

Experimental Removal of Barred Owls to Benefit Threatened Spotted Owls

Record of Decision

Prepared by:

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U.S. Fish and Wildlife Service
Portland, Oregon**

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This Record of Decision presents the U.S Fish and Wildlife Service's (Service's) decision regarding the selection of a plan for the experimental removal of barred owls (*Strix varia*) to benefit the threatened spotted owl (spotted owl) (*Strix occidentalis caurina*). This document includes a brief summary of the alternatives considered, public involvement in the decision making process, and reasons for selecting the Preferred Alternative from the Final Environmental Impact Statement (EIS) for the experimental removal of barred owls to benefit threatened spotted owls.

Background

Historically, the barred owl was not present in the Pacific Northwest. In the past century, the barred owl expanded its range westward from eastern North America reaching British Columbia and the range of the spotted owl by about 1959. As the barred owl population continues to expand southward within the range of the spotted owl, its numbers and density behind the expansion front continue to increase, and barred owls now outnumber spotted owls in many portions of the spotted owl's range (Pearson and Livezey 2003, p. 272).

Strong evidence indicates that barred owls negatively affect spotted owls and their populations. Barred owls displace spotted owls from high-quality habitat (Kelley *et al.* 2003, p. 51; Pearson and Livezey 2003, p. 274; Courtney *et al.* 2004, pp. 7-27 through 7-31; Gremel 2005, pp. 9, 11, 17; Hamer *et al.* 2007, p. 764; Dugger *et al.* 2011, pp. 2464–1466), reducing spotted owl survival and reproduction (Olson *et al.* 2004, p. 1048; Anthony *et al.* 2006, p. 32; Forsman *et al.* 2011, pp. 41–43, 69–70). In addition, barred owls are aggressive toward spotted owls and may physically attack them (Gutierrez *et al.* 2007, p. 187). These effects may explain, in part, declines in spotted owl territory occupancy associated with barred owls in the Northwest, reduced spotted owl survivorship, and sharp spotted owl population declines in Washington (e.g., in northern Washington, spotted owl populations declined by as much as 55 percent between 1996 and 2006) (Anthony *et al.* 2006, pp. 21, 30, 32; Forsman *et al.* 2011, pp. 43–47, 65–66)). Without management intervention, competition from barred owls may cause extirpation of the spotted owl from all or a substantial portion of its historical range, reducing its potential for survival and recovery.

The Service listed the spotted owl as a threatened species under the Endangered Species Act (16 U.S.C. 1531 *et seq.*; Act) in 1990. While the listing rule noted that the long-term impact of barred owls on the spotted owl was of considerable concern, the scope and severity of this threat were largely unknown at that time (55 FR 26114, p. 26190). As apparent impacts on spotted owls from the continuing barred owl range expansion increased over the years, the scope and scale of the threat from barred owls became more evident. By 2005, barred owl competition was identified as a serious concern for spotted owl populations, culminating with a determination that competition from barred owls was one of the two primary threats to the spotted owl in the 2011 *Revised Spotted Owl Recovery Plan* (Recovery Plan) (USFWS 2011, p. III–62). The Recovery Plan summarized information available since the 1990 listing, and found that competition from barred owls now poses a significant and immediate threat to the spotted owl throughout its range (USFWS 2011, pp. B–10 through B–12). To address this threat, the Recovery Plan recommends designing and implementing large-scale controlled experiments

(Recovery Action 29) to assess the effects of barred owl removal on spotted owl site occupancy, reproduction, and survival (USFWS 2011, p. III-65).

Purpose

The purpose of the proposed action is to implement experimental research necessary for conservation of the spotted owl in accordance with Recovery Action 29 of the Recovery Plan (USFWS 2011, p. III-65). This action should provide needed 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;
- 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;
- the cost of barred owl removal; and
- the evaluation of this technique to contribute to developing future options for potential management of barred owls as expeditiously as possible.

Alternatives

In the Final EIS, the Service evaluated eight action alternatives and a no action alternative for the experimental removal of barred owls to benefit threatened spotted owls. These nine alternatives described a range of: potential study areas throughout the range of the spotted owl; removal methods (lethal and non-lethal); and study types (demography and occupancy).

All of the action alternatives are based on an experimental design that facilitates a direct comparison of spotted owl response. Each study area would be divided into treatment and control areas. Barred owls would be removed from the treatment areas and not from the control areas. Any difference in the population trend of spotted owls on the treatment and control areas would represent the effect of barred owl removal on spotted owl populations.

No Action Alternative

Under the No Action Alternative, the Service would not conduct this experimental removal of barred owls. A decision to not implement the proposed action at this time would not prevent others from proposing such studies at a later time and seeking the necessary permits, but there is no guarantee that any such efforts would occur.

Preferred Alternative

Under the Preferred Alternative, the Service would conduct a demographic study on four study areas with current pre-treatment spotted owl demography data, spread across the range of the spotted owl, using a combination of lethal and nonlethal removal methods. Given the size of the study areas and the number of spotted owl sites in the combined study areas, we estimate this alternative would require an estimated duration of 4 years of barred owl removal to detect significant results. The availability of considerable spotted owl demography data would facilitate a strong experimental result within a relatively brief study period.

Alternative 1

Under Alternative 1, the Service would conduct a spotted owl demographic study approach on a single study area with current pre-treatment data gathered during ongoing spotted owl demographic studies, using lethal removal methods. The estimated duration of barred owl removal for this alternative varies from 4 to 7 years depending on the study area evaluated, due primarily to the size of the study area and the number of spotted owl sites on each potential study area.

Alternative 2

Under Alternative 2, the Service would conduct a spotted owl demographic study approach on three study areas with current pre-treatment data gathered during ongoing spotted owl demographic studies spread across the range of the spotted owl, using a combination of lethal and nonlethal barred owl removal methods. The three study areas would include one in Washington, one in northern Oregon, and one in southern Oregon or northern California to cover a wide range of habitat and ecological conditions within the range of the spotted owl. Given the size of the study areas and the number of spotted owl sites in the combined study areas, we estimate this alternative would require an estimated duration of 4 years of barred owl removal to detect significant results.

Alternative 3

Under Alternative 3, the Service would conduct a spotted owl demographic study approach on two study areas in Oregon that are not ongoing spotted owl demographic study areas, but have recent data to allow an estimate of pre-treatment spotted owl population trends (Veneta and Union/Myrtle). This alternative would use a combination of lethal and nonlethal barred owl removal methods. Given the size of the study areas and the number of spotted owl sites in the two study areas, we estimate this alternative would require an estimated duration of 4 years of barred owl removal to detect significant results.

Alternative 4

Under Alternative 4, the Service would conduct a spotted owl demographic study approach on two study areas that lack current demographic data (Columbia Gorge in Washington and McKenzie in Oregon), using a combination of lethal and nonlethal barred owl removal methods. Under sub-Alternative 4a, we would gather pretreatment demographic data on spotted owls for up to 5 years before initiating barred owl removal. Under sub-Alternative 4b, we would initiate barred owl removal on the treatment portion of the study area immediately after locating and banding resident spotted owls. This alternative would require an estimated 8 to 10 years (5 to 8 years of barred owl removal) to detect significant results.

Alternative 5

Under Alternative 5, the Service would conduct a spotted owl occupancy study approach on three study areas distributed across the range of the spotted owl with existing and recent occupancy data (Cowlitz Valley, Veneta (Oregon Coast Ranges/Tyee), and Union/Myrtle (Klamath)), using lethal barred owl removal methods. Given the size of the study areas and the number of spotted owl sites on the three study areas, we estimate a presence/absence occupancy experiment would require 3 to 5 years of barred owl removal to detect significant results.

Alternative 6

Under Alternative 6, the Service would conduct a spotted owl occupancy study approach on three study areas that do not have current occupancy data (Olympic Revised (Olympic Peninsula), McKenzie, and Horse/Beaver), using a combination of lethal and nonlethal barred owl removal methods. Under sub-Alternative 6a, we would gather pretreatment spotted owl occupancy data for 3 years before beginning barred owl removal. Under sub-Alternative 6b, we would start barred owl removal on the treatment portion of the study area immediately and rely on differences between the control and treatment areas to determine the effects of the removal. This alternative would require an estimated duration of 4 to 8 years (3 to 6 years of barred owl removal).

Alternative 7

Under Alternative 7, the Service would conduct either a spotted owl demography or occupancy study on each of 11 total study areas, using a combination of lethal and nonlethal barred owl removal methods. For most study areas, we estimated the duration of barred owl removal would vary from 3 to 10 years, based on the time required to achieve significant results relative to the effects of barred owl removal on spotted owls. On four of the 11 study areas, barred owl removal would continue for 10 years to determine the potential long-term effects of removal.

Environmentally Preferred Alternative

The Service has determined that the Preferred Alternative causes the least damage to the biological and physical environment and best protects, preserves, and enhances natural resources. The Preferred Alternative provides for a strong scientific study with applicability across the range of the spotted owl while minimizing the number of barred owls we would remove to meet the purpose of the proposed action described above. The relatively short duration of the study (4 years of barred owl removal) and the use of four limited study areas reduces the total number of barred owls removed compared to what would be needed for a longer or larger study under other alternatives. This alternative provides the best compromise between the quality of the data, duration of the study, and the number of barred owls removed.

Decision

The Service has selected the Preferred Alternative as described in the Final EIS for the experimental removal of barred owls to benefit threatened spotted owls and will issue the scientific collecting permit (50 CFR §21.23) for the barred owl removal associated with this experiment.

We chose the Preferred Alternative because it would provide for a strong, scientifically-credible experiment with a high power to detect the effect of the barred owl removal on spotted owl populations, and provide results applicable across the range of the spotted owl in a timely manner. We will attempt to implement the entire experiment on all four study areas, but we may implement the experiment on only a subset of the four study areas if available funds are insufficient to implement the entire alternative. Any subset would fall within the boundaries of identified study areas, and would be consistent with the constraints of the Preferred Alternative, as described in the Final EIS.

To provide for a high degree of scientific credibility and statistical power to detect any effect of the experimental removal of barred owls on affected spotted owl populations, we selected a demography study approach utilizing study areas with preexisting data on spotted owl populations and trends. The use of a demography study approach provides the ability to measure changes in the spotted owl population trend with and without removal of barred owls. Using areas with a long history of spotted owl population demography studies and data provides for a very robust experiment and allows comparison of spotted owl population trends on the removal areas before and after barred owl removal.

The selected alternative includes up to four study areas. This provides a robust total number of spotted owl sites, which allows more power to detect smaller changes in the spotted owl population trends as a result of barred owl removal. It also allows the study to remain viable if data from one or two study areas are affected by catastrophic events that compromise the data or analysis on those areas. The combination of up to 4 study areas and the available pre-treatment data provides for a timely result, with the study taking an estimated 4 years of removal to reach significant results.

To ensure the results are applicable across the range of the spotted owl, the selected alternative includes four study areas distributed in Washington, Oregon, and California. The Cle Elum Study Area in Washington has a long history of barred owl presence, high barred owl density, low spotted owl site occupancy, and a declining spotted owl population trend. The combined Oregon Coast Ranges and Veneta Study Area has some of the highest known densities of barred owls, but a shorter history of high barred owl populations and greater spotted owl site occupancy. Spotted owl population trends have been declining on this area, though not as steeply as on the Cle Elum Study Area. The Union/Myrtle (Klamath) Study Area has a more recent and lower barred owl population. This area is also the northern-most portion of the Klamath Physiographic Province range where dusky-footed woodrats become a major component of the spotted owl's diet. This may result in different habitat use patterns for spotted owls. The Hoopa (Willow Creek) Study Area is the most recently invaded, has lower barred owl densities, and higher spotted owl site occupancy, yet has shown recent declines in spotted owl nesting and site occupancy coincident with a rapidly increasing barred owl population. Given the distribution of the study areas, the selected alternative will provide information on the efficacy of the removal in all types of barred owl population condition.

The use of a combination of lethal and non-lethal removal methods allows us to reduce the number of barred owls that would be killed under this study. To the extent that we are able to find organizations with the appropriate permits, adequate facilities to provide a high quality of

life for the bird, and an interest in having barred owls for educational purposes, we would capture birds to fill the opportunities. Our initial overtures to zoos and zoological parks resulted in interest in placing only five individual barred owls. However, we will continue to pursue opportunities to place barred owls, but given the expense, difficulty, and type of facility needed, we do not anticipate being able to place a large number of individuals.

The Service will issue a scientific collecting permit (50 CFR §21.23) for the lethal and non-lethal take as required under the Migratory Bird Treaty Act. An expected outcome of the lethal and nonlethal take of barred owls is a reduction in the number of barred owls within the study areas. The effect on the overall population of this species will be negligible, as removal will occur on only 0.05 percent of its North American range and recently colonized portions.

Measures To Minimize Environmental Harm

Throughout the planning process, the Service took into account all practicable measures to avoid or minimize environmental impacts that could result from the implementation of the Preferred Alternative. The primary potential environmental harm of this proposed action is the removal of barred owls from some areas and the potential disturbance, injury, or death of individuals of non-target species. We developed and included the following measures to minimize environmental harm:

- We developed a detailed and specific removal protocol to ensure reasonable, feasible, and humane removal of barred owls.
 - The protocol mandates that removal (both lethal and nonlethal) must avoid orphaning juvenile barred owls by not allowing removal of barred owls with dependent young during the breeding season.
 - The protocol excludes the use of firearms (e.g., rifle, pistol) with higher risk of non-fatal injury, and specifies the shooting conditions and distance to ensure virtually all removal are the result of a single lethal shot.
- Under the Preferred Alternative, we reduced the size of study areas considered in the Draft EIS to reduce the number of barred owls being removed to what is necessary to achieve scientifically rigorous results in a reasonable amount of time.
- We included specific identification requirements prior to removal to minimize the potential of injury or death of any species other than barred owls.
- Removal methods specifically prohibit the use of lead shot to eliminate the potential for introducing lead into the environment.
- We created a buffer of no removal within 300 yards of a known active spotted owl nest during the critical breeding period for spotted owls to reduce potential disturbance of nesting spotted owls.
- We selected the demography study approach on four areas with preexisting spotted owl trend data to provide the greatest power to detect the effects of the removal of barred owls on spotted owl populations. By using this approach, we reduce the duration of the study and the total number of barred owls that would be removed for the study.
- We chose to apply a combination of barred owl removal methods. If we find institutions that have adequate facilities to provide a good quality of life for the barred owl's lifespan,

an interest in receiving one or more barred owls, and the required State or Federal permits, we will capture barred owls and provide them to these institutions.

Public Involvement

Scoping

Public involvement in the development of the Draft EIS was twofold. First, we invited a group of stakeholders, with the assistance of an ethicist, to help us explore ethical questions and issues about barred owl removal. Second, we published a scoping notice and accepted comments on the proposal to develop a Draft EIS.

The more than 40 stakeholders included representatives from the timber industry, animal protection organizations, conservation groups, State, Tribal and local governments, and other organizations. Stakeholders were invited to participate in two full-day meetings, one set of group-focused conference calls, and a field visit. The process explored ethical questions and concerns about barred owl removal, and educated participants on a range of relevant ethical ideas about animals in environmental policy and wildlife management. Through these interactions, the Service also gathered individual stakeholder perspectives on the ethical issues and identified specific ethical concerns with the proposed removal experiment.

On December 10, 2009, the Service published a Notice of Intent to prepare an EIS on the experimental removal of barred owls for the conservation benefit of threatened spotted owls (Notice of Intent) in the Federal Register (74 FR 65546). We solicited the participation of Federal agencies, State agencies, Tribes, local governments, and the public to determine the scope of the EIS, and provide input on issues associated with the proposed experiment. In addition to the publication of the Notice of Intent, the scoping process included informal stakeholder and agency discussions. We sent notification of our intent to prepare an EIS via email or mail to over 1,000 interested parties.

We received 54 comments from 25 individuals and 29 different organizations, including environmental, conservation, animal welfare, and industry groups, Tribes, professional societies, government agencies, and zoological parks. A summary of the process and comments can be found in Appendix B of the Final EIS. In addition, we conducted several meetings, conference calls, and discussions with the Federal agencies potentially involved in implementation of this action. Lands managed by these agencies represent the majority of the lands within potential study areas, and conducting the experiment on Federal lands may require additional permits or processes. We developed the Draft EIS to meet the requirements of these agencies, to the extent possible, to expedite any permit processes. Information from the individual stakeholders, the scoping notice comments, and the meetings with agencies were used in the development of the Draft EIS.

Draft EIS

The Service released the Draft EIS for public review and comment with publication of a Notice of Availability in the Federal Register on March 8, 2012 (77 FR 14036). The Environmental

Protection Agency's Notice of Availability of our Draft EIS was published on March 9, 2012, in the Federal Register (77 FR 14360). The 90-day public comment period ended on June 6, 2012. We conducted one public meeting in Seattle on May 3, 2012. We also conducted five informational webinars for the public, as well as one webinar for the stakeholder group in May of 2012. In addition, we conducted several meetings with Federal land management agencies, Federal agencies involved in the Northwest Forest Plan, State wildlife agencies, the Hoopa Valley Tribe, and involved researchers to coordinate on issues related to the alternatives and study areas. We received 75 comments, 52 from individuals, on the Draft EIS. The remaining public comments were received from organizations including environmental, conservation, animal welfare, and industry groups; Tribes; professional societies; and Federal, State, and County governments or their agencies. A summary of the issues raised in the comments and our responses can be found in Appendix K of the Final EIS.

Final EIS

The Service issued a Final EIS on July 24, 2013, with publication of a Notice of Availability in the Federal Register (78 FR 44588). The Environmental Protection Agency's Notice of Availability of our Final EIS was published on July 26, 2013 in the Federal Register (78 FR 45190). We received a few comment emails, notes and phone calls, none of which raised new issues or resulted in changes to the analysis or to the preferred alternative in the Final EIS.

Findings Required by Other Laws and Executive Orders.

As a Federal agency, the Service is required to comply with numerous other Federal laws or Executive Orders in carrying out its duties. This section identifies laws and orders relevant to this action and our compliance with those laws and orders.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act requires all Federal agencies, in consultation with the Service, to ensure that any action "authorized, funded, or carried out" by any such agency "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of critical habitat. Because this proposed study is a Federal action subject to section 7 of the Endangered Species Act and this action may affect the spotted owl and the marbled murrelet, the Service has completed formal consultation and a Biological Opinion has been issued on the proposed action. The Service has determined that the proposed action would have no effect on other listed species or critical habitat. The Biological Opinion determined that the proposed action would not jeopardize the spotted owl or the marbled murrelet.

Section 106 of the National Historic Preservation Act

Under section 106 of the National Historic Preservation Act, the Service must determine whether a proposed action meets the definition of an undertaking that could result in changes in the character or use of historic resources (i.e., districts, sites, structures, or objects) that are eligible for listing on the National Register of Historic Places. The issuance of a Federal permit is an

undertaking as defined by the National Historic Preservation Act that triggers consideration of section 106 review. The Service has determined that the proposed barred owl removal experiment would have no direct or indirect effects on cultural resources given that no ground disturbance or potential impacts to section 106 resources would occur.

Executive Order 12898, Federal Actions to Address Environmental Justice

As analyzed in the Final EIS (Section 3.6.3.2), there are no foreseeable direct or indirect effects from any of the alternatives that create any pollution or other deleterious environmental justice effects. Furthermore, selection of the Preferred Alternative would not unnecessarily or disproportionately affect any particular community, or discriminate on the basis of race, color, or national origin.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

This order was enacted to establish regular and meaningful consultation and collaboration with Tribal officials in the development of Federal policies that have Tribal implications, to strengthen the United States government-to-government relationships with Indian Tribes, and to reduce the imposition of unfunded mandates upon Indian Tribes.

As part of the ongoing commitment to government-to-government relations with Native American Tribal Governments, the Service sent an EIS scoping letter to the members and/or Tribal decision makers of Native American groups potentially affected by the proposed action. The purpose of the scoping letter was to reaffirm the Service's intention to work cooperatively with affected and interested Tribes, and to seek Tribal input for preparation of the Draft EIS.

During public scoping, the Confederated Tribes of the Colville Reservation (Colville Confederated Tribes) responded to the Service's request for comments. In their letter, dated January 4, 2010, they indicated their reverence for wildlife, and provided comments regarding their specific cultural values. While there are species of owls with which the Tribes have an unambiguous connection, the Colville Confederated Tribes do not include either the spotted owl or barred owl among them. They do not have any specific traditions concerning either species, as the spotted owl's historical range only marginally includes the traditional territories of the Colville Confederated Tribes. Therefore, the Colville Confederated Tribes refrained from offering a specific recommendation or embracing a particular alternative, leaving those decisions to Tribes with a closer relationship to the spotted owl and the barred owl.

The Hoopa Valley Tribe, in a letter, dated June 17, 2011, from Tribal Chairman Leonard Masten to the Service's Arcata Fish and Wildlife Office Field Supervisor, Nancy Finley, provided information to the Service regarding the cultural and economic significance of the barred owl and the spotted owl to the Tribe and its membership, and the conservation investment that the Tribe has made for the spotted owl in their ongoing forest management. The Hoopa Valley Tribe stated their support for experimental removal of barred owls and requested to be part of the project. The selected Preferred Alternative includes the Hoopa Valley Indian Reservation as a potential treatment area for barred owl removal under the experiment. The Selected Alternative

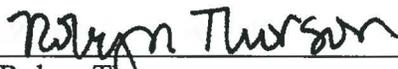
would be responsive to the Hoopa Valley Tribe's concerns for maintaining the culturally-significant spotted owl on their lands.

FOR FURTHER INFORMATION CONTACT

Paul Henson, State Supervisor, Oregon Fish and Wildlife Office, at 503-231-6179. If you use a telecommunications device for the deaf, please call the Federal Information Relay Service at 800-877-8339.

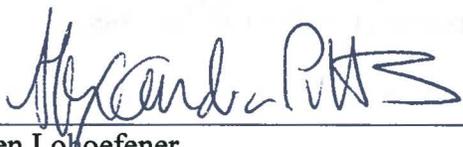
You may view or obtain copies of the Final EIS and the Record of Decision by any of the following methods:

- *Agency Web Site:* Download a copy of the document at <http://www.fws.gov/oregonfwo>.
- *Telephone:* Call and leave a message requesting the Final EIS or Record of Decision hard copy or CD, at (503) 231-6901.
- *In-Person Viewing or Pickup:* Call the U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, at 503-231-6179, to make an appointment to review or pick up a copy of the Final EIS and the Record of Decision during regular business hours at the Oregon Fish and Wildlife Office, 2600 SE 98th Ave., Suite 100, Portland, OR 97266.
- *U.S. Mail:* Paul Henson, State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Ave., Suite 100, Portland, OR 97266.



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