conservation value of the Experiment to the spotted owl is primarily in the information gained on the effect of barred owl removal on spotted owl populations, the cost of such removal, the development of potential barred owl removal methods, and the value of this information to the development of a long term barred owl management strategy. The USFWS did not anticipate long-term conservation benefits to the spotted owl from the temporary removal of barred owls from historically occupied spotted owl sites and other areas within spotted owl habitat.

3.1.2.2 Incidental Take of the Spotted Owl under the Proposed Agreement and Permit

Incidental take of spotted owls under the Agreement and Permit is likely to be in the form of harm or harass. Harm would occur from ODF forest operation activities that result in spotted owl habitat loss or degradation at a re-occupied spotted owl site or a potentially new spotted owl site(s) that occur in non-baseline areas. Harass take is usually the result of disturbance to spotted owls during the early phase of the breeding season caused by loud, persistent activities.

Spotted owls use a relatively large home range, often including over three square miles of land. Within the treatment area, the Federal, State, and private lands are interspersed on a square mile or smaller scale. Thus, an individual spotted owl is likely to use forest habitat owned and managed by several landowners.

3.1.2.2.1 Incidental Take of Spotted Owls due to Habitat Removal

Most habitat-based take under this Agreement would be a result of timber harvest. A small amount of additional habitat removal may occur with the development of roads to access lands for timber harvest or other management activities. Within the treatment portion of the Study Area, 76 percent of the remaining spotted owl nesting/roosting habitat occurs on Federal lands, 14 percent on State lands, and 10 percent on private lands (Table 4).

On the 18 spotted owl non-baseline sites, ODF manages less than 10 percent of the total land within the Thiessen polygons at 6 sites, between 16 and 33 percent at 5 sites, and greater than 33 percent of the lands at 7 sites (Table 5). Some of the lands managed by ODF are reserved as Marbled Murrelet Management Areas or are withdrawn from timber harvest for various other administrative reasons and thus are unlikely to be impacted during the term of the Agreement and Permit.

Table 4. Landownership of spotted owl nesting/roosting habitat within the treatment portion of the Oregon Coast Ranges Study Area.

Spotted Owl Habitat within the Treatment Area, Oregon Coast Ranges Study Area		
Landowner	Acres of Spotted Owl Habitat¹	% of Total Habitat
Federal	39,600	76%
State	7,400	14%
Other Private	5,030	10%
Total	52,030	

¹ Includes suitable and highly suitable habitat.

Table 5. Area and percent ownership of land and spotted owl nesting/roosting habitat within the non-baseline Thiessen polygons of spotted owl sites where ODF owns lands. ODF lands are broken out into ODF protected lands (not managed for timber and likely to continue to support spotted owls) and ODF Available lands that may be impacted by timber harvest.

SITE NAME		Area in Thiessen			NSO Nesting/Roosting Habitat in Thiessen				
		Federal	ODF	Private	Federal	ODF Protected (MMMA, Riparian, etc.)	ODF Available	ODF (Total)	Private
Brush Creek	Acres	1168	921	1136	814	285	124	409	144
	%	36	29	35	60	21	9	30	10
Chickahominy Creek	Acres	536	246	880	72	1	105	106	141
	%	32	15	53	23	0	33	33	44
Chicken Creek	Acres	116	759	887	83	8	450	458	238
	%	7	43	50	11	1	58	59	30
Druggs Creek	Acres	1248	585	619	598	10	274	284	45
	%	51	24	25	65	1	30	31	5
Greenleaf Creek	Acres	1348	62	0	795	0	43	43	0
	%	96	4	0	95	0	5	5	0
Iron Mountain	Acres	817	260	300	250	0	73	73	26
	%	59	19	22	72	0	21	21	7
Lake Creek	Acres	37	1201	1064	31	55	202	257	114
	%	2	52	46	8	14	50	64	28
Little Lake Creek	Acres	1123	1036	271	453	33	562	595	15
	%	46	43	11	443	3	53	56	1
Lower Deadwood	Acres	1978	36	865	916	1	17	18	71
	%	69	1	30	91	0	2	2	7
Lower Nelson Creek	Acres	1335	1497	664	478	18	421	439	105
	%	38	43	19	47	2	41	43	10
Misery Creek	Acres	1811	144	129	842	23	15	38	29
	%	87	7	6	93	2	2	4	3
Nelson Creek	Acres	1296	1054	154	567	15	454	469	19
	%	52	42	6	54	1	43	44	2
Old Man Rock Creek	Acres	1987	2	1010	1187	0	0	0	105
	%	66	<1	34	92	0	0	0	8
Pat Creek	Acres	309	1334	949	180	82	184	266	70
	%	12	51	37	35	16	36	52	13

Upper Elk	Acres	1575	374	469	1031	9	218	227	82
	%	65	16	19	77	1	12	17	6
Upper Hula	Acres	168	1	639	152	1	0	1	112
	%	21	<1	79	57	<1	0	<1	42
Upper San Antone	Acres	40	651	203	28	49	152	201	11
	%	4	73	23	12	21	63	84	4
Velvet Creek	Acres	1992	91	484	608	4	51	55	77
	%	78	3	19	82	1	7	8	10

The potential effect of removing spotted owl habitat under the Agreement on assessing the effect of removing barred owls on the spotted owl depends on the amount of habitat lost relative to available habitat within the affected spotted owls sites. As discussed above, there are 18 non-baseline spotted owl sites in the treatment area (Table 3) where incidental take would be authorized under the Agreement and Permit and would be likely to occur in the form of harm. These 18 sites include varying amounts of ODF lands (Table 5). ODF manages less than 10 percent of spotted owl habitat within the Thiessen polygons on 7 sites, between 16 and 33 percent of spotted owl habitat on 6 sites, and greater than 33 percent of habitat on 5 sites.

There are 48 known spotted owl site centers in the treatment area; some of these sites also have multiple historic site centers. Of the 48 site centers, 10 occur on ODF lands (Table 6). Of these 10, 7 include site centers for non-baseline sites. Under the Agreement, ODF would be able to carry out timber harvest within these seven site centers, except if they are occupied by actively nesting spotted owls. If spotted owls reoccupy these historic site centers and initiate nesting, ODF will maintain at least 70 acres of nest stand habitat during the nesting and rearing season from March 1 to September 30. This conservation measure is intended to facilitate the successful production of young to contribute to the future spotted owl population.

Table 6. Spotted owl site centers within the treatment portion of the Oregon Coast Ranges Study Area.

Spotted Owl Site Centers within the Treatment Area, Oregon Coast Ranges Study Area		
Landowner	Site Centers	% of Site Centers
Federal	36	75%
ODF	10	21%
Other Private	2	4%
Total	48	

ODF manages a total of 10,254 acres of land and 3,939 acres of spotted owl nesting/roosting habitat within the non-baseline Thiessen polygons. Approximately 594 acres of nesting/roosting habitat are in protected status, leaving 3,345 acres available for timber harvest. This represents less than seven percent of the total spotted owl nesting/roosting habitat in the treatment portion of the Study Area (Table 7).

ODF uses different habitat data in their internal analysis of their actions that also includes spotted owl foraging and some dispersal habitat as potentially suitable spotted owl habitat. ODF estimates that it manages approximately 5,489 acres of potentially suitable spotted owl habitat that is available for harvest on ODF lands within the non-baseline Thiessen polygons. However, because ODF does not have data for private lands, we will continue to use our spotted owl nesting/roosting habitat data to analyze the effects of the Agreement and Permit on the spotted owl. The extent of nesting/roosting habitat that is present is likely the most important habitat factor in determining whether spotted owls can support themselves within a specific area.

Table 7. Potential amount of spotted owl habitat removal on ODF lands under the Agreement and Permit.

Spotted Owl Habitat within the Treatment Area, Oregon Coast Ranges Study Area		
ODF lands	Acres of Spotted Owl Habitat¹	% of Total Habitat in Treatment Area
Treatment Area	7,400	14%
Available for harvest within non-baseline area	3,345	7%
¹ Includes suitable and highly suitable habitat (nesting/roosting habitat).		

If spotted owls do reoccupy ODF lands as a result of barred owl removal and initiate nesting, ODF will maintain at least 70 acres of nest stand habitat for nesting spotted owls during the nesting and rearing season as discussed above.

3.1.2.2.2 Incidental Take of Spotted Owls due to Disturbance

The USFWS has concluded that noise disturbance caused by the removal of barred owls on the treatment area is not likely to cause take of the spotted owl (USFWS 2013b). However, incidental take due to harass could occur under the Agreement if loud forest management activities occur during the early part of the nesting season in the vicinity of nesting spotted owls that are re-occupying historic spotted owl sites. Such loud activities could occur due to routine harvest, road maintenance and construction activities, and rock pit development on ODF lands. USFWS data include the location of all known spotted owl site centers from over 20 years of spotted owl survey effort. Some of these sites may have multiple site centers as spotted owls shifted their area of use, and many of these site centers represent nest sites. These historic site centers are the most likely locations to be re-occupied by spotted owls in response to barred owl removal, where sufficient spotted owl habitat remains. Disturbance take is a short-term impact that is limited to the year in which it occurs.

Of the 48 known spotted owl site centers in the treatment portion of the Study Area, 10 occur on ODF lands (Table 7) and 7 of these are site centers for non-baseline sites. If any of the seven non-baseline sites centers on ODF lands are re-occupied by nesting spotted owls during the

Experiment, and if ODF activities occur within close proximity to these site centers, some disturbance of spotted owls may occur.

Three additional non-baseline site centers are close enough to ODF lands that ODF forest management activities could result in some short-term disturbance of spotted owls re-occupying these sites if the management activities occur during the early portion of the spotted owl nesting period. However, given the limited area likely to be affected by ODF forest management activities in any given year here is only a small possibility that these activities would fall near enough to these three site centers to potentially disturb nesting spotted owls.

Overall, given the short duration of forest management activities that might disturb spotted owls, the limited period of time in the early portion of the nesting season during which noise may disturb spotted owls, and the relatively short distance over which disturbance due to noise is anticipated, any take of spotted owls resulting from disturbance is likely to be very limited.

3.1.2.3 Level of Contribution of ODF lands to Spotted Owl Sites

ODF lands contain 14 percent of the suitable spotted owl habitat occurring within the treatment portion of the Study Area. Of this, 3,939 acres of suitable spotted owl habitat lie outside of the baseline and elevated baseline Thiessen polygons. Of this 3,939 acres, 3,345 acres are available for harvest under ODF management plans. This represents less than seven percent of the total spotted owl habitat remaining in the treatment portion of the Study Area. Incidental take of spotted owls that re-occupy non-baseline sites may occur with the removal of this habitat (Table 3). No incidental take of spotted owls associated with baseline sites (Tables 1 and 2) is authorized under the proposed Agreement or the Permit.

The USFWS does not expect all of the non-baseline sites to be re-occupied by spotted owls as a result of the Experiment. In addition, removal of some spotted owl nesting/roosting habitat may not result in incidental take of any spotted owls because the lands lie outside the areas used by spotted owls and because some sites may retain sufficient habitat to support the spotted owls despite the habitat removal. As discussed above, incidental take due to harass caused by disturbance is likely to be very limited.

3.1.2.4 Effect of Take Impacts on Local and Regional Spotted Owl Populations

The spotted owls that may be incidentally taken under the Agreement and the Permit are re-occupying sites or areas where no resident spotted owls have been located in the last five years, despite extensive survey efforts. The most likely source of spotted owls that may reoccupy these sites is territorial spotted owls that were displaced from these sites and remain in the area as floaters (i.e., non-territorial, non-breeding birds). A few replacement birds may be younger spotted owls produced on one of the few remaining spotted owl-occupied sites that have joined the floater population and are looking for sites to establish a territory. It is unlikely that any remaining territorial spotted owls in the vicinity of the removal will abandon their current sites and move onto non-baseline sites from which barred owls would be removed under the Experiment because data show that once spotted owls establish a territory, they have a high tendency to remain on that (familiar) territory. Therefore, we do not anticipate that any of the

spotted owls currently occupying baseline sites would move onto non-baseline sites and therefore be subject to incidental take authorized under the Permit and the Agreement.

We have no evidence that floaters (young and displaced territorial spotted owls) successfully breed unless they first become established on a territory. These individuals are unlikely to find and defend territories as long as barred owls remain in the area at current densities. Thus, these non-territorial owls are not contributing to future generations and, in the absence of barred owl removal, will likely die without reproducing. If we remove barred owls, these spotted owls may be able to establish territories and reproduce, thus contributing to future generations during the removal period.

The Experiment is short-term and covers a relatively small area. Once the Experiment is completed, it is likely that barred owl populations will return to current levels within five years and again displace any spotted owls re-occupying sites or areas where no resident spotted owls had been located in the five years before the Experiment began. These displaced birds are likely to re-enter the floater population. The term of the Permit was defined to coincide with the return to pre-Agreement spotted owl baseline conditions. Thus the Experiment, the Agreement and the Permit are not likely to reduce the current territorial population of spotted owls in the treatment area and may, in fact, protect these sites from incursions by expanding barred owl populations during the removal period. The Experiment will also likely allow some non-territorial spotted owls to temporarily establish territories and contribute to the regional spotted owl population.

In developing the Experiment, the proposed Agreement, and the proposed Permit, we did not anticipate a long-term conservation contribution from the spotted owls that might reoccupy currently unoccupied sites and areas of the Study Area due to the likelihood that barred owls would re-occupy these areas within five years following the end of the Experiment.

The primary conservation value of the Experiment, and the net conservation benefit of the Agreement which supports the Experiment, is the information the USFWS will gain about the feasibility and effectiveness of removal as a tool for barred owl management. This information will be crucial for the development of long-term barred owl management strategies. The 2011 *Revised Recovery Plan for the Northern Spotted Owl* (USFWS 2011) clearly identified the need for such information. On that basis, the Experiment, and the proposed Agreement and Permit have significant value relative to the recovery of the spotted owl. It is important to note that all ODF forest management activities covered under the proposed Agreement and Permit, whether within or outside a spotted owl Thiessen polygon, are currently, or would soon be, allowed to proceed without any ESA-related restrictions in the absence of barred owl removal on ODF lands. In other words, the Agreement and the Permit would only change the timing of such impacts, not influence whether they occur or not because barred owls have currently displaced spotted owls from historically occupied, non-baseline sites on ODF lands and are very likely to do so again following completion of the Experiment.

3.1.2.5 Effects of Permit/Agreement-authorized Spotted Owl Take Impacts on Spotted Owl Critical Habitat

Most ODF lands within the treatment area are designated as CH for the spotted owl (USFWS 2012). In the rule designating the CH, the USFWS recommends maintaining areas currently functioning as spotted owl habitat. Actions such as thinning and fuels management that are likely to improve or speed the development of spotted owl habitat or restore ecological function are considered to be consistent with spotted owl recovery and conservation, and are generally not considered to adversely affect CH.

There are approximately 18,200 acres of spotted owl CH on ODF lands in the treatment portion of the Study Area. Of these, about 12,140 acres occur within non-baseline sites or areas. Of those 12,140 acres, 4,700 acres contain spotted owl nesting/roosting habitat. Some of these lands are protected under current ODF forest plans. Under the proposed Agreement and Permit, ODF may take spotted owls as a result of forest management activities in spotted owl habitat on non-baseline sites and areas that include up to approximately 3,345 acres of nesting/roosting habitat.

ODF lands in the treatment area include lands within the North Coast Ranges and Olympic Peninsula Recovery Zone, which contains 859,864 acres of spotted owl CH (USFWS 2012). Unit 2 of the above stated region is the Oregon Coast Range (OCR). This unit contains six subunits, two of which overlap with the area affected by the proposed Agreement and Permit.

- OCR-2. The OCR-2 Subunit consists of approximately 261,400 acres in Lane, Benton, and Lincoln counties, Oregon, and includes lands managed by the State of Oregon, the Bureau of Land Management (BLM), and the U.S. Forest Service (USFS). Within this subunit, 18,504 acres are managed by the State of Oregon, 17,790 of which are within the treatment area and therefore potentially affected by the proposed Agreement and Permit.
- OCR-3. The OCR-3 Subunit consists of approximately 203,681 acres in Lane and Douglas counties, Oregon, and comprises lands managed by the State of Oregon, the BLM, and the USFS. Within this subunit, 5,082 acres are managed by the State of Oregon, 410 of which are within the treatment area and therefore potentially affected by the proposed Agreement and Permit.

An ESA permit from the Service is not needed to conduct timber harvest on ODF lands affecting unoccupied spotted owl habitat, as this activity would not result in take of the spotted owl. The issuance of the Permit authorizes the take of spotted owls on 18 currently unoccupied spotted owl sites, and some unoccupied areas outside of spotted owl use areas, (encompassing about 3,345 acres of spotted owl CH) that may become reoccupied as a result of the Experiment. This take may occur through the removal or degradation of habitat or disturbance resulting from timber management. Therefore, the maximum potential effect of the proposed Agreement and Permit is the removal or degradation of up to 3,345 acres of spotted owl CH during the permit term. Absent re-occupation by spotted owls, these effects to spotted owl CH would not be regulated under the ESA and would not be an effect of the proposed Agreement and Permit since those effects could otherwise legally occur. In other words, the Agreement and the Permit would only change the timing of such impacts, not influence whether they occur or not because barred

owls have currently displaced spotted owls from historically occupied, non-baseline sites on ODF lands and are very likely to do so again following completion of the Experiment.

Spotted owl CH that overlaps the covered area under the Agreement is located in Unit 2 (Oregon Coast Ranges), Subunits 2 and 3. As described above, the maximum potential effect of the issuance of the Permit is the removal or degradation of up to 3,345 acres of spotted owl re-occupied habitat. We anticipate that this removal will be spread across both CH subunits. However, the actual location of the habitat removal or degradation will only be known when ODF timber sale planning is complete. For purposes of this analysis, we analyzed the effect to spotted owl CH based on the assumption that the entire 3,345 acres could be removed or degraded from within the subunit. CH Unit 2 includes 752,648 acres of land. In total, CH for the spotted owl includes 9,577,969 acres of land.

CH Unit 2, Subunit 2 consists of approximately 261,400 acres, including lands managed by the State of Oregon, the BLM, and the USFS. The spotted owl CH Final Rule identified that “[s]pecial management considerations or protection are required in this subunit to address threats from current and past timber harvest and competition with barred owls. This subunit is expected to function primarily for demographic support to the overall population and north-south connectivity between subunits.” (USFWS 2012, p. 71922). The Experiment, which is the impetus behind the USFWS objectives for the proposed Agreement and Permit, is designed to address the threat of barred owl competition. If the entire 3,345 acres of spotted owl CH covered by the Agreement and the Permit were destroyed on ODF lands within this subunit, this would represent a loss of nesting/roosting habitat on less than 1.3 percent of CH within the subunit. As discussed above, absent occupation by spotted owls, these effects to CH would not be caused by the proposed Agreement and Permit. This level and distribution of CH loss is not likely to appreciably reduce the conservation value/function of the CH subunit for demography support of the CH unit or overall spotted owl population based on the fact that the vast majority CH habitat within this subunit occurs on Federal lands. Because of the scattered nature of ODF lands that may be affected, the loss of up to 3,345 acres of ODF lands would not appreciably affect the north-south connectivity between CH subunits.

Critical Habitat Unit 2, Subunit 3 consists of approximately 203,681 acres, including lands managed by the State of Oregon, the BLM, and the USFS. Within the treatment area of the Study Area (the only portion of CH that would be affected by ODF forest management activities covered under the proposed Agreement and the Permit) ODF manages 410 acres. Therefore, this is the maximum level of harvest of spotted owl nesting/roosting habitat in CH that could potentially occur as a result of the proposed Agreement and Permit. As discussed above, absent occupation by spotted owls, these effects to CH would not be caused by the proposed Agreement and Permit. The spotted owl CH Final Rule identified that “[s]pecial management considerations or protection are required in this subunit to address threats from current and past timber harvest and competition with barred owls. This subunit is expected to function primarily for demographic support to the overall population and for both north-south and east-west connectivity between subunits.” (USFWS 2011, p. 71922). The Experiment, which is the impetus behind the USFWS objectives for the proposed Agreement and Permit, is designed to address the threat of barred owl competition. If the entire 410 acres of spotted owl CH covered by the Agreement and the Permit were destroyed on ODF lands within this subunit, this would

represent a loss of less than 0.2 percent of CH within the subunit. This level and distribution of CH loss on ODF lands would not appreciably reduce the conservation value/function of the CH subunit for demography support of the CH unit or overall spotted owl population, in part because the vast majority CH habitat within this subunit occurs on Federal lands. Because of the scattered nature of ODF lands that may be affected, CH loss on ODF lands would not appreciably affect the north-south or east-west connectivity between CH subunits.

At a regional scale, 3,345 acres of spotted owl habitat loss in CH Unit 2 would represent 0.4 percent of the Unit. At the scale of the full designation, the 3,345 acres represents less than 0.04 percent of spotted owl CH. This level and distribution of CH loss on ODF lands would not appreciably reduce the conservation value/function of the CH subunit for demography support of the overall spotted owl population because of the limited and scattered nature of ODF lands that may be affected, the fact that the vast majority CH habitat within this subunit occurs on Federal lands, and the distribution of ODF lands such that CH loss on ODF lands would not appreciably affect the north-south or east-west connectivity between CH subunits. As discussed above, absent occupation by spotted owls, these effects to CH would not be caused by the proposed Agreement and Permit. Considering the above findings, the USFWS concludes that the proposed Agreement and Permit are not likely to cause a significant adverse effect to spotted owl CH at the local, regional, or range-wide scale. Furthermore, the Agreement is likely to facilitate beneficial effects to the recovery function of spotted owl CH by assessing the effects of barred owl removal from that habitat on the capability of that CH to support spotted owls. Absent barred owl removal, spotted owl CH is not likely to be capable of providing recovery support for the spotted owl because current and expanding barred owl populations preclude spotted owl occupation and use of that habitat.

3.2 Effect on the Marbled Murrelet

The threatened marbled murrelet (*Brachyramphus marmoratus*) potentially nests in the Oregon Coast Ranges, including in forest habitat on ODF lands in the area covered under the proposed Agreement and Permit. There is no marbled murrelet CH on ODF lands covered under the proposed Agreement. The proposed Agreement and the Permit would not authorize any take of this species.

3.2.1 Effects of the No Action and the Proposed Action Alternatives on the Marbled Murrelet

No adverse effects to the marbled murrelet, and no loss of occupied marbled murrelet habitat is anticipated with implementation of either alternative. ODF currently surveys all potential marbled murrelet habitat prior to timber harvest activities, and protects any occupied sites that are located by buffering the habitat to prevent loss or disturbance. On ODF lands covered under the proposed Agreement and Permit, there are currently about 600 acres protected from timber activity due to the presence of marbled murrelets. During the course of implementing the proposed Agreement and Permit, ODF will continue to survey for marbled murrelets prior to any habitat removal and will protect all sites occupied by this species. Therefore, we determined that the issuance of the Permit represented no significant effect to the marbled murrelet. All existing requirements and prohibitions remain in effect. Under the Agreement, ODF would be able to

continue to operate as they are currently, consistent with all other applicable State and Federal Laws.

3.3. Cumulative Effects

Cumulative effects associated with the No Action and Proposed Action alternatives of the Experiment were analyzed in the FEIS (USFWS 2013b, p. 239), which is herein incorporated by reference. The Experiment is currently being implemented on the Study Area, and barred owls are being removed from Federal lands within the treatment portion of the Study Area. The proposed Agreement and Permit will contribute to the full implementation of the Experiment on the Study Area. This analysis supplements the cumulative effects analysis in the FEIS; it evaluates cumulative effects not reasonably foreseeable at the time the FEIS was prepared that are associated with the other Safe Harbor Agreements and ESA Enhancement of Survival Permits affecting the human environment in the Study Area.

The Council on Environmental Quality's regulations for implementing NEPA define cumulative effects as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions" (40 CFR § 1508.7).

In 2016, the USFWS executed a Safe Harbor Agreement for covered activities in the Oregon Coast Ranges Study Area with the Roseburg Resources Company (RRC) and the Oxbow Timber I, LLC (Oxbow) (USFWS 2016a). RRC and Oxbow own approximately 9,400 acres of forest lands within the treatment portion of the Study Area in Lane County, Oregon. The RRC and Oxbow Safe Harbor Agreement and Permit authorize incidental take of spotted owls that may re-occupy up to 19 non-baseline spotted owl sites and areas as a result of the harvest or modification of 308 acres of spotted owl nesting/roosting habitat. RRC and Oxbow own no spotted owl habitat on 6 of the 19 non-baseline sites covered under their permit, less than 10 percent of the spotted owl nesting/roosting habitat on 11 of the sites, and 14 and 29 percent, respectively, of the spotted owl nesting/roosting habitat on the remaining two sites.

In 2016, the USFWS also executed a Safe Harbor Agreement with the Weyerhaeuser Company for covered activities in the Oregon Coast Ranges Study Area (USFWS 2016b). The Weyerhaeuser Company owns approximately 1,072 acres of forest lands within the treatment portion of the Study Area in Lane County, Oregon. The Weyerhaeuser Safe Harbor Agreement and Permit authorize incidental take of spotted owls that may re-occupy up to 16 non-baseline spotted owl sites and areas as a result of harvest or modification of 817 acres of spotted owl nesting/roosting habitat. The Weyerhaeuser Company owns less than 3 percent of spotted owl nesting/roosting habitat on 6 of the 16 sites, less than 5 percent of the habitat on 9 of the 16 sites, and less than 10 percent of the habitat on all sites.

On the treatment portion of the Study Area across all ownerships, there are 28 total baseline spotted owl sites and 32 non-baseline (i.e., unoccupied) spotted owl sites on which spotted owls may be incidentally taken under the 3 Agreements and Permits issued to RRC and Oxbow, Weyerhaeuser, and ODF should spotted owls re-occupy non-baseline sites as a result of barred

owl removal activities; many of the 32 non-baseline sites overlap two or more ownerships. Nine of these non-baseline sites are part of the elevated baseline for the ODF Agreement and would not be taken under the ODF Agreement.

All three of the Safe Harbor Agreements (RRC and Oxbow, Weyerhaeuser, and ODF) and their associated Permits contain the same three basic requirements of the permittee: (1) allow USFWS and USGS and their contractors access to covered lands and roads for the survey of barred owls on the permittee's lands throughout the study area; (2) allow USFWS and USGS and their contractors access and permission to remove barred owls from the permittee's lands within the treatment portion of the Study Area; and (3) avoid disturbance of actively nesting spotted owls. All three Safe Harbor Agreements would contribute to implementation of Recovery Action 29 for the spotted owl through support of the Experiment. As discussed above in this EA, the information gained from the Experiment is critical to the development of a long-term management strategy to address the barred owl threat to the spotted owl as part of the recovery strategy for the spotted owl. USFWS and USGS (and their contractors) access to the lands covered under these three Safe Harbor Agreements for barred owl and spotted owl surveys and barred owl removal is crucial to efficient and effective implementation of the Experiment.

As described in the "Effect of Take Impacts on Local and Regional Spotted Owl Populations" section above, the non-baseline sites are not currently occupied by spotted owls and are unlikely to become re-occupied unless the Experiment is implemented. The Experiment and these Permits are not likely to reduce the current territorial population of spotted owls in the treatment area and may, in fact, protect these sites from incursions by expanding barred owl populations during the removal period. The Experiment and these Permits will also likely allow some non-territorial spotted owls to temporarily establish territories and contribute to the regional spotted owl population. Spotted owls that temporarily re-occupy non-baseline sites subject to timber harvest and incidental take under the Agreements and Permits are likely to return to the "floater" population. Absent that timber harvest and take, those spotted owls are likely to be displaced into the floater population by barred owls that are likely to re-occupy the non-baseline sites after the Experiment has concluded.

The primary conservation value of the Experiment, and the Agreements which support the Experiment, is the information the USFWS will gain about the feasibility and efficiency of removal as a tool for barred owl management. This information will be crucial for the development of long-term barred owl management strategies. The *Revised Recovery Plan for the Northern Spotted Owl* (USFWS 2011) clearly identifies the need for the information that would be provided by the Experiment. The ODF Agreement, in conjunction with the other two Agreements referenced above, will contribute to removing the majority of barred owls from the treatment area and avoid creating residual pockets of barred owls within the treatment area that could reduce the power of the Experiment to detect and measure the effect of barred owl removal on the spotted owl, and thereby lengthen the duration of the Experiment. Thus, even with some habitat loss, the Experiment still has significant value to the recovery of the spotted owl. As discussed above, this habitat loss could otherwise legally occur at these sites without an ESA permit if they are unoccupied by spotted owls due to displacement by barred owls, which is likely to be the case if the Experiment and barred owl removal are not conducted on lands covered under the Agreements and Permits.

Under the proposed Agreement and Permit, ODF would be able to continue normal forest management operations on its lands, potentially resulting in the removal of up to 3,345 acres of spotted owl nesting/roosting habitat, generally equating to older diverse forests. This represents about seven percent of spotted owl nesting/roosting habitat available in the treatment portion of the Study Area, two percent of spotted owl nesting/roosting habitat in entire Study Area, 0.4 percent of spotted owl nesting/roosting habitat in the Oregon Coast modeling region (1 of 11 modeling regions in the range of the spotted owl), and 0.03 percent of the spotted owl nesting/roosting habitat rangewide.

The RRC and Oxbow Agreements and Permits authorize the take of spotted owls associated with removal of up to 308 acres of nesting/roosting habitat, and the Weyerhaeuser Agreement and Permit authorizes the take of spotted owls associated with removal of up to 817 acres of nesting/roosting habitat. Between all three of the Safe Harbor Agreements (RRC and Oxbow, Weyerhaeuser, and ODF), a total of 4,470 acres of spotted owl nesting/roosting habitat would be available for harvest and incidental take of spotted owls that may re-occupy these habitat acres would be authorized. The extent of the collective take impacts, assuming all of the non-baseline sites on the covered areas are re-occupied by spotted owls, would represent 8 percent of the 52,000 acres of spotted owl nesting/roosting habitat in the treatment portion of the Study Area, 3 percent of spotted owl nesting/roosting habitat in entire Study Area, 0.6 percent of spotted owl nesting/roosting habitat in the Oregon Coast modeling region (1 of 11 modeling regions in the range of the spotted owl), and 0.04 percent of the spotted owl nesting/roosting habitat rangewide. As discussed above, this habitat loss could otherwise legally occur at these sites without an ESA permit if they are unoccupied by spotted owls due to displacement by barred owls, which is likely to be the case if the Experiment and barred owl removal are not conducted on lands covered under the Agreements and Permits.

In the period starting October 2010, the USFWS has authorized the incidental take of spotted owls at 32 sites on Federal lands throughout the entire North Coast Planning Province (similar to the Oregon Coast Ranges Physiographic Province) where the lands that would be covered by the Permit occur, though not all of this incidental take authorization was used. Most of this take has been in the form of harassment from noise and/or smoke during one breeding season. This may affect breeding for that year, but is not likely to affect the survival of the territorial spotted owls. No incidental take has been authorized in any area on Federal lands in the North Coast Planning Province since October 2014.

It's also important to emphasize from a cumulative effects perspective that 76 percent of the lands within the treatment portion of the Study Area are federally-administered and managed under the NW Forest Plan, which includes extensive reserves throughout the range of the spotted owl that are managed to protect and conserve this species. Significant beneficial cumulative effects to spotted owl nesting/roosting habitat have accrued in conjunction with the protection and management afforded Federal lands under the NW Forest Plan. These significant beneficial effects to spotted owl habitat greatly outweigh the adverse effects to spotted owl habitat associated with the Agreements and Permits discussed above. The *Revised Recovery Plan for the Northern Spotted Owl* (USFWS 2011), contemplates that habitat on Federal lands will provide the greatest contribution to conservation of the spotted owl.

3.4 Conclusions

For the following reasons, the USFWS concludes that the issuance of the proposed Agreement and Permit to ODF allowing for implementation of the Experiment on ODF lands, and for the incidental take of non-baseline spotted owls that may re-occupy currently unoccupied habitat on those lands is not likely to have a significant impact on the spotted owl:

- The Agreement does not authorize incidental take of spotted owls at 20 currently or recently occupied spotted owl sites (Tables 1 and 2) that overlap ODF-managed lands. These are the baseline conditions for the Agreement and are not covered by the Permit. Issuance of the Permit to ODF will facilitate the removal of barred owls on ODF lands; that removal may protect the remaining territorial spotted owls on or overlapping ODF-managed lands from incursions by expanding barred owl populations during the removal period.
- The spotted owls that may be taken under the Permit are only temporarily reoccupying non-baseline sites or areas.
 - The experimental removal of barred owls will be conducted for an estimated four years, with a maximum of 10 years, after which barred owls are anticipated to again displace spotted owls from these sites as the barred owl population rebuilds over a three to five year-period post-Experiment.
 - Spotted owl presence on these sites is temporary in all cases. Any non-baseline sites that become occupied by spotted owls during the Experiment would likely become unoccupied again as barred owls re-populate the area following the end of the Experiment.
 - In developing the Experiment and assessing its effects on the human environment in the FEIS (USFWS 2013b), we did not anticipate long-term conservation value from the spotted owls that might reoccupy currently unoccupied, historic (non-baseline) sites in the Study Area.
- The conservation value of the Permit is its support of the Experiment and the information gained from the Experiment regarding: the effect of barred owl removal on spotted owl populations; the cost of such removal; potential methodologies for removal; and the value of this information to the development of a long-term barred owl management strategy.
- The Permit will authorize incidental take of spotted owls that may reoccupy up to 18 currently unoccupied (non-baseline) spotted owl sites or other currently unoccupied, non-baseline lands during and immediately following the experimental removal of barred owls, as defined in the Agreement. The actual take and the impact of that take are likely to be small because:
 - Not all of the currently unoccupied spotted owl sites are likely to be reoccupied during the Experiment.
 - The Permit would authorize the removal of less than seven percent of the current spotted owl nesting/roosting habitat in the treatment portion of the Study Area. And some of this removal may not result in take. Removal of small patches of

habitat at a distance from the site center of some of these sites may not result in incidental take of the spotted owls in the areas if Federal and other lands have sufficient habitat.

- Disturbance of spotted owl nest sites that may be reoccupied on or in the vicinity of ODF lands or where ODF holds easements and agreements. This take is temporary and limited to the year of the disturbance.
 - Spotted owl habitat within treatment portion of the Oregon Coast Ranges Study Area represents less than 0.5 percent of spotted owl habitat range-wide, therefore this will have little effect on the range-wide condition of the species.
- The cumulative effects of incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, do not significantly impact the spotted owl because the affected non-baseline sites do not currently have spotted owls and are unlikely to be recolonized without barred owl removal. The past action of establishing and implementing the NW Forest Plan on Federal lands within the range of the spotted owl, including on 76 percent of lands within the treatment portion of the Study Area for the Experiment, has caused significant beneficial effects to the spotted owl, especially in terms of protecting and managing large, interconnected blocks of suitable nesting, roosting, and foraging habitat, that greatly exceed the adverse effects of habitat loss at non-baseline spotted owl sites on ODF lands that may occur under the Agreement and Permit.

Impacts to barred owls from the Experiment were addressed in the FEIS.

For the following reasons, the USFWS concludes the proposed Agreement and Permit to ODF allowing for implementation of the Experiment on ODF lands, and for the incidental take of non-baseline spotted owls that may re-occupy currently unoccupied habitat on those lands is not likely to have a significant impact on other resources of the human environment.

- The actual amount of spotted owl habitat that may be affected under the Agreement and Permit represents a very small portion of the spotted owl nesting/roosting habitat rangewide. This represents a very small impact on the regional forest environment.
- All activities covered under the Agreement could be carried out at any time under current State laws and regulations in the absence of the Agreement and Permit because we would be unable to remove barred owls from ODF lands in the treatment portion of the study unit. Absent that removal, barred owls would continue to displace spotted owls at non-baseline sites. The effect of the Agreement and Permit would allow for covered activities to occur during the Permit term when, otherwise, they might be delayed until barred owls re-occupy the non-baseline sites after the Experiment has ended.
- The issuance of an incidental take permit only allows take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (50 CFR 17.3). Thus, issuance of the Permit addresses activities that conform to Federal and State laws.

4. List of Preparers

This document was prepared by the USFWS, Oregon Fish and Wildlife Office. The following individuals contributed to its preparation.

Name	Affiliation	Responsibility
Paul Henson	U.S. Fish and Wildlife Service, State Supervisor, Oregon Fish and Wildlife Office	Policy oversight and approval
Jody Caicco	U.S. Fish and Wildlife Service, Supervisor, Forest Resource Division, Oregon Fish and Wildlife Office	ESA process and technical oversight
Robin Bown	U.S. Fish and Wildlife Service, Barred Owl Removal Experiment USFWS Project Lead, Oregon Fish and Wildlife Office	Draft EA analysis and preparation, spotted owl expert
Betsy Glenn	U.S. Fish and Wildlife Service, Barred Owl Removal Experiment Team, Oregon Fish and Wildlife Office	Draft EA analysis expert, spotted owl expert

5. Coordination

The USFWS conducted extensive scoping and outreach on the EIS for the Barred Owl Removal Experiment (USFWS 2013b, pp. 7-8; 188-193; and 343-350). We established a Barred Owl Stakeholder Group including: a broad range of environmental, animal welfare, and industry groups; Federal, State, and local governments; and Native American tribes to assist with early scoping. We conducted public comment periods for scoping and the draft EIS, including one public meeting, five public webinars, and meetings with affected Federal agencies. We mailed notices of the availability of the draft EIS to over 600 individuals and organizations.

We discussed the approach of a Safe Harbor Agreement for the Barred Owl Removal Experiment with the Private Forest Program of the ODF, BLM Districts and National Forests within the study areas included in the Experiment, and with regional offices of the BLM, USFS, and the National Park Service. We have discussed the potential for Safe Harbor Agreements with the ODF and several private landowners within the study areas for the Experiment.

The USFWS published a notice of availability of this EA and related documents in the Federal Register with a 30-day public comment period. Documents are posted on the USFWS's web site (<http://www.fws.gov/ofwo/>) and will be made available at the Oregon Fish and Wildlife Office, 2600 SE 98th Ave, Suite 100, Portland, Oregon 97216.

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