

The following are the comments received by the US Fish and Wildlife Service on the Draft Environmental Impact Statement on the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls.



stuart phillips
<stulips@hotmail.com>

03/01/2012 03:44 PM

To: <barredowleis@fws.gov>

cc:

Subject: RE: Draft Barred Owl Removal Experiment EIS is available on our website

dont kill anything just stop logging old mature native growth! No brainer!



"Wildhaven.Rehabilitatio
n@gmail.com"
<wildhaven.rehabilitation

To: barredowlEIS@fws.gov
cc:
Subject: barred owl removal

03/02/2012 09:11 AM

All life on this planet is ever-changing and transitory. Species rise and decline world-wide on a minute-by-minute scale. This is nature adapting to the world as it now exists and as man has changed it.

One of the ways people have changed the Spotted Owl environment is deforestation. They thrive in old-growth, undisturbed environments.

The owl species that have adapted to these changes are the ones that will survive, regardless of temporary predation measures. These short-term plans will not ensure the continuation of the Spotted Owl species unless it can better adapt to its changing environment, an ability it seems to lack. To harm one adaptable species to protect another will only leave a temporary "vacuum" that will soon be filled by the adaptable species again.

I am a federally and state permitted wildlife rehabilitator, an avocation I have pursued for 20 years. All life is sacred to me, regardless of its scarcity or abundance. I understand there are those groups and individuals who put pressure for this type of program, however, man cannot dictate what nature will do. A plan like this may pacify some temporarily, but will ultimately fail and cause long-term damage.

I will be sad if these beautiful birds become extinct, but that is the way of nature and of evolution. Adapt or die might be a hard concept for many, but that is the reality of life in the wild, no matter how much people interfere.

Diana Soderstrom
Wildhaven Rehabilitation Center
Ponca City, OK



"Dan Upton"
<gdupton@frontier.com
>

To: <barredowlEIS@fws.gov>
cc:
Subject: Barred Owl Shooting

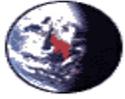
03/02/2012 11:57 AM

Dear Sirs,

I am opposed to shooting of Barred Owls in an effort to save Spotted Owls. It just doesn't make sense to shoot one species to help a second, less competitive species...A number of years ago Jack Ward Thomas commented that within 100 years the Spotted Owl would become extinct regardless of how much the species was propped up. I view the Barred Owl presence as a naturally occurring process that should be left alone.

Thanks for the opportunity to comment.

Dan Upton
Forester



"Terri Coppersmith"
<tacoppe@qis.net>

03/02/2012 08:51 PM

To: <barredowlEIS@fws.gov>
cc:
Subject: Objection to Barred Owl EIS

Dear FWS:

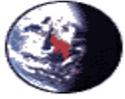
The damage to the Spotted Owl has already been done by allowing the destruction of its habitat in the first place. Barred Owls are better adapted than Spotted Owls to the type of forest available in the area now. Killing another species in certain areas just compounds the problem: then two species will have been harmed. Where's the sense in that? Or the humanity?

Another thing to consider: since the habitat involved is more suited to Barred Owls, how long do you think it would take before other Barred Owls discovered the newly unoccupied territory and migrated back in? Do you plan to periodically go back and wipe them out again in a few years? And again? And how wide a buffer zone of slaughter would it take to prevent that?

You people really need to re-think this.

A more viable solution might be to attempt release of Spotted Owls into suitable habitat - where ever that may be. If there are no longer extensive tracts of old-growth forest suitable for the Spotted Owl in a given area, then they are probably doomed in that area. So find another. Surely with so many so-called experts working on the problem, there can be a better alternative found than wholesale slaughter.

Sincerely,
Dave & Terri Coppersmith
Westminster, Md. 21158



Vicki Riley
<rriley@dm-tech.net>

03/09/2012 06:14 PM

To: barredowlEIS@fws.gov
cc:
Subject: Barred Owl EIS:

Nature is not static. Natural situations change constantly. Whether it is amount of rainfall, volcanic action, earthquakes, redistribution of plant seeds, or expanding or shrinking territory of a bird or animal, the situation changes. Why not just let the barred owl take over? The spotted owl is sweet, but not sacred. Shouldn't the more vigorous species be allowed to thrive, and the weaker one take whatever defensive action it can? I see no reason at all for the US government to play god with animal populations. If the barred owl is a more successful species, it should be allowed the territory.

Vicki Riley
Box 389
Douglas City, CA, 96024



usacitizen1 usacitizen1
<usacitizen1@live.com>

03/11/2012 05:32 AM

To: <barredowleis@fws.gov>, <americanvoices@mail.lhouse.gov>, <paul_henson@fws.gov>, <comments@whitehouse.gov>, <speakerboehner@mail.house.gov>
cc: <sf.nancy@mail.hoiuse.gov>, <foe@foe.org>, <broads@greatoldbroads.org>, <info@godscreaturesministry.org>, <info@earthjustice.org>
Subject: public comment on federal register - horror of mankind killing more owls is disgusting - this agency has gone off the deep end - let the owls take care of themselves - get the madmen out of it

america has madmen working in our fws. they think they are god and they go out to kill species based on stupidity. we have mismanagement in fws. there is noneed to spend tax dollars on sending our mad men to kill any owl species no need at all. those mad menshould instead be saving land for the owls to live on instead of participating in allowing endless logging all over the place. the efforts of this agencfy have gone way way off what was chartered for thisagency. i cannot believe the stupidity of this latest murderous killing scheme by the nra affiliated usfws.

i thouroughly oppose this wasteful,useless mismanagement action of killing some owl species on teh misguided notion that you are helping other owls, or are you really helping the nra and anti environment people whowant environmental destruction. i think the latter.
jean public



usacitizen1 usacitizen1
<usacitizen1@live.com>

03/11/2012 05:51 AM

To: <barredowleis@fws.gov>

cc:

Subject: this plan to murder spotted owls to allegedly save barred owls makes no sense - i thoroughly oppose any man made killing of any species

there are mad men working at fws these days.
jean public

the management seems to be part of the nra



w2 rivers
<w2rivers@hotmail.com
>

03/13/2012 04:43 PM

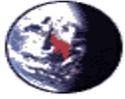
To: <barredowleis@fws.gov>
cc:
Subject: FW: Draft Environmental Impact Statement for Experimental Removal of
Barred Owls To Benefit Threatened Northern Spotted Owl

Subject: Draft Environmental Impact Statement for Experimental Removal of Barred Owls To Benefit Threatened Northern Spotted Owl

Date: Sat, 3 Mar 2012 16:45:16 -0800

So far Fish and wildlife Service has done little in it's effort to provide more spotted owls other than putting many foresters out of work and therefore providing more or better habitat for barred owls. I suggest under FWS regulations the agency has demonstrated that it can be no more effect the process of natural selection then it would have been to reduce loggers by lethal methods. Shooting barred owls is a "un-natural" processes and no more right than it would be to restrict conflicts between man and wolves by shooting man and his farm animals. NWS believes it is a natural process to re-introduce wolves in a environment substantially changed by mans activities and allow wolves to compete with man for wildlife and livestock. Therefore I would conclude that it is contrary to NWS process and policies to kill barred owls to protect another wild species. I do not agree with this plan as it conflicts with natural processes, ignores natural extinction processes, and and has unknown consequences which, based on record breaking returning salmon numbers, indicates NWS is not in a position to replace God, had nothing to do with increases, and cannot determine why all things change in time.

Rich Weaver
53254 Stateline Road
Milton Freewater, OR 97862



"J. Brian Fiacco"
<jbfiasco@gmail.com>
03/15/2012 11:33 AM

To: barredowlEIS@fws.gov
cc:
Subject: Spotted Owl/Barred Owl EIS

It's not nice to mess with Mother Nature. Let Her work her way.

--

J Brian Fiacco

Timberland Strategies LLC

460 Wild Cherry Ln

Summerville SC 29483

jbfiasco@gmail.com

Phone: 843.475.1341

Web site: [Timberland Strategies](#)

Blog: [The Timberland Blog](#)

Realtor and Timberland Investment Specialist

Brand Name Real Estate/ Timberland Strategies



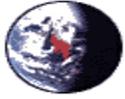
Rick Krause
<rick_gis@yahoo.com>

03/19/2012 02:13 PM

To: barredowleis@fws.gov
cc:
Subject: No killing Barred Owl's

Killing one species for another was never the intention of the Endangered Species Act. The Barred Owl and Spotted Owl are cousins, and have been know to inter bread. I am totally apposed to the kill

Rick Krause
Madras, Or=====



jackiewilson@comcast.
net

03/20/2012 10:07 AM

To: barredowleis@fws.gov

cc:

Subject: Re: Barred Owl Removal Experiment DEIS available

I do not agree with shooting barred owls. I hope spotted owls will survive, but we don't live on an island so killing barred owls would have to go on forever. Jackie Wilson



"Charles(Chuck) Stuart"
<cstuart64@gmail.com>

04/09/2012 10:30 PM

To: barredowlEIS@fws.gov

cc:

Subject: Experimental Removal of Barred Owls to Benefit Threatened Northern
Owls

To Whom It May Concern,

After reading the text of the "Experimental Removal Of Barred Owls To Benefit Threatened Northern Owls", I'm flabbergasted. It's difficult to remain reasonable and measured with my response because this proposal of the Fish and Wildlife Service is so absurd. I find it incredible that a so-called scientific based federal agency would determine that it was justifiable and wise to proceed with such a ridiculous plan of removing (apparently primarily killing) one species of owl to protect the rights of another!

Are you seriously going to use the Endangered Species Act as justification to counteract a likely inevitable range expansion by the barred owl!? Apparently barred owls and northern spotted owls are capable of interbreeding which strongly suggests that they maybe subspecies of the same owl species. To carry out this plan you would likely have to continue killing barred owls from now on!

I do not want any government of mine to be wasting resources on such a ridiculous and cruel enterprise; therefore, I strongly recommend that the Fish and Wildlife Service choose the "no action alternative" among the several options available. Leave the owls alone!

I have proudly been a strong environmentalist all my life, and particularly a lover of birds, but I have never heard of anything so preposterous as this proposal! Furthermore, it is apparent that the Fish and Wildlife Service is losing credibility with the public because of how badly this barred owl issue is being handled. The opinions that I'm hearing are almost unanimously opposed to removing or killing the barred owls. Frankly, if I were in your position and had to defend this proposal/plan I would be embarrassed! Yes, if you are not embarrassed, I'm embarrassed for you because you are part of my government and I support you with my tax dollars.

Sincerely,

Clyde C. Stuart
Livingston, Texas



"Fitch, WyattX L"
<wyattx.l.fitch@intel.com>

04/18/2012 08:55 PM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: Comment on the barred owl draft EIS

I'm writing to express my **opposition** to the removal of barred owls from spotted owl habitat. I can understand the government's desire to set aside habitat for endangered species, and in moderation I don't object to it. However, when the government circumvents natural competition between two species by actively favoring one of them, it is going too far. Let nature sort this out, and stop wasting tax money on it.

Wyatt Fitch
16000 NW Centine Lane
Portland, OR 97229



John H and Liz E
<groovyjoker@gmail.com>
m>

To: barredowlEIS@fws.gov
cc:
Subject: Fwd: Barred Owl EIS

04/21/2012 08:22 AM

I must emphasize that these comments are from a member of the public, at the personal address below, who works at the Department of Natural Resources. The comments are her personal opinion and do not necessarily reflect those of her employer.

----- Forwarded message -----

From: **John H and Liz E** <groovyjoker@gmail.com>
Date: Fri, Apr 20, 2012 at 10:50 PM
Subject: Barred Owl EIS
To: barredowlEIS@fws.gov

Comments attached

Elizabeth Ellis
31 SE Holly Place
Shelton WA 98584

--

GroovyJoker@gmail.com

This email does not necessarily reflect nor endorse the opinion of my employer.

--

GroovyJoker@gmail.com

This email does not necessarily reflect nor endorse the opinion of my employer.



spotted owl comments.doc

To Whom it May Concern:

I am writing in clear opposition to the proposal put forward by the USFWS to utilize lethal means in order to manage the increasing barred owl (*Strix varia*) population. I understand the barred owl is competing with the Northern spotted owl (*Strix occidentalis*), and that the spotted owl continues to decline. I have worked on survey teams for both the Northern and California spotted owls. I understand many of the ecological, biological, and management issues.

What I am concerned with here is the lack of detail in the USFWS' proposal on the barred owl. I am not against continued protections for the spotted owl, however, the Draft EIS and the information provided to the public on how the shooting of the barred owl is justified and will be a economically justified use of tax dollars is lacking.

My primary issues are outlined below. In general, I am asking for better detail, further investigation, clarification, and more time before such a drastic proposal is decided upon. I believe, given our limited dollars to manage the many species that require protection at this time, such a request is prudent. What may not be prudent is the USFWS spending an exorbitant amount of money on a "pilot" project to protect one species, when the USFWS does not even know if their strategy will have long-term conservation value, or if their strategy will have negative impacts on the barred owls' genetic pool.

COMMENTS:

The USFWS clearly needs a better understanding of why the Barred Owl (*Strix varia*) has moved west:

According to Livezey, Kent (The American Midland Naturalist 161(2):[323-349](https://doi.org/10.1674/0003-0031-161.2.323), 2009 doi: <http://dx.doi.org/10.1674/0003-0031-161.2.323>), the expansion of the barred owl (*Strix varia*) westward is correlated with the action of European settlers. These actions created foraging habitat across the Great Plains – formerly treeless. Fire suppression, removal of beaver and replacement of native species with livestock helped facilitate these forest corridors, allowing for the movement of the barred owl into the western states. Other researchers (Monahan and Hijmans 2007) argue the range expansion is related to the recent rise in temperature, and other climatic mechanisms – again, possible (likely) anthropogenic caused.

Why would the barred owl take the opportunity to spread across the states so relatively rapidly? The barred owl has been identified as moving slowly northwestern-ward for a number of decades, with British Columbia recording numbers between the 1940 – late 1960s. A decade later, numbers of barred owls increased in Western Washington, spreading into Oregon, California. The question remains unanswered, and will remain unanswered by this approach, as to where the barred owl is coming from: are the owls moving from the eastern states through the Great Plains to the west, or through Canada and then south. Wiens explains the two routes in the Draft EIS, and admits scientific evidence supporting one or the other is lacking (p. 283, Section A.2), including

unanswered questions, such as Montana's recent report that historic observations of spotted owls were actually barred owls that had migrated from Canada nearly 75 years ago (Holt, Domenech and Paulson, 2001).

The USFWS needs a (better) population model for the barred owl:

Barred owls have a higher fecundity rate than spotted owls; if they have been arriving since 1972 in Washington, at 1 brood per year, what is the survival rate? What is the population growth rate? How many of the current barred owls are residents and are not migrating? Has immigration into the states already stopped?

This study would answer that question, because by shooting them, and assuming there is no more immigration, the competition would end. Is that the sole purpose of this study?

The USFWS must identify limiting factors for the barred owl

What are the limiting factors in the **eastern states** with respect to the barred owl's preferred habitat? Have any of the limiting factors increased in intensity or number? Would this pressure species to move to areas that provide the biological requirements necessary to survive? If so, could the movement of the barred owl be a natural response to human disturbance? If that is true, the USFWS must address the initial reason the barred owl began moving away from its central habitat – that is the correct management strategy.

The USFWS must do a comprehensive statewide analysis of the barred owls discrete population units, and identify biological requirements and ecological parameters governing the population size and distribution, such as habitat needs, food resources, carrying capacity and range size

The USFWS portrays the barred owl as a generalist that is widespread, abundant in numbers. However, locally in areas, it is declining. It is a state-listed species in New Jersey. These areas of decline could offer insight into the movement of owls from east to west – after all, what pressures would cause barred owls immigrate to the western states in the first place?

Barred owls in the eastern states do not nest in coniferous forests as their primary choice of habitat. They are more likely to be found in swampy habitat and deciduous forests, both of which are declining in areas such as Florida. Barred owls are listed as a state-threatened species in New Jersey, where they are associated with "...the remote, swampy woodlands of New Jersey (<http://www.nj.gov/dep/fgw/ensp/pdf/end-threatened/barredowl.pdf>). The New Jersey Department of Fish, Game and Wildlife report goes on to say that "the barred owl persisted virtually unscathed until the early 1940s when the cutting of old growth forests and the filling of wetlands greatly reduced habitat throughout the state. Rampant habitat loss and associated barred owl population declines continued for the next several decades. Consequently, these owls were lost from many historic breeding locales. Due to population declines and habitat loss, the barred owl was

listed as a threatened species in New Jersey in 1979. The New Jersey Natural Heritage Program considers the barred owl to be “demonstrably secure globally,” yet “rare in New Jersey” (Office of Natural Lands Management 1992). Currently, barred owl populations appear to be declining due to development and fragmentation of large tracts of private forested lands. The barred owl population has been estimated at 37 pairs in South Jersey and 75 pairs in North Jersey (Sutton and Sutton 1985, Bosakowski 1988).”

The “native” habitat of the barred owl in the eastern states must be better researched – how has it changed since the movements of the barred owl began?

In the 1960s, a radio telemetry study followed 10 barred owls from Minneapolis, and determined the habitat preferences were, in this order: Oak woods, mixed hardwoods and conifers, white cedar swamps, oak savannas, alder swamps and marshes, open fields. In this study, statistically significant habitat preferences were documented for oak woods or mixed hardwood and conifer habitats, with one owl preferring oak-savanna (Thomas H. Nicholls and Dwain W. Warner, 1972, *The Journal of Wildlife Management*, Vol. 36, No. 2: pp. 213-224; Allen, Habitat Suitability Index Models: Barred Owl. USFWS Biological Report 82 (10.143)1987)

The USFWS conducted a Habitat Suitability Index Model for the barred owl that discusses explicit detail on habitat preferences, behavior and foraging, most of the information lacking from this Draft EIS. I highly recommend revisiting that document. See Allen, A. 1987. National Ecology Center, Habitat Suitability Index Models: Barred Owl. USFWS Biological Report 82 (10.143)1987).

Using the data from the 1960s- 70s, the late 1980s research on habitat suitability by the USFWS, and moving to the current year, how has the barred owl’s foraging and roosting habitat changed? Are these habitats still available? Simple lessons in biogeography tell us that aerial dispersal and migration patterns are not governed by “choice”, they are governed by narrow ecological requirements, such as the distribution of certain food resources, or the proper habitat for raising offspring. A recent study in North Carolina (Bierregaard 2001) followed radio-tagged barred owls. In this state, old growth forests had long been cut down, replaced by residential homes. The owls had adapted to this change, and their offspring rate had increased. This species-specific response was to an anthropogenic trigger – the animal cannot be punished for it. If the owls are able to adapt to habitat fragmentation and development, and even thrive in some states (North Carolina), why are they doing poorly in others (New Jersey)? Which populations are moving into Canada – what are the pressures and can those pressures be relieved?

The role of humans in facilitating the movement of the barred owl MUST be understood before management action is taken:

Section A.3 is one of the most important sections in the EIS, yet it is one of the shortest. Understanding the “why” of the barred owl’s movement should and must be the

governments first and foremost priority, before using taxpayer dollars to “manage” the species. The government clearly does not understand the “why” and this section, as well as the Draft EIS, details the uncertainties in this “science based” conservation effort:

For example, the information provided on what role humans have played in facilitating the movement of the barred owl (and thus, what humans could do to stop this?) is inadequate, at best. Before developing a management strategy suggesting lethal means, a clear understanding of the species, its population dynamics, and its history **must be provided**. The USFWS provides loose connections to habitat loss, possible ecological corridors opened by European Settlers, and offers a theory that the owl has only recently become adapted to coniferous forests (*this seems to conflict with Nicholls and Warner’s radio telemetry study, 1972, which showed the spp. had a statistically significant preference for this habitat within its native range*). At best, these are theories, untested, and offer little insight into why this animal should be controlled by lethal means. Certainly this is not the work of any “science based” conservation strategy (Thomas H. Nicholls and Dwain W. Warner, 1972, *The Journal of Wildlife Management*, Vol. 36, No. 2: pp. 213-224).

The USFWS must define this species as Native or Invasive before developing a management strategy

In order for the USFWS to develop a management strategy that will be appropriate for the barred owl (as well as the spotted), the USFWS **MUST** determine if the barred owl will be considered an “invasive” or “native” species. Treatment is vastly different for both. Instead, the USFWS refers to the barred owl as “invader” as if it is an alien.

The barred owl *is* a native species to the United States. It has grown in population and spread locally over hundreds of years. Now it is spreading regionally, even crossing international boundaries. Why are we referring to this species as an “invader” in this analysis? Is there a distribution mechanism occurring that is not natural? Has the species been placed in areas by humans, on purpose, such as the stocking of a pond with non-native bass? No. I object to the use of “invasive” or “invader” or similar terms. This language should be reserved for non-native or non-local species that have been mechanically or artificially introduced (non-naturally) by humans, either intentionally or unintentionally. The USFWS does not investigate this issue, but instead simply defines the terms “nuisance”, “native,” “nonnative”, “indigenous,” “exotic,” and “invasive” and chooses to state that they “do not know at this time” whether the barred owl is to be considered native or invasive. Note that all of these terms have specific places in federal and state law, and should not be used interchangeably. The USFWS must determine whether the barred owl is a native species or an invasive one, before making the decision to use lethal means as a way to manage the population! If they determine this is a pest, the USFWS should be required to work with APHIS and have the animal appropriately classified under federal and state laws. In the development of a management strategy for

an animal which “may” be an invasive or “may” be a native, saying “I don’t know” before proposing the strategy is not only unacceptable, it is bad science.

The USFWS makes unclear assumptions about “generalist” versus a “specialist” in the DEIS in relation to climate change

The USFWS makes the bold statement with relation to generalist species and climate change: “Generalist species are commonly able to adapt more successfully to a new climate than specialists (Dukes and Mooney 1999, p. 138). Barred owls are considered generalists in their use of habitat and prey, while northern spotted owls are considered specialists. Therefore, we expect that barred owls may have successfully adapted to a changing climate in the past, and will continue to do so as conditions change in the future.”

Has the USFWS validated the Monahan and Hijmans (2007) study? Even if climate change were a factor contributing to the movement of the barred owl, is it the only factor? Finally, it almost seems arbitrary for the USFWS to make value judgements about a species’ ability to adapt to any aspect of climate change, when humans have yet to understand the full implications of climate change is. We are still unable to develop response strategies for our own species – how can the USFWS claim that one owl will respond better than another?

In the paragraph cited, the USFWS described the barred owl as a generalist. Technically, the Northern Spotted Owl is considered a specialist because of its dependence upon old-growth habitat and the dusky wood rat as a food item. In general, specialists tend to have smaller populations than generalists, and they *are also much more efficient at using their habitat and foraging resources*. (p. 516, Ecological Biogeography in Brown and Gibson, Biogeography, 1983, Mosby Press). This information is not acknowledged or offered. Furthermore, the proposed strategy of removal by lethal means will not allow researchers to evaluate the “fitness” of the Northern Spotted Owl as specialist, or determine if the barred owl is a true generalist. Only through competition and continued documentation of results without human interference will this information be obtained.

Problem with species-based conservation is clear in the Draft EIS

The USFWS attempts to justify some responsibility for shooting the barred owls by claiming that because it was the fault of humans the Northern spotted owl declined, we now must protect them (final par. P. 294). To some extent, under the ESA, this is logical. As the USFWS states, Northern spotted owl populations and habitat were significantly reduced by human activity before barred owls invaded their range. The depressed condition of northern spotted owl populations in the 1970s is due to human-caused fragmentation and removal of habitat and movement corridors.

The problem with the argument is this statement:

Whether the barred owl presence in the Pacific Northwest is considered “natural” or “unnatural,” the consequences to the northern spotted owl are the same. We believe, therefore, that humans bear at least some *responsibility to investigate* and, if appropriate, *mitigate the negative impacts of barred owl interactions on northern spotted owl, because this impact is exacerbating the decline of northern spotted owl populations.*

The species-centric approach the US Fish and Wildlife Service is suggesting for the purposes of conserving the Northern Spotted Owl is understandable, in the context of the Endangered Species Act, but inherent dangers have been identified with such an approach.

This paragraph illustrates clearly the problems associated with the species-based conservation approach. To cite from the Northwest Forest Plan (p. 74), which integrates elements of species-based conservation, reserve-based conservation and active management into a flexible comprehensive, integrated ecosystem-based forest management strategy: “The disadvantages of a species-based conservation approach are that it requires detailed information about the life history of a species, which is lacking for most species; the information and resource needed to develop separate plans for all species of concern is not available; **having on species serve as an indicator for other species or ecosystem degradation is, at best, only a crude indicator of the condition of the entire ecosystem; managing for a single species ignores needs of other species that share the same habitat; the cumulative effects of habitat protection for many species can often shut a forest down for all other uses; and it is usually not cost-effective use of public resources.**”(Emphasis added, Tuchmann, E.T., Connaughton, K.P., Freedman, L.E. and C.B. Moriawki, 1996).

The section on why habitat protection is not enough should be flushed out (section A.8.2).

This section states that the current and past habitat protection measures for the spotted owl are not enough to conserve the species, because the barred owl is invading the reserves set up for protection. Thus, remove the barred owl from the reserves. What this section needs to explain is that the current habitat protection measures *do not set aside large enough reserves* or that past forest management has simply reduced the amount of old growth forest to a miniscule amount compared to the past, and the spotted owl population is a reflection of that. *Explain to the reader why the habitat protection measures are not enough.*

Will this set precedent for managing other species that compete with the Northern Spotted Owl?

The Spotted Owl (*Strix occidentalis*) includes three resident subspecies: the Northern Spotted Owl (*S. o. caurina*) in mountains of the Pacific coast from southwestern British Columbia south through western Washington and Oregon to San Francisco Bay,

California; the Mexican Spotted Owl (*S. o. lucida*) in forested mountains from southern Utah and Colorado south to Michoacan, Mexico; and the California Spotted Owl (*S. o. occidentalis*) from the southern Cascade Range of northern California south along the west slope of the Sierra Nevada and in mountains of central and southern California nearly to the Mexican border, with three sight records from the Sierra San Pedro Mártir of northern Baja California (Gutiérrez et al. 1995, Unitt 2004). Minimum rangewide population estimates are 4779 Northern Spotted Owls, 1592 Mexican Spotted Owls, and 3050 California Spotted Owls, on the basis of surveys in 1987–1992, 1990–1993, and 1970–1992, respectively (Gutiérrez et al. 1995).

In 1996, I was a wildlife biologist working on a team in the Sequoia/Kings Canyon Team for the U.S. Forest Service to locate and collect data on the California spotted owl (J. Verner et al. 1992). It was my understanding that along the border of Oregon and California, it was possible for California and Northern spotted owls to share isolated patches of habitat. Should pressure ever push California spotted north, will Washington and Oregon be placed in a position to rank the protection of one subspecies over the others, and choose lethal means in order to manage the population?

To confound the fact even further, research has been presented (Livezey, et al 2007) suggesting lethal control as a mechanism to deal with the presence of the barred owl in California Spotted Owl habitat. If the USFWS may be contemplating this action for barred owls in California, it should be included under the Draft EIS. The action remains the same – whether in Washington, Oregon or California – and the federal nexus is the same. The only thing that is different is whether you are controlling because of the CSO or the NSO.

It appears to me that the USFWS is setting a dangerous precedent, choosing such a drastic and expensive strategy, with so (admitted) little understanding or control, and the planning for this strategy appears fragmented.

In Summary

How can humans protect the Northern Spotted Owl and stop facilitating barred owl movement into the western United States? Only by understanding the (1) route of immigration into the western states, (2) the limiting factors for the barred owl, (3) the biological requirements necessary to survive, and (4) defining the habitat throughout the continental United States, not just Washington, will we have a true understanding of what the barred owl is doing, and why. After that, informed scientists can make appropriate management decisions.

What about the spotted owl? Give it the habitat it deserves. We all know it does not have enough and faces mounting pressures every day.

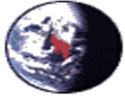
With the barred owl, so many elements of information are missing, that the USFWS is unable to paint a complete picture in this Draft EIS. They admit time after time their data relies on “suggestions” or “indications” or they admit they simply do not know. And with the spotted owl, they freely admit – humans degraded the spotted owl habitat, the spotted owl has not yet recovered, so our conservation strategy is to shoot another owl that may have moved here (possibly because of humans again?) and is in competition with it. And we wonder why the public does not trust science anymore?

Thank you your time,

Elizabeth Ellis

Certified Environmental Planner, Washington Department of Natural Resources
Member of National Association of Environmental Professionals
Degrees in Biology, M.S. in Environmental Studies

The contents of this letter are my own and do not necessarily reflect the opinion of my employer



"mbhayden tds.net"
<mbhayden@tds.net>
04/26/2012 01:54 PM

To: barredowlEIS@fws.gov
cc:
Subject: EIS barred owl

Paul Henson

April 26,2012

Field Supervisor

US Department of Fish & Wildlife

Portland, Oregon 97266

2600 S.E. 98th AVE.. suite 100

barredowlEIS@fws.gov

Paul Henson

April 26,2012

Field Supervisor

US Department of Fish & Wildlife

Portland, Oregon 97266

2600 S.E. 98th AVE.. suite 100

I am writing this as a concerned Citizen of the State of Washington on the proposed Barred Owl Removal Experiment. The removal of the Barred owl by means of trapping, shooting, poisoning, or any other hunting method in my estimation is a Violation of our State laws, WAC 232-12-297 and WAC 232-12-011.

These WAC codes are made to protect endangered, designated, and sensitive wildlife in our state.

The Barred Owl is a natural predator on the spotted owl as is the spotted Owl on the Flying Squirrel (*Gaulcomys Sabrinus*) The plan to increase the spotted owl population would decrease the amount of flying squirrels, As that is the #1 diet of spotted Owls. The squirrels are protected under this law from all hunting methods and any process that could decrease their numbers.

Looking at the large area that the spotted owl is being given for habitat seems like we better

be happy the dinosaurs are gone.

Mike Hayden

mbhayden@tds.net

P.O. Box 62

Cougar, WA. 98616



"Hart, George A CIV
Navy Region NW, N40"
<george.hart1@navy.mil
>

To: <barredowIIS@fws.gov>
cc:
Subject: comment on removal`

04/27/2012 02:47 PM

My concern is that the state of Washington had a bounty for bull trout a few years ago because they were eating salmon. Now the bull trout is listed as a threatened and endangered species. Removal of yet another species does not make good sound science. We have already messed up the habitat for the spotted owl and now we are engaging on the thought process of removing a species that is thriving in what use to be good habitat for the spotted owl. Two wrongs do not make a right!! We can only do the best we can for the spotted owl and if it survives great if not then we should face the fact that we basically caused the local extension of the species. I worked for the USFWS as a threatened and endangered species coordinator and in my mind this goes completely against what we were taught and how the USFWS works. Thanks for allowing me to comment and I hope my comments will make you think before you act.

V/R
George Hart

My home email is : sourdough@live.com



rod stevens
<stumpywon@msn.com
>

To: <barredowleis@fws.gov>
cc:
Subject: Draft EIS for removal of barred owls

05/18/2012 01:49 PM

Sirs, Madams and Those Biologists of Hybrid Origins:

This is the most poorly conceived, illogical governmental proposal I have ever read. How many millions of taxpayer dollars did you waste on this monstrosity?

The only plausible, defensible choice is "The No Action Alternative."

Mother Nature has made Her choice. Kiss the Northern Spotted Owl goodbye! If spotted owls are meant to survive as a genetically pure and distinct species, they will find their own ecological niche, without the "help" of bumbling, fumbling federal biologists plying them with lab raised white mice by the millions! If barred owls are more fit, they will displace or absorb the spotted owl via hybridization and introgression, regardless of what inept, stupid biologists try to do. For example, during the brief mention of hybridization (page 297), one of your "experts" speculated that lowering barred owl populations would actually favor hybridization between the two "species."

Are barred owls continuing to expand their range to the south? Are the Mexican Spotted Owls in the southwest US next on the list? Or, maybe the barred owls will migrate from eastern Mexico westward. Perhaps Barack O' Bama and Eric Holder can lead an army of federal biologists into Mexico to conduct wars on invasive barred owls there. Note that they won't need to take any weapons or ammo. They can simply ask the drug lords, politely, for the remnants of Fast and Furious!

Rod Stevens



"Lee Hall"
<leehall@friendsofanimals.org>

05/30/2012 11:23 AM

To: <barredowlEIS@fws.gov>
cc: "Priscilla feral" <feral@friendsofanimals.org>
Subject: PUBLIC COMMENT: Draft Barred Owl/Northern Spotted Owl EIS

PUBLIC COMMENT: Draft Barred Owl/Northern Spotted Owl EIS

From: Lee Hall, Vice President, Legal Affairs, Friends of Animals, Inc., 777 Post Rd., Darien, Connecticut 06820 US

To: Paul Henson, State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Ave., Suite 100, Portland, OR 97266 US

Via e-mail: barredowlEIS@fws.gov

Date: 30 May 2012

Overview

On behalf of our members throughout the United States, please accept this statement in OPPOSITION to the proposals by the U.S. Fish and Wildlife Service to kill OR engage in experimental relocation of the barred owls, OR both.

Our statement has value particularly with regard to two aspects of the call for public comments:

- Social and human value/ethics, including the intrinsic value of spotted and barred owls and human culpability in the presence of barred owls in the West; and
- Effects of the alternatives on visitor use and recreation, and visitor experience, especially in National Parks and Recreation Areas and other recreation sites.

The Fish and Wildlife Service proposes to “experiment” with strategies to remove barred owls (*Strix varia*) for 3 to 10 years in various areas to determine whether eliminating them is a realistic way to bring back spotted owls (*Strix occidentalis caurina*). The spotted owls are listed as threatened under the Endangered Species Act.

Removing the barred owls would require an extermination program on a mass scale by the U.S. Fish and Wildlife Service—which has acknowledged this. We oppose this approach to owl spotted conservation in the strongest terms, and we support the NO ACTION alternative yet

observe there are other actions that can help achieve the worthy aim of northern spotted owl protection.

We do support proposals to increase protected habitat for the Northwest's owls.

Our members are hikers, birdwatchers, environmental writers, photographers, and animal-rights advocates. Many are all of these things. Many decline to eat the products of ranchers, on account of their acute concerns over deforestation and resource-costly methods of feeding our population. The impacts of heavy-handed government-directed eradication projects affect our members' and supporters' interests and disappoints our expectations for funding and having a federal government that serves and protects rather than annihilates and panders. Our staff and members are visitors to public lands who appreciate viewing any and all birds acting according to their natures and interacting, whether co-operatively or competitively, with members of their own and other species. We value the spotted owls and their continued survival and the goal of their ultimate ability to thrive; we value equally the barred owls and their individual and collective struggles to adapt to humanity's overwhelming impacts on their environment. Our experiences as visitors to public lands, especially in National Parks and recreation sites, are embittered by the knowledge that barred owls would be killed and tormented by the proposals at issue.

In our view, the U.S. government should be moving the pressure where it belongs in order to support a variety of owls—including barred owls as well as northern spotted owls—and decline to clear any public lands at the behest of developers and timber businesses.

Though ostensibly proposed in the interest of saving spotted owls, projects to eliminate or move one group of owls will harm both groups. Increasing resentment against barred owls in order to claim action is being taken for spotted owls will mean less attention will be paid to habitat protection, and logging will be resumed in protected spotted owl areas.

Background

Barred owls, though their west-coast population is sometimes called invasive, are true owls, native to North America, and closely related to the spotted owls. Barred owls should not be considered a community of invasive species. Since the 1960s, pushed to adapt by human development, barred owls have been expanding their range westward from the eastern United States on their own accord and in harmony with their chosen environment. The two groups of owls are so closely related that they mate. (Notably, this is not a case of domesticated animals escaping or being abandoned into habitat and mating with a free-living community.)

It is thought, but not certain, that barred owls are a hindrance to the ability of northern spotted owls to thrive in the Pacific Northwest. Northern spotted owls of the Pacific coast are particularly vulnerable to habitat decimation because they are old-growth forest specialists. Unlike the barred owls, their future depends on protections for old-growth territory.

Human commerce is responsible for destroying old-growth forestlands—in effect, turning spotted owl habitat into barred owl habitat. Thus, human destruction of old-growth forests

allowed or encouraged the barred owl to move westward—some say to the detriment of the spotted owl communities already there.

The U.S. government has presented the proposals at issue here to suppress the population of barred owls. In other words, the proposal to exterminate barred owls across the Pacific Northwest is part of a wider project in the name of bolstering the northern spotted owls.

We oppose killing of barred owls

One section of the U.S. Fish and Wildlife Service proposals involves the outright killing. In March, the Democratic party of Clallam County, Washington went on record against plans to hunt barred owls. (See “Clallam Democrats Opposing Owl Plan”: <http://www.konp.com/local/7759>.) The party's executive board voted to support a resolution opposing the U.S. Fish & Wildlife Service's proposal to implement plans to hunt hundreds of barred owls yearly.

With the kind of common-sense thinking that is becoming ever less common, Clallam County Democratic Party leaders indicated their view that waging war on the barred owls is both mean-spirited and unworkable in the long run, for we humans can't legislate the natural advantages the barred owls have over spotted owls; and nature will take its course.

We think the federal government ought to be able to acknowledge the wisdom in that. We urge the government to focus on, and spend taxpayers' resources on, protecting habitat so the problems faced by threatened and endangered animals do not worsen, rather than spending money and other resources on projects to eradicate indigenous bird life. Significant perils to the spotted owls' future include climate change, drought and drought-related fires, habitat loss, the grazing of non-indigenous animals for profit, continued forest thinning and the construction and maintenance of energy transmission lines. Interfering with indigenous and naturalized animals' lives, as they do their best to adapt with human encroachment, should not be the focus of spotted owl protection.

We oppose relocation as well as killing

We understand that some groups have supported the U.S. Fish and Wildlife Service's proposal to relocate some of the barred owls, as an experiment. It is neither feasible nor respectful to think we could just pluck these birds from the place they've evolved and raised their young year after year and stick them somewhere else. And the ones left uncaught would still reproduce and fill the vacuum remaining.

Our main concerns about the relocation of some owls are:

- Stress of relocation, including in capture, disorientation, travel, and possible mortality.
- Owls in the population who are not moved would still breed and still be subject to the government-imposed animal-control policy.
- Neither shooting nor moving barred owls would confront or check the underlying problems, such as logging and deforestation for agribusiness.

In short, we consider relocation as well as killing inappropriate human interference in the barred owls' natural interests and adaptations. Bottom line: habitat is the issue. Killing or moving barred owls won't fix anything. Through the proposals at issue, the federal government is thrusting itself into an expensive and grotesque cycle whereby it would have to remove and to kill barred owls forever to achieve its ostensible aims. The underlying problem remains: logged forests are more hospitable to barred owls than to northern spotted owls.

Ethical action entails respect for the intrinsic value of spotted and barred owls

“Environmental law, once focused on direct threats to human health, now is concerned with assaults on non-human life,” write Professors Dale D. Goble and Eric T. Freyfogle in the casebook *Wildlife Law* (2002; preface page v). Ecologists and, in turn, people who make decisions about water and land are questioning the assumption that nature is merely a store of material value. And insofar as it offers material value, they're suggesting it belongs to members of the bio-community. Environmental law to date would not necessarily contradict this goal. The National Environmental Policy Act of 1969 (P.L. 91-190) “encourages productive and enjoyable harmony between man and his environment.” Productive and enjoyable harmony is not fostered through killing and forcibly removing owls. Nor is this conducive to the interests of our members in enjoying public lands or appreciating our government's attitudes to animals in their habitat.

Killing is immoral, and fails to solve problems in any case because killing barred owls to save northern spotted owls lets logging companies and other development in spotted owl territory off the hook. Timber sales in northern spotted owl territory have not ceased; yet the government wishes to torment endangered-species law by using it to blame and exterminate one type of owl—for its natural conduct—when the root cause is people manipulating the forest.

Human culpability underlies the presence of barred owls in the West

Human commerce, as well as industrial, residential and tourism development, and the imposition of forest management techniques have all threatened spotted owls for decades. Now, those same activities are prompting barred owls to adapt and spread west. Amidst all the pro-commerce cheerleading of federal-level government officials, the barred owls are saddled with a terrible burden, which reasonable minds could conclude is a way to appease logging firms and private landowners in Oregon, Washington and California.

The blame-shifting not only eases pressure where pressure is due—on human commerce—but it also is not necessarily based on reality with regard to the interactions between owl groups. The claim that barred owls overpower spotted owls is based on anecdotal evidence and recently published research. (See, e.g., Press release: U.S. Department of the Interior, U.S. Geological Survey, “High Numbers of Barred Owls Likely in Pacific Northwest Forests” (11 May 2011, stating, “Barred owls may be more abundant in coniferous forests of the Pacific Northwest than previously recognized, according to research published today in the *Journal of Wildlife Management* [citing J. David Wiens, Robert G. Anthony, and Eric D. Forsman, “Barred owl occupancy surveys within the range of the northern spotted owl” - *Journal of Wildlife*

Management.] The follow-up research is new, arguably interpreted in a result-oriented manner, and not representative of an established body of knowledge. Key funders include the U.S. Fish and Wildlife Service, the National Park Service, U.S. Forest Service, the Bureau of Land Management, and the Oregon State Department of Forestry.

Friends of Animals' Recommendations

We SUPPORT the no-action option and we OPPOSE capture, we OPPOSE relocation, and we OPPOSE killing of barred owls. Internet reference URL summarizing the Alternatives: <https://www.federalregister.gov/articles/2012/03/08/2012-5139/draft-environmental-impact-statement-for-experimental-removal-of-barred-owls-to-benefit-threatened#p-36>

Alternative 1 proposes subjecting barred owls to lethal removal methods. We OPPOSE Alternative 1.

Alternative 2 proposes lethal and other methods. We OPPOSE Alternative 2.

Alternative 3 proposes lethal and other methods. We OPPOSE Alternative 3.

Alternative 4 proposes lethal and other methods. We OPPOSE Alternative 4.

Alternative 5 proposes lethal methods. We OPPOSE Alternative 5.

Alternative 6 proposes lethal and other methods. We OPPOSE Alternative 6.

Alternative 7 proposes lethal and other methods. We OPPOSE Alternative 7.

We support the no-action option—with additional suggestions. The Fish and Wildlife Service, when framing the various alternative actions, has largely missed the best action, which will involve pro-active confrontation of the commercial problem faced by the owls rather than confronting the owls themselves. Perhaps this is not surprising, given the profit-oriented directions from the highest levels in government. For example, President Obama's Spotted Owl Memo of 28 February 2012 puts emphasis on protection of commerce rather than the bio-community, and underscores the radical nature of current proposals when stating, "The proposal rejects the traditional view that land managers should take a 'hands off' approach to forest habitat in order to promote species health; on-going logging activity may be needed to enhance forest resilience." As this is the case, it is left to non-governmental organizations to take a stand aligned with the "traditional" and best reading of the U.S. National Environmental Policy Act, the Migratory Bird Treaty Act, as well as U.S. endangered-species law and policy. As a society, our best attitude would be to respect both kinds of owls—their natures and interests. The only way to act accordingly is to protect substantial tracks of un-logged forests. Therefore, in addition to the No-Action alternative:

- The government should consider creating public-service announcements for

television and radio outlets, newspapers and regional magazines, and social media that connect our use of resources with pressure on animal life, including spotted and barred owls. Builders should be encouraged to use reclaimed wood and other materials such as recycled industrial and construction materials: concrete made from foundry sand, reclaimed steel beams or recycled asphalt. This would have effects in the short term as well as over time.

- The government should further consider creating public-service announcements that connect human population density with pressure on animal life, including spotted and barred owls. Without curbing human population density, not only will species become extinct, ecological systems will become simpler and less functional. The loss of ecosystem services will harm humans, the environment, and the planet. This is long-term thinking, which is needed now.
- The government should protect all remaining old-growth forestlands and place an immediate moratorium on the use and legal transfers of such lands.

The spotted owl population has continued to decline in recent decades because of the loss of old-growth habitat. Yet the Department of the Interior continues to insist that some kinds of logging be allowed in areas designated as spotted owl habitat. Interior Secretary Ken Salazar has recommended “sustainable timber jobs” and harvests in mature forests. these forests because they are also important habitat for spotted owls, marbled murrelets, flying squirrels, red tree voles and many other species that are associated with old-growth forests.

Conclusion

For all of the above reasons, we strenuously oppose killing or clearing out barred owls, oppose Alternatives 1-7, and support NO ACTION against barred owls.



Karen Pentony
<kepentony@gmail.com>

To: barredowlEIS@fws.gov
cc:
Subject: Comments on Barred owl EIS.

06/03/2012 08:41 PM

Paul Henson,

The attached document contains my comments on the Barred owl EIS proposals.

Karen Pentony



Comments on draft Barred owl EIS..odt

Paul Henson, Field Supervisor
U.S. Fish and Wildlife Service Oregon Fish and Wildlife office
2600 SE 98th Ave., Suite 100
Portland, OR 97266

I would like to comment on the Fish and Wildlife Service proposal to kill Barred owls in order to study if reducing their number would benefit the endangered Spotted owl population. My favorite alternative of those proposed in the EIS is the first one, or no action. I believe it is unethical to shoot Barred owls and that killing even thousands of them will not save the Spotted owl. As a taxpayer I do not like seeing tax money being used or “wasted” in this manner. Looking at some of the estimated costs it appeared that it would take approximately five hundred dollars to kill one owl.

I am not a scientist but I think a lot of scientists believe in “evolution” or adaptation of species. The Spotted owl is very endearing but the Barred owl seems to be better at adapting to it's environment.

My last comment is that the Fish and Wildlife Service is a well respected organization but if this owl killing proposal is approved and carried out I feel there will be a loss of this respect.

Respectfully submitted,
Karen Pentony
6380 W. Shelton Matlock Rd.
Shelton, WA 98584



Red Lodge
Clearinghouse
<contactus@rlch.org>
Sent by:
brandt.reed@colorado.e
du

To: barredowlEIS@fws.gov
cc:
Subject: Draft Environmental Impact Statement for Experimental Removal of
Barred Owls to Benefit Threatened Northern Spotted Owls

06/04/2012 01:30 PM
Please respond to
pir8zwife

Draft Environmental Impact Statement for Experimental Removal of Barred Owls
to Benefit Threatened Northern Spotted Owls

The following comment was sent by Red Lodge Clearinghouse (www.rlch.org) on
behalf of:

Gabrielle Kenton

5877 Nightshade Lane
Prescott AZ, 86305
928-
pir8zwife@hotmail.com

COMMENT

Certainly it is tragic to lose a species; however, the globe is changing and
species must change with it. We can't save all, either by breeding programs,
exterminating competitors, or trying to recreate habitat artificially. So,
aside from the tragedy of perhaps losing NW spotted owls, what is the benefit
of the rather difficult and expensive project to try to preserve this
species? Perhaps that environment is now better suited to barred owls.
Perhaps spotted owls will no longer be able to survive under current and
ever-changing environmental conditions. We can't eradicate all competitors,
including non-native invasives, where they are now established and thriving.
We can't save all species. The ecosystems, and species within them, are going
have to adapt or perish.

I can support efforts to save species such as honey bees from destruction by
pesticides, or bats from perhaps-treatable fungal infections, but it seems
that if barred owls have found the Northwest to their liking, and they
out-compete spotted owls, you'd have to eradicate all barred owls to keep
them from re-invading. It seems a losing proposition, and not the best place
to spend limited FWS funds.

The Red Lodge Clearinghouse does not monitor, review, or edit the content of
comments sent through its website. The comments offered are those of the
author and do not necessarily represent the views of the Red Lodge
Clearinghouse, the Natural Resources Law Center, or its employees. If you
would like to provide comments or feedback to the Red Lodge Clearinghouse
about this service please contact us at contactus@rlch.org.



**Red Lodge
Clearinghouse**
<contactus@rlch.org>
Sent by:
brandt.reed@colorado.e
du

To: barredowlEIS@fws.gov
cc:
Subject: Draft Environmental Impact Statement for Experimental Removal of
Barred Owls to Benefit Threatened Northern Spotted Owls

06/04/2012 02:44 PM
Please respond to lynnj

Draft Environmental Impact Statement for Experimental Removal of Barred Owls
to Benefit Threatened Northern Spotted Owls

The following comment was sent by Red Lodge Clearinghouse (www.rlch.org) on
behalf of:

Lynn Jungwirth

Box 216 Leroy St.
Hayfork CA, 96041
530-628-5345
lynnj@hayfork.net

COMMENT

I prefer the no action alternative. If the barred owl is occupying the same
ecological niche as the spotted owl then it seems like nature is just moving
birds around. My Peterson's Field Guide to Western Birds (published 1990)
claims that the Northern Spotted Owl "may eventually be displaced by the
Barred Owl "(page 204) . If Mr. and Ms. Peterson knew that in 1990, its
suprising that the Fish and Wildlife Service didn't know it in 1994, when the
spotted owl recovery plan was adopted.

The Red Lodge Clearinghouse does not monitor, review, or edit the content of
comments sent through its website. The comments offered are those of the
author and do not necessarily represent the views of the Red Lodge
Clearinghouse, the Natural Resources Law Center, or its employees. If you
would like to provide comments or feedback to the Red Lodge Clearinghouse
about this service please contact us at contactus@rlch.org.



**Red Lodge
Clearinghouse**
<contactus@rlch.org>
Sent by:
brandt.reed@colorado.edu

To: barredowlEIS@fws.gov
cc:
Subject: Draft Environmental Impact Statement for Experimental Removal of
Barred Owls to Benefit Threatened Northern Spotted Owls

06/04/2012 07:23 PM
Please respond to sralt

Draft Environmental Impact Statement for Experimental Removal of Barred Owls
to Benefit Threatened Northern Spotted Owls

The following comment was sent by Red Lodge Clearinghouse (www.rlch.org) on
behalf of:

Sid Goodloe

Box 598
Caoitan NM, 88316
575 354 2379
sralt@hotmail.com

COMMENT

We are trillions in debt and you want to do that!

The Red Lodge Clearinghouse does not monitor, review, or edit the content of
comments sent through its website. The comments offered are those of the
author and do not necessarily represent the views of the Red Lodge
Clearinghouse, the Natural Resources Law Center, or its employees. If you
would like to provide comments or feedback to the Red Lodge Clearinghouse
about this service please contact us at contactus@rlch.org.



Luckyfoot Rabbitry
<luckyfootrabbitry@yah
oo.com>

06/04/2012 10:15 PM
Please respond to
Luckyfoot Rabbitry

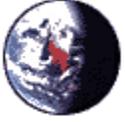
To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: Suggested proposals

I agree with these suggested proposals for the Barred Owl.
MANAGE THE FOREST HABITAT:

1. Removal of heavy ground fuels that are at 70 to 200 tons/acre levels rather than USFS recommended levels of 5 to 20 tons/acre that present the greatest threat to spotted owls: catastrophic fire
2. Removal of ground fuels that restrict access to the spotted owl prey
3. Thin trees to allow more visual access to prey
4. Analyze the benefits of the barred owl rather than propose to kill barred owls which are known as a sub species that interbreeds with spotted owls and stop killing barred owls which may represent a substantial gene pool for spotted owl breeding programs.
5. Study successful breeding pairs established in Sierra Pacific lands and other private lands where forest is managed properly.

I Support this proposal!
Thank you,

Cynthia Korinek
Santa Cruz, Ca.
831-662-0365

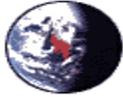


Fred May
<fredmay@com-pair.net
>

To: barredowEIS@fws.gov
cc:
Subject: are you nuts?

06/05/2012 06:31 AM

The owl is not endangered, the forest is from FIRES!!!!

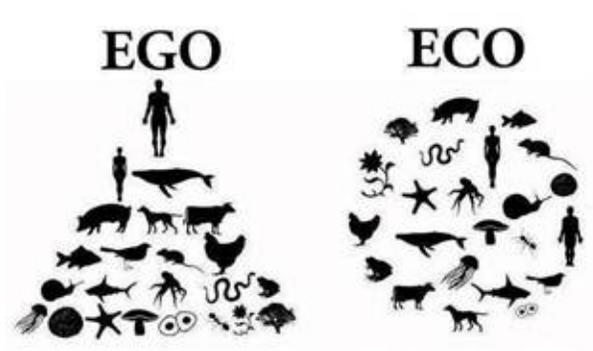


"Denise Boggs"
<conservation@q.com>
06/05/2012 09:24 AM

To: <BarredOwlEIS@fws.gov>
cc:
Subject: cmts. on DEIS

Please accept the attached comments and incorporate them into the Administrative Record for the Barred Owl Experimental Removal Program DEIS. We also request they be considered prior to any decision-making. Thank you.

Denise Boggs, Executive Director
Conservation Congress
P.O. Box 2076
Livingston, MT 59047
Tel:406-222-2723
Fax:406-222-2725



2012 DEIS cmts. exp. removal.docx



June 4, 2012

barredowleis@fws.gov

Re: Experimental Removal of Barred Owls Draft EIS

The Conservation Congress appreciates the opportunity to comment on the DEIS for the experimental removal of Barred owls to benefit threatened Northern spotted owls.

We support the No Action alternative at this time.

We don't believe the FWS has done enough to protect NSO habitat and is now placing the majority of blame for NSO decline on Barred owls. The Service recognizes past habitat loss and current habitat loss as pressing threats yet has decided to emphasize removal of Barred owls rather than aggressive habitat protection. Indeed, the DEIS even states logging could resume in the study areas upon completion. As long as owl habitat continues to be logged for commercial interests, rather than ecological restoration the NSO will continue decline regardless of Barred owls.

As stated in the DEIS barred owls are native to eastern North America and therefore we strenuously object to any removal of owls from wilderness areas or National Parks. In fact, removal of owls from wilderness areas would be a violation of the Wilderness Act.

The DEIS alleges that Barred owls are more strongly correlated with spotted owl population trends than the presence of protected habitat, yet provides no empirical data for this claim. "Protected habitat" is not defined and in reality little habitat is protected from commercial logging and/or development.

The DEIS states the Service has no specific direction for future management at this time, nor would the results of the study trigger any automatic actions. This statement contradicts the purpose of the study to conduct an experiment to provide scientifically rigorous results regarding the effects of barred owls on NSO rates of occupancy, survival, reproduction, and population trends. What is the purpose of obtaining such results if the Service has no specific direction for future management or utilizing the results?

The DEIS also states the study would run until sufficient information is gathered to determine the effects of removal. Again, what value are the research results if the Service has no specific direction for future management?

It is clear the Service has put little thought into the long term implications of the study and how the results would possibly benefit spotted owls. Without long term plans, the study is a waste of taxpayer dollars.

The DEIS states the Service proposes to utilize a demographic and occupancy study approach following three basic components: surveying NSO using recorded calls; surveying for barred owls using recorded calls; and lethally removing barred owls. The Service is well aware that NSO won't respond if Barred owls are present so the occupancy study approach is flawed from the beginning.

The Service states it is important to use humane methods of removal and then states barred owls would be attracted with recorded calls and then any that approach will be shot with a shotgun. The DEIS is silent on how it considers this method "humane."

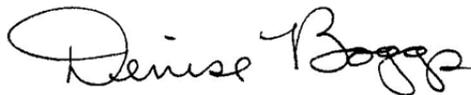
There are seven action alternatives contemplated. The percent of total habitat within range of the spotted owl is from 0.31% to 6.53%. NSO habitat is being used as a surrogate for barred owl habitat which has not been mapped or defined despite its presence being known in the PSW since 1973. This is a major flaw in the study. The Service has had almost 40 years to research barred owl habitat yet ignored this known threat to NSO and is now attempting to address a crisis with no empirical habitat data.

We do not believe any action alternative that includes removal of Barred owls from ongoing demographic study areas should be considered, since the removal experiment could affect ongoing study results. We are also concerned about impacts to Marbled murrelets since 13 of the 21 potential study areas are within the likely inland range of the murrelet.

The proposed removal experiment is estimated to cost between \$1.2 and \$17 million. We believe this is a waste of money considering the poor design of the study. Rather than implementing this experiment we recommend the Service follow the recommendations in the Forsman Demography Study (2011), as well as Dugger et al. (2011). Foresman does not believe the removal experiment is a valid solution to the Barred owl problem. Both Foresman and Dugger recommend protecting additional habitat for the NSO, and developing new definitions for owl habitat that reflect actual habitat being utilized. We believe this common sense approach combined with limits on commercial logging in owl habitat would do far more to protect NSO than the proposed experimental removal program.

Please incorporate these comments into the administrative record and keep us on the mailing list for the final EIS.

Sincerely,

A handwritten signature in black ink that reads "Denise Boggs". The signature is written in a cursive style with a large, looping initial "D".

Denise Boggs,
Executive Director



WE THE PEOPLE 2007
<wethepeople2007@gm
ail.com>

06/05/2012 09:42 AM

To: barredowlEIS@fws.gov
cc:
Subject: COMMENT ON BARRED OWL PROPOSAL

I object to the format designed for presenting the barred owl proposal whereby 100s to 1000s of barred owls will be killed. A few public "meetings" with a biologist standing at a table in front of a few posters is not a presentation. The data to back up this deadly proposal is inadequate, unacceptable and unavailable.

I submit the following statements (see attached) from two reknowned experts disputing the USFS and USFWS policies.

Thank you for your consideration.

Diane Richards
Firenza Pini
Box 501



Hayfork, Ca 96041 Dubrasich_testimony_05212012.pdf Hanna-Curriculum_Vitae_2012-05.pdf



<http://giveourlandback.org>

From: Mike Dubrasich, Exec Dir
33862 Totem Pole Rd.
Lebanon, OR 97355
541-223-5764

To: Honorable Don Hastings, Chairman, Natural Resources Committee
US House of Representatives, Washington DC 20515

Re: House Natural Resources Committee, Subcommittee on National Parks, Forests
and Public Lands oversight field hearing on: "Failed Federal Forest Policies:
Endangering Jobs, Forests and Species"

May 21, 2012

Testimony for the record for the Longview, WA, Field Hearing

Greetings,

My name is Mike Dubrasich. I have been a practicing professional forester in Oregon since 1975. For the last 31 years I have been a private consulting forester. I am author of "A Guide to Innovative Tree Farming in the Pacific Northwest" as well as numerous scientific papers.

I am a founder and Executive Director of the Western Institute for Study of the Environment, a non-profit educational website teaching environmental stewardship and caring for the land: <http://westinstenv.org>

I am also a founder and Executive Director of Give Us Our Land Back, a civic betterment corporation spearheading the **Petition to De-Federalize Oregon Lands**:
<http://giveourlandback.org>.

My testimony today consists of six parts which follow.

I – Firebombing Spotted Owl Stands

Last September the US Forest Service waged an aerial attack on Oregon old-growth Spotted Owl forests by firebombing them. Approximately 6,400 acres of heritage forest were destroyed by military-style incendiary bombing.

It really happened. And now firebombing old-growth is established as the *de facto* forest policy on Federal lands in Oregon and elsewhere.

The chemical used by the USFS to incinerate old-growth Spotted Owl habitat at Santiam Pass was potassium permanganate (KMnO₄) injected with glycerin. The explosive chemicals were encased in polyacrylate “Ping Pong balls” ejected by government helicopters on green forests. An instant canopy fire resulted, an effect similar to napalm.

The Shadow Lake Fire received no initial attack. Deschutes National Forest public announcements declared the fire management strategy was “allowing nature to run its course in the wilderness.” That is a treatment prescription, but no EIS, EA, or other NEPA process was instituted. No Section 7 ESA consultations were made with USFWS. No Section 106 consultations were performed as required under NHPA. No public process. No NEPA. It was an illegal fire.

No one forced the USFS to firebomb Spotted Owl nesting stands. Congress did not authorize it. The USFS chose its self-appointed mission to "reintroduce fire" by dropping incendiary bombs on Oregon's old-growth forests.

The Shadow Lake firebombing induced a canopy fire with 100% mortality in a green, mixed conifer forest with an older cohort of ponderosa pine from 200 to 500 years-old. The fire was in the Santiam Pass corridor south of Cache Mountain (4,500 feet elevation), an area which has been the main east-west human travel route across the Oregon Cascades for over 10,000 years, and the site of the historical Santiam Wagon Road. Just to the south are Obsidian Cliffs. Prehistoric tools from that quarry have been found over 1,000 miles away. The area is not wilderness in reality, only by Federal decree.

An initial attack crew of five people could have put the fire out in three days. Instead, over 15,000 man-days were expended. Most injuries suffered by firefighters do not come from getting burned by the fire. They come from accidents with equipment and machinery, and the likelihood of an accident or injury is directly proportional to the number of man-days. By increasing the man-days 1,000-fold, the USFS increased firefighter risk 1,000-fold.

Public safety was also compromised. If the fire had been contained, controlled, and extinguished at 10, 20, 50, or even 100 acres, there would have been no need for the emergency evacuation of Big Lake.

“Let nature run its course” is not the official mission of the USFS. Their stated mission is to “Care for the Land and Serve the People, but their *de facto* mission has been to destroy Oregon's forests, watersheds, and economy.

The USFS has practiced Let It Burn for at least 15 years in Oregon, allowing wildfires to spread unchecked across vast tracts. They have written "wildfire use for resource benefit" into NF Fire Plans and Land and Resource Management Plans. The Biscuit Fire (2002, 500,000 acres) and the B&B Fire (2003, 90,000 acres) are examples of initially unfought, Let It Burn wildfires that subsequently raged out of control.

Similar Let It Burn fires have been replicated in every National Forest in Oregon, over 80 in the last five years alone, including the Tumblebug Fire, the Rattle Fire, the Oak Flat Fire, the Boze Fire, the Lonesome Fire, the North Fork Fire, the Williams Creek Fire, the Bridge Creek Fire, and dozens more -- many of them in Spotted Owl nesting stands.

Over 170,000 acres of the Metolius watershed in the Deschutes NF, the site of last year's firebombing, have been incinerated in the last ten years. More than 30 Spotted Owl nesting pairs have been burned up.

The cost-plus-loss damages incurred from those fires exceed the suppression costs 10- to 40-fold. Yet the USFS claims unspecified "benefits" and refuses to consider damages.

Let It Burn has not been sufficient for their purposes, however. Now the USFS deliberately firebombs our Spotted Owl forests.

All this has occurred without any vote or referendum of the people. Our country was founded on the principle that governments derive their just powers from the consent of the governed, but Oregonians have never and do not now consent to the deliberate destruction of our forests by the Federal Government.

II – Destroying Oregon's Environment, Economy, and Society

The 1994 Northwest Forest Plan is a terrible mistake initiated by Bill Clinton, Al Gore, and the so-called Gang of Four. A now-deceased Federal judge gave his stamp of approval, called the Record of Decision or ROD.

The 1994 Northwest Forest Plan has four fundamental goals. It has failed spectacularly to meet any of them.

1. The NWFP has failed to protect northern Spotted Owls
 - By most estimates, the northern Spotted Owl population has fallen 40 to 60 percent since inception of the NWFP.
2. The NWFP has failed to protect Spotted Owl habitat
 - Since inception, millions of acres of Spotted Owl habitat have been catastrophically incinerated. Millions more acres are poised to burn.
3. The NWFP has failed to preserve habitat continuity throughout the range of the northern Spotted Owl
 - The dozens of huge and catastrophic forest fires have left giant gaps in the range. The Biscuit Burn alone is 50 miles long and 20 miles wide.
4. The NWFP has failed to protect the regional economy
 - Since inception of the NWFP, Oregon has experienced 18 long years of one of the worst economy in the U.S., with some of the highest rates of unemployment, business bankruptcy, home foreclosure, and hunger of any state.

Those are not just statistics, but indicators of real human suffering. Over 60,000 workers lost their jobs, and the rural economy has been crippled ever since. Today 25% of rural Oregon families are on food stamps. In some communities as much as 80% of K-12 students now qualify for Federal free lunches based on family income.

All that suffering is in a state rich with natural resources.

The plan to save the owls has not saved anything; not owls, not old-growth, not the economy. The cost for nothing? At least \$5 billion dollars per year times 18 years equals \$90 billion in opportunity costs for harvests foregone. That's what Oregonians have paid, for nothing. And the bills continue to mount.

As a direct result of the NWFP, Federal forests in Oregon have accumulated biomass (fuels) in excess of 10 times historical levels. And as a direct result, wildfires have raged. Those fires in a-historical accumulated fuels were not light-burning and low running like fires of the past. Instead our forest fires today are a-historically severe and catastrophic.

In recent years megafires (those greater than 100,000 acres) have repeatedly spread from unkempt, unmanaged, fuel-laden Federal land to private land, and even into towns and cities, wreaking tens of \$billions in damages every year across the West.

In 2002 the Biscuit Fire burned 500,000 acres, the largest fire in state history. It was a Let It Burn fire that blew up into an inferno. The Biscuit Fire killed 500-year-old trees and 75 nesting pairs of Spotted Owls. In addition it caused extreme erosion: soil was sucked up into fire plumes and blown off the site leaving only a rubble of heavier stones behind. Historical and cultural resources, water quality and quantity, air quality, public health and safety, and recreation resources were severely damaged.

Since then another 2.5 million acres of Oregon forests have been destroyed in wildfires, many of which were unfought, Let It Burn fires emanating from “protected” Federal lands.

Federal “protection” is deadly to living things.

III – Bogus Biology

In 1991 I was hired to analyze the forest structure of Spotted Owl nesting stands in SW Oregon. At a pre-work meeting with Dr. E. Chuck Meslow, famously the “Father of the Spotted Owl,” I suggested that one approach to Owl conservation would be captive breeding and release.

Dr. Meslow became visibly upset. He pounded the table and yelled at me, “It’s not about the owl; it’s about the habitat!”

Indeed. It has never been about the owl. It has always been about the takeover of territory by self-serving wildlife biologists and radical “environmentalists”.

Unfortunately for all of us and Spotted Owls, owl biologists have proved to be the most incompetent and irrational biologists on the planet.

That same morning in 1991, it was explained to me that Spotted Owls do not eat mice because their “talons are too big.” We then proceeded into the woods to a Spotted Owl nesting stand, where the owl biologist fed laboratory mice to the owl. He placed the mouse on a stick and held it in the air. The owl swooped down and grabbed the mouse deftly with its talons, swooped up to a tree branch and consumed the mouse whole.

We were told that Spotted Owls only eat Northern Flying Squirrels. That proved to be false. They eat all manner of rodents.

We were told that Spotted Owls only nest in hollow snags. That proved to be false. Owls nest in dwarf mistletoe brooms, tree forks, and even K-Mart signs.

We were told that in order to save the owl, 25 million acres must be set aside in No Touch zones. That proved to be false. The set asides happened, but the Spotted Owl population declined by 3 percent per year for 20 years.

Now we are told that an additional 9 million acres must be set aside, as if that would make any difference.

In every case, the owl biologists theorized some fanciful biological characteristic or relationship that manifestly does not exist in the real world and violates the basic principles of wildlife biology.

No highly evolved animal with a wide range is limited to a single prey species. There are literally billions of rodents in the forests occupied by Spotted Owls. They most definitely do not limit themselves to a single prey species. Spotted Owls have a cosmopolitan diet. If they didn't, they would have gone extinct long ago.

Similarly, Spotted Owls are not limited to one nesting situation (a dead old-growth tree 30 inches in diameter 30 feet above the ground, previously hollowed out by a Pileated Woodpecker). Again, Spotted Owls would have gone extinct long ago if they had such restrictive needs to complete reproduction.

Such bizarre pronouncements from owl biologists run counter to logic and science. Indeed, they repeatedly violate Wildlife Biology 101.

Habitat alone does not determine the success or failure of bird populations. Habitat is the arena they compete in, but birds move around, travel for hundreds of miles or more, and encounter a wide variety of habitats.

The owl biologists claimed Spotted Owls live only in old-growth. That proved to be false. They live in a variety of forest structures, as my work and the work of hundreds of other forest analysts proved. For 22 years owl biologists have attempted to define and characterize Spotted Owl habitat. To date, they have failed because Spotted Owl habitat is diverse.

People should not be fooled by junk science, science so bad it defies the smell test, which proposes bogus theories without correspondence to anything in the real world.

We have been gulled by charlatans. Their con job has been obvious and artless, but Congress fell for the lies anyway.

And in falling for the con, being entirely taken in, Congress has inflicted tremendous harm for 18 years on innocent American citizens.

IV – The Barred Owl Lie

In the Media Advisory to this Hearing, Rep. Doc Hastings is quoted as saying:

The Obama administration's proposed Northwest recovery plan would increase burdensome regulations, cost thousands of jobs, and place more public land off limits, all while failing to address the Spotted Owl's top predator - the Barred Owl.

That statement perpetuates another pernicious owl biologist lie. Barred owls **do not** predate Spotted Owls.

There has **never** been a documented case of a Barred Owl killing and eating a Spotted Owl.

That myth was promulgated by owl biologists working for the US Fish and Wildlife Service as an excuse for 22 years of failure at protecting Spotted Owls. Unfortunately for all of us and for Spotted Owls, it is a complete and utter lie.

The Barred Owl (*Strix varia*) is closely related to the Spotted Owl (*Strix occidentalis*). They are virtually identical, except that the Barred Owl has horizontal stripes on its breast whereas the Spotted Owl has rows of spots. They are identical in length, weight, and wingspan (although the Barred Owl is more varied, sometimes larger and sometimes smaller than the average).

Barred Owls and Spotted Owls interbreed. They are both hoot owls. They make love, not war.

The USFWS owl biologists claim Barred Owls are “more aggressive.” That is a characteristic that cannot be measured, or at least, has never been measured.

The USFWS owl biologists claim Barred Owls are driving out Spotted Owls. There has **never** been a documented case of a Barred Owl driving a Spotted Owl out of any stand.

What has been observed is Barred Owls occupying stands after (years after) the Spotted Owls have died off.

Based on such flimsy evidence, or no evidence at all, the latest “solution” proposed by the US Fish and Wildlife Service to the Spotted Owl crisis is to arm Federal biologists with shotguns, send them onto public and private property, and have them blast away at Barred Owls. In their own commentary, the USFWS referred to Barred Owl blasting as a “redneck sport.”

Unfortunately, Spotted Owls and Barred Owls are so similar they can’t be readily distinguished. DNA analysis is required to determine the species. But shotgunning is permanent, and the USFWS has given no indication that their redneck sporting biologists are going to search through the forest for enough owl bits to make a satisfactory DNA test.

Congress has bought this biology con hook, line, and sinker. It is illogical, defies common sense, defies everything we know about wildlife biology, and will not save a single Spotted Owl, yet Congress is eager to give it a try.

Barred Owl killing by the USFWS has been going on four years in Northern California, and not one more Spotted Owl resides there. In fact, there are fewer.

V – Avian Malaria

What then is really killing Spotted Owls? If it’s not “habitat” or starvation or pushy Barred Owls, what possibly could be killing off our iconic little owl?

Wildlife Biology 101 teaches us that population dynamics are controlled by **predator-prey relations**.

Spotted Owls have plenty of rodent prey. They never go hungry.

Their known, documented predators are eagles, hawks, falcons, and much larger owls (Great Horned Owls). It is likely that those known, documented predators have taken their toll on the Spotted Owl population.

It is ironic to note that the USFWS has **not** recommended shotgun blasting of eagles, hawks, falcons, and much larger owls.

Another predator is more insidious, avian malaria. In a 2008 study published in PLoS One, the journal of the US National Library of Medicine and National Institutes of Health [**Blood Parasites in Owls with Conservation Implications for the Spotted Owl (*Strix occidentalis*)** by Heather D. Ishak et al.] the researchers screened 111 Spotted Owls, 44 Barred Owls, and 387 owls of nine other species for blood parasites (*Leucocytozoon*, *Plasmodium*, and *Haemoproteus* spp.).

Spotted Owls had the highest incidence of avian malaria of any species tested (79%). The researchers found that Spotted Owls had more unique lineages (haplotypes) of blood parasites than were found in any other owl species (12 unique out of 17 total lineages).

The 2010 Draft Revised Recovery Plan for the Northern Spotted Owl produced by the U.S. Fish and Wildlife Service makes one single mention of avian malaria, on page 60:

Avian disease. At this time, no avian diseases are significantly affecting spotted owls. It is unknown whether avian diseases such as West Nile virus (WNV), avian flu, or avian malaria (Ishak et al. 2008) will significantly affect spotted owls.

The 2010 Plan cites the 2008 study (Ishak et al.), but comes to the diametrically opposite conclusion. Ishak et al. found avian malaria in 79% of 111 Spotted Owls sampled. The USFWS interprets that as “no significant affect” or “unknown.” Avian malaria causes anemia and weakens birds. It can be fatal directly or indirectly.

Either the USFWS owl biologists are grossly incompetent or they are **bold liars** who assume the rest of us are not paying attention.

Certainly Congress is easily duped. They have displayed much more loyalty to bureaucrats and self-important government functionaries than they display to the people who elect them and pay their salaries.

But we the people are not so easily fooled.

The best solution, the one action that might actually save Spotted Owls, is mosquito control. Mosquitoes are the vector of avian malaria just as they are of human malaria.

Control mosquitoes, save the Owl. There is no other rational, biologically workable solution.

VI – Give Us Our Land Back

The Federal Government is trustee of 53% of the landbase of Oregon, and they have violated that trust exceedingly.

The Federal Government has denied the rights of Oregonians to care for and steward our own forests, watersheds and rangelands; imposed fees and duties on us for use of our own public lands; erected locked gates and refused entry to the People of Oregon into our own public lands; burned vast tracts, incinerating the wealth of Oregon; **destroyed our wildlife**; polluted our air and water; fouled our streams; introduced exotic pests -- and in so doing our homes, businesses and communities have become bankrupted, our schools, roads and public safety have been threatened, and our economy has been crippled.

The Federal Government first set aside our natural resource base in a failed attempt to save Spotted Owls. Then they firebombed those forests.

The best stewardship arises from local ownership and jurisdiction. We residents of Oregon know our environment, appreciate and understand our watersheds, forests, rangelands and wildlife, and we wish to assume responsibility for our own environment, which is our birthright, heritage, and legacy to future generations.

Oregon is not a colony. We are a state with the same rights, responsibilities, and equal footing with every other state in the Union. We swear allegiance to the United States and our democratic and republican form of government, founded on the principle that governments derive their just powers from the consent of the governed.

We suffer directly the effects of Federal mismanagement of our own watersheds, and we no longer consent to such, or to the abrogation of our unalienable rights as free people.

In order to rectify this untenable situation, we have prepared a petition to the U.S. Congress, respectfully requesting redress of our grievances by returning ownership of our public lands to the Counties of Oregon.

The **Petition to De-Federalize Oregon Lands, and to Return Public Land Ownership Rights to the Chartered Counties of Oregon** may be found on the website of Give Us Our Land Back, <http://giveourlandback.org>

We cordially invite you to visit our site and sign the **Petition**.

If you are an elected official, we would like you to take a stand on the issue, one way or the other. Do you think Oregonians should recover title and jurisdiction over our own lands, or should the Federal Government continue its oversight?

We will publicize your statements on the issue so that your constituents may know where you stand.

Thank you for this opportunity to address this Committee and our US Congress.

Mike Dubrasich, Exec Dir
Give Us Our Land Back

Curriculum Vitae

Steven A. Hanna

McKinleyville, CA 95519
Phone: (559) 853-1953
email: drsahanna@gmail.com

OVERVIEW

Natural resource professional with a BS, MS, and PhD in Forest Science with a strong emphasis in forest ecosystem ecology. Analytical, practical, and innovative. Committed to doing a good job for a good purpose. Specific areas of training, study, and expertise are in general forestry, silviculture, botany, soils, forest ecology, and fire ecology. Acquired a high level of education, high quality research, plus over 5,000 days of fieldwork in assessing real problems and monitoring results. This unique combination has helped retain a unique and firm commitment to practical and sound scientific forest management, especially in public forest management. Retired from the US Forest Service in October 2011. In addition to over 22 years in the Forest Service, served 1 year as a State Nursery Manager and 4 years as a researcher in forest ecosystem ecology. Currently employed as an adjunct associate professor teaching Forest Health and Protection at the College of the Redwoods in Eureka, California.

AREAS OF PROFESSIONAL EXPERTISE

- Ecology and silviculture of ecosystems in forest biomes of the Western Cascades, Sierra Nevada Mountains, Pacific Coast, Northern Rockies, North Central Hardwoods, Lake States, Central Hardwoods, Coastal and Piedmont Hardwoods and Southern Pines, and Appalachian Hardwoods and Conifers.
- Plant and soil relations, interactions of biotic and abiotic factors, with 12 years of experience and investigation in the Mediterranean forest ecosystems of California and Oregon.
- Tree pathology and entomology in major North American forest biomes.
- Pacific fisher habitat management including structural requirements and long-term protection.
- Soils and watershed impacts from agricultural and forest management activities.
- Land and habitat ecological classification and management applications.
- Best Management Practices on National Forest lands.
- Fire ecology including vegetative, soils, forest floor litter, and hydrological impacts of various burn intensities and burn season.
- Forest riparian zone protection in relation to logging and burning impacts in Western and Eastern forest ecosystems.
- Soils and hydrological impacts of roading and deforestation in decomposed granites, tuffs, and breccias of the western Cascades and metamorphic parent materials of the Southern Appalachians.
- Ecosystem cycling of carbon, nitrogen, and phosphorus.
- Plant biomass response to irrigation, fertilization, and vegetation control.
- Reforestation, timber stand improvement, and stocking control in North American forest biomes, considering changes over time in climate, soils, and forest structures.
- Ecosystem multifactor interpretation and problem solving.
- Experimental analyses in forest research using correlation and regression analyses and simple but powerful randomized designs.

EDUCATION

Ph.D. Forest Ecology/Soils, Auburn University, 2000. Focus: Plant and soils relationships, macro and micronutrient cycling, ecosystem response of forest habitat to intensive management.

Graduate course work in forest science (silviculture and wildlife mgt.), University of Idaho, 1989
M.S. Forest Science, University of Illinois, 1978. Focus: Plant and soils relationships; Histosols - Chemical and structural classification and vegetative succession in boreal and semitropical wetlands.

B.S. Forestry, University of Illinois, 1976. Focus: Soils, Botany, and Forest Science.

PROFESSIONAL EXPERIENCE

03/ 2006 – 10/ 2011: Forester, GS-460-12,
USDA Forest Service
Sequoia National Forest
1839 S. Newcomb St., Porterville, CA 93257

Position: Served as the US Forest Service Giant Sequoia Ecologist and Forest Silviculturist for the Sierra and Sequoia National Forests. Served as core team ecologist and vegetation specialist on the Giant Sequoia National Monument Plan.

Brief statements of accomplishments: Monitored tree and stand conditions and forest health on the Sequoia and Sierra National Forests (NF). Served as on-ground expert with regional Forest Health Protection (FHP) staff investigating oak mortality on the Cleveland NF. Reviewed the FHP program on the San Bernardino NF that was developed after the outbreak of conifer mortality in 2001. Coordinated with District and FHP staff; developed and reviewed treatment needs for project level activities. Reviewed and helped to develop vegetation management guidelines for managing the Pacific fisher in the Southern Sierra Forests. Developed new methods for assessing tree canopy cover. Compared and standardized existing methods of determining canopy cover for wildlife, soils, and hydrology purposes. Secured tree planting grants for planting within 230,000 acres of areas burned by wildfire. Provided effective silvicultural and ecological input to NEPA projects. Served on the editorial staff of ecology and forestry journals for peer review of scientific research for publication.

Major accomplishments included providing skilled analyses in forest science and management. Applied best science in evaluating options for managing the Monument in respect to forest health, ecological restoration, and carbon sequestration. Maintained objectivity and commitment to sound principles while enduring maximum controversial and opposing philosophies against scientific forest management of the national forests and the monument.

May 2004 – March 2006: Forester, GS-460-11,
USDA Forest Service
Land Between the Lakes National Recreation Area
100 Van Morgan Dr., Golden Pond, KY 42211

Served as Lead Forester (Silviculturist, Timber Manager, and Forest Ecologist) for the unit. Served as the Forest botanist and soil scientist for fuels projects.

Accomplished the development of a scientific and practical method to evaluate and classify forest ecosystems based on collection of common stand exam, hydrological, meteorological, and soils resource data. Developed and applied the silvicultural method “Variable Ecological Retention of Trees” or VERT that promotes biological and structural diversity to enhance forest health and wildlife habitat using tools in timber management.

May 2002 – May 2004: Forest Silviculturist, GS-460-11,
USDA Forest Service
Fishlake National Forest
900 N., 115 E.
Richfield, Utah 84701

Served as the Forest Silviculturist. Investigated, monitored, and mitigated forest health and managerial problems with aspen and spruce regeneration, spruce beetle epidemic, and subalpine fir ingrowth. Coordinated the artificial reforestation program including plans, nursery inspections, field monitoring.

Developed a working ecosystem management program. Accomplished a new approach to identify aspen regeneration and growth factors as influenced by the ecological interaction of seral stage, fuels loading, and ungulate browsing. Modified entomology density reduction guidelines to develop ecological thinning prescriptions and guides designed to protect old growth Engelmann spruce. These modified guidelines considered factors such as individual tree diameter growth, root grafts, and tree distribution patterns to predict wind firmness and vigor in an attempt to help save the remaining old growth spruce in Utah.

Jan 2001 – May 2002: Forest Ecologist, GS-460/408-11
USDA Forest Service
San Bernardino National Forest
1824 S. Commercenter Circle
San Bernardino, CA 92408

Served as the Forest Ecologist and Fire Ecologist for the San Bernardino National Forest. Investigated and reported ecosystem effects of National Fire Plan projects on forest and chaparral vegetation, soils, and hydrology. Evaluated threatened and endangered species and invasive species programs in the field to determine the effectiveness in terms of ecosystems and management. Provided silvicultural expertise in managing mixed conifer and bigcone Douglas-fir ecosystems.

Was instrumental in identifying and carrying out field investigations to evaluate the extensive major forest health decline of the late 1990s and early 2000s across the Forest that preceded the tree mortality and major forest fires in 2003. In coordination with the Forest Entomologist and Plant Pathologist, evaluated specific forest health problems in tree and forest conditions. Identified the forest health problems as a set of complex interactions rather than simply bark beetles, root rot, or drought. Developed a working ecosystem management approach for fuels, stand density, and wildlife management. Developed a species ecological site indicator list for chaparral ecosystems designed to predict plant responses to dry sites and changing climate.

Jan 1997 – Aug 2000: Research and Teaching Assistant
Auburn University, School of Forestry and WL Sciences
108 M White Smith Hall
Auburn, Alabama 36849

Planned and performed doctoral field research investigating the effects and fate of nutrient supplements and vegetation control in intermediate-aged pine stands with different densities of arborescent hardwoods. Performed field and laboratory measurements designed to determine the quantitative interactive responses of soils (chemical, biological, physical, and hydrological factors), forest floor (biomass and decomposition), and plants (nutrient, water relations, and biomass). Monitored and measured the balance and cycling of nitrogen, carbon, and phosphorus to determine their fate in the environment and their responses to changes in nutrients, moisture, and temperature over a period of four years. Designed experiments to determine whether hardwood vegetation can be compatible with intensive conifer management. Assisted teaching course in Forest Ecology. Accomplished internationally significant research in intensive forest ecology and management.

Nov 1991 – Jan 1997: Self-employed, Owner, Hanna Publications, Rios Road, Poway, CA

Prepared business plans, researched market opportunities and prepared products and services for advertising, and general publications.

Oct 1989 – Nov 1991: District Silviculturist, GS-460-11,
USDA Forest Service
National Forests of N. Carolina
Tusquitee Ranger District
201 Woodland Drive
Murphy, NC 28906

Performed intensive and extensive vegetation field surveys and prepared silvicultural diagnoses and prescriptions following the major epidemic of southern pine beetles in the 1980s (40%). Served as the district specialist in hydrology and soils, and in hardwood and conifer health and regeneration. Performed field monitoring to determine resource effects and program success of harvesting, prescribed burning, reforestation, tree and timber stand improvement, riparian rehabilitation, and forest research projects. Accomplished the design and development of suitable, regulated forest growth, including the sustainable timber levels based on site-specific ecological field data.

Jan 1989 – Oct 1989: District Silviculturist, GS-460-09,
USDA Forest Service
Nez Perce National Forest
Selway Ranger District
HC 75, Box 91
Kooskia, Idaho 83539

Planned and accomplished field investigations in silvicultural exam and prescription, ecological (ecoclass) habitat evaluation, multi-species regeneration, project monitoring, and prescribed burning in forest ecosystems with extensive and severe forest health problems related to root disease and opportunistic insects. Supervised and trained field crews to observe and document

ecological data. Accomplished an ecologically integrated approach in collecting multi-resource data for resource management.

Feb 1988 – Jan 1989: Subcontractor, Landscape Management Services, Kailua, Hawaii

Developed and performed landscape designs on private and corporate lands on the island of Oahu including planting of eucalyptus, Norfolk island pines, and various species of cycads, bromeliads, and palms.

Jan 1987 – Jan 1988: State Nursery Manager, Staff Forester,
Tennessee Division of Forestry
Pinson Nursery
P.O. Box 120
Pinson, Tennessee 38366

Directed 25 foresters, technicians, and office managers in nursery and tree improvement operations growing 15 different tree species. Duties included budgeting and planning, scheduling and coordinating tree delivery in a seven state area, overseeing operations, supervision, and serving as the nursery specialist (stratification, sowing, pesticide use, stocking and vegetation control, and insect and disease control. Accomplished a significant improvement in seedling quality and employee morale in less than one year.

Jun 1985 – Aug 1986: Assistant District Ranger, GS-460-11,
USDA Forest Service
Monongahela National Forest
Greenbrier Ranger Station
Bartow, West Virginia 24920

Responsible for planning and completing programs in developed and dispersed recreation, minerals (coal, gas, and oil), special uses, wilderness, range, safety, silviculture, administrative facilities, fire management, law enforcement, Senior Citizen Employment Program, Youth Conservation Corps, and volunteer programs. Accomplished the successful management of 12 budgeted resource management programs. Completed the long-term backlog of special use permit inspections and plans. Surveyed and prepared the management plan for the newly established wilderness, and completed seven range allotment plans.

Nov 1983 – Jun 1985: District Silviculturist, GS-460-09,
USDA Forest Service
Superior National Forest
Tofte Ranger Station
Tofte, MN 55615

Identified, delineated, and examined initial stands in the field for silvicultural, timber, visuals, wildlife, recreation, and soils resource management. Prepared resource prescriptions and carried out white pine regeneration projects using rust-resistant seedlings. Provided direction for reforestation, database management, timber sale layout, and sale appraisals. Improved the vegetation management program through site-specific prescriptions that included a reduction in

unnecessary herbicide application. Accomplished identification and mitigation of problems in regenerating red oak, white and black spruce, yellow birch, and red pine.

Jun 1978 – Nov 1983: Forester, GS-460-5/7/9, GS-09
USDA Forest Service
Umpqua National Forest
Tiller Ranger Station
Route 2 Box 1
Tiller, Oregon 97484

Served as silviculturist, soil scientist, and timber sale recon specialist. Prepared timber sale plans and NEPA for 70,000 acres and 40 million board feet, including the silvicultural, soils, and land classification input. Accomplished silvicultural exam and prescription (40%) and NEPA (20%). Served as District Soil Scientist and Environmental Monitor.

Served as the first US Forest Service Vegetation Management Specialist, researching severe problems in reforestation and young stand growth and preparing creative methods to improve tree survival and growth. Reduced reforestation backlog. Accomplished the development of the first operational vegetation management approach in the National Forest system utilizing a variety of methods and tools. Provided practical and effective alternatives to herbicides in the Pacific Northwest. Accomplished the development of sustained yield management plans on a watershed basis with reserves for spotted owl, old growth, riparian, and low productivity areas. Developed the two-tiered shelterwood system in the Pacific Northwest, now used by the agency to help mitigate solar radiation and final removal effects. Developed prescription guidelines designed to help accomplish the successful reforestation of harsh sites.

AWARDS AND SCHOLARSHIPS

- Auburn University Presidential Graduate Fellowship, 1998 to 2000, 4.0 GPA.
- Certificate of Appreciation for superior performance in diversifying and intensifying forest vegetation management programs, USDA Forest Service, Umpqua National Forest, 1980.
- Certificate of Appreciation and cash award for superior performance for highly significant improvement of major planning activities including land capability and suitability, fuels management, and silvicultural prescription, USDA Forest Service, Umpqua National Forest, 1981.
- Commendation for soils and silvicultural input as a member of the Monitoring Taskforce of the Forest Land Management Plan. USDA Forest Service, Umpqua National Forest, 1982.

PROFESSIONAL ORGANIZATIONS

- Association of Forest Ecologists, California Chapter, 2000-2002.
- Society of American Foresters, 1974-1979.

PUBLISHED REPORTS AND DISSERTATION

- Hanna, S.A. 2000. Midrotation response of loblolly pine to fertilization and vegetation control. PhD Dissertation, Auburn University, Auburn, AL. 226 p.
- 1983. Reforestation of the Higher Elevations of the Western Cascades. FIR Reports, Oregon State University, Corvallis, Oregon.
- 1989. Reforesting Big Game Winter Range. In: Forest Regeneration and Site Preparation. Univ. of Idaho, Moscow, Idaho.

REPORTS IN PREPARATION FOR REFEREED JOURNAL

- Hanna, S.A. Leaf area and stem growth response of giant sequoia seedlings under two different light levels.
- Biogeochemical effects of forest fire on the germination of giant sequoia seedlings.
- Survival of planted giant sequoia seedlings in two different ecological habitat types.
- Forest ecosystem classification at the Land Between the Lakes. CanJ For Res.
- Hanna, S.A., Glover, G.R., Lockaby, B.G., Zutter, B.R., and Torbert, J.L. Response of midrotation loblolly pine (*Pinus taeda* L.) and sweetgum (*Liquidambar styraciflua* L.) foliage and litterfall to fertilization and vegetation control. (Plant and Soil).
- Hanna, S.A., Lockaby, B.G., Glover, G.R., Zutter, B.R., and Torbert, J.L. Soil microbial and nutrient response fertilization and vegetation control in midrotation loblolly pine (*Pinus taeda* L.). (Plant and Soil).
- Hanna, S.A., Zutter, B.R., Glover, G.R., Lockaby, B.G., and Torbert, J.L. Effects of fertilization and vegetation control on soil moisture and leaf water potential in midrotation loblolly pine (*Pinus taeda* L.). (Plant and Soil).
- Hanna, S.A., Samuelson, L.J. Relationships of basal stem and soil surface moisture in midrotation loblolly pine (*Pinus taeda* L.). (Plant and Soil).

OTHER REPORTS IN PREPARATION

- Hanna, S.A. Ecological management of forest coarse woody debris.
- Forest stand density, an ecological approach.
- An ecological evaluation of the Pebble Plains habitat of the San Bernardino National Forest.
- Tamarisk in the Western United States, ecological perspectives on invasives with management implications.

PRESENTATIONS

- Jun. 2010. Integrated Pest Management, Factor Interaction, and Drought-Density relations. Forest Health Protection Workshop, Sequoia National Forest (Oral presentation).
- Feb. 2008. Fields methods to accurately determine Canopy Cover. Blodgett Forest, University of California, Berkeley. (Oral presentation).
- Jun. 2005. Forest Ecosystem Classification at the Land Between the Lakes (Oral presentation). North American Forest Ecology Workshop in Aylmer, Quebec, Canada.
- Jun. 2003. Foliar and litter nutrient responses to nitrogen, phosphorus, and moisture additions. North American Forest Ecology Workshop in Corvallis, Oregon (Oral presentation) .
- Jul. 2000. Midrotation response of loblolly pine to fertilization and vegetation control. Presented to Mead Coated Board, Phenix City, AL (Oral presentation).

Feb.2000. Response to vegetation control and fertilization in a midrotation loblolly pine stand. Auburn University Silvicultural Herbicide Cooperative. Auburn University, AL (Oral presentation).

Feb. 1999. Soil nitrogen response to vegetation control and fertilization in a midrotation loblolly pine stand. Southern Silvicultural Research Conference in Shreveport LA (Poster presentation).

Jan. 1999. Soil nitrogen response to vegetation control and fertilization in a midrotation loblolly pine stand. Annual Meeting of the Southern Weed Science Society in Greensboro, NC. (Oral presentation).

TRAINING, CONFERENCES, AND WORKSHOPS

USDA Forest Service, 1978-2002

- California Association of Fire Ecologists Workshop
- Southern California Forest Insect and Disease Workshop
- Alternative Harvesting Methods Workshop
- Issues and Concerns – Streamlining the NEPA process
- Successful Management of the NEPA/NFMA Process
- In Search of Excellence Seminar
- Forest Silvicultural Workshop
- Nantahala-Pisgah Plan Re-Analysis Workshop
- Non-Point Source Pollution - Regional Management Strategy Workshop
- Uneven-aged Silviculture of Upland Hardwood Stands
- Management Fundamentals
- Managerial Grid
- Timber Sale Design
- Visual Resource Management
- Personnel Management for Supervisors
- Design of Logging Roads to Minimize Impacts
- Silv-exam and Data Management Workshop and System 2000
- Wilderness Management Seminar

Auburn University 1996-2000

- Southern Weed Science Society Conference
- Southern Silvicultural Research Conference

University of Idaho, 1989

- Forest Regeneration and Site Preparation Workshop

Washington State University, 1983

- Silvicultural Certification Prescription Module

Oregon State University, 1978-1983

- Reforestation Workshop
- Forest Pesticides Shortcourse Program
- Habitat Type Workshop
- Site Preparation Workshop
- Managing Forest Stands to Minimize Soil Compaction
- Boise Logging System Program
- Using Prescribed Fire Workshop
- Plant Ecology Workshop
- Using Designated Skidtrails for Protection and Logging Efficiency



kay graves
<trinity.patriot@hotmail.
com>

To: <barredowleis@fws.gov>
cc:
Subject: Ready for REAL science

06/05/2012 11:01 AM

We need REAL science and not some ologist blowing air up our skirts. Went to Redding California yesterday and received plenty; now I am ready to see-the-science. We demand to be able to read ALL the document that you claim are the best science available and not just some dude getting his Ph.D (by the way who probably was in your employment)

Kay Graves
Nothing But Owl Habitat County, California



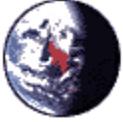
"charley fitch"
<scfitch@snowcrest.net
>

To: <barredowlEIS@fws.gov>
cc:
Subject: Barred owl input

06/05/2012 02:26 PM

Have you considered supplementing the food source in a couple of experimental shared spotted and barred owl territories? If competition for food is the problem then supplementing the food source will show that they can cohabit a territory. This should be done prior to attempting to eliminate the barred owl through shooting them. I would say if you have to go to the extreme of getting rid of barred owls that the spotted owl is destined to lose in the long run. If your maps are correct, the advance of the barred owl is rapid enough to overtake the spotted owl territories in a few decades.

Charley Fitch
1112 Coggins St.
Redding, CA 96003



PATRICIA GREEN
<patricia.green67@yahoo.com>

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: Barred Owl Draft EIS.

06/05/2012 02:42 PM
Please respond to
PATRICIA GREEN

To whom it may concern,

On reading some comments below I wish to incorporate them into this email as though they are my own. I do object to any approach that calls for disposal of the owls that have been proposed to be disposed of, and that the following steps be taken in order to accommodate all owl species breeding efforts:

The "range" biologist, a specialist in desert range, not northwest territory, did not appreciate our proposal of alternative methods to protect spotted owls:

MANAGE THE FOREST HABITAT:

1. Removal of heavy ground fuels that are at 70 to 200 tons/acre levels rather than USFS recommended levels of 5 to 20 tons/acre that present the greatest threat to spotted owls: catastrophic fire
2. Removal of ground fuels that restrict access to the spotted owl prey
3. Thin trees to allow more visual access to prey
4. Analyze the benefits of the barred owl rather than propose to kill barred owls which are known as a sub species that interbreeds with spotted owls and stop killing barred owls which may represent a substantial gene pool for spotted owl breeding programs.
5. Study successful breeding pairs established in Sierra Pacific lands and other private lands where forest is managed properly.

Respectfully submitted,

Mrs. Patricia Green, Willows, California



**"Pamplin, Nathan
(DFW)"**
<Nathan.Pamplin@dfw.
wa.gov>

06/05/2012 02:45 PM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc: "Thompson, Bruce C (DFW)" <Bruce.Thompson@dfw.wa.gov>,
"Buchanan, Joseph B (DFW)" <Joseph.Buchanan@dfw.wa.gov>,
"Whipple, David A (DFW)" <David.Whipple@dfw.wa.gov>
Subject: WDFW comments on Barred Owl EIS

Hello:

Attached are comments from the Washington Department of Fish and Wildlife on the Barred Owl EIS.

Sincerely,

Nate Pamplin, Assistant Director
Wildlife Program



WDFW Henson Barred Owl EIS.pdf



State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TTY (800) 833-6388
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

June 4, 2012

Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266

Subject: Barred Owl Draft Environmental Impact Statement (Federal Register 77:14036-14039)

Dear Mr. Henson:

With the release of the draft Environmental Impact Statement on experimental removal of Barred Owls, the U.S. Fish and Wildlife Service (USFWS) has taken an important first step in a process that may be crucial to the continued survival of the Northern Spotted Owl, particularly in areas where populations have declined substantially. We applaud this effort and support the use of a landscape-scale experiment to evaluate Barred Owl effects on Northern Spotted Owls. Knowledge acquired from such an experiment can and should inform future decisions that require an understanding of the practicality, effectiveness, and expense of a program of Barred Owl maintenance control. For now, however, we remain focused on the experiment itself. We have reviewed the Environmental Impact Statement (EIS) and offer comments for your consideration.

As you know, Spotted Owl populations have declined significantly in the Northwest and ongoing research has demonstrated a particularly dire situation in Washington and northern Oregon. The implication of another owl species in decline of the Spotted Owl exacerbates matters in that management solutions such as the one proposed in the EIS link directly to issues involving ethical treatment of animals. Consequently, it is of the utmost importance that a removal experiment be conducted with the highest level of scientific and professional rigor. Conduct must be professional and the experiment must be performed in a way that minimizes effects of confounding factors. Failure on either account could jeopardize abilities to address and resolve this management issue. As such, the need for scientific rigor influences our thinking about the alternatives identified in the EIS.

We support Alternative 2 and we recommend that the three demography study landscapes selected for inclusion under this alternative should be selected from candidate sites in Oregon. Washington's population of Spotted Owls has been greatly reduced and the small size of the population would therefore potentially become a confounding factor in the investigation. There may be too few Spotted Owls to

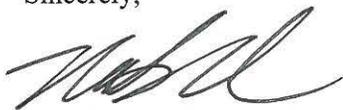
readily reoccupy territories and otherwise respond to removal of Barred Owls in the timeframe of the experiment. None of the other alternatives are particularly compelling to us. A robust experiment is essential; therefore, sites with access and logistics issues (Olympic National Park), diminished owl populations (Washington sites in general), and potential differences in aspects of landscape condition (Olympic National Park/Olympic National Forest, Mt. Rainier demography study area) should not be included in the primary experiment. As a "second tier" study site, to be used only in addition to the three study sites selected under Alternative 2, we support inclusion of the Washington study area identified in Alternative 5. We also support use of the demography components identified for Alternative 7, but not for application in Washington, for the reasons mentioned above. We do not object to the USFWS encouraging investigation of Spotted Owl responses to Barred Owl removal in areas such as the Cle Elum demography study area in Washington, as a means to evaluate recolonization rates, especially if this is a second tier study and resources and time are judged available for conducting such an investigation effectively.

The EIS was very well prepared, and we commend your staff for their hard work through all phases of this process. In particular, we appreciate that the USFWS had the foresight to involve an environmental ethicist to participate in discussions with a stakeholder group to clarify issues of concern and identify ways in which the EIS could be prepared to address those issues. Although, we agree there may be limited opportunities for nonlethal removal, the most effective means of removal will involve lethal methods. Additionally, we were active in the Barred Owl Working Group and we appreciate the opportunity to assist the USFWS in this conservation and management challenge. We also offer a few minor and largely editorial comments that are enclosed with this letter.

Washington Department of Fish and Wildlife has a long history of involvement in Spotted Owl conservation and management issues. We are optimistic that a removal experiment will be informative, and we look forward to continuing interaction with the USFWS over the next several years as the project is developed and implemented. The Barred Owl Working Group appeared to be an effective organizational structure for involving and soliciting expertise from a team of experts and we look forward to reconstitution of that group.

Please don't hesitate to call me (360) 902-2693 if you have questions about the comments we have provided. For any questions or clarifications needed regarding attached comments, please contact Joe Buchanan in our Wildlife Diversity Division. Joe can be reached at (360) 902-2697 or by email Joseph.Buchanan@dfw.wa.gov.

Sincerely,



Nate Pamplin, Assistant Director
Wildlife Program

Enclosure

Attachment 1. Additional comments on the Environmental Impact Statement for the Experimental removal of Barred Owls to benefit threatened Northern Spotted Owls. Washington Department of Fish and Wildlife, June 2012.

1. The second paragraph of the section entitled “Issues, ethics and other considerations” (page 4) concludes with the following language: “Regardless, of the effects of human activities on the barred owl’s range expansion, human activities have undoubtedly removed, changed, and fragmented spotted owl habitat. These changes substantially impacted spotted owl populations before the arrival of the barred owl. Therefore, humans have likely increased the potential severity of the barred owl’s effect on spotted owl populations.”

We interpret the final sentence to indicate that Barred Owl effects on Spotted Owls would be less severe if Spotted Owl habitat had been less impacted by human activities. With that interpretation in mind, we offer the following perspective. There is little debate that Spotted Owl habitat has been impacted by human activities; indeed, habitat loss was a factor that contributed to the listing of the species under the Endangered Species Act. Loss of habitat in the Pacific Northwest was independent of factors that contributed to expansion of Barred Owl distribution across the continent. When Barred Owls arrived at the northern part of the Spotted Owl’s distribution a substantial amount of harvest of Spotted Owl habitat had already occurred. Barred Owls are habitat and prey generalists and they occur in all forested landscapes in Washington (and likely elsewhere in the Pacific Northwest). Given the broad range of ecological conditions that are suitable for Barred Owls, it is likely that they would have impacted Spotted Owls, perhaps in much the same manner, even if old forest habitat in the Pacific Northwest were largely intact. Barred Owls are found (and are abundant) in wilderness areas, national parks and other areas where timber harvest has not impacted Spotted Owl habitat. We agree that the combination of Barred Owls and the effects of habitat loss are greater than either factor alone, but that the effect of Barred Owls has not been demonstrated to have magnified habitat loss effects per se. We are aware of recent research in Oregon study areas – where Spotted Owls are still reasonably common – that contrasts with this perspective, but we suspect that such results may not be expected in Washington, where Spotted Owl populations are approaching, or in some cases, may have reached the point of local extirpation. In short, the sentence in question implies that the presence of more Spotted Owl habitat would result in a lesser effect of Barred Owls on Spotted Owls; demography data from largely protected landscapes in Washington (e.g. Olympic National Park) do not seem to support this. We recommend that less definitive language be used in the sentence in question.

2. Page 111-112. The USFWS estimated Barred Owl abundance, in part, by associating the owls with Spotted Owl habitat. This approach may suffice for landscapes where little habitat alteration has occurred, but it will substantially underestimate Barred Owl abundance in landscapes where Spotted Owl habitat has been harvested or degraded. Many forest landscapes, including federal and nonfederal lands in Washington and Oregon, have been intensively managed such that the amount of habitat in Spotted Owl management circles ranges from less than hundreds of acres upwards to and above the 40% “take” guideline. Because Barred Owls are habitat generalists, they are much more common in these management circles than would be indicated by estimates derived from an assessment of Spotted Owl habitat. For example, field studies conducted by NCASI in southwestern Washington indicate that numerous Barred Owls may reside within a single Spotted Owl management circle that contains only several hundred acres of Spotted Owl habitat. Barred

Owls are common throughout these landscapes and, coupled with ongoing investigations of Barred Owl habitat use in suburban areas (J. Buchanan, unpublished data), suggest an ability to nest and reproduce in forests as young as 30 or 40 years old if there is a single suitable nest tree. Consequently, the estimates of Barred Owls are likely substantially lower than the actual abundance in many landscapes. If the USFWS lacks the ability to revise the estimate of abundance it would be appropriate to indicate the likelihood of underestimation is high. Consulting the NCASI data may allow for a refined estimate of abundance.

3. Page 137. The USFWS estimated that an additional 52 Spotted Owl sites are likely present in the Ross Lake area. We think this estimate greatly exaggerates the potential capacity of this landscape to support Spotted Owls. The upper elevation of Douglas-fir forest in parts of this landscape is approximately 3000 feet, substantially lower than in other landscapes in the eastern Cascades. This means that substantial areas of the landscape likely do not support Spotted Owl habitat. Additionally, some of the areas in the proposed Ross Lake study area appear to include forest cover types that to our knowledge do not support Spotted Owls. Surveys in portions of this landscape were conducted over 20 years ago, at a time when Barred Owls were much less common than at present, and did not result in new Spotted Owl territory locations. Consequently, we think the estimate of capacity is far too high.



Rene Umali
<renejulie@yahoo.com
>

To: "barredowleis@fws.gov" <barredowleis@fws.gov>
cc:
Subject: Barred owls

06/05/2012 03:15 PM
Please respond to Rene
Umali

Please stop government's ridiculous land grabbing attempt in the name of the spotted owl. Do not kill barred owls. Leave them alone! The spotted owls in-breed with them and will be fine. People like me with common sense see through the smoke and mirrors involved here. Enough is enough. The spotted owls do not need government interference and your excuse to control more land and waste more money.

Julie



Doug Heiken
<dh@oregonwild.org>
Sent by:
dh.oregonwild@gmail.com
m

To: barredowlEIS@fws.gov
cc:
Subject: Barred Owl Removal Experiment Draft EIS - comments

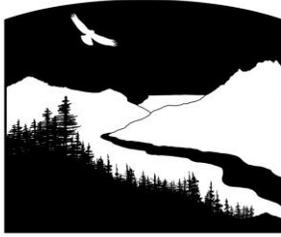
06/05/2012 04:42 PM

Please find our comments attached.

Doug Heiken, Oregon Wild
PO Box 11648, Eugene OR 97440



dh@oregonwild.org, 541.344.0675 [Barred owl DEIS cmt, 6-5-2012, USFWS.doc](#)



OREGON WILD

Formerly Oregon Natural Resources Council (ONRC)

PO Box 11648 | Eugene OR 97440 | 541-344-0675 | fax 541-343-0996
dh@oregonwild.org | <http://www.oregonwild.org/>

5 June 2012

TO: Paul Henson, Field Supervisor, U.S. Fish and Wildlife Service, Oregon Office
VIA: barredowleis@fws.gov

Subject: Oregon Wild comments on Barred Owl Removal Experiment Draft EIS

Dear FWS:

Please accept the following comments from Oregon Wild concerning the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft EIS dated March 2012.

<http://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/BarredOwl/default.asp> Oregon Wild represents about 7,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. The purpose of the EIS is to implement Spotted Owl Recovery Action 29: "Design and implement large-scale control [removal] experiments to assess the effects of barred owl removal on spotted owl site occupancy, reproduction, and survival."

The alternatives described in the DEIS vary in number of study areas, distribution of those study areas, type of study (demography or just occupancy), method of removal (lethal or combined), and presence or absence of pretreatment data.

Our June 2010 scoping comments outlined the major issues we have with the proposed barred owl control experiment, so we attach those comments to reiterate and supplement our comments on the DEIS.

Since well over 1,000 barred owls will likely be killed, and possibly as many as 6,000 barred owls, the moral elements of this decision must be taken seriously, and we commend FWS for trying to do this by engaging an ethicist and a wide range of stakeholders. I am not sure of what significance this is, but the DEIS description of the ethical issues seemed to portray the stakeholder deliberations as more linear and more logically ordered than I remember them. We urge FWS to keep the study areas and barred owl control efforts to a minimum necessary to obtain the desired statistically significant information, so that decision-makers can clearly separate the decisions regarding science and operational implementation intended to aid the overall recovery of spotted owls.

We appreciate that FWS has disclosed the fact that treating barred owls within the existing long-term spotted owl demographic study areas will increase the variance of the population estimates within study affected areas by approximately 150% while the barred owl removal study is in effect and until the effects on barred owls subside after cessation of the removal efforts. We urge FWS to take a forward look at likely future needs for NSO demographic data to consider whether the increased variance will make a significant difference in future decisions, e.g. uplisting, delisting, recovery thresholds, etc. Also, we urge the FWS to continue data collection after the control effort ceases to see how long it takes for barred owl populations to recover. This is useful information, not only for recombining NSO study/control areas but also for estimating the cost and efficacy of future non-experimental barred owl control efforts.

Are there any plans to look at owl pellets before and during the removal study to see if the spotted owls' diet changes in response to the presence or absence of barred owls?

Sincerely,

A handwritten signature in black ink that reads "Doug Heiken". The signature is written in a cursive, flowing style.

Doug Heiken

Enclosed: 2010 scoping comments from Oregon Wild and Klamath Siskiyou Wildlands Center

OREGON WILD

PO Box 11648 | Eugene OR 97440 | 541-344-0675 | fax 541-343-0996
dh@oregonwild.org | <http://www.oregonwild.org/>

Klamath-Siskiyou Wildlands Center

PO Box 102 | Ashland, OR 97520 | (541) 488-5789

8 Jan 2010

TO: BarredOwlEIS@fws.gov

Subject: Oregon Wild scoping comments on the FWS' proposed EIS for experimental control of barred owls

Dear FWS:

Please accept the following scoping comments from Oregon Wild and Klamath Siskiyou Wildlands Center concerning the NOI published Dec 10, 2009 in the Federal Register regarding the proposed EIS for experimental control of barred owls. Oregon Wild represents about 7,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. The Klamath-Siskiyou Wildlands Center (KS Wild) is an advocate for the forests, wildlife and waters of the Rogue and Klamath Basins, working to protect and restore the extraordinary biological diversity of the Klamath-Siskiyou region of southwest Oregon and northwest California.

Please send a timely copy of all subsequent NEPA documents and decisions regarding this project to both Oregon Wild and Klamath Siskiyou Wildlands Center at the addresses above.

Oregon Wild supports the careful implementation of a barred owl removal experiment. This removal experiment is a critical step to gain information that could help save the spotted owl.

During the pre-scoping meetings in Eugene, conservationists delivered a consistent message that killing lots of barred owls will require a high level of public trust. FWS and the land management agencies should build trust by cleaning up their act in terms of habitat protection. This will require improving and finalizing the spotted owls' final recovery plan & critical habitat, and removing the threat of the WOPR and its progeny. The recovery strategy should maximize habitat protection in order to minimize the number of barred owls that need to be killed while still ensuring recovery of the spotted owl.

Acknowledge and Address Controversy.

Experimentally removing barred owls from half of three demographic study areas (e.g. "Cle Elum" in central-eastern Washington, "Klamath" in BLM checkerboard in southern Oregon, and Oregon Coast Range) will likely require killing more than 1,000 barred owls. Rangewide removal will require killing an order of magnitude more. This is unprecedented and will be shocking to many people, but that does not mean it's a bad idea.

FWS must plan for and address the expected controversy head on.

First, address habitat concerns and finish the recovery plan with sound scientific and public input.

Second, educate the public on the real threat posed by barred owls. It may be instructive for the public to know that in less than 2 decades barred owls are now likely more numerous than spotted owls in much of their range. (Five times more numerous in David Wiens' study area near Wolf Creek.)

Third, invest in public education so that the public understands the threat of barred owls, understands the experiment and likely follow-up treatments, understands the continued

importance of habitat conservation, and understands that it's NOT "open season" on owls. This program can only be implemented by trained professionals.

Let's ask the right question and prepare an appropriate study to answer it.

The proposed action alternative involves: "testing the feasibility of removing barred owls from specific areas" later clarified to mean "conduct experiments to determine if the removal of barred owls would increase the site occupancy, survival, reproduction, and population trends of northern spotted owls."

During the pre-scoping meeting in Eugene, there was some question whether the study design would answer only the simple question: "Are barred owls negatively affecting NSO?" Or, whether the study design should be tweaked to answer more relevant policy questions, such as: What minimum level of barred owl removal will likely lead to northern spotted owl recovery?

Some of the study parameters, variables, and issues that FWS should consider include:

- FWS should consider analyzing an alternative that would implement a complementary strategy of habitat conservation and barred owl control across a large study area for a long period. This alternative might have too many variables to be directly comparable to the experimental alternatives, but it more closely matches the appropriate management response so please consider it.
- How large should the removal area should be? We think it should be large enough to minimize the effects of existing habitat variability and future variability caused by logging during the study, existing owl occupancy rates, barred owl in-migration, etc. and to ensure valid results, but not too big. It's premature to try to achieve other management objectives with this experiment.
- How long should the removal experiment last in order to give spotted owls enough time to respond and assure valid experimental results? The experimental question as described in the Federal Register includes evaluating the effect of barred owl removal on spotted owl "population trends." How big do the study areas need to be and how long does the experiment need to last in order to obtain statistically powerful results on population trend?
- How will we know if the spotted owls initial response will be long-lasting? How can the experimental design address that question? FWS should continue to rigorously monitor spotted owls and barred owls for several years after the removal efforts cease, so that the consequences of terminating the removal efforts can be tested.
- The last few barred owls will be very hard to remove because they are either very wary or immune to the lures used in the control program. FWS might be able to achieve 100% removal of barred owls at small geographic and temporal scales, but unless 100% removal can be duplicated at a larger scale (which we doubt), knowing the effects of 100% removal is not directly applicable to the subsequent management decisions about whether and how to expand the control program. Therefore, FWS should evaluate removing various proportions of the barred owl population (e.g. 50%, 70%, 90% barred owl removal, or maybe the experiment should strive for a target ratio of barred owls to spotted owls, 1:1, 1:2, 1:4). This will provide the most useful information for future management decisions.
- Whether barred owl removal program can be duplicated on larger scales in order to contribute to the recovery of the spotted owl is an important underlying consideration in this study. The NEPA analysis should keep this fact out in the open and include appropriate discussion regarding possible future expansion.
- We are pleased that the EIS will consider alternative non-lethal control methods, even if FWS deems them impractical. Discussion of such an alternative in the EIS will help the decision-maker and the public understand the trade-offs, consequences, and practicalities.
- Please adopt protocols that ensure reliable and humane methods of both lethal and non-lethal removal.
- Please adopt protocols to minimize and mitigate the possibility of false identification of spotted owls as barred owls.

- FWS should carefully track the amount of time and resources required to reduce the barred owl population and maintain the low barred owl population. This will help inform future decisions about whether to expand the program.
- We assume that forest management within the study areas will continue during the study. Please monitor and try to account for the effects of those activities as part of the study.
- Maybe it goes without saying, but be sure to include large untreated control areas that are monitored just as rigorously as the treated areas.

Barred owl control is a complement, not a replacement for habitat protection.

Habitat conservation remains THE primary path to long-term recovery of spotted owls. In the zeal to control the barred owl population, FWS must not lose sight of the paramount need to protect habitat. FWS and the federal land management agencies can make these efforts complementary by maximizing protection and restoration of habitat which helps minimize the need to kill barred owls. This makes sense in terms of both recovering the spotted owl and earning a social license to kill barred owls (and continue to modify habitat).

The NOI fails to accurately characterize the import of the barred owl invasion and the role of habitat in mitigating it. The NOI explains that the barred owl poses a significant new threat to the spotted owl "therefore securing habitat alone may not result in the recovery of the northern spotted owl." This may not be factually inaccurate, but it fails to reflect the reality that habitat conservation becomes even more important when the barred owl invades and occupies spotted owl habitat. More habitat may need to be protected in order to account for the suitable habitat rendered unavailable to the spotted owl due to the presence of barred owls. The NOI seems to leap to a conclusion that barred owl control is the only or primary solution, when in fact the most logical solution is increased habitat conservation combined with barred owl control. See the supplemental materials included below.

The current EIS process is focused on an experiment to determine whether spotted owls might do better in the absence of barred owls. In this limited frame, the current EIS might not need to deal directly with the habitat issue. However, we still want the EIS to be carefully contextualized to ensure that concerns about habitat are not dismissed or mischaracterized.

After the study, when it comes time to make the big policy decisions such as large-scale barred owl population control, the NEPA process needs to fully and openly consider BOTH habitat AND population control. The NEPA alternatives should include increased habitat protection and an expansion of Recovery Action 32. The current study should be designed to keep all options open and inform to the extent possible these broader policy questions.

Regardless of whether there are few or many barred owls, we can't forget that spotted owls need lots of old growth forests habitat in order to survive. Yet the recovery plan and critical habitat remain up in the air. The Bush administration adopted a recovery plan which reduced emphasis on habitat, with fewer and smaller reserves, and various other problems. FWS has admitted that the plan is flawed but has not fixed it. FWS must place more emphasis on fixing the recovery plan and protecting habitat while they move forward with this barred owl control study.

Recovery Action 32 is also up in the air with the rest of the recovery plan. This recovery action would provide some protection for high quality owl habitat and help reduce adverse competitive interactions between the species. This is good as far as it goes, but given the rapid expansion of the barred owl population and the concomitant decrease in the availability of suitable habitat for spotted owls, FWS should expand RA32 to include ALL suitable habitat, not just high quality habitat.

Related to the habitat question is the WOPR.

BLM's Western Oregon Plan Revision (WOPR) appears to be dead but WOPR Jr is being quietly discussed behind closed doors. This is another potential threat to owl habitat that is inconsistent

with sound conservation of the species, especially with the barred owl already reducing the effective size of the reserves.

DOI must recognize that any hint that the WOPR might be revived makes this barred owl control effort appear to be part of a strategy to de-emphasize the habitat requirements of the spotted owl. In fact, the most important strategy to combine with barred owl control is to increase the suitable habitat that is used by both owls to increase the chances that they can co-exist and to decrease the chances that the barred owl can competitively exclude the spotted owl.

Sincerely,
/s/

Doug Heiken
Oregon Wild
PO Box 11648
Eugene OR 97440
dh@oregonwild.org
541.344.0675 w

Supplemental Materials

On the relationship between competitive interactions and habitat availability

A well-known axiom of the species-area relationship from island biogeography holds that as habitat area increases, the number of cohabiting species also increases. See especially, Part III - Competition in a Spatial World in Tilman, D. and P. Kareiva, Eds. 1997. *Spatial Ecology: The Role of Space in Population Dynamics and Interspecific Interactions*. Monographs in Population Biology, Princeton University Press. 368 pp.

“The major causes of population and species extinction worldwide are habitat loss and interactions among species. ... The most robust generalization that we can make about population extinction is that small populations face a particularly high risk of extinction. ... [E]mpirical support for the extinction-proneness of small populations has been found practically wherever this issue has been examined. ... The loss of habitat reduced population size Larger habitat patches have larger expected population sizes than smaller patches. Therefore, other things being equal, we could expect large habitat patches to have populations with a lower risk of extinction than populations in small patches. ... More generally, the relationship between patch size and extinction risk provides a key rule of thumb for conservation: other things being equal it is better to conserve a large than a small patch of habitat or to preserve as much of a particular patch as possible. ... [T]here are likely to be many complementary reasons why large patches have populations with low risk of extinction.” Oscar E. Gaggiotti and Ilkka Hanski. 2004. Chapter 14 - Mechanisms of Population Extinction. In *Ecology, Genetics, and Evolution of Metapopulations*. Elsevier. 2004.

<http://www.eeb.cornell.edu/sdv2/Readings/Gaggiotti&Hanski.pdf> From these ecological foundations, one can see that the barred owl, by invading, occupying suitable habitat and excluding spotted owls, has reduced the effective size of the reserves that were established in 1994, and thereby reduces the potential population of spotted owls. Extinction risk is increased by this loss of habitat and smaller population. If we provide more suitable habitat, the population potential increases, and the risk of extinction decreases. The most rational way to respond is to protect remaining suitable habitat, expand and restore the reserve system to provide more

suitable habitat to increase the likelihood that the two owl species can co-exist. Put another way, when threatened with extinction, "the best defense is a strong offense" that is, species are more likely to persist if they have a large, well-distributed population size and if we minimize all manageable threats. Dunham, Jason. 2008. Bull trout habitat requirements and factors most at risk from climate change.

http://www.fs.fed.us/rm/boise/AWAE/projects/bull_trout/bt_Dunham.html

This view is corroborated by owl biologist David Wiens who was interviewed on the Lehrer NewsHour. He said: "The more habitat you protect, the more you're going to alleviate the competitive pressure between the species. Rather than reducing it and increasing the competitive pressure between these two species, we need to provide as much habitat as possible for them." DAVID WIENS. NewsHour interview. "Biologists Struggle to Save the Spotted Owl." December 18, 2007. http://www.pbs.org/newshour/bb/science/july-dec07/owl_12-18.html Robert Anthony agrees, "If you start cutting habitat for either bird, you just increase competitive pressure." Welch, Craig. 2009. The Spotted Owl's New Nemesis. Smithsonian Magazine. January 2009. <http://www.smithsonianmag.com/science-nature/The-Spotted-Owls-New-Nemesis.html?c=y&page=2> And in the same article Eric Forsman added "You could shoot barred owls until you're blue in the face," he said. "But unless you're willing to do it forever, it's just not going to work."

The book "Signs of Life: How Complexity Pervades Biology" by Sole and Goodwin has an interesting discussion that immediately brings to mind the barred owl/spotted owl issue. Chapter 7 of the book describes work being done by a Japanese researcher named Kaneko who developed and explored a modeling concept called "coupled map lattices." The lesson from these models is that when habitat is abundant, competing species operate within the "coexistence regime" but when habitat becomes scarce the model switches to a new attractor and operates in the "exclusion regime." This model strongly supports the idea that retaining more habitat increases the likelihood that spotted and barred owls can coexist, and if we eliminate reserves or continue to log suitable habitat in the matrix, then barred owl may competitively exclude and extirpate the spotted owls. Similar results are demonstrated in resource competition models described by Tilman, Lehman, and Thompson. 1997. Plant diversity and ecosystem productivity: theoretical considerations. Proceedings of the National Academy of Sciences. 94:1857-1861.

<http://www.cedarcreek.umn.edu/biblio/fulltext/t1694.pdf> See also, Tilman, D. and P. Kareiva, Eds. 1997. Spatial Ecology: The Role of Space in Population Dynamics and Interspecific Interactions. Monographs in Population Biology, Princeton University Press. 368 pp. It is important to think of the non-equilibrium dynamics of owl populations interacting across time and space. The two owl species are not bound to reach equilibrium like two chemical constituents in a well-mixed beaker. Incomplete mixing of species in a heterogeneous environment promotes species coexistence. The effect of the spatial dimension in these models is that space acts to dampen the tendency for competitive exclusion. The more space the two owl species could potentially occupy, the less chance that the barred owl will occupy all of it at once which gives the spotted owl a fighting chance to persist in the interstices that are unoccupied by barreds. If on the other hand the shared habitat becomes smaller due to habitat loss from logging, then there is a greater chance that barred could accomplish the feat of occupying all of the habitat at once, or at least it increases the chance that spotted owls will be relegated to small patches/populations and vulnerable to stochastic variation and extirpation. See Peter Chesson 2000. General Theory of Competitive Coexistence in Spatially-Varying Environments. Theoretical Population Biology 58, 211-237 (2000).

http://eebweb.arizona.edu/Faculty/chesson/Peter/Reprints/2000_General_Theory.pdf



gay berrien
<gberrien@wildblue.net
>
06/05/2012 07:19 PM

To: barredowlEIS@fws.gov
cc:
Subject: Comments on Proposed Experimental Barred Owl Removal to help
Spotted Owls

P.O. Box 669
Big Bar, CA 96010
June 5, 2012
gberrien@wildblue.net
530-623-8675

Dear Sir or Madam:

My husband, Richard, and I have lived most of our lives in northwestern Trinity County amidst the Shasta-Trinity National Forest. We have observed the wildlife and have observed the management of the forest by the Forest Service. Additionally, we are both retired Forest Service employees with many years experience in the forest here.

We don't believe you have adequate information to show the barred owl is any more a threat to the spotted owl than perhaps normal natural conditions are. Whether the barred owl is inbreeding with the spotted owl, or killing it, this is perhaps a natural occurrence. While mankind is so often blamed for changes in the numbers and status of certain species--some of this blame with reason and some not--here is an example of something natural occurring, and the Government wants to alter all that, too. This is at the expense of another natural species that also has a right to continue its existence.

In our particular area, it has not been our timber industry, or our obtaining firewood, or any of the usual things we have done in the woods for years, that has done the most damage to the spotted owl. It has been the catastrophic fires that have been allowed to burn because of a change in the government's National Wildfire Management Policy in 1994 or 1995. Thousands of additional acres have been allowed to burn without regard to wildlife, or archaeological sites, private timber holdings, or anything else. Attached is a map I would like to enter with our comments for your consideration. You can see that most of the old Big Bar District area of the Forest Service in northwestern, home to much of the spotted owl areas (SOMAs), has been burned up.

My husband and I are definitely against further manipulation of a species, such as your killing numbers of the barred owl.

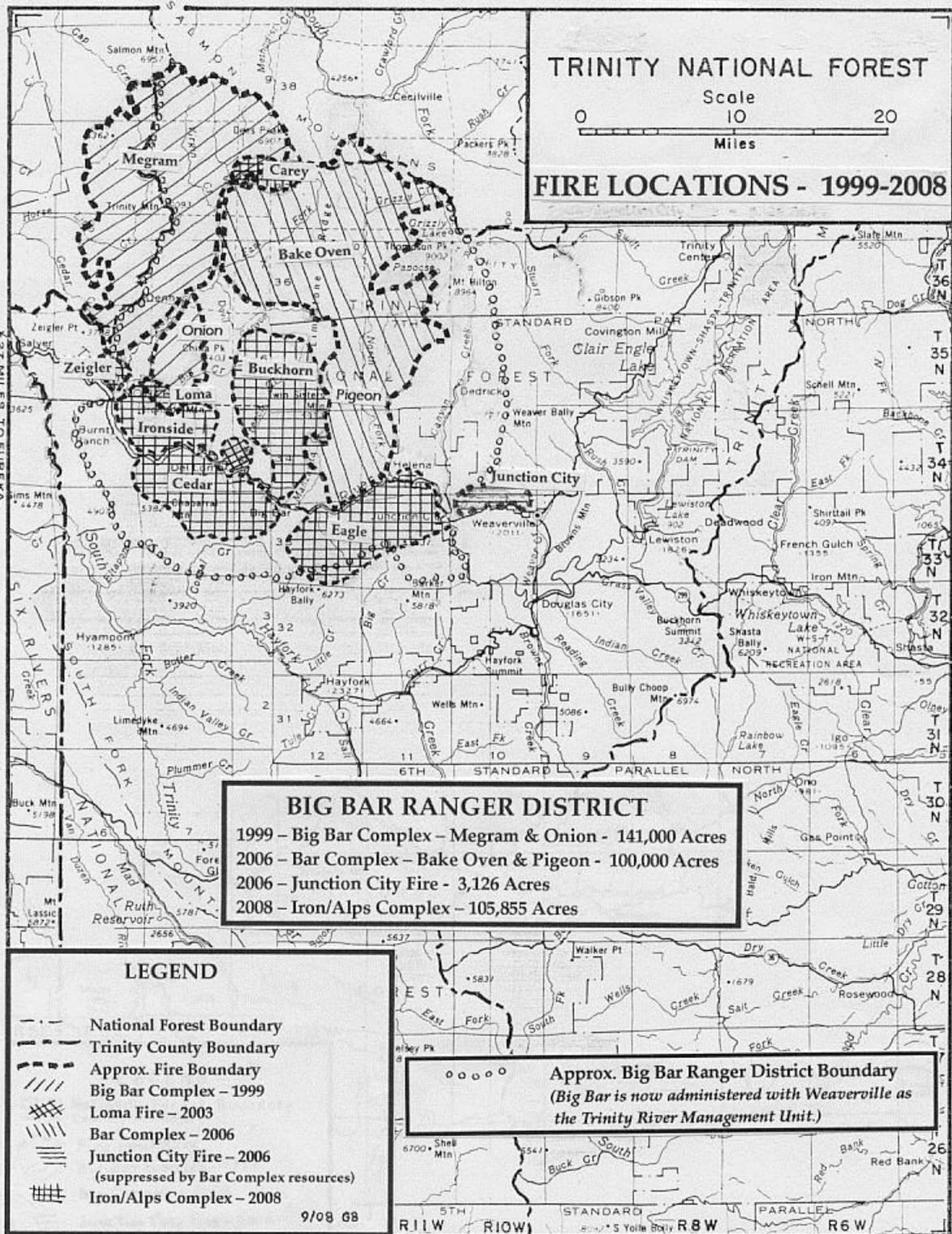
Thank you,

Sincerely,

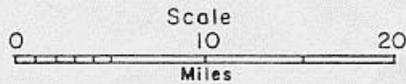
Gay L. Berrien



BBRDFireLocationMap.jpg



TRINITY NATIONAL FOREST



FIRE LOCATIONS - 1999-2008

BIG BAR RANGER DISTRICT

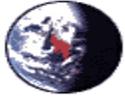
- 1999 – Big Bar Complex – Megram & Onion - 141,000 Acres
- 2006 – Bar Complex – Bake Oven & Pigeon - 100,000 Acres
- 2006 – Junction City Fire - 3,126 Acres
- 2008 – Iron/Alps Complex – 105,855 Acres

LEGEND

- - - National Forest Boundary
- - - Trinity County Boundary
- - - Approx. Fire Boundary
- //// Big Bar Complex - 1999
- //// Loma Fire - 2003
- //// Bar Complex - 2006
- //// Junction City Fire - 2006
(suppressed by Bar Complex resources)
- //// Iron/Alps Complex - 2008

9/08 08

Approx. Big Bar Ranger District Boundary
(Big Bar is now administered with Weaverville as the Trinity River Management Unit.)



Cindy Mitchell
<CMitchell@wfpa.org>
06/06/2012 12:37 AM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: WFPA Public Comments Barred Owl EIS

Cindy Mitchell
Sr. Director of Public Affairs
Washington Forest Protection Association
360-705-9283
360-791-9372 (cell)
www.wfpa.org

It is okay to print this email. Paper is a plentiful, biodegradable, renewable, recyclable, sustainable product made from trees that provide jobs and income for millions of Americans.



Barred Owl EIS Comment June 6 2012.pdf



WASHINGTON FOREST PROTECTION ASSOCIATION

724 Columbia St NW, Suite 250

Olympia, WA 98501

Fax: 360-352-4621

June 5, 2012

U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
Paul Henson, Field Supervisor
2600 SE 98th Ave., Suite 100
Portland, OR 97266

barredowleIS@fws.gov

Dear Paul:

We understand that the U.S. Fish and Wildlife Service has identified competition from barred owls as one of the main threats to the continued survival of the northern spotted owl, and that about one-third of the Service's Northern Spotted Owl Recovery Plan focuses on addressing the threat of the encroaching barred owls, which now outnumber spotted owls in many portions of their range.

The range of the native barred owl now completely overlaps with the range of the northern spotted owl. The impact of the barred owl range expansion on the spotted owl has been well documented. We appreciate the Service's pursuit of credible scientific approaches to base its decisions on managing federal lands, for the health of all species.

We continue to support recovery of the northern spotted owl on federal lands, and to restore the health of federal habitat before it looks outward to encumber any other lands for spotted owl recovery.

Furthermore, additional habitat contribution from private lands should only be through the use of market-based incentives and voluntary contributions. WFPA recognizes that it is up to each individual landowner to determine whether there is a necessity or desire to conduct experimental removal of barred owls, such as the case of landowners that have HCPs, and may need to maintain a specified number of occupied NSO sites.

WFPA supports the science that shows that the barred owl is the major threat to spotted owl survival, and will continue to state that encumbering additional private land is not the answer. We encourage the Service to develop a preferred alternative and expeditiously determine the next course of action after receiving public comment.

Thank you,

Cindy Mitchell
Sr. Director of Public Affairs



Clive Mann
<clivemann@gmail.com
>

To: barredowlEIS@fws.gov
cc:
Subject: habitat destruction

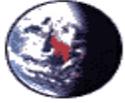
06/06/2012 12:50 AM

It seems that a dangerous procedure is about to be embarked upon. DO NOT CLEAR THIS HABITAT. IT WILL NOT AID SPOTTED OWLS' RECOVERY, BUT IN LONG TERM WILL HAVE THE OPPOSITE EFFECT!

Dr Clive F Mann (freelance biologist and writer)

--

Dr C F Mann



"Rocky McVay"
<rocky@blupac.com>
06/06/2012 06:42 AM

To: <barredowlEIS@fws.gov>
cc: <Paul_Henson@fws.gov>, <kqjkd@aol.com>
Subject: Removal of the Barred Owl to Benefit the Threatened Northern Spotted Owl Public Comment

Good morning,

Attached you will find comments on the DEIS for removal of the Barred Owl from the Association of O&C Counties. If you have any questions feel free to contact me. Thank you,

Rocky McVay
Executive Director
Association of O&C Counties



541-412-1624 20120606062605262.pdf DrVincentRept1990-BarredOwlRange-1.pdf

**THE EXTENSION OF THE RANGE OF THE BARRED OWL
INTO OREGON AND POTENTIAL FOR INTERACTION WITH THE SPOTTED
OWL**

**Prepared for
Association of O & C Counties**

**Prepared by
Robert E. Vincent, Ph.D**

November 1990

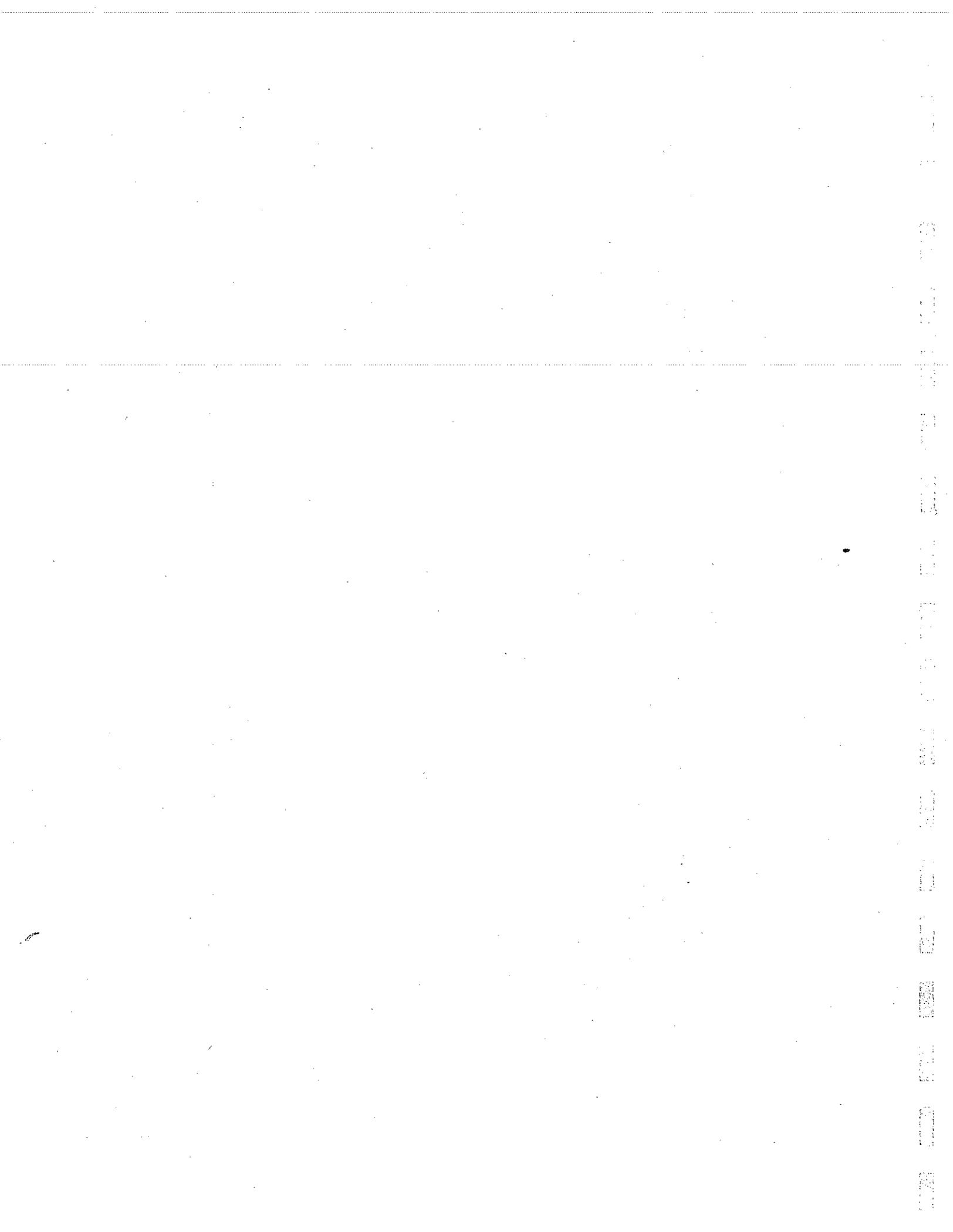
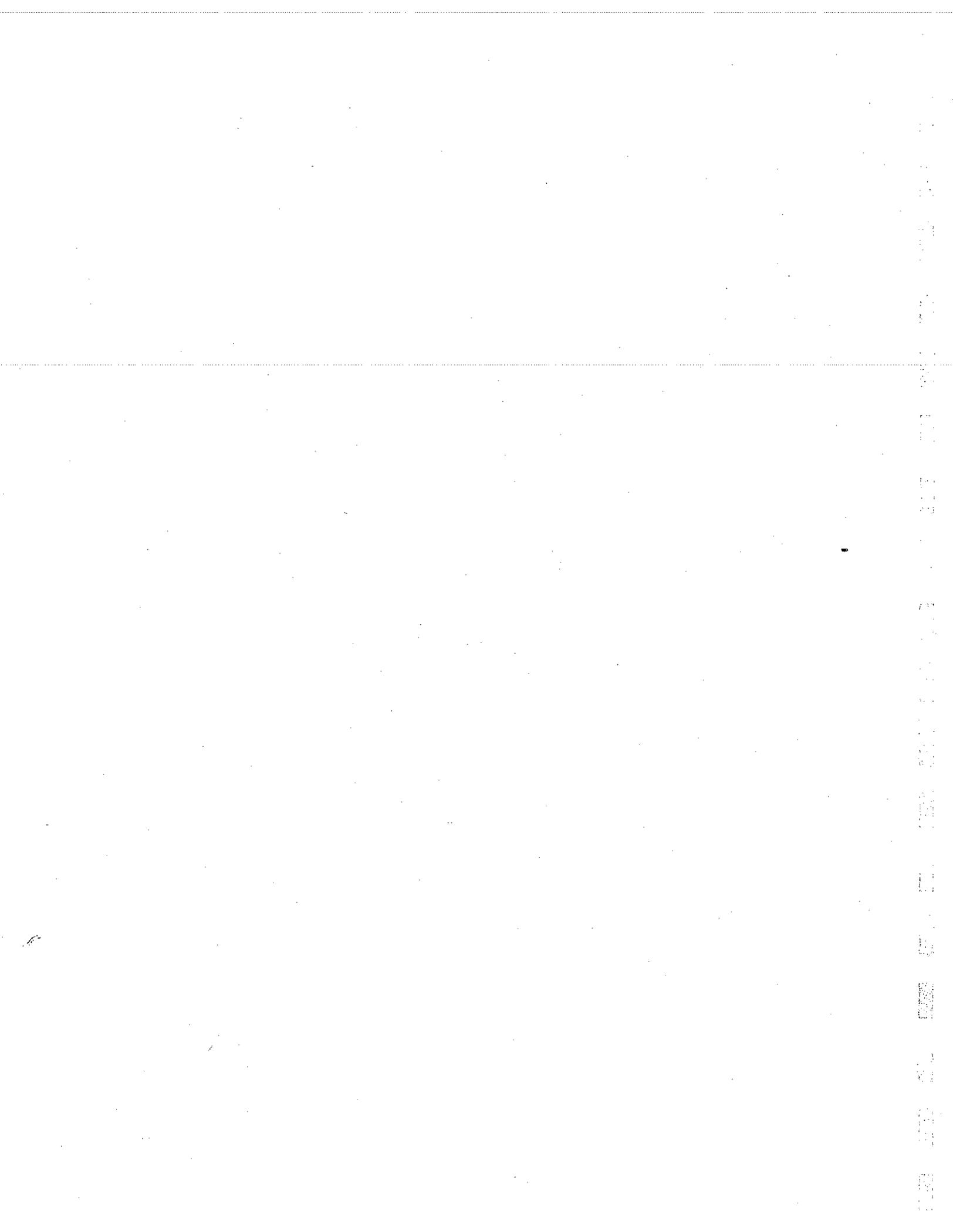


TABLE OF CONTENTS

INTRODUCTION	2
DATA SOURCE	4
THE BARRED OWL.....	6
Distribution and Range Expansion in North America	6
Distribution and Range Expansion in Western Oregon.....	7
BIOGEOGRAPHY.....	16
COMPETITION.....	19
HYBRIDIZATION	32
Hybridization Among Owls.....	38
Hybridization and the Endangered Species Act.....	40
CONCLUSIONS	43
RECOMMENDATIONS	46
LITERATURE CITED.....	47



INTRODUCTION

The Northern Barred Owl (*Strix varia varia*) has recently extended its range into the Pacific Northwest. Since 1950 this owl has spread throughout British Columbia and Washington, and since 1980, throughout western Oregon and into California. Movement was rapid southward, apparently down the Cascade Range. Widespread in the eastern United States, the Barred Owl is similar to the Northern Spotted Owl (*Strix occidentalis caurina*) in many ways. Now that the two species are no longer separated geographically, they have become sympatric, and competition for resources is likely to occur. In addition to competition, hybridization to some extent has taken place. When two similar species join after being geographically separated, the result may be reproductive isolation and separation of resource use, reproductive and genetic compatibility with the formation of fertile hybrids, or severe interspecific competition where one species suppresses the other.

Competition among species determines how resources of a particular area are allocated or partitioned. Interspecific competition is interaction between two or more species that adversely affects survival. Competition may result in an equilibrium adjustment whereby both species partition the resources and the species exist compatibly in the same area. On the other hand, if an equilibrium is not attained, one species may replace the other by forcing it to move geographically, to occupy another habitat space, to use another food supply, to displace yet another species, or by some manner compensate or replace whatever is the object of competitive interaction.

Closely related species that have similar life requirements tend to be separated geographically. Should they occur in the same area, each species has evolved over many years to utilize the resource in a somewhat different manner, time, efficiency, or role. For these reasons, competition between closely related species (congeneric, ecological equivalents, geographic replacements) is important in determining species distribution.

It is possible that the Barred and Spotted owls once shared a common gene pool with a distribution not too different than the present. Continental glacial advance truncated the northern part of the range, thus separating the species into two segments divided by the essentially treeless Great Plains. Post-Pleistocene warming and human-caused habitat change permitted the two segments to rejoin. Hybridization among sympatric bird species is rare. However, among allopatric species in secondary contact, such as the Barred and Spotted owls, it is not unusual. Man-induced habitat

changes, such as forestry, agriculture, or urbanization, may accelerate new sympatry. Genetic assimilation can be a serious conservation problem if one species is widespread with a broad genotype (Barred Owl) and another is limited in distribution and has a narrow genotype (Spotted Owl).

These thoughts provide a framework for examining the movement of the Barred Owl throughout western Oregon. Considered by many as an ecological equivalent to the Spotted Owl, the Barred Owl has invaded western Oregon in the last ten years and now occupies nearly all of the range of the Northern Spotted Owl. This paper documents the spread of the Barred Owl across Oregon and proposes some impacts this may have on the Spotted Owl.

This is not a definitive report on Barred Owl and Spotted Owl interactions, but rather, I hope it will call attention to the threat that the Barred Owl may be and to the need for more research on the Barred Owl. Neither is this a research report; instead it examines available information in order to stimulate interest in and perhaps provide a suggestive framework for giving more emphasis on interspecific interactions that may impact the Spotted Owl. The invasion during the past decade has progressed with little heed, while dozens of research projects and national attention have focused on Spotted Owl habitat relationships but few on Barred Owl and Spotted Owl relationships.

DATA SOURCE

The goal was not to gather every record of Barred Owls in Oregon but to get enough records to indicate present distribution and something about movement into and across the state. The wildlife biologist on each BLM District and each National Forest in western Oregon that is within the range of Spotted Owls was contacted, and a request was made for dates and legal description of Barred Owl records. Copies of these raw data have been sent to the Oregon Department of Fish and Wildlife and to the Oregon Cooperative Wildlife Research Unit. Additional records from literature were also included in this compilation.

In order to be consistent in handling the data, some arbitrary guidelines were followed. The records were first grouped by year, and then for each year the locations were plotted on maps. Locations were recorded by legal description, and at a number of locations an owl or a pair of owls was recorded on more than one date during the year. This was counted as one owl location. Since owls move, only one record was counted if the owl were subsequently (during the same year) recorded from any Section that touched the Section of original observation. Thus, it was possible for several observations over a year to be in nine Sections and still count as one observation. Although this may not accurately reflect all on-the-ground situations, it is a consistent method.

It must be remembered that, as far as I am aware, few or no surveys have been taken in western Oregon for Barred Owls. Records are incidental to surveys for Spotted Owls. In addition, until the last couple years many individuals conducting Spotted Owl surveys were not trained in recognizing Barred Owl calls. As a result, it is possible that before 1988, survey crews may have confused the calls of the two species. Validation levels are not uniform. Some records are visual; others, audio only. Because survey effort has varied over different areas and because records originate from surveys for other species, care needs to be taken in interpreting too much about density or sequential range expansion. Barred Owls do appear to respond readily to Spotted Owl calls (Hamer et al. 1989).

I have attempted to relate literature from a number of disciplines to this topic. Subject areas such as biogeography, hybridization, colonization, invasion, competition, introductions, as well as life histories are woven into this report. Considerable European literature is used both because bird

movements and because habitat changes associated with man have had a longer time to interact with climate and avian communities on that continent.

THE BARRED OWL

The Barred Owl shares many similarities with the Spotted Owl: size, shape, vocalizations, food, life history, nesting sites, and habitats. But the Barred Owl has a more robust body weighing 50 to 150 g more and seems to be a more adaptable and aggressive bird.

Distribution and Range Expansion in North America

There are four recognized subspecies of the Barred Owl. The most widespread is the Northern Barred Owl, which is found from central Texas east to South Carolina, north to Nova Scotia, west to the eastern Great Plains, and northwest across the subboreal forests of Manitoba, Saskatchewan, Alberta, British Columbia, into southeast Alaska, and south to northwestern California, Idaho, and western Montana. The range extension across Canada and southward throughout the Pacific Northwest seems to have been within the last century.

The first records of Barred Owls in Saskatchewan were in 1948 (Houston 1959), and the first nesting, in 1960 (Houston 1961). All indications are that the Barred Owl was a recent invader. In Alberta, Oeming and Jones (1955) list only three early records (1934, 1945, 1952) of Barred Owl (a fourth 1912 record is probably invalid) and add an additional seven records for 1953 and 1954. Boxall and Stepney (1982) update Alberta records with another 68 sightings. This increase may reflect more owls, range expansion, more observers, or more access to forested areas. Boxall and Stepney (1982), however, express the opinion that Barred Owls are both expanding their range and increasing in numbers within their previous range. Also, they conclude that this owl, which is essentially a deciduous or deciduous-conifer-mix forest bird may well have adapted in recent times to predominantly coniferous forests. Most early records were from mixed forests while most recent records are from coniferous forests. Erskine (1972) listed the Barred Owl as present in Balsam Fir stands and a visitor in mature poplar stands in Manitoba. The Barred Owl appears to have moved westward across Canada more in response to adaptability than habitat change.

Just adjacent to Alberta, British Columbia first reported the Barred Owl in 1943. Grant (1966a) continues to list 31 records in the eastern Fraser and the upper Columbia drainages where the Barred Owl had recently extended its range. Subsequently, Stirling (1970) reported a Barred Owl in residential Victoria, and Campbell (1973) records several from coastal British Columbia. During

this 10 year period the owl had moved westward across British Columbia to the Coast Range, which resulted for the first time in an overlap of range for the Barred and Spotted owls (Fig. 1).

Further southward range expansion is summarized by Taylor and Forsman (1976). The first record in Washington was near Spokane in 1968 (Taylor and Forsman 1976) and in Oregon in 1974 (Rohweder 1978). Movement into Oregon was first recorded along the Washington-Idaho border into northeastern Oregon. Although the owl may have been moving down the Cascade Range at the same time, it was not observed until later.

On the west side of the northern Cascade Range, reports during the 1970's were becoming more frequent. Over 30 sightings had been reported along the Washington Cascades by 1979 (Leder and Walters 1980). Although most were in the north, some were from Gifford Pinchot N. F., which extends to the Columbia River.

Early central and western Oregon reports came from Winema N. F. and Umpqua N. F. in 1981 (Irons and Watson 1985) and in the Umpqua River Valley near Glide in 1982 (Mattocks and Humm 1982). Southward movement across Oregon down the Cascade Range must have been rapid for the first California record was in the spring of 1982 near Crescent City (Evens and LeValley 1982). This well illustrates how a nocturnal forest bird can be present but not easily detected. Throughout this southward movement, habitat change had taken place as timber harvest replaced older forest with younger forest. How much difference this made in Barred Owl colonization is unknown for the Barred Owl seems to use older forests as well as younger.

Distribution and Range Expansion in Western Oregon

Plotted on the maps (Figs. 2, 3, 4, 5) are 150 records of Barred Owls for western Oregon. Most of the agencies did not differentiate sexes or pairs. For those that did, 19 pairs, 45 singles, and 14 males were reported. All of the singles were either undifferentiated by sex or were males, which indicates either the lack of ability to tell vocalizations of sexes apart or the more aggressive territorial nature of males in responding to Spotted Owl calls.

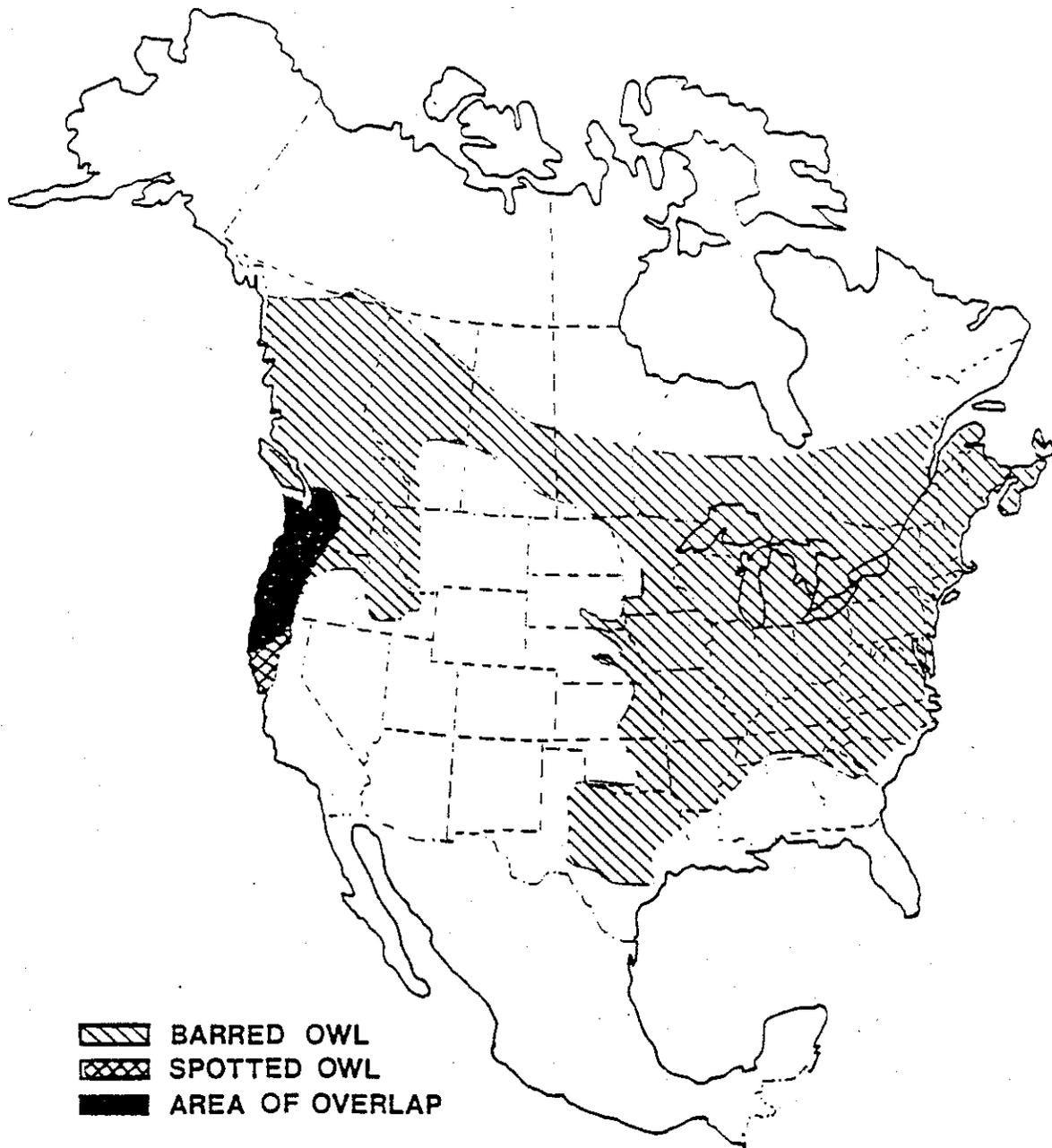


Figure 1. Distribution of the Northern Barred Owl and the Northern Spotted Owl. The range of the Barred Owl now includes all of the range of the Spotted Owl except for a small area in west-central California.

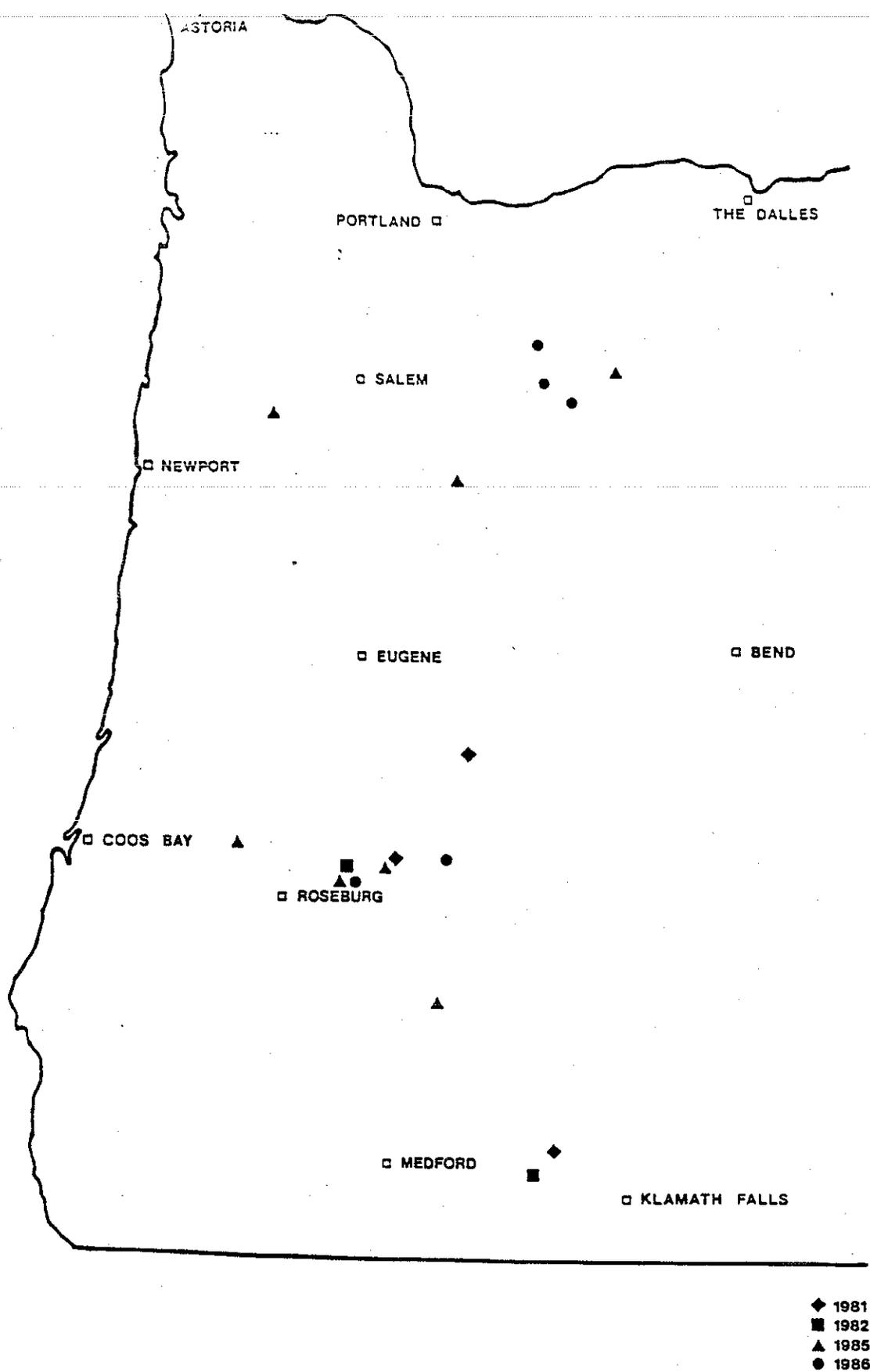


Figure 2. Location of reports of the Barred Owl in western Oregon for the years 1981 to 1986.

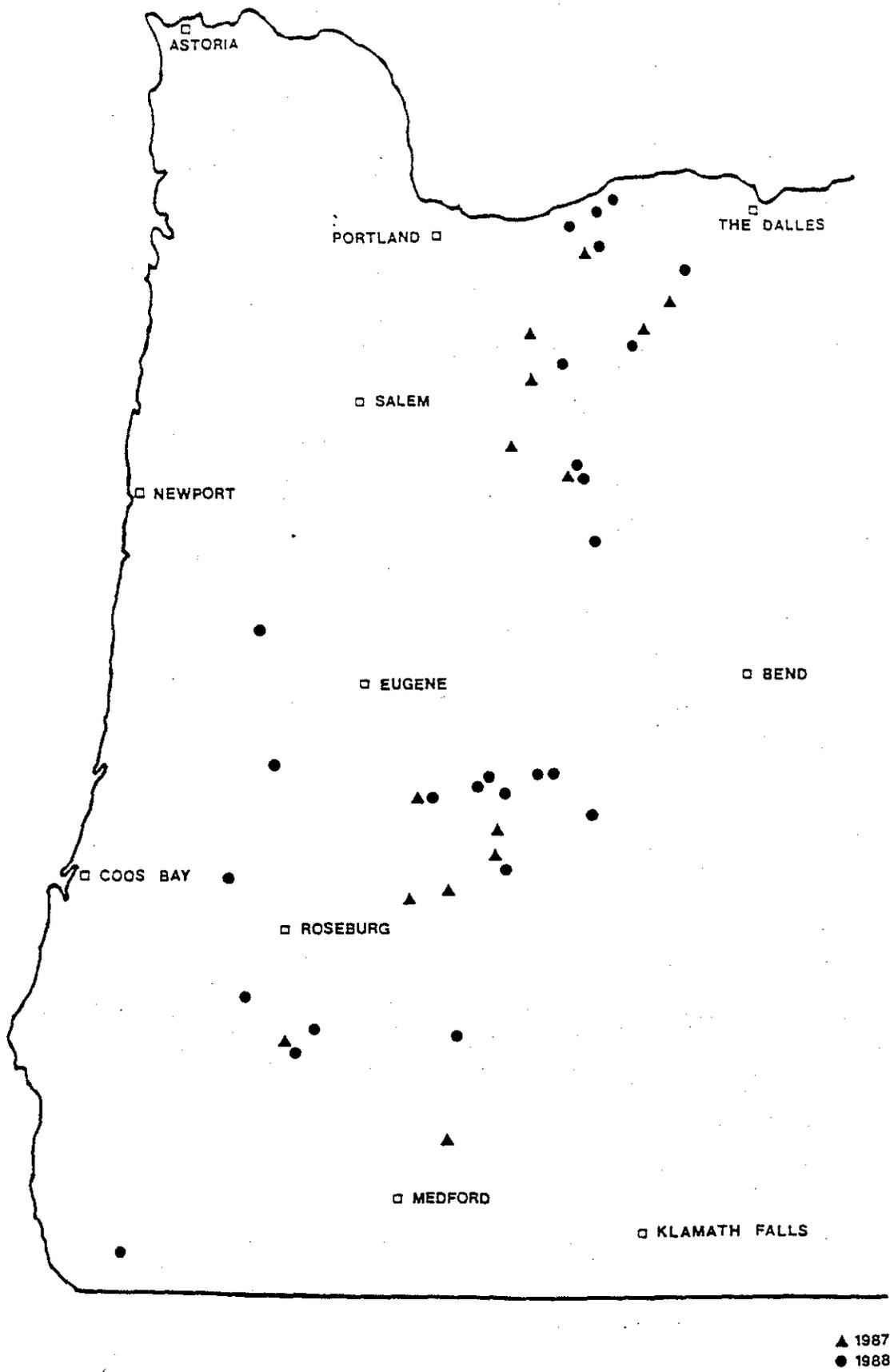


Figure 3. Location of reports of the Barred Owl in western Oregon for the years 1987 and 1988.

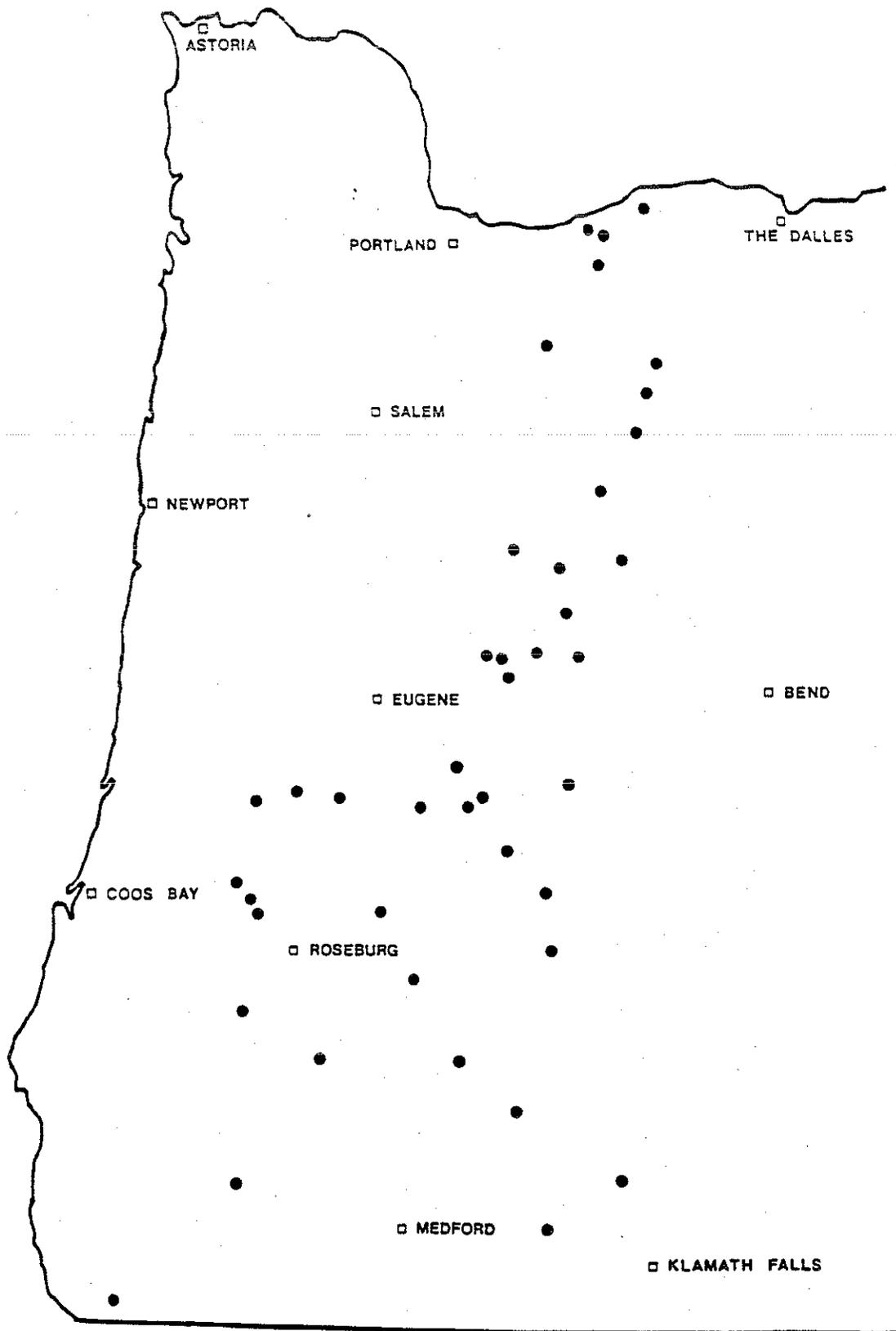


Figure 4. Location of reports of the Barred Owl in western Oregon for the year 1989.

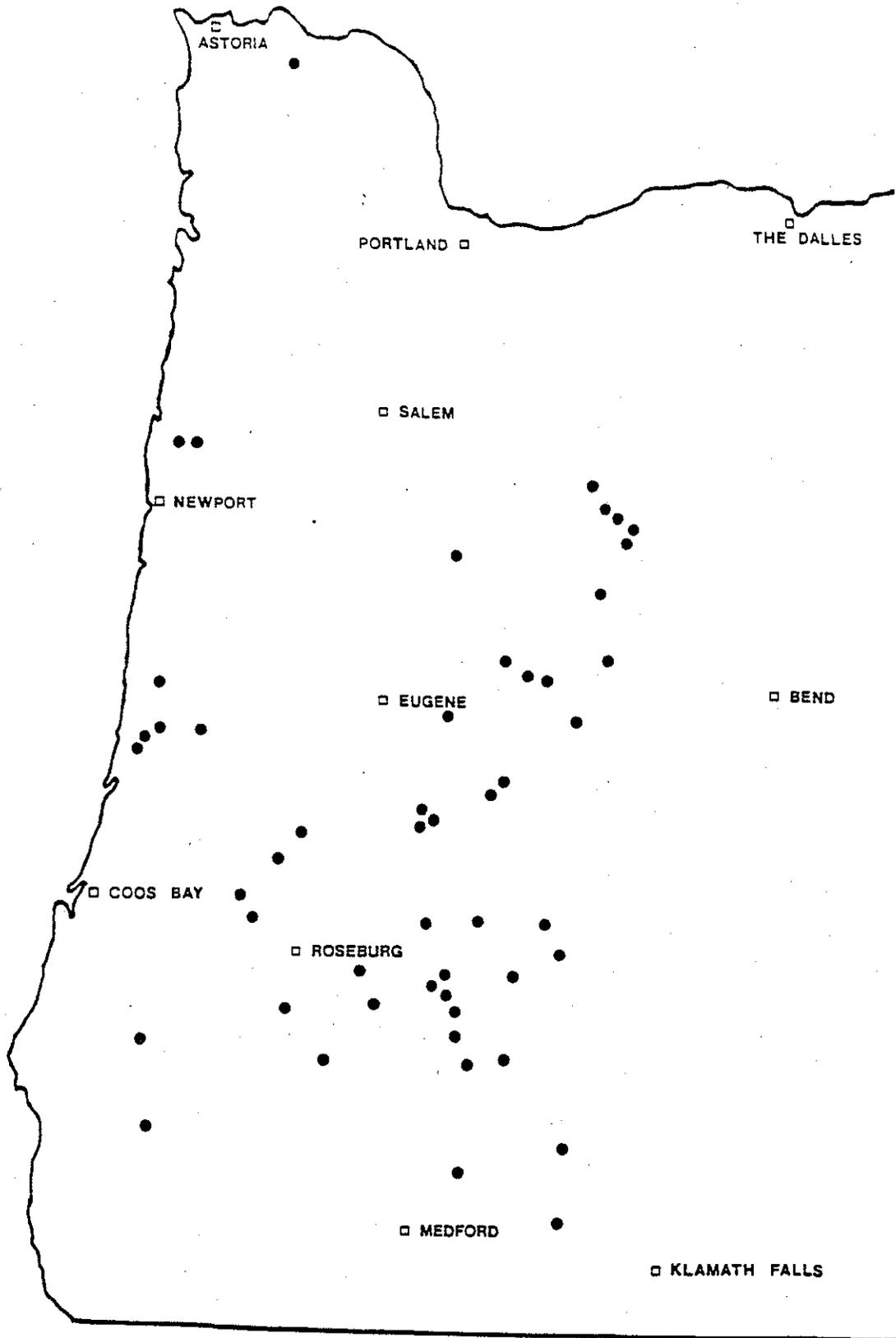


Figure 5. Location of reports of the Barred Owl in western Oregon for the year 1990. Note that the records from the Mount Hood N. F. were not reported for this year.

The maps show that the Barred Owl moved southward through the Cascade Range quickly and virtually unreported. Records for 1981 in the Roseburg and Medford areas and a record for 1982 in the Crescent City area of California attest to this invasion. As recently as 1975, Taylor and Forsman (1976) reported on Barred Owls in northeastern Oregon but had no records for western Oregon. Surveys for Spotted Owls were conducted during this period so either the owl was only sparsely present or its call was not differentiated from the Spotted Owl. Records have been reported from only the fringe of the Willamette Valley. This may indicate either absence of habitat or lack of survey in other than older forests.

Last to be occupied appears to have been the coastal area, for no records were reported by Coos Bay BLM or Siuslaw N. F. until 1990. These two agencies had been conducting Spotted Owl surveys on a regular basis for a number of prior years.

Extreme northwestern Oregon has had few Spotted Owl surveys since most land is younger forest in state or private ownership. The pattern of observations is so erratic that it is difficult to tell whether Barred Owl movement into the Coast Range has been from the north across the Columbia River, from the east across the Willamette Valley, or from the Umpqua River drainage to the south. The latter is indicated and better fits forest distribution.

Records indicate that the Barred Owl may be moving frequently and long distances, which would be expected of an invader into new unoccupied habitats. Often owls are reported from a location for one year and not again even though the area is surveyed. On other occasions the owl is reported for several years, and then it is gone. In one forest a Barred Owl was reported in 1982, but no other records on that forest were reported until 1989. On the other hand, some are reported in the same general location for a number of years.

Apparently, no barriers hindered the rapid movement of the Barred Owl down the Cascade Range. In contrast, the view of the Forest Service is that the Columbia River, Santiam area, and the Interstate 5 corridor in southern Oregon may hinder or prevent Spotted Owl movement (USDA-Forest Service 1988, p. III-24 and III-25). The rapidity with which the Barred Owl moved across all of these may suggest re-evaluation of how much of a hindrance these corridors are to Spotted Owls. It is accepted that the Barred Owl is not inhibited in crossing large openings or bodies of water as the Spotted Owl appears to be. As a result, the Barred Owl has a greater dispersal ability.

Range adjustment is a continuous movement among all species, especially so among mobile animals such as birds. As populations, habitats, and environments fluctuate, so does a species

distribution. The rapid engulfment of the Northern Spotted Owl range by the Barred Owl can more accurately be termed an invasion rather than a slowly advancing front of range adjustment. In a recent book on invasions, Hengeveld (1989) discussed how movement occurs by neighborhood diffusion and by long-distance dispersal. This is the same concept expressed by Johnston (1961) of a bimodal dispersal pattern: most birds move a short distance, but a few move a long distance. This fits the pattern of the Barred Owl advance. As population pressures build, movement is away from population centers in order to find needed resources and territory space. Movement of this type probably accounts for the major thrust across the Columbia River and into the northern Oregon Cascades. At the same time, bridgeheads are established far ahead of the advancing front. Long-distance dispersal is nearly always by juvenile birds (Johnston 1961). Just why some young disperse so far is not readily understood. Shields (1982) thinks it is an expression of genetic heterogeneity while Waser (1985) thinks competition is the driving force. Bridgeheads may have been the situation for areas in the Cascade Range northeast of Roseburg and again northeast of Medford. These two areas have generally had Barred Owls reported since 1981. These advanced bridgeheads can then become important as centers for diffusion-range expansions.

Populations ahead of the advancing front may thrive, maintain a low level, or die out. From the sketchy reports of Barred Owls in northwestern California, one wonders whether a population is established. Barred Owls were first reported in 1982 (Evens and LeValley 1982), then in 1983 by Gutierrez et al. (1984), then in 1985 and 1988 (personal communication, Six Rivers N. F.). None, however, were reported for either 1989 or 1990. Further surveys may change this pattern.

The Collared Dove (*Streptopelia decaocto*) is one of the best-known examples of a recent natural invader in Europe (Hengeveld 1989) and may provide some insight into the Barred Owl invasions. Until 1900 it was confined to Turkey; then by 1928 it expanded to the Balkans. Later it invaded and continued into all of Europe. Following the pattern frequently shown by other invasions, it moved across Europe with a more or less closed front as well as being preceded by outlying individuals or pairs. Movement was very rapid even though spatial saturation of the species was some distance behind the wave front. Similarity to the Barred Owl is evident. The Barred Owl was common throughout eastern North America up to Manitoba until 1900. It then moved across Canada and into the Pacific Northwest where it apparently is still expanding its range. Behind the advancing front in British Columbia and northern Washington, populations levels are reported high and probably increasing.

Hengeveld (1989) also notes that recent invaders often widen their habitat choice. Until arriving in the Pacific Northwest, the Barred Owl had limited contact with habitat similar to either old-growth forest or coniferous stands, yet it uses both readily. This may be an expression of using wider

habitat breadth. On the other hand, if we assume that much of the range of the Barred Owl in the east was originally older coniferous forest that has now been cleared or replaced by younger stands, a wide habitat breadth is still indicated for the Barred Owl is doing well in a quite different habitat.

All communities are open to invasion to a certain extent, although those that have man-caused habitat changes are most susceptible. Hengeveld (1989) further points out that because of man-caused perturbations, climatic changes, and species genetic changes, invasions are not exceptions but the rule.

It is common for invaders to be introduced species: for example, Starling (*Sturnus vulgaris*), House Finch (*Carpodacus mexicanus*), and the House Sparrow (*Passer domesticus*). Other species have extended their range in recent years: the Cattle Egret (*Bubulcus ibis*) from Africa to South America to North America, the Horned Lark (*Eremophila alpestris*) across eastern United States, and the House Wren (*Troglodytes aedon*) into southeastern United States. In northwestern Oregon the introduced Nutria (*Myocaster coypus*) has spread quickly, and the Opossum (*Didelphis virginiana*) and the Porcupine (*Erethizon dorsatum*) are common throughout the northern Coast Range and the Willamette Valley where they were not previously found. Thus, over a comparatively short time frame, species geographical distributions are dynamic.

Community resilience to the injection of a new species is remarkable. One or two species may be impacted, but, as a whole, the domino effect with widespread impact is minimal. The above mentioned species have been integrated into their respective communities without major disruption. Can the Barred Owl do the same? Because of the close relationship, possibly the Spotted Owl is the only species that may be noticeably affected.

The apparent ease and speed with which the Barred Owl has spread throughout the Northwest is atypical, especially considering that the adult Barred Owl is thought of as essentially a sedentary bird with a high degree of nest site tenacity, territoriality, and pair bonding.

BIOGEOGRAPHY

The distribution of a species is dynamic over the long term. For as continental glaciers advance and retreat, ocean water levels rise and fall, and air and water temperatures increase and decrease, vegetation patterns respond (Davis 1987) and animals often follow vegetation changes (see Fischer 1981, Graham 1986, Peters 1988, Hengeveld 1990, and many others).

In North America, glacial advances have truncated the northern distribution of a number of avian species. Species moved southward into southeastern or southwestern United States with the Rocky Mountains or Great Plains forming an east-west movement barrier. Air temperatures have been cooler and warmer than the present. A number of birds have, therefore, developed as east-west pairs that are closely related members of the same genus and are found generally on their respective sides of the continent. Following are some of these pairs:

Western Wood Pewee
Eastern Wood Pewee

Contopus sordidulus
Contopus virens

Audubon's Warbler
Myrtle Warbler

Dendroica coronata subsp.
Dendroica coronata subsp.

Pigmy Nuthatch
Brown-headed Nuthatch

Sitta pygmaea
Sitta pusilla

Red-shafted Flicker
Yellow-shafted Flicker

Colaptes auratus subsp.
Colaptes auratus subsp.

Steller's Jay
Blue Jay

Cyanocitta stelleri
Cyanocitta cristata

Bullock's Oriole
Baltimore Oriole

Icterus galbula subsp.
Icterus galbula subsp.

Western Screech-Owl
Eastern Screech-Owl

Otus kennicottii
Otus asio

Spotted Owl
Barred Owl

Strix occidentalis
Strix varia

Some of these species have reoccupied northern habitats over a wide area on their respective sides of the continent, such as the Steller's and Blue jays. The Bullock's and Baltimore orioles have re-established genetic contact and interbreed freely. Another pattern is that of the Spotted and Barred owls where one species invades a large area while the other stays in a limited area. It appears that the Spotted Owl has not extended its range much beyond the Pleistocene refugia whereas the Barred Owl has moved north and westward.

In western Europe a number of warblers are extending their range northward (Cody 1985). Whether this is due to postglacial warming, habitat change, or genetic shift is uncertain. The Tawny Owl (*Strix aluco*) has also moved northward. In 1875 it was first recorded in southern Finland and is now common (Mikkola 1983). Thus, it seems that a number of avian species in the northern hemisphere have expanded their range northward in recent years. The Tawny and Barred owls have whereas the Spotted Owl has not.

During the time of geographical isolation, species probably have nonparallel evolution (Svärdson 1949). When the two species then re-meet, the dissimilarities are tested. If the ecology of the two species is nearly alike, one species will probably eliminate the other, or one may have specialized enough to permit sympatry.

The length of time the Barred and Spotted owls have been separated may determine the degree of genetic isolation that has developed, if any. Has each evolved a coexistence mechanism so that when they are now in secondary contact they will partition resources and maintain genetic integrity? Or have they not been separated long enough to develop an isolation mechanism? If not, it is possible they could return to a previously held common gene pool. The Bullock's and Baltimore orioles have done the latter. Once considered separate species, these orioles have moved into treeless prairies that are now interspersed with settlements and riparian strips that permit range overlap and active hybridization. Currently, the two orioles are considered one species, the Northern Oriole. A comparable change has taken place with the Yellow-shafted and Red-shafted flickers that are now the Northern Flicker.

The Pacific Coast has the highest owl species density in North America with 11 species (Johnsgard 1988). A high owl density would imply limited unused habitat so that when a new member is added, competition for resources will likely be severe. Because the Barred Owl has invaded this area, some adjustment by other owls is expected.

A number of species has had geographic distribution similar to the Barred and Spotted owls. Some have maintained species integrity while others have hybridized extensively. Because both

competition and hybridization are potentially important interactions between Barred Owls and Spotted Owls, each will be discussed further.

COMPETITION

Competition among species may manifest itself in different ways (see Keddy 1989 for a refreshing review of competition). Two similar species, as the Barred and Spotted owls, need to achieve or perhaps have already achieved some degree of resource partitioning in order to coexist. To avoid detrimental impact on one or both species, these coexistence mechanisms must develop. But where geographical separation has broken down suddenly, there is little time for such a mechanism to evolve.

Barred and Spotted owl competition has already been reported. Instances of Barred Owls occupying areas previously occupied by Spotted Owls are reported by Allen et al. (1985), and Sisco and Sharp (1986) record two apparent displacements of Spotted Owls by Barred Owls. Hamer et al. (1989) agrees that this displacement takes place, but is uncommon. But in those interactions that do occur, the larger Barred Owl dominates in each encounter (Hamer et al. 1989). The competition is more an interference-type than a complete displacement or exclusion-type, yet any competition adds strain to an already declining population.

Four most probable areas of competition exist between the Barred and Spotted owls: (1) habitat, (2) territory, (3) nest site, and (4) food. I will discuss each of these and then summarize by examples of North American and European owl competition.

Habitat type utilized by the Barred Owl is varied but tends toward mature woods of both upland and lowland swamps, woods that may be hardwoods, conifers, or mixed stands. Riparian vegetation is used heavily. Nicholls and Warner (1972) found oakwoods, mixed hardwoods and conifers, and cedar swamps most used in Minnesota. In Michigan, Elody and Sloan (1985) determined that older stands of Hemlock (*Tsuga canadensis*) and Maples (*Acer spp*) were the dominant cover types. Mature forest--hardwoods, conifer, and mixed--were most used by the Barred Owl in New Jersey (Bosakowski et al. 1987).

In comparison with the Barred Owl varied-forest use, the Spotted Owl uses a more uniform habitat type with a strong affinity for older, coniferous forests that have large trees, snags, multistoried, and large, woody debris on the ground. Perhaps this habitat is best summarized by Thomas et al. (1990, Appendix F).

Hamer et al.'s (1989) study, a preliminary one that is subject to revision and refinement, is the only report of habitat types where both Barred and Spotted owls are present. They found that in northern Washington the vegetative composition within home range was similar, but use of habitat types within the vegetative matrix was different. The similarity in vegetative composition is expected since both species are establishing home ranges in the same landscape. This information is summarized and adapted from Hamer et al. (1989) in the following table:

<u>Tree Size</u>		<u>Spotted Owl</u>		<u>Barred Owl</u>	
		<u>Vegetative Composition</u>	<u>Vegetative Use</u>	<u>Vegetative Composition</u>	<u>Vegetative Use</u>
Old growth	> 32" dia.	23%	44%	18%	17%
Large saw	20-32" dia.	14	20	13	13
Small saw	14-20" dia.	15	14	18	20
Pole	8-14" dia.	17	12	24	33
Sapling	8-30' tall	16	3	13	10
Deciduous		4	2	5	5

It is apparent that the Barred Owl uses vegetation classes close to the proportion of availability (Fig. 6). The one exception is the pole size that is used more. In contrast, the Spotted Owl uses old growth and large saw timber more than they are available and uses pole, sapling, and deciduous less (Fig. 7,8). As also indicated by the wide range of habitats used by the Barred Owl elsewhere in North America, the Barred Owl utilizes a variety of habitats while the Spotted Owl is restricted more to older forests. Forest harvest over the past century in the Pacific Northwest has reduced the acres of older forests and at the same time increased the acres of small-saw and pole forests. This has resulted in an apparent increase of habitat for Barred Owls and a decrease for Spotted Owls. Since the Barred Owl is competing more for older forest habitat with the Spotted Owl but the Spotted Owl is competing less with the Barred Owl for pole-type habitat, the advantage is solely with the Barred Owl. Riparian and other habitats near waters seem to be particularly preferred by the Barred Owl.

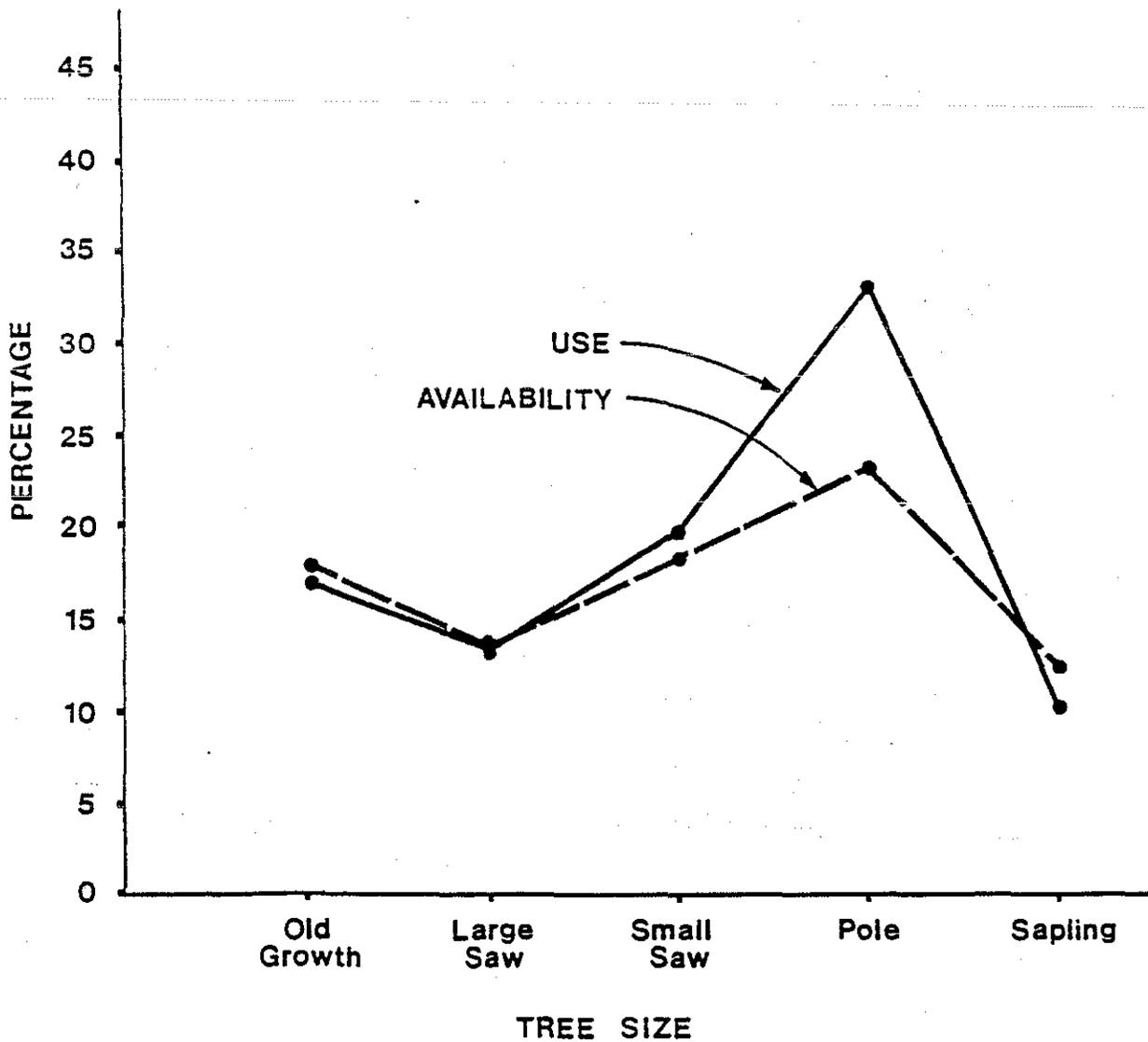


Figure 6. Barred Owl use of vegetation classes by tree size. Note the general use as available except for pole-size stands. This is adapted from Hamer et al. (1989) preliminary data.

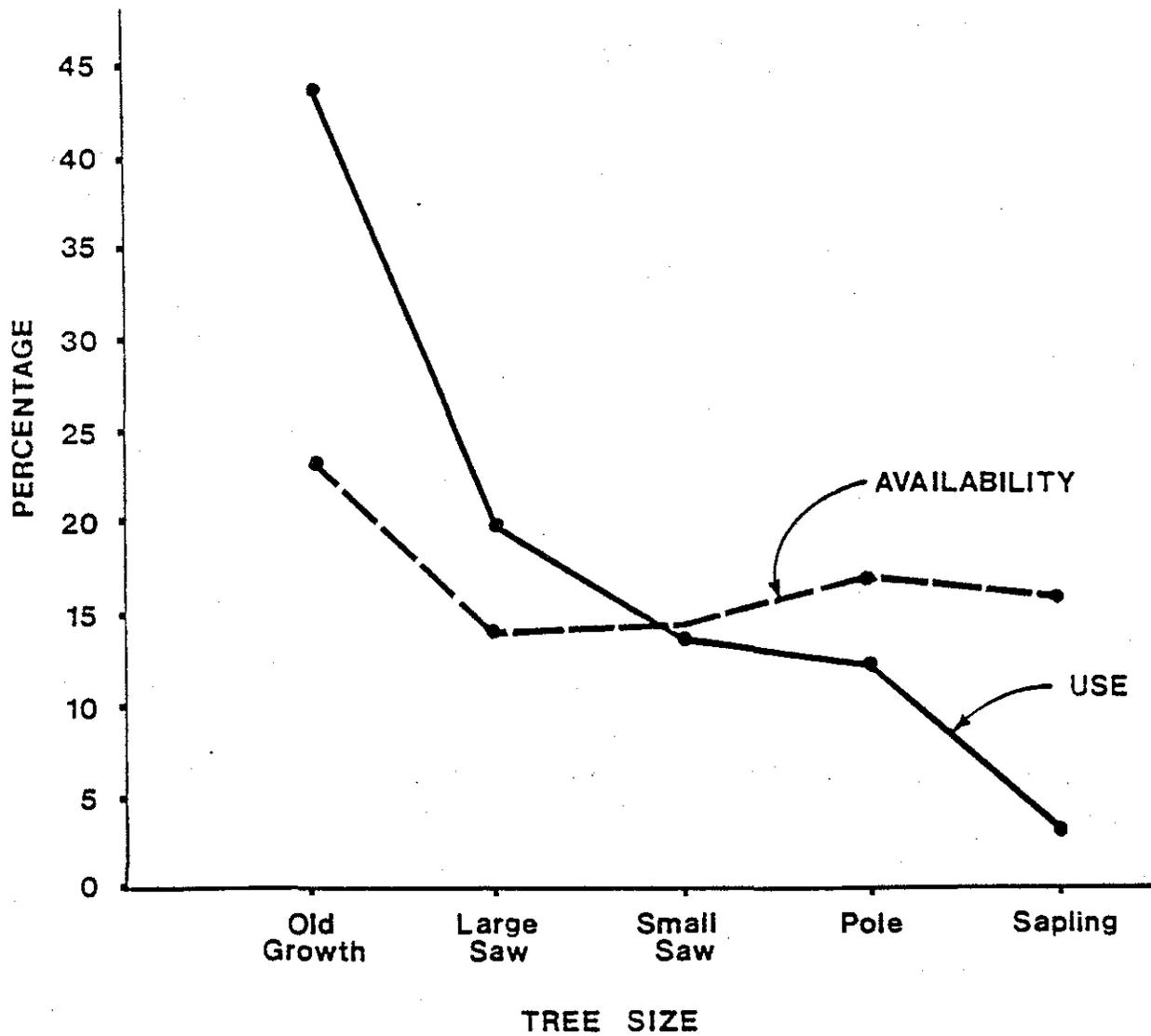


Figure 7. Spotted Owl use of vegetation classes by tree size. Note the heavy use of older forest and little use of younger stands. This is adapted from Hamer et al. (1989) preliminary data.

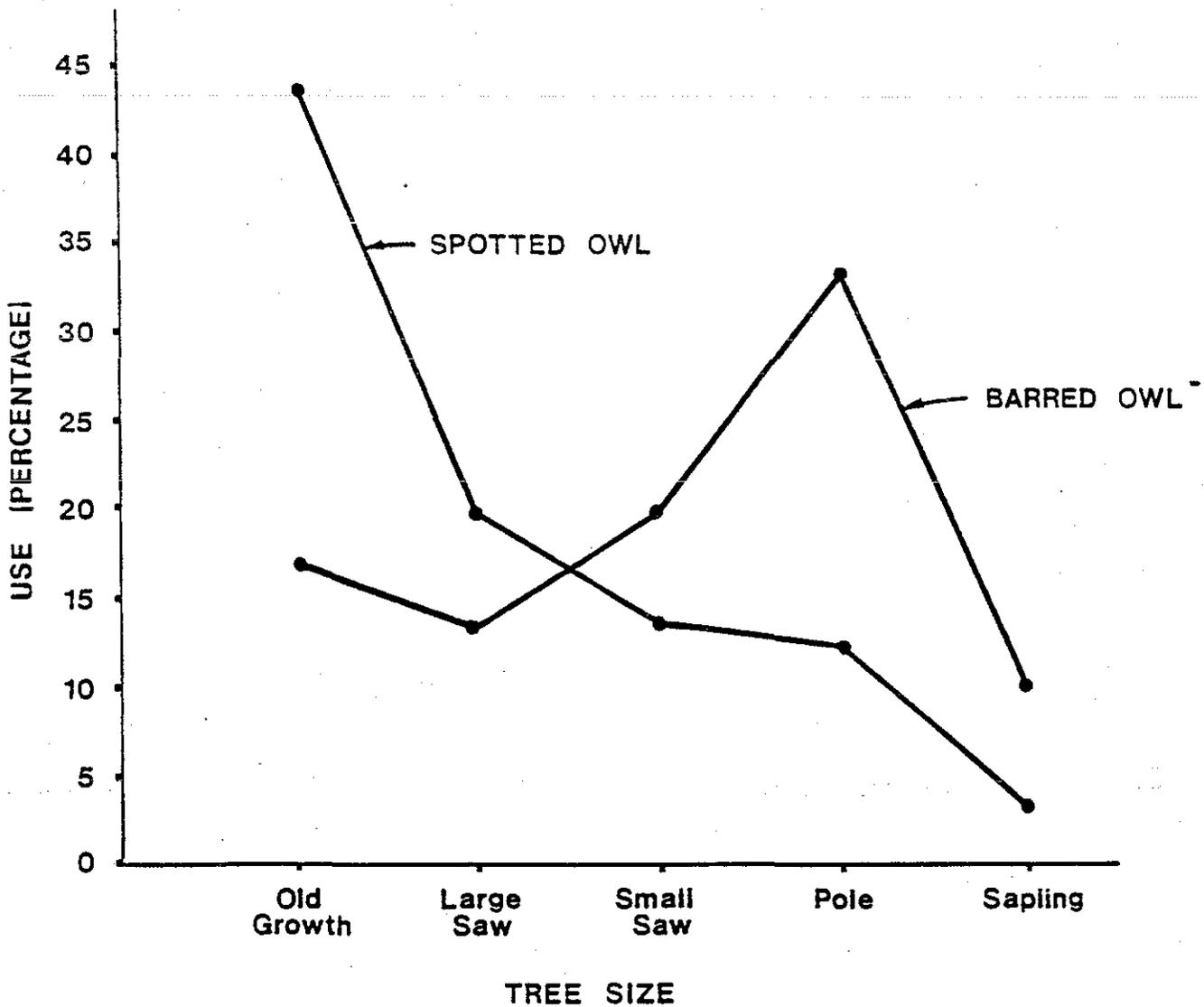


Figure 8. Barred Owl and Spotted Owl use of vegetation classes by tree size. Note the high use by Spotted Owls of older forests and the high use of pole stands by the Barred Owl. This is adapted from Hamer et al. (1989) preliminary data.

A second area of competition between these two owls is territory. Territoriality is an effective method to partition resources and separate activities of individuals (Cody 1974). (See Hinde (1956) for a discussion of the advantages of territories and Wittenberger (1981) for a discussion on the concepts of territoriality.) Usually individuals of closely related species do not tolerate spatial overlap of territories; thus, each reserves an area for nearly exclusive use. Both Nicholls and Fuller (1987) and Hamer (1988) noted that Barred Owls rigorously defend their home ranges with little intraspecific overlap. Territories tend to be circular because much of a bird's time is spent foraging in reference to a central location, nest, or roost site. A circular area reduces this flight time. Both appearance and vocalizations (Wittenberger 1981) may be used as signals to defend and to mark territories. In owls a wide range of vocalizations is used to challenge territorial invasion because color and behavior patterns are not effective for nocturnal birds. Nicholls and Fuller (1987) found this to be so of Barred Owls in Minnesota.

As far as I am aware, the size of defended territory for either the Barred or Spotted owls has not been determined. It appears that the Spotted Owl defends a much smaller area around the nest while the Barred Owl defends a larger area that may include nearly all of the home range. Much work has, however, been done on home range. The large home ranges that both species have makes defending them nearly impossible, but home range does give an index of the spatial extent of resources partitioning. Hamer et al. (1989) (preliminary data) found in northern Washington that the Barred Owl has an annual home range of 1300 acres and the Spotted Owl in the same area, an annual home range of 6595 acres. Hence, the Spotted Owl had over five times as large of annual home range as the Barred Owl. The smaller home range of the Barred Owl is an advantage when in or near Spotted Owl home ranges because at least some resemblance of a defense of home range may be maintained. Home range of the Barred Owl was estimated to be 565 acres in Minnesota (Nicholls and Warner 1972) and 697 acres in Michigan (Elody and Sloan 1985). However, as Hamer (1988) points out, these latter two estimates were not for a full year and might be comparable to his if extended over the same time period.

Just if or how a smaller home range translates into competitive advantage or disadvantage is unclear. Klopfer (1969) feels that at below a certain minimal size, territories are incompressible and that instead of reducing size, birds expand area into less-favored habitat. This is not in complete agreement with the concept of packing (Cody 1974) whereby because of habitat change, long-lived, mobile species may move into the area of remaining good habitat. Packing has been suggested by Thomas et al. (1990, p. 21) as a possible source of distortion of Spotted Owl census results. Also, Thomas et al. (1990) suggest that even though birds packed into an area may be nonbreeders, they also reduce the available food supply. Interspecific interaction may interrupt

normal routines and expend energy especially where one Spotted Owl home range may abut several Barred Owl ranges. With a smaller home range, higher population densities are possible, but resources may be limited. To illustrate the complexity of resource allocation, Barred Owls nest closer to each other than Spotted Owls do. Likewise, Barred Owls seem to nest closer to Spotted Owls than to other Barred Owls, which may be an artifact of different home range size and potential population densities. Mean-nearest neighbor between Barred Owl nest sites and Spotted Owl nest sites was 1 mile in a study by Hamer (1988) while between Barred Owls it was 2 miles and between Spotted Owls it was 4.6 miles (Hamer 1988).

Not only is there competition for territorial space but also for nest sites within that space. In its range other than the Northwest, the Barred Owl nests in cavities, hawk nests, and squirrel nests (Bent 1938), in hollow tree stubs, and old stick nests (Devereux and Mosher 1984), and in both deciduous and coniferous trees (Apfelbaum and Seelbach 1983). Leder and Walters (1980) even describe a nest in a large maple tree in western Washington. Although the Barred Owl will on occasion use a stick nest, its preference actually seems to be for tree cavities. Devereux and Mosher (1984), Johnson (1987), and Hamer et al. (1989) conclude that most cavities that meet minimum dimension with an opening of 7 to 10 inches diameter are suitable.

Much has been written in recent years about interaction between cavity nesting birds and snags (see Mannan et al. 1980, Davis et al. 1983, and Neitro et al. 1985). Hamer (1988) found much similarity between nest characteristics of the two owls. Also, both have an affinity to reuse the same nest and both make no attempt at nest building. Additionally, there is a large overlap in nest-site tree species, tree diameter, and cavity size. Use of similar sites by Barred and Spotted owls is nearly a classic example of potential competition. The resource (cavities) is in limited, probably declining, supply, and both species seem to prefer similar type and size of cavities. Aggressive behavior and adaptability to other nest sites are important in the outcome of this competition.

The Barred Owl as well as the closely related European Tawny Owl and Ural Owl (*S. uralensis*) are known to use nest boxes. In southern Finland during the 1950's, the Ural Owl was considered rare and vanishing; after placing more than 12,000 nest boxes, the species is now thriving (Saurola 1989). Johnson (1987) presents a successful use of nest boxes in Minnesota, and Johnson and Follen (1984) give specifications for Barred Owl nest boxes. Nest boxes may be an option for a Spotted Owl management tool. Certainly, they worked well for the Wood Duck (*Aix sponsa*) and the Eastern Screech-Owl, and are helping the Western Bluebird (*Sialia mexicana*); additionally, Fowler and Dimmick (1983) and Froke (1983) review other successful uses of nest boxes.

In food habits, our fourth aspect of competition, we find the Spotted Owl is more of a specialist, the Barred Owl, more of a generalist. The Spotted Owl feeds heavily upon Northern Flying Squirrel (*Glaucomys sabrinus*), Red Tree Vole (*Arborimus longicaudus*), Western Red-backed Vole (*Clethrionomys gapperi*), and woodrats (*Neotoma spp.*). A variety of other mammals, birds and insects are eaten in only very small quantities (Forsman et al. 1984). In contrast, the diet of the Barred Owl is much broader, consisting of mice, shrews, rabbits, squirrels, small birds, amphibians, reptiles, insects, and crayfish (Bent 1938, Devereux and Mosher 1984, and Bosakowski et al. 1987). Cahn and Kemp (1930) and Wilson (1938) found *Microtus spp.* to be the most common food item. Where these owls are sympatric in western Washington, Hamer et al. (1989) found in preliminary results that Spotted Owls had two major prey, Flying Squirrel and Deer Mouse (*Peromyscus maniculatus*), with only two other species, Red-backed Vole and Snowshoe Hare (*Lepus americanus*), comprising the primary prey base. In contrast to the total of seven prey items for the Spotted Owl, Barred Owls had eighteen, which included the same species as the Spotted Owl plus voles (*Microtus spp.*), shrews (*Sorex spp.*), Coast Mole (*Scapanus orarius*), and Douglas Squirrel (*Tamiasciurus douglasii*). There were nine primary prey species for the Barred Owl and only four for the Spotted Owl. The two major prey of the Spotted Owl comprise 26 per cent of the Barred Owl's diet. The Barred Owl preys upon both terrestrial and arboreal species while the Spotted Owl is heavily dependent upon arboreal species. Thus, it appears that the Barred Owl is largely an opportunistic forager, feeding upon whatever it can find and capture and also, the Barred Owl may be a more diurnal forager than the Spotted Owl. Also, the heavy use of *Microtus* provides a food source in meadows, in early successional stages, and in marsh, brush, and riparian habitat that is generally not used by the Spotted Owl.

A broad prey base becomes critical if owl reproduction fluctuates with availability of prey. The Tawny Owl (Southern 1970), the Ural Owl (Saurola 1989) and the Great Horned Owl (*Bubo virginianus*) in Canada (Rusch et al. 1972) have reproductive success that is related to abundance of prey. A similar relationship has been difficult to establish for the Spotted Owl (see Thomas et al. 1990, p. 204). Some owls, such as the Eagle Owl (*Bubo bubo*) and Ural Owl in western Finland, have the ability to partly shift their prey base during times of low vole populations to more squirrel, hare, and grouse (Korpimäki et al. 1990). The Barred Owl seems to behave more like the Eagle and Ural owls in that it has the capability of shifting among a large number of prey species while the Spotted Owl does not appear to do so. Marti (1974) in a study of feeding behavior of four owls that varied in size found that there was overlap for prey. Despite using some of the same prey, the owls partitioned prey by size, time of hunting, and method of hunting; hence, the competition for food was restricted. With Barred and Spotted owls alike in some aspects, such partitioning would have to be along lines of size of prey, diurnal prey, or prey in open habitats.

To summarize competition, we can look at the *Strix* owls in North America and Europe for examples. Johnsgard (1988) condenses into a figure the potential interspecific interactions among North American owls. Four parameters are used: (1) sympatric breeding ranges, (2) similar daily hunting patterns, (3) overlapping average weight, and (4) overlapping breeding habitat preference. In all traits four species overlap. The Barred and Spotted owls, the Eastern and Western Screech-Owls, the Snowy Owl (*Nyctea scandiaca*) and Great Horned Owl, and the Burrowing Owl (*Athene cunicularia*) and Western Screech-owl. The Barred and Spotted owls are the only ones where sympatry extends over nearly the complete range of one species. Thus, there is little area within the range of the Northern Spotted Owl where it is free from potential interaction with the Barred Owl. For the other three combinations, either habitat or geography leaves a major portion of the species range free of such competition.

In Europe there is a wide overlap of resources used between the Tawny and Ural owls and between the Ural Owl and Great Grey Owl (*Strix nebulosa*). These two combinations overlap in nesting sites, habitats, diet, body size, distribution, and hunting method (Mikkola 1983). Each does, however, have a large area where it is not sympatric with the other. Even in the area of range overlap, the species maintain their identity even though there is no genetic barrier to hybridization (Scherzinger 1987). Mikkola (1987) points out that the Tawny Owl is most nocturnal, the Ural Owl is intermediate, and the Great Grey Owl is most diurnal. This suggests some temporal separation in activity. Moreover, Voous (1989) found that where the Tawny and Urals owls have a narrow zone of overlap in Central Sweden, they both feed on voles but are separated by habitat. The Ural Owl prefers boreal forest, and the Tawny Owl, parklands, clearcuts, and mixed deciduous forests. Mikkola (1983) feels that an abundant food source permits coexistence even with competition for prey.

The potential for strong competition between the Barred and Spotted owls exist in all aspects of competition I have just discussed and in the four used by Johnsgard (1988). The Barred Owl has a wider range of habitat use and a smaller home range while the Spotted Owl has a narrower range of habit use and a larger home range that may result in interaction with several Barred Owls. Both owls use similar nest sites, and the food of the Barred Owl is more varied and terrestrial with the abundant *Microtus* being a common prey, while the Spotted Owl is restricted and arboreal with few major prey. Competitive advantage at this early stage of sympatry appears to favor heavily the more generalized Barred Owl (Fig. 9).

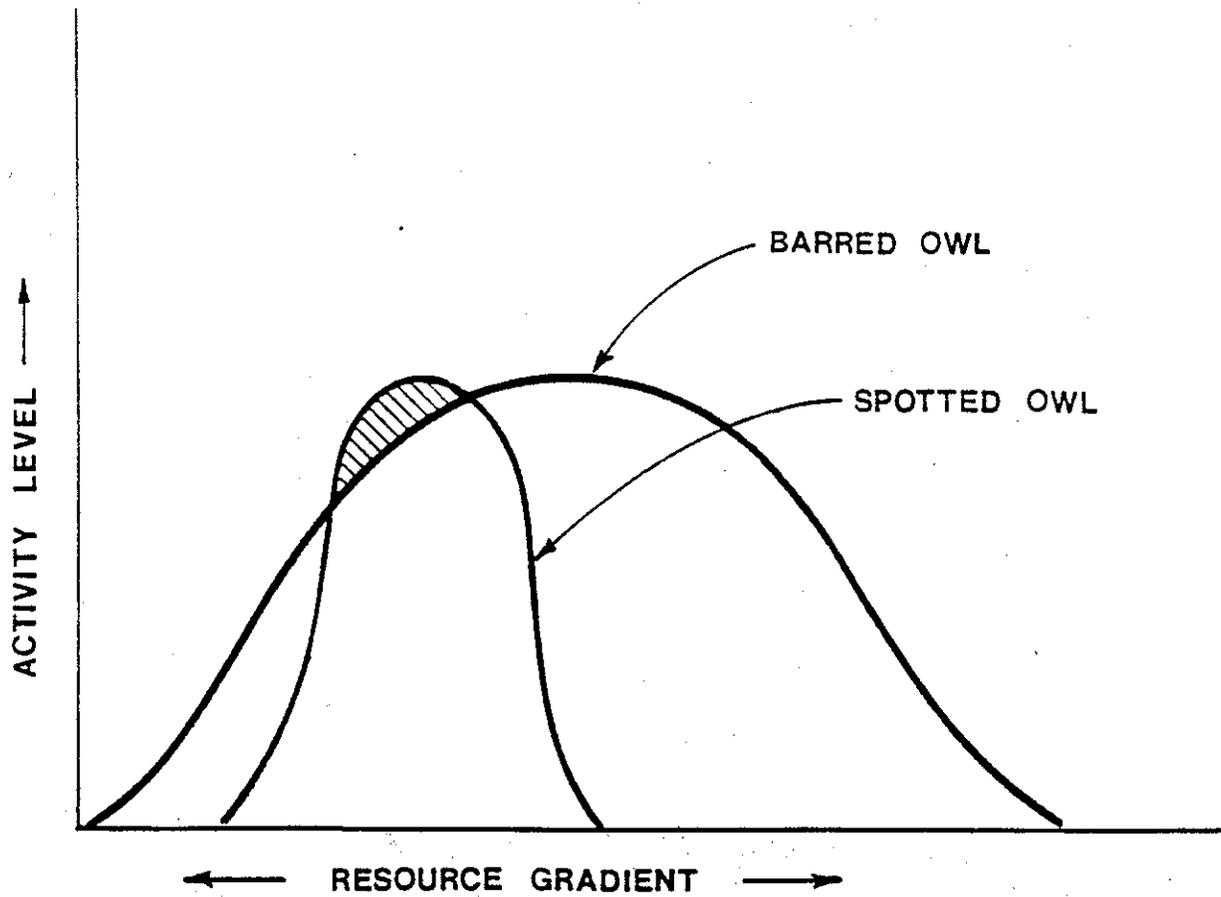


Figure 9. A schematic presentation for the wide ecological breadth of the Barred Owl and the narrow breadth of the Spotted Owl. The small area of non-overlap could indicate slightly better adaptation to older forests by the Spotted Owl.

Unless coexistence mechanisms develop, populations and distribution of the two species will be dynamic. Some manner of resource partitioning may come to the forefront (Fig. 10). Where there is competition with closely related species, the range of habitat conditions occupied generally becomes restricted to optimum habitats (Svärdson 1949) where one species has in some manner an advantage over its competitor. If this holds true with the Spotted Owl, it will have to specialize even more (if possible) until it can use a particular segment of resources more efficiently than the Barred Owl.

The importance of interspecific competition is questioned by some (Wiens 1977, Schoener 1983) who feel that species interaction is so common it has minor influence on communities. Law and Watkinson (1989) perhaps rightfully lament the lack of progress in understanding the role of competition in nature. Much discussion on the role of interspecific competition is being reported in current ecological literature. In a study of competition between two blackbirds, Miller (1968) concluded that resource use must have considerable overlap before the interaction is serious. In Miller's study both the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) and the Red-winged Blackbird (*Agelaius phoeniceus*) preferred the same niche space; however, this space was occupied by the Yellow-headed Blackbird when both species were present and by the Red-winged Blackbird when it alone was present. If both were present, the Red-winged Blackbird nested in less-optimum habitat and flew farther to feed. What resulted was an interference-type competition where both blackbirds coexisted with one, the Yellow-headed, being dominant. As a result, a dynamic shifting was taking place in resource use that permitted both species to maintain population levels.

Rarely does competition alone among continental species result in extinction (Mayr 1965, Frankel and Soule 1981, Soule 1983). The usual effect is to lower population numbers, restrict habitat or range, or shift range (see MacArthur 1984). Or to go back one step further to a cause of competition, few introductions have an overall effect on the structure or function of the resident community (Simberloff 1981). Furthermore, Simberloff (1981) also found that fewer than 10 per cent of extinctions were from introductions causing a compensatory extinction. It, thus, appears that usually communities as an entity are little impacted by the injection of a new species. Exceptions exist, of course, where species compete, but community integrity remains essentially intact. Examples of competition by introductions are Starlings and woodpeckers for nesting sites, House Sparrow, bluebirds, and swallows for nesting sites, and Starlings and meadow larks for winter food (Mayr 1965).

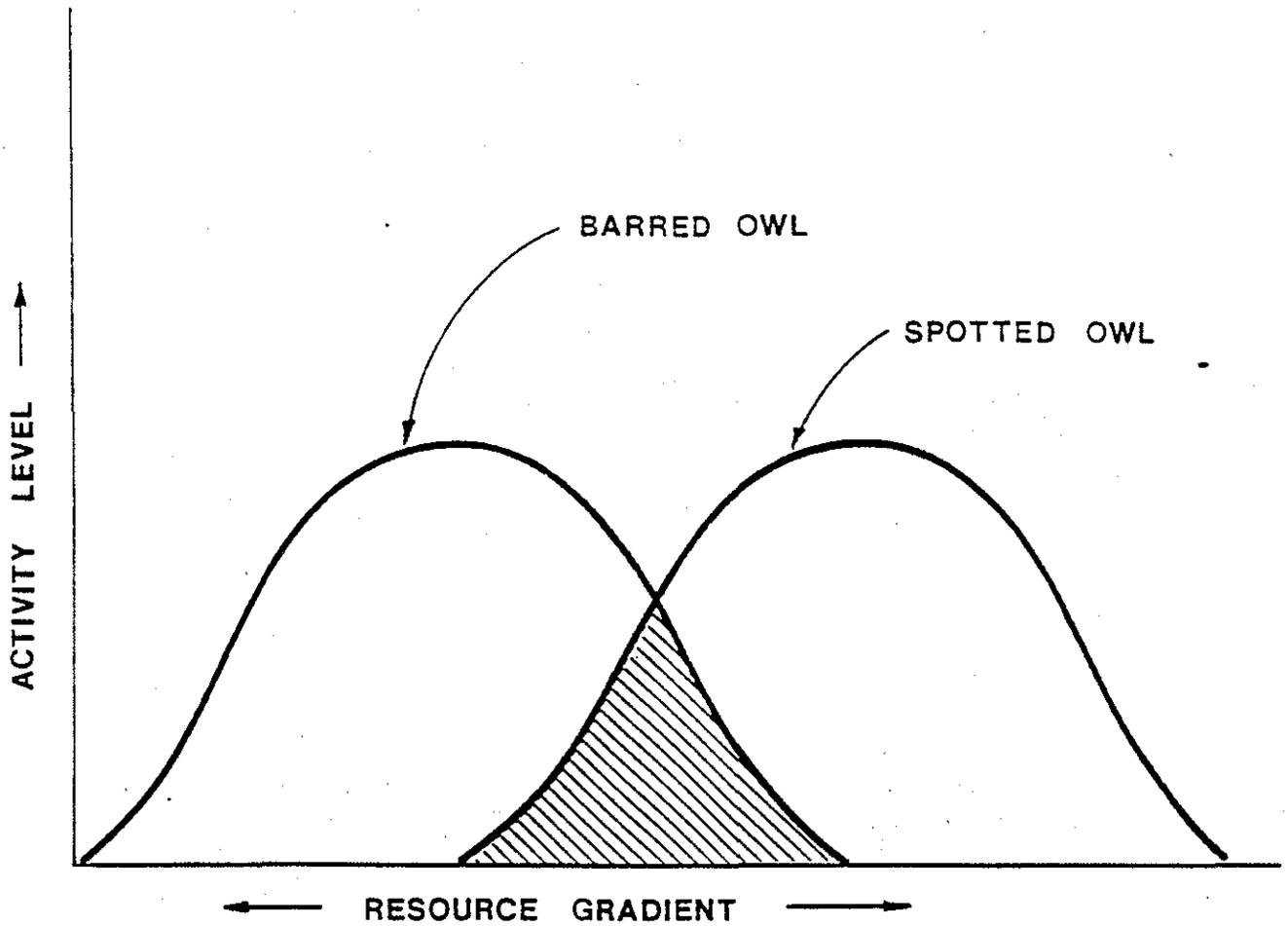


Figure 10. A schematic presentation of a more typical resource separation by two species. If the two owls develop coexistence mechanisms, this type of partitioning will occur where overlap is small.

It does appear, as Wiens (1977) points out, that competition is difficult to study because environments are changing. What may be viewed as competition could well be a direct consequence of environmental change. Environmental change is almost a constant. Climates fluctuate, perturbations occur, and the distribution of species expand and contract. In the long term, no community is stable, for environments shift and range adjustments or invasions of new species result in competitive allocation of resources.

It is into this complex milieu of competitive interaction that the Spotted Owl has been thrust by the invasion of the Barred Owl. This is a new role for the Spotted Owl because it has lived in a comparatively uniform habitat with little interference competition. Partitioning a niche that will give the Spotted Owl an advantage is the selective process in the immediate future.

HYBRIDIZATION

The Barred Owl has successfully engulfed nearly the entire range of the Northern Spotted Owl, and a few hybrids with offspring have been reported. Interspecific hybridization among birds is fairly common. In an analysis of 516 nonmarine avian species in North America, Mayr and Short (1970) found at least 10 per cent have hybridized in nature. Short (1972) estimated that ultimately 40 per cent of all bird species will be shown to hybridize.

Hybrids may be sterile, have reduced viability, be fertile, or have increased viability. Sterile hybrids have little significance if they are rare. If frequent, however, they could have a decimating impact on a species with a low population level. Each sterile bird removes that individual and its mate from the potential reproductive pool (note the use of sterile insects to control unwanted insect populations). If a Barred Owl X Spotted Owl were infertile and yet the parental forms continued to interbreed, the consequences could be negative. Since the Spotted Owl is a threatened species, each individual is important to the population.

Reduced viability, a second consequence, may result because in a static environment hybrids can be less well adapted than either parental form; as a result, hybrids could be selectively eliminated. The end result could be reproductive isolation of two parental forms not previously completely separated.

Besides sterility and reduced viability, hybridization may produce fertile hybrids. These fertile hybrids may result in several scenarios. Hybrid vigor may result in a strong F_1 generation, but the vigor is usually soon lost in subsequent generations (Schonewald-Cox et al. 1983, p. 265). It can usually be expected that the F_1 generation will be fairly uniform as an intermediate between the two parental forms (Merrell 1981). If, however, the F_1 hybrids interbreed, the F_2 and subsequent generations can be expected to be variable with a number of size, color, and vocal manifestations. Backcrossing to a parental type is most common in early stages of sympatry because another F_1 may be hard to find.

Should the environment be undisturbed and the parental forms well adapted (as Spotted Owls in large tracts of older forest), the backcross types that most closely resemble one or the other parent will be better adapted and selection will eliminate aberrant backcross types. Hybridization in natural populations may consequently be difficult to detect.

On the other hand, where habitats have been disturbed, some of the hybrids may be better adapted to the changed conditions than either parent. Introgressive hybridization, where genes flow from one population to another, may then take place. Disturbed habitats favor hybridization and in such habitats recombination and selection may result in a rapid move toward new adaptation.

Increased viability, a fourth result, occurs when the environment is changing or has changed. Hybrids better adapted to the altered habitats have a selective advantage. As forestry, agriculture, urbanization, etc., have already impacted older forest habitat and formed more pole-size habitat, a hybrid may have better viability than parental forms.

Perhaps the most comprehensive impact of hybridization is the free breeding of the two parental forms to an extent that the uniqueness of each is lost. Such effects of hybridization may be a serious conservation problem for a relict species such as the Spotted Owl when genetic contact is established with a widespread and reproductively successful species as the Barred Owl. The worse case scenario is that one species may be genetically swamped out of existence by the other. In other words, the unique gene pool of the Spotted Owl would become mixed with that of the Barred Owl. Even though the hybrid may be better adapted to the extant habitat, the original gene pool has been changed. A situation occurred on the Seychelles Islands that may be similar to the Barred Owl and Spotted Owl. The Seychelles Turtle Dove (*Streptopelia picturata rostrata*) occupied the Seychelles Islands until approximately 100 years ago when a closely related dove (*S. p. picturata*) was introduced from Madagascar. In 1959 no typical *S. p. rostrata* could be found on any of the 92 Seychelles Islands (Cade 1983). The current population of Seychelles Turtle Doves seems to be a stabilized hybrid swarm that phenotypically looks most like the introduced species. This is an historical account of a species with a restricted distribution being overwhelmed by a species with a much larger distribution.

Another incident of hybridizing to the detriment of one species is also given by Cade (1983). The Golden-winged Warbler (*Vermivora chrysoptera*), a habitat specialist nesting only in early shrubby successional stages, and the Blue-winged Warbler (*V. pinus*) were thought to have originally been allopatric in eastern United States. Both are extending their range northeastward into New England in response to man-induced habitat changes. Whenever the two species have come in contact, frequent hybridization results until approximately 50 years after contact, when only Blue-winged phenotypes remain in a given locality while Golden-winged and hybrid phenotypes have disappeared. Whether habitat change, interspecific competition, or genetic assimilation is the cause for disappearance of the Golden-winged Warbler is unclear. The Blue-winged Warbler is more of a generalist as it breeds not only in early shrubby successional stages like the Golden-winged Warbler but also in wooded habitat and edges of 60-to-70-year-old forest. The future of the

Golden-winged Warbler is bleak, and it could be gone in another 50-100 years (Confer and Knapp 1981).

A third example of an invader overwhelming a resident species is presented by Cade (1983). The Red-fronted Parakeet (*Cyanoramphus novaezelandiae*) and the Yellow-crowned Parakeet (*C. auriceps*) are sympatric over much of New Zealand and the nearby Chatham Islands. Some difference in nesting habitat is apparent. The Yellow-crowned Parakeet is more of a forest-dwelling species that nests only in tree cavities while the Red-fronted Parakeet nests in more open country using rocky crevices as well as tree cavities. Although these parakeets did not hybridize extensively over their range, in recent years they have hybridized on Mangere and Little Mangere islands of the Chatham group. Originally, only the Yellow-crowned Parakeet was found on these two small islands. Later habitat change and predation eliminated all parakeets from Mangere Island. Around 1961, Yellow-crowned Parakeets appeared and then Red-fronted Parakeets. By 1968 Red-fronted parakeets were more common, and the species composition changed quickly as shown by the following percentages:

	<u>1970</u>	<u>1973</u>
Yellow-crowned Parakeet	8%	6%
Red-fronted Parakeet	32	47
Hybrids	60	47

The same type of change is taking place on Little Mangere Island (Cady, 1983). For some reason, after existing sympatrically elsewhere, the reproductive isolation between the two species has broken down, and the Yellow-crowned Parakeet with the more restrictive breeding requirements is at a disadvantage. Its unique gene pool is being swamped out of existence on these two islands.

The sequel to this hybridization is that a selective shooting program to kill Red-fronted Parakeets and hybrids was initiated. By 1982 nearly twice as many Yellow-crowned Parakeets as Red-fronted Parakeets were on Mangere Island. The artificial selection against the Red-fronted Parakeet and hybrids has helped the less-aggressive species.

These examples give some indication of what may happen when two similar species that have been geographically separated come together. As in the case of the Barred and Spotted owls, this secondary contact may precipitate a range of behavioral, ecological, or genetic interactions.

Whether the Spotted Owl can maintain its distinct gene pool is unknown. The above examples do, however, suggest that the invading generalist, the Barred Owl, is favored.

Remington (1968) points out that when sympatry first occurs, hybridization is likely to take place freely with almost random mating with its own or another species. The amount of hybridization is often a measure of recency of sympatry rather than genetic similarity. Remington (1968) continues to list three possible consequences of recent sympatry:

1. Anti-hybridization and anti-competition mechanisms will develop quickly so both species may share available and needed resources.
2. The competitive inferior species may be driven to extinction.
3. One species may remain inferior and survive in only limited parts of its range, and the superior may expand its range.

A hybrid is not a single phenotype but is usually a wide range of recombinant genes. Even with a range of genotypes, some hybrid zones may be stable for long periods (Barton and Hewitt, 1985). Others may expand or contract quickly. Usually, hybrid zones are narrow and comprise a small portion of a species range (Fig. 11, 12). After two species come together and interbreed to any extent, one of three situations usually occurs (Short 1969, 1972). One is that a hybrid zone develops with a population entirely of hybrids. This zone is injected between the two parental species and may act either to separate or connect the parental species. The Common Flicker (*Colaptes auratus*) with eastern, western, and southwestern subspecies separated by a wide zone of hybrids along the Great Plains is a good example (Short 1965). Also, two forms of grackle (*Quiscalus quiscula*) have a large hybrid zone over much of eastern North America (Huntington 1952).

The second situation is that a zone overlap develops where both hybrids and parental forms occur. Within the zone, distal parental species reach the limit of their range and decline, thus leaving only the other parental form as allopatric even though the hybridizing forms are sympatric. The North American distributions of grosbeaks are a good example (West 1962). The Rose-breasted Grosbeak (*Pheucicus ludovicianus*) that inhabits eastern North America and the Black-headed Grosbeak (*P. melanocephalus*) that inhabits western North America meet and hybridize in the Great Plains. In this zone both parental forms and hybrids are found, and there appears to be no well developed barrier to genetic exchange (West 1962). Another example is the western Lazuli Bunting (*Passerina amoena*) and the eastern Indigo Bunting (*P. cyanea*).

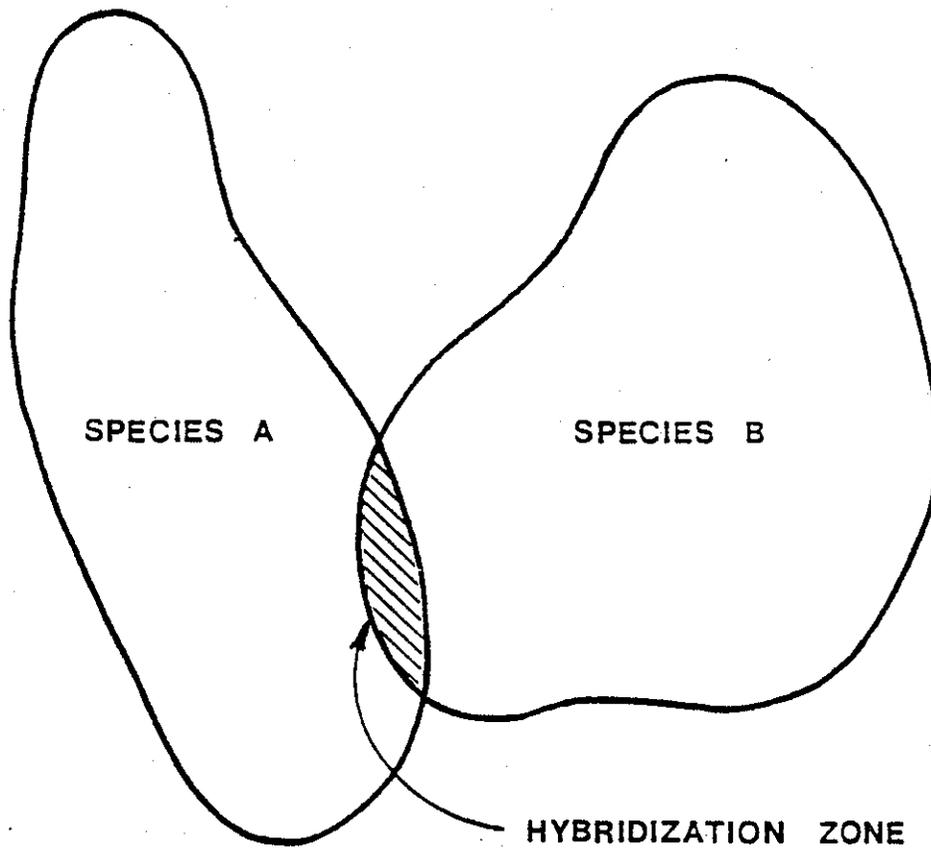


Figure 11. A schematic of a typical east-west distribution of two species with a hybridization zone.

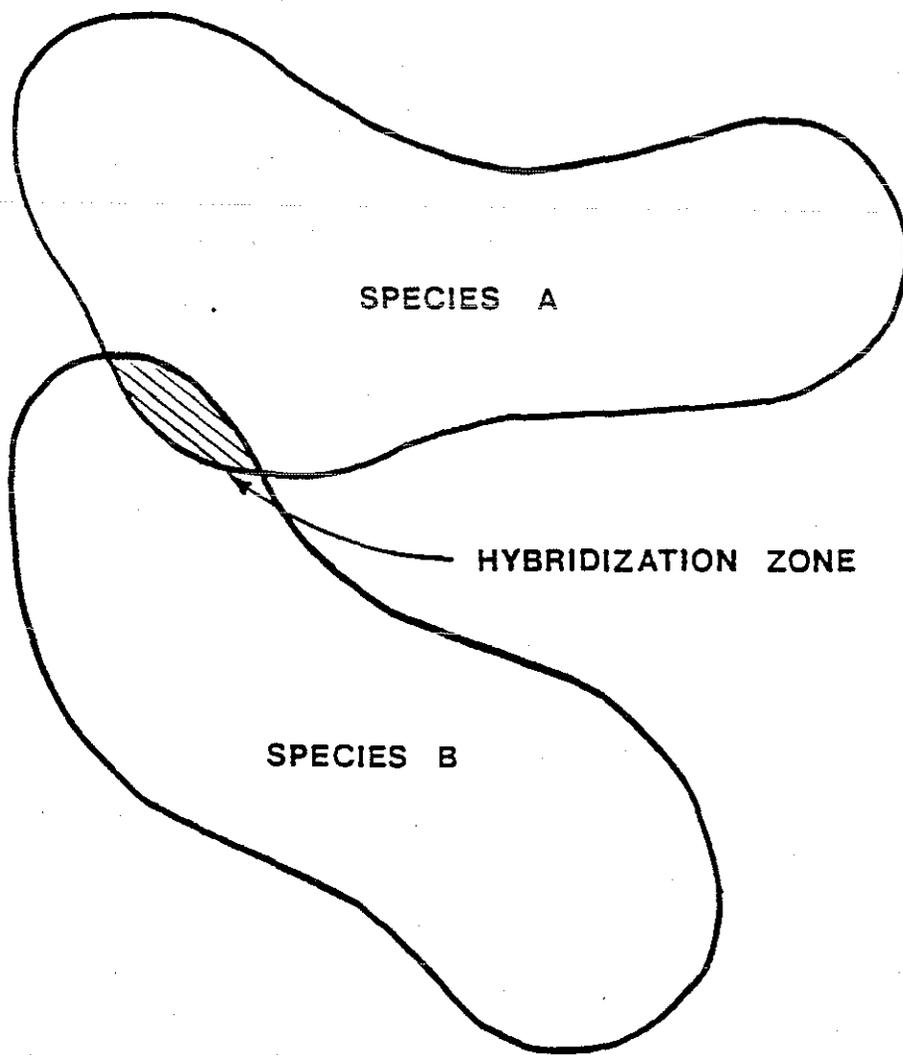


Figure 12. A schematic of a typical north-south distribution of two species with a hybridization zone.

A third common occurrence is that hybrid swarms may develop where the hybrids are not in contact with either parental form. The stability and taxonomic status of these hybrid swarms is variable. The genus *Junco* with its many closely related and hybridizing species is an example of a hybrid swarm. In addition, the towhees (*Pipilo*) have formed a hybrid swarm in western Mexico (Short 1969).

These examples illustrate that it is possible for two species to come together and have only limited hybridization. Still, none of these three situations seem to apply to the rapid invasion of much of the Spotted Owl distributional area by the Barred Owl. Perhaps a fourth category is needed: a situation when one species engulfs a major portion of the range of another. The species that is engulfed has little parental reservoir free from potential interbreeding where a pure gene pool is maintained. Low numbers of Barred Owls that have probably not occupied all suitable habitat currently limit potential interbreeding. This may change if Barred Owl populations increase. New sympatry over the distributional area of a species either brings forth an existing isolating mechanism or requires a quick and major adjustment of resource partitioning in order to maintain genetic integrity.

Some birds appear to biologists to be very similar, yet reproductive isolation is maintained. Two sympatric wrens (*Thryothorus sinaloa* and *T. felix*) in Mexico are of the same size and shape (Grant 1966b). Territories are nonoverlapping and contiguous, and songs cannot be discriminated in the field. Food, foraging, and nests appear the same. Breeding time is the same. Fifty per cent of the territories were occupied by the other species in subsequent years, yet hybridization was unreported. Obviously, through some undetected means, separation was maintained.

Hybridization Among Owls

The study of hybrids depends upon the ability to recognize them. Birds may have a distinct, colorful, feather pattern and/or distinct vocal patterns. Since males are usually more colorful and more vocal than female birds, records of male hybrids are much more common. Identification of owl hybrids is made difficult by lack of bright color patterns, nocturnal behavior, and (for many) woodland habitats. For a threatened species as the Spotted Owl, the task of identifying hybrids is compounded because of the broadly interpreted application of "take" and the penalty for possessing a threatened species. Few individuals can legally examine a Spotted Owl. This then leaves vocalization as a poor second means of hybrid identification; fortunately BLM uses visual records only. Owls do mimic calls, and there are reports of a Spotted Owl being near to and mimicking a Barred Owl. Is this mimicking or hybridizing? However, from limited reports of F₁ hybrids, the

vocalization is intermediate, consistent, and different from either parent. This opens the possibility of using vocalizations to identify F_1 hybrids. Probably F_2 hybrid vocalizations would not be uniform.

Considering the importance of owl vocalization in territoriality and in owl survey techniques, it may be good to consider briefly more about vocalization. Hybrids may have songs like either or both parents or songs intermediate between parental types (Payne 1986, Nicholls and Fuller 1987). Where two allopatric species became sympatric, hybrids may frequently have vocalization intermediate of the two parental types. Not following this pattern, Scherzinger (1987) found that in the young of a Tawny Owl X Ural Owl and backcrosses, the Tawny Owl call dominated. Other birds may have an intermediate call where ranges overlap such as the Eastern Meadowlark (*Sturnella magna*) and the Western Meadowlark (*S. neglecta*), but where separated they maintained distinctive calls (Cody 1974, p. 247). Additional examples are the towhee and Fox Sparrow (*Passerella*) (Cody 1974, p. 245) where most songs can be assigned to one or the other species, but some song types that are intermediate and without visual verification cannot be attributed to either species. Consequently, it is possible that vocal separation of territories may break down when two similar species overlap. This could, therefore, confuse and prevent territoriality as a means of resources separation and species identity. Furthermore, Ganey (1990) found that calling behavior among Mexican Spotted Owls may be important in intrapair communication. It is unknown if or how a mixture of similar vocalizations may be confusing to paired owls.

Payne (1986) also feels that songs are learned (within a genetic framework). Therefore, in theory when Barred Owl populations become higher than Spotted Owl because of smaller home range size, Spotted Owls may tend to mimic the more frequently heard Barred Owl call. This has not, however, been reported to be the result in either Washington or British Columbia where the Barred Owl is more abundant than the Spotted Owl.

Response to either recorded or vocal-call imitations is the only practical means to census owls (McGarigal and Fraser 1985). Recognition of replies is important. As more hybrids are likely to occur in the population, intermediate-type calls can be expected more frequently and accurate identification will be more difficult. Thus, intermediate-type calls are not only important to the owl to establish territories and maintain genetic integrity but also important to the biologist who must separate these species by their calls.

Few species of North American owls have been reported to hybridize to any extent. The Eastern Screech-owl and the Western Screech-owl, although allopatric over most of their range, have a small overlap in eastern Colorado along the Arkansas River and in central and western Texas.

Only a limited mixing has been recorded. Some intergrades also occur in southeastern Arizona between the Western Screech-owl and the Whiskered Screech-owl (*Otus trichopsis*) (see Johnsgard 1988, and Voous 1989).

The Northern Saw-whet Owl (*Aegolius acadicus*) and the Boreal Owl (*A. funereus*) are closely related owls that have a wide area of distributional overlap across southern Canada and down the Rocky Mountains. Within this zone, the amount or type of interaction is unknown (Voous 1989). Another two sympatric species that are closely related are the Northern Pigmy Owl (*Glaucidium gnoma*) and the Ferruginous Pigmy Owl (*G. brasilianum*). The ranges but not habitats overlap in southern Arizona and into Mexico where the amount of interaction is unknown. Thus, it is evident that little is reported about hybridizing of North American owls in the wild and little insight is offered to the result of the recent Barred Owl and Spotted Owl sympatry.

Three European *Strix*, the Great Grey Owl, the Ural Owl, and the Tawny Owl, are closely related. The distributional pattern is from north to south respectively. In captivity, the Ural Owl and Tawny Owl hybridize and the F₁ is fertile (Voous 1989). The Ural Owl is reported by Lundberg (1979) to be a generalist feeder but to nest in tree cavities that are scarce. Observations on Ural Owl and Tawny Owl interaction present a mixed picture. Some report that they nest agreeably within 300 yards of each other, while other reports are that the Ural Owl kills or drives away the Tawny Owl (Voous 1989). The Barred and Spotted owls may be considered intermediate between the Ural and Tawny owls. The latter have limited sympatry with little or no hybridization. They have, however, essentially different distributions so the behavior of the European *Strix* offer little insight into what may develop from the engulfing sympatry of the Barred Owl and Spotted Owl.

Hybridization and the Endangered Species Act

The Endangered Species Act is entirely dependent on the definition of species and subspecies and the status and geographic distribution of populations in these taxonomic classifications.

Furthermore, hybrids between an endangered form and a nonendangered form are interpreted as not covered by the ESA (Cade 1983). The exclusion of hybrids is well illustrated by the Mallard Duck (*Anas platyrhynchos*) and Mexican Duck (*A. diazi*) decision. Cade (1983) gives a good summary of this development.

A highly successful species, the Mallard Duck has hybridized with all eight other members of its genus in North America. Among them is the Mexican Duck whose northern range crosses into the United States along the Rio Grande Valley. Under the old Endangered Species Preservation Act of 1966, the Mexican Duck was listed as endangered because of draining of wetlands and hybridizing

with the Mallard Duck. After various surveys and census, it was finally concluded by 1977 that the entire United States population of Mexican-like ducks consisted entirely of hybrids between Mallard and Mexican ducks. The Department of Interior ruled that hybrids were not covered by the ESA, and the American Ornithologist's Union changed the taxonomic status of the Mexican Duck from a separate species to a subspecies of the Mallard Duck. In 1978 the Mexican Duck was removed from federal listing. Thus, it would seem that when the United States population of Mexican-like ducks became intergrades, the ESA no longer applied (Finnley 1978).

Also of concern is that the gene pool of the Black Duck (*A. rubripes*) may be assimilated by the Mallard Duck (Johnsgard 1976). The Mallard Duck has recently extended its range throughout the eastern flyway and is now more common than the Black Duck. Extensive hybridization and backcrossing is taking place (Cade 1983) as the Mallard Duck continues to expand its range and hybridization continues to increase. Truly, there is genuine concern that the Black Duck gene pool may be swamped by the Mallard Duck (Heusmann 1974). The Mallard and Black duck interaction has similarities to that of the Barred and Spotted owl: a widespread, aggressive, successful species rapidly invading the range of a species with a limited range and a narrow ecological tolerance.

A second example of the ESA not including hybrids is presented by the Dusky Seaside Sparrow (*Ammodramus maritima nigrescens*). Only five captive males remained of the Florida species. Some biologists wanted to cross the Dusky Seaside Sparrow with a closely related subspecies, the Scott's Seaside Sparrow (*A. m. peninsulae*), and then by backcrossing to the parental males reconstitute a nearly pure genotype (Cade 1983). But following the Department of Interior policy, hybrids were not included in the ESA (James 1980, Kale 1983). Finally in 1984 a Dusky Seaside Sparrow male was crossed with a Scott's Seaside Sparrow, but by this time the Dusky was too old and even though young hatched, none survived. From these two precedents, it would be concluded that as the ESA now is currently interpreted, hybrids are not included. Therefore, under present interpretation, should the Barred Owl swamp the Spotted Owl and form a Barred Owl X Spotted Owl genepool, the present Northern Spotted Owl subspecies would cease to exist and the ESA would not apply to the resulting hybrid. If, on the other hand, the hybrid were different enough from both parents to be considered a new subspecies or species, the new taxonomic entity could be considered under the ESA.

The entire concept of Barred Owl and Spotted Owl hybridization is complex. It is known that they hybridize, and at least in one case the hybrids were fertile. Some birds provide examples of species coexisting indefinitely with limited hybridization when an isolation mechanism develops. In other examples, an aggressive species appears to swamp the gene pool of another and cause its decline. The major difference between the Barred and Spotted owl situation is that the Barred Owl

has engulfed much of the distributional area of the Northern Spotted Owl. This has not been the case in most examples. Overall, the prognosis is poor for the Spotted Owl to maintain an undiluted gene pool.

Undoubtedly, many more hybrids exist than we know about. It must be remembered that frequent hybridization is common upon first sympatry until sufficient members of the invading species are present as mates and until an isolating mechanism appears. Perhaps we should question the concept that hybrids in nature are bad and so-called "pure" gene pools are good. Certainly, in some cases hybrids may be better adapted to changed environments of today's world than either parental form.

CONCLUSIONS

The Barred Owl is now widely distributed throughout western Oregon, being reported from all National Forests and all BLM Districts that have Spotted Owls. Population levels of Barred Owls are low enough that interaction with the Spotted Owl is still limited. This invasion by the Barred Owl over the past few decades has encompassed nearly all the range of the Northern Spotted Owl. Movement has been rapid westward across Canada and then southward down the Cascade Range. Outlying owls in advance of the population front appear to be very transient, moving frequently and long distances. Habitat change probably had little influence on movement across Canada but may have provided suitable Barred Owl habitat for southward movement. It is common for species to adjust range boundaries in response to short-term climate or habitat fluctuation; communities in turn have the resilience to integrate new members or adjust to the loss of previous members.

Not only are there short-term fluctuations but also long-term adjustments of many species ranges following post-glacial warming. A number of avian species, including the Barred and Spotted owls, had the northern portion of their range truncated by glacial advance. Now range expansion to the north is bringing previously separate species into secondary contact. Some species meld together while others maintain separate identities.

Competition may occur as these alike species regain sympatry. The Barred Owl uses a wider variety of habitat with a stronger use of younger stands. In contrast, the Spotted Owl is selective toward older forests. In the Northwest, Spotted Owls have much larger home ranges than Barred Owls with a result that a Spotted Owl may be competing with several Barred Owls. Also, as the Barred Owl uses older forests as well, it is occupying habitat that could be used by Spotted Owls. Both species use similar type and size of cavities for nests. Since tree cavities are generally thought to be in short supply, competition for this scarce resource may be keen. The Barred Owl preys upon the same food base as the Spotted Owl but also preys heavily on other terrestrial species, especially *Microtus*. Abundance of prey base has been related to reproductive success in European owls so the broader prey use by the Barred Owl could be important.

When two previously separated species become sympatric, a mechanism to separate and allocate resources is essential. European owls and other birds have developed partitioning mechanisms. If and how quickly the Barred and Spotted owls will, can only be determined over time. Although

competition in continental species rarely results in extinction, the Spotted Owl is in a new role of having to compete with an aggressive invader.

Hybridization is common in birds and usually takes place on the fringe of two species distribution. In most cases the hybridization zone remains small compared to the total distribution of the species, and the population levels of the hybrids and both parental forms remain relatively constant. Whenever one species invades much of the range of the other, either isolating mechanisms must develop quickly or one species may genetically swamp the other. One or the other could result from the Barred Owl invasion.

Hybrids may be sterile, have reduced viability, or have increased viability. At least some Barred Owl X Spotted Owl crosses are fertile. It is too soon to tell if the offspring and backcross offspring will be better or less adapted. Many habitats have changed, and, as often happens in an altered environment, genes from other than the original parental form (Spotted Owl) may increase viability. Generally, changing environments favor hybrids and hybridization.

As these hybrids mix into the avian community, identification of hybrids becomes important to both the owls and to biologists. Vocalization is the common territorial marker among owls. Intermediate type calls of hybrids could confuse adjacent owls of different species as atypical calls are used to defend territorial areas. The result is the erosion of species differences and a lowering of barriers to cross breeding. Imitation of owl calls is the only practical method of censusing owls. Identification, depending on the agency, may be based upon the ability of the biologist to recognize answering calls. Since hybrids may answer with an intermediate call or a call like either parent, precise identification becomes difficult. The potential for confusing hybrids as either Barred Owls or Spotted Owls is present.

The Endangered Species Act is not clear about how to consider hybrids. Interpretation and past policy indicate that hybrids are excluded from the Act's provisions.

Competition and hybridization are complex concepts that have many ramifications. It is into this intricate milieu that the Spotted Owl has been thrust by the invasion of the aggressive, adaptable Barred Owl. As this report indicates, the forecast is not good for the Spotted Owl as there is no indication but that the Barred Owl will continue to increase and to extend its range. Nonetheless, species are adaptable, and it is possible that both owls will allocate resources and limit hybridization when they have had time to adjust to the recent sympatry. Most publications on the Spotted Owl relegate a sentence or two acknowledging the presence of the Barred Owl but little more. The following reports have only one paragraph each that refers to the Barred Owl:

Gutierrez et al. (1984), Carey (1985), Dawson et al. (1986), Irwin (1986), Marshall (1988), and USDA (1988). In the most recent and comprehensive report (Thomas et al. 1990), the Barred Owl is mentioned a few times but not as a potentially serious competitor. Furthermore, none of the models used to project Spotted Owl population dynamics include the Barred Owl as an input variable. Simberloff (1987) is one of the few who realized the importance of the Barred Owl for he termed it "...a threat that may supersede all others...".

In summary, a major theme of this report is that the potential for future interaction between the Barred and Spotted owls is considerable. Just how much interaction, when it will occur, and what the impact on the two species will be can only be suggested. In the meantime, as with many research needs, an obvious crisis builds before funding dollars become available.

The difficulty of applying information on both owls from southern United States and even from Washington to Oregon is apparent. Washington is on the northern fringe of Spotted Owl distribution while Oregon is the center of its distribution. How the two species react may well differ.

Another anomaly is the emphasis of the BLM and Forest Service on habitat research and not on owl biology. Since the land (habitat) belongs to the federal government and the wildlife, to the individual states, this long-standing artificial separation has focused the majority of research on habitat. The major portion of research funding has come through the two federal agencies, and as expected nearly all projects have been habitat-oriented. Now that the Spotted Owl is a threatened species, perhaps competition can receive equal attention.

Our thinking should not become too ingrained in believing that habitat change is the only problem facing the Spotted Owl and that habitat protection is necessarily the only solution required.

RECOMMENDATIONS

1. Basic to any management program is identification of the species involved. Methods of separating hybrids and backcrosses from parental forms must be developed. This would involve a captive breeding program in order to have known phenotypes and then a comprehensive study of their vocalizations.
2. A re-evaluation should be made of all preserved Spotted Owl sites to determine accurately that the owls in these locations are Spotted Owls and not hybrids or Barred Owls.
3. The genetics of Barred and Spotted owls needs to be studied and analyzed. What will hybridization mean to the two parental forms? What are the viability and characteristics of the variety of backcrosses? What can be expected from introgression between populations of the two species?
4. Little is known about the life history of the Barred Owl in Oregon. Why is it doing so well? Habitat use, food habits and prey, demographic parameters, home-range size, dispersal ability, etc., all need intensive and extensive study.
5. Barred Owl and Spotted Owl interaction and the relationship of both to the Great Horned Owl require critical analysis. Millions of dollars have been spent on research on the habitat relationships of the Spotted Owl while the invasion of the Barred Owl has progressed with only minimal attention.

ACKNOWLEDGMENTS

Preliminary versions of this report were reviewed by Fred Gehlbach, Tom Hamer, and Joe Lint. Their helpful comments, criticism, and suggestions made valuable improvements.

LITERATURE CITED

- Allen, H. L., T. Hamer, and L. W. Brewer. 1985. Range overlap of the Spotted Owl (*Strix occidentalis caurina*) and the Barred Owl (*Strix varia*) in Washington and implications for the future. Proc. Raptor Research Found. Symp. Sacramento (abstract). p. 1.
- Apfelbaum, S. I., and P. Seelbach. 1983. Nest tree, habitat selection and productivity of seven North American raptor species based on Cornell Univ. nest record program. Raptor Research 17:97-113.
- Barton, N. H., and G. M. Hewitt. 1985. Analysis of hybrid zones. Ann. Rev. Ecol. Syst. 16:113-148.
- Bent, A. C. 1938. Life histories of North American birds of prey. Part 2. U. S. Natl. Mus. Bull. 170. Washington. 482p.
- Bosakowski, T., R. Spelser, and J. Benzinger. 1987. Distribution, density, and habitat relationships of the Barred Owl in northern New Jersey. p. 135-143 in R. W. Nero, R. J. Clark, R. J. Knapton, and R. H. Hamre, eds. Biology and conservation of northern forest owls. U.S.D.A., Forest Service GTR RM-142.
- Boxall, P. C., and P. H. R. Stepney. 1982. The distribution and status of the Barred Owl in Alberta. Can. Field-Naturalist 96:46-50.
- Cade, T. J. 1983. Hybridization and gene exchange among birds in relation to conservation. p. 288-348 in C. M. Schonewald-Cox, S. M. Chambers, B. MacBryde, and L. Thomas, eds. Genetics and conservation. Biol. Cons. Ser. The Benjamin/Cummings Publ. Co.
- Cahn, A., and J. T. Kemp. 1930. On the food of certain owls in east-central Illinois. Auk 47:323-328.
- Campbell, R. W. 1973. Coastal records of the Barred Owl for British Columbia. Murrelet 54:25.
- Carey, A. B. 1985. A summary of the scientific basis for Spotted Owl management. p. 100-114 in R. J. Gutierrez and A. B. Carey, tech. eds. Ecology and management of the Spotted Owl in the Pacific Northwest. U.S.D.A. Forest Service. Gen. Tech. Report PNW-185.
- Cody, M. L. 1974. Competition and structure of bird communities. Monographs in Popn. Biology, No. 7. Princeton Univ. Press, Princeton, N. J. 318p.
- Cody, M. L. 1985. Habitat selection in the Sylviine Warblers of western Europe and North America. p. 85-129. in M. L. Cody, ed. Habitat selection in birds. Academic Press. 558p.
- Confer, J. L., and K. Knapp. 1981. Golden-winged Warblers and Blue-winged Warblers: The relative success of a habitat specialist and a generalist. Auk 98:108-114.

- Davis, M. B. 1987. Invasions of forest communities during the Holocene: beech and hemlock in the Great Lakes region. p. 373-394. *in* A. J. Gray, M. J. Crawley, and P. J. Edwards, eds. Colonization, succession and stability. Symp. British Ecol. Soc. No. 26. Blackwell Sci. Publ.
- Davis, J. W., G. A. Goodwin, and R. A. Ockenfels, tech. coords. 1983. Snag habitat management: proceedings symp. U.S.D.A., Forest Service GTR RM-99, 226p.
- Dawson, W. R., J. D. Ligon, J. R. Murphy, J. R. Myers, D. Simberloff, and J. Verner. 1986. Report of the advisory panel on the Spotted Owl. Audubon Conservation Report No. 7. 47p.
- Devereux, J. G., and J. A. Mosher. 1987. Breeding ecology of Barred Owls in the central Appalachians. Raptor Research 18:49-58.
- Elody, B. I., and N. F. Sloan. 1985. Movements and habitat use of Barred Owls in the Huron Mountains of Marquette County, Michigan, as determined by radiotelemetry. Jack-pine Warbler 63:3-8.
- Erskine, A. J. 1972. Mature poplar stands and Balsam Fir stands. Amer. Birds 26:989-992.
- Evens, J. and R. LeValley. 1982. Middle Coast Region. Amer. Birds 36:890.
- Finnley, D. ed. 1978. Status review shows Mexican Duck should be deregulated. Endangered Species Tech. Bull. 3:1 and II.
- Fischer, A. G. 1981. Climatic oscillations in the biosphere. p. 103-131 *in* M. H. Nitecki, ed. Biotic crises in ecological and evolutionary time. Academic Press. 301p.
- Forsman, E. D., E. C. Meslow, and E. M. Wight. 1984. Distribution and biology of the Spotted Owl in Oregon. Wildl. Soc. Monogr. 87, 64p.
- Fowler, L. J., and R. W. Dimmick. 1983. Wildlife use of nest boxes in Eastern Tennessee. Wildl. Soc. Bull. 11:178-181.
- Frankel, O. H., and M. E. Soule. 1981. Conservation and evolution. Cambridge Univ. Press. 327p.
- Froke, J. B. 1983. The role of nestboxes in bird research and management. p. 10-13 *in* J. W. Davis, G. A. Goodwin, and R. A. Ockenfels, tech. coords. Snag habitat management: proceedings symp. U.S.D.A. Forest Service GTR RM-99.
- Ganey, J. F. 1990. Calling behavior of Spotted Owls in northern Arizona. Condor 92:485-490.
- Graham, R. W. 1986. Plant-animal interactions and Pleistocene extinctions. p. 131-154 *in* D. K. Elliott, ed. Dynamics of extinction. John Wiley & Sons. 294p.
- Grant, J. 1966a. The Barred Owl in British Columbia. Murrelet 47:39-45.
- Grant, P. R. 1966b. The coexistence of two wren species of the genus *Thryothorus*. Wilson Bull. 78:266-278.

- Gutierrez, R. J., D. M. Solis, and C. Sisco. 1984. Habitat ecology of the Spotted Owl in northwestern California: implications for management. p. 368-373 in Proceedings Society of American Foresters 1983, Portland, OR. Society of American Foresters, Bethesda, MD.
- Harner, T. E. 1988. Home range size of the Northern Barred Owl and Northern Spotted Owl in western Washington. M.S. thesis, Western Washington University, Bellingham. 73p.
- Harner, T. E., S. G. Seim, and K. R. Dixon. 1989. Unpublished. Northern Spotted Owl and Northern Barred Owl habitat use and home range size in Washington. Preliminary report. Wash. Dept. Wildl., Olympia. 65p.
- Hengeveld, R. 1988. Mechanisms of biological invasions. *Jour. Biogeography* 15:819-828.
- Hengeveld, R. 1989. Dynamics of biological invasions. Chapman and Hall. 160p.
- Hengeveld, R. 1990. Dynamic biogeography. Cambridge Univ. Press. 249p.
- Heusmann, H. W. 1974. Mallard-Black duck relationships in the Northeast. *Wildl. Soc. Bull.* 2:171-177.
- Hinde, R. A. 1956. The biological significance of territories of birds. *Ibis* 98:340-369.
- Houston, C. S. 1959. First records of Barred Owls in Saskatchewan. *Blue Jay* 17:94.
- Houston, C. S. 1961. First Saskatchewan nest record for Barred Owl. *Blue Jay* 19:114-115.
- Huntington, C. E. 1952. Hybridization in the Purple Grackle, *Quiscalus quiscula*. *Syst. Zool.* 1:149-170.
- Irons, D., and C. Watson. 1985. Oregon Birds Record Committee. Report of Committee Actions 1978-1983. *Oregon Birds* 11:18-68.
- Irwin, L. 1986. Ecology of the Spotted Owl in Oregon and Washington. Tech. Bull. 509. NCASI, New York. 58p.
- James, F. C. 1980. Miscegenation in the Dusky Seaside Sparrow. *Bioscience* 30:800-801.
- Jarvinen, O., and S. Ulfstrand. 1980. Species turnover of a continental bird fauna: northern Europe, 1850-1970. *Oecologia* 46:186-195.
- Johnsgard, P. A. 1975. Waterfowl of North America. Indiana Univ. Press. Bloomington. 575p.
- Johnsgard, P. A. 1976. Sympatry changes and hybridization incidence in Mallards and Black Ducks. *Amer. Midl. Naturalist* 77:51-63.
- Johnsgard, P. A. 1988. North American owls: biology and natural history. Smithsonian Instit. Press. Washington, 295p.

- Johnson, D. H. 1987. Barred Owls and nest boxes--results of a five-year study in Minnesota. p. 129-134 in R. W. Nero, R. J. Clark, R. J. Knapton, and R. Hamre, eds. *Biology and conservation of northern forest owls*. U.S.D.A. Forest Service. GTR RM-142.
- Johnston, D. H., and D. G. Follen. 1984. Barred Owls and nest boxes. *Raptor Research* 18:34-35.
- Johnston, R. F. 1961. Population movements of birds. *Condor* 63:306-389.
- Kale, H. W. 1983. A status report on the Dusky Seaside Sparrow. p. 128-132 in *Bird Conservation Vol. I*, S. A. Temple, ed. Univ. Wisc. Press, Madison.
- Keddy, P. A. 1989. *Competition. Population and community biology series*. Chapman and Hall. 202p.
- Klopfer, P. H. 1969. *Habitats and territories*. Basic Books, NY. 117p.
- Korpimäki, E., K. Huhtala, and S. Sulkava. 1990. Does the year-to-year variation in the diet of Eagle and Ural owls support the alternative prey hypothesis? *Oikos* 58:47-54.
- Law, R., and A. R. Watkinson. 1989. Competition. p. 243-284 in J. M. Cherrett, ed. *Ecological concepts*. Symp. British Ecol. Soc. No. 28. Blackwell Sci. Publ.
- Leder, J. E., and M. L. Walters. 1980. Nesting observations of the Barred Owl in western Washington. *Murrelet* 61:110-112.
- Lundberg, A. 1979. Residency, migration and a compromise: adaptations to nest-site scarcity and food specialization in three Fennoscandian owl species. *Oecologia* 41:273-281.
- MacArthur, R. H. 1984. *Geographical ecology*. Princeton Univ. Press. Princeton, NJ. 269p.
- McGarigal, K., and J. D. Fraser. 1985. Barred Owl responses to recorded vocalizations. *Condor* 87:552-553.
- Mannan, R. W., E. C. Meslow, H. M. Wight. 1980. Use of snags by birds in Douglas-fir forests, western Oregon. *Jour. Wildl. Manage.* 44:787-797.
- Marshall, D. E. 1988. Status of the Northern Spotted Owl with special emphasis on populations in Oregon. Unpublished report. Oregon Depart. of Fish and Wildlife. 57p.
- Marti, C. D. 1974. Feeding ecology of four sympatric owls. *Condor* 76:45-61.
- Mattocks, P. W., and E. S. Humm. 1982. North Pacific Coast Region. *Amer. Birds* 36:887.
- Mayr, E. 1965. The nature of colonization in birds. p. 29-47 in H. G. Baker and G. L. Stebbins, eds. *The nature of colonizing species*. Academic Press, NY.
- Mayr, E., and L. L. Short. 1970. Species taxa of North American birds, a contribution to comparative systematics. Publ. Nuttall Ornithol. Club No. 9.

- Merrell, D. J. 1981. Ecological genetics. Univ. Minn. Press. Minneapolis, 500p.
- Mikkola, H. 1983. Owls of Europe. Buteo Books. Vermillion, SD. 397p.
- Mikkola, H. 1987. Ecology of the three species of *Strix* owls in Finland. Summary. p. 144 in R. W. Nero, R. J. Clark, R. J. Knapton, and R. H. Hamre, eds. Biology and conservation of northern forest owls. U.S.D.A. Forest Service. GTR RM-142.
- Miller, R. S. 1968. Conditions of competition between Redwings and Yellowheaded blackbirds. Jour. Animal Ecol. 37:43-62.
- Neitro, W. A., V. W. Binkley, S. P. Cline, R. W. Mannan, B. G. Marcot, D. Taylor, and F. F. Wagner. 1985. Snags (Wildlife Trees). p. 129-169 in E. R. Brown, tech. ed. Management of wildlife and fish habitats in forests of western Oregon and Washington, Part I, U.S.D.A. Forest Service. PNW Region. Supt. Doc., Washington
- Nicholls, T. H., and M. R. Fuller. 1987. Territorial aspects of Barred Owl home range and behavior in Minnesota. p. 121-128 in R. W. Nero, R. J. Clark, R. J. Knapton, and R. H. Hamre, eds. Biology and conservation of northern forest owls. U.S.D.A. Forest Service. FTR RM-142.
- Nicholls, T. H. and D. W. Warner. 1972. Barred Owl habitat use as determined by radiotelemetry. Jour. Wildl. Manage. 36:213-224.
- Oeming, A. F., and E. T. Jones. 1955. The Barred Owl in Alberta. Can. Field-Naturalist 69:66-67.
- Payne, R. B. 1986. Bird songs and avian systematics. p. 87-123 in R. F. Johnston, ed. Current Ornithology Vol. 3. Plenum Press, NY.
- Peters, R. L. 1988. Effects of global warming on species and habitats an overview. Endangered Species Update. 5:1-8.
- Remington, C. L. 1968. Suture-zones of hybrid interaction between recently joined biotas. p. 321-428 in T. Dobzansky, M. K. Hecht, and W. C. Steere, eds. Evolutionary Biology. Appleton-Century-Crafts, NY.
- Rohweder, R. 1978. Barred Owl expanding into northeastern Oregon. Oregon Birds 4:41-42.
- Rusch, D. H., E. C. Meslow, P. D. Doerr, and L. B. Keith. 1972. Response of Great Horned Owl populations to changing prey densities. Jour. Wildl. Manage. 36:282-296.
- Saurola, P. 1989. Breeding strategy of the Ural Owl *Strix uralensis*. p. 235-240 in B. U. Meyburg and R. D. Chancellor, eds. Raptors in the modern world. Proceed. III World Conf. on Birds of Prey and Owls. World Working Group on Birds of Prey and Owls, London.
- Scherzinger, W. T. 1987. Reintroduction of the Ural Owl in the Bavarian National Park, Germany. p. 75-80 in R. W. Nero, R. J. Clark, R. J. Knapton and R. H. Hamre, eds. Biology and conservation of northern forest owls. U.S.D.A. Forest Service. GTR RM-142.

- Schoener, T. W. 1983. Field experiments on interspecific competition. *Amer. Naturalist* 122:240-285.
- Schonewald-Cox, C. M., S. M. Chambers, B. MacBryde, and L. Thomas, eds. 1983. *Genetics and conservation*. Biol. Cons. Ser. The Benjamin/Cummings Publ. Co. 721p.
- Shields, W. M. 1982. *Philopatry, inbreeding, and evolution of sex*. State Univ. New York Press. Albany, NY.
- Short, L. L. 1965. Hybridization in the flickers (*Colaptes*) of North America. *Bull. Amer. Mus. Natural Hist.* 129:309-428.
- Short, L. L. 1969. Taxonomic aspects of avian hybridization. *Auk* 86:84-105.
- Short, L. L. 1972. Hybridization, taxonomy and avian evolution. *Ann. Missouri Botanical Gardens* 59:447-453.
- Simberloff, D. 1981. Community effects of introduced species. p. 53-81 in M. H. Nitecki ed. *Biotic crisis in ecological and evolutionary time*. Academic Press, NY.
- Simberloff, D. 1987. The Spotted Owl fracas: mixing academic, applied, and political ecology. *Ecology* 68:766-772.
- Sisco, C., and D. Sharp. 1986. The occurrence of Spotted and Barred owls in Olympic National Park, Washington. *Proc. Raptor Research Found. Symp. Sacramento* (abstract).
- Soule, M. E. 1983. What do we really know about extinction? p. 111-124 in C. M. Schonewald-Cox, S. M. Chambers, B. MacBryde, and L. Thomas, eds. *Genetics and conservation*. The Benjamin/Cummings Publ. Co.
- Southern, H. N. 1970. The natural control of a population of Tawny Owls (*Strix aluco*). *Jour. Zool.* 162:197-285.
- Stirling, D. 1970. A sight record of the Barred Owl on Vancouver Island. *Murrelet* 51:19.
- Svärdson, G. 1949. Competition and habitat selection in birds. *Oikos* 1:157-174.
- Taylor, A. L., and E. D. Forsman. 1976. Recent range extensions of the Barred Owl in western North America, including the first records for Oregon. *Condor* 78:560-561.
- Thomas, J. W., E. D. Forsman, J. B. Lint, E. C. Meslow, B. R. Noon, and J. Verner. 1990. *A conservation strategy for the Northern Spotted Owl*. U.S. Gov't. Printing Office. 427p.
- USDA-Forest Service. 1988. *Final supplement to the Environmental Impact Statement for an amendment to the Pacific Northwest Regional Guide, Vol. 1*. U.S.D.A. Forest Service. PNW Region. Portland, OR.
- Voous, K. H. 1989. *Owls of the northern hemisphere*. MIT Press. Cambridge, MA. 320p.
- Waser, P. M. 1985. Does competition drive dispersal? *Ecol.* 66:1170-1175.

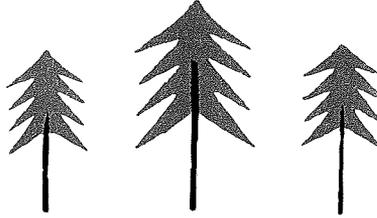
- West, D. A. 1962. Hybridization in grosbeaks (*Pheucticus*) of the Great Plains. *Auk* 79:399-424.
- Wiens, J. A. 1977. On competition and variable environments. *Amer. Scientist* 65:590-597.
- Williamson, M. 1987. Are communities ever stable? p. 353-371 in A. J. Gray, M. J. Crawley, and P. J. Edwards eds. *Colonization, succession and stability*. Symp. British Ecol. Soc. No. 26. Blackwell Sci Publ.
- Wilson, K. A. 1938. Owl studies at Ann Arbor, Michigan. *Auk* 55:187-197.
- Wittenberger, J. F. 1981. *Animal social behavior*. Duxbury Press. Boston. 722p.

ASSOCIATION OF O & C COUNTIES

COMM. DOUG ROBERTSON, PRES.
DOUGLAS COUNTY COURTHOUSE
1036 S.E. DOUGLAS AVENUE
ROSEBURG, OREGON 97470
(541) 440-4201

COMM. TONY HYDE, VICE-PRES.
COLUMBIA COUNTY COURTHOUSE
230 STRAND STREET
ST. HELENS, OREGON 97051
(503) 397-4322

COMM. AL SWITZER, SEC.-TREAS.
KLAMATH COUNTY
305 MAIN STREET, SUITE 224
KLAMATH FALLS, OREGON 97601
(541) 883-5100



ROCKY McVAY, EXEC. DIR.
16289 HWY. 101 SOUTH, SUITE A
BROOKINGS, OREGON 97415
(541) 412-1624
FAX (541) 412-8325
Email: rocky@blupac.com

KEVIN Q. DAVIS, LEGAL COUNSEL
SUITE 1600, UMPQUA BANK PLAZA
ONE S.W. COLUMBIA
PORTLAND, OREGON 97258
(503) 517-2405

DAVID S. BARROWS, LEGIS. COUNSEL
1201 S.W. 12TH AVENUE, SUITE 200
PORTLAND, OREGON 97205
(503) 227-5591

June 6, 20012

Mr. Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
2600 SE 98th Ave., Suite 100
Portland, OR. 97266

Re: Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft EIS

Dear Mr. Henson:

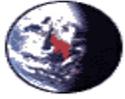
The Association of O&C Counties represents Western Oregon Counties with an interest in about 2.2 million acres of timberlands managed by the BLM pursuant to the O&C Act of 1937, and Sec. 701(b) Federal Land Policy and Management Act 1976. These forestlands, commonly referred to as Oregon and California Railroad (O&C) lands, were part of a railroad land grant in the late 1800s, but after 40 years in private ownership and on the property tax rolls, were revested to the United States in 1916. Management of these lands is directed by a unique statutory mandate to manage the lands primarily for sustained yield-timber production for the economic benefit of 18 O&C Counties and associated local communities. The Association, in existence since the 1920s, has as its sole purpose participation in the development and implementation of polices for the management of these unique federal lands

The Association reviewed the draft EIS for Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls (NSO) and has concluded that the removal program will do nothing to enhance the viability of the NSO in either the short or long term. NSO numbers continue to decline in spite of 20 years of land management on millions of acres that sacrificed the economic vitality of hundreds of communities in an attempt to preserve the NSO. Natural selection is obviously taking place, with the more aggressive and hardier Barred Owl overtaking the range of the NSO. We note that the literature cited in the draft EIS does not include the 1990 report, "The Extension of the Range of the Barred Owl Into Oregon and the Potential For Interaction with the Spotted Owl" prepared by Robert Vincent, Ph.D, so we have attached it to be included in our comments. Dr. Vincent foresaw the displacement of the NSO by the Barred Owl. The outcome of this interspecies competition is now clear. Complete dominance by the Barred Owl is inevitable, and the study, duration, methods and cost of the proposed removal program seem a useless and wasteful exercise in futility.

Thank you for the opportunity to comment,

A handwritten signature in black ink, appearing to read 'Rocky McVay', written in a cursive style.

Rocky McVay
Executive Director



Brett Hartl
<bhartl@conbio.org>
06/06/2012 06:59 AM

To: barredowlEIS@fws.gov
cc:
Subject: SCB_TWS-OC comments on Barred Owl

Hello,

I recently sent an email with the joint comments of the Society for Conservation Biology, The Wildlife Society, and the Ornithological Council. I am attaching an identical PDF version of the letter. Could you post that to the docket instead of the word document?

Thanks,

Brett Hartl
Senior Policy Fellow
Society for Conservation Biology
1017 O Street NW
Washington, DC 20001
www.conbio.org/policy
202-234-4133 X 114



SCB_TWS_OC_Comment_letter_barred_owl_experimental_removals_6.6.2012.pdf

June 6, 2012

Paul Henson
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave., Suite 100,
Portland, OR 97266.

Dear Mr. Henson,

On behalf of the Society for Conservation Biology,¹ The Wildlife Society,² and the Ornithological Council,³ we offer the following comments on the U.S. Fish and Wildlife Service's proposed Barred Owl removal experiments in the Pacific Northwest forests. Barred Owls (*Strix varia*) are native to eastern North America, but over the last 80 years have spread into the forests of the Pacific Northwest (Dark 1998). In recent years, evidence has begun to indicate that Barred Owls are able to outcompete the Northern Spotted Owl (*Strix occidentalis caurina*), a species listed as threatened under the Endangered Species Act (Gutiérrez 2007).

Recognizing the potential threat that Barred Owls may represent to the survival and recovery of the Northern Spotted Owl (NSO), the 2011 revised recovery plan identified Barred Owl management and control as a key strategy for recovering the NSO. On February 28, 2012, concurrently with the publication of revised critical habitat for the NSO,⁴ the U.S. Fish and Wildlife Service (FWS) published a Draft Environmental Impact Statement (DEIS) on the *Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls*.⁵ In the past, our organizations have supported careful, experimental removals of Barred Owls given the declining conservation status of NSO as one means of reducing the overall stressors contributing to the decline of the NSO. Accordingly, we support the FWS's decision to move forward with the DEIS to evaluate Barred Owl control in a scientifically credible manner, and as humanely as possible. As will be discussed in greater detail below, we support Alternative 7 within the DEIS

¹ SCB is an international professional organization whose mission is to advance the science and practice of conserving the Earth's biological diversity, support dissemination of conservation science, and increase application of science to management and policy. The Society's 5,000 members includes resource managers, educators, students, government and private conservation workers in over 140 countries.

² The Wildlife Society was founded in 1937 and is a non-profit scientific and educational association of over 11,000 professional wildlife biologists and managers, dedicated to excellence in wildlife stewardship through science and education. Our mission is to represent and serve wildlife professionals—the scientists, technicians, and practitioners actively working to study, manage, and conserve native and desired non-native wildlife and their habitats worldwide.

³ The Ornithological Council is a consortium of the twelve major societies of ornithologists in the Western Hemisphere. We provide timely information about birds to help ensure scientifically-based decisions, policies, and management actions.

⁴ *Revised Critical Habitat for the Northern Spotted Owl*, 77 Fed. Reg. 14,062, Mar. 8, 2012

⁵ *Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft Environmental Impact Statement* (hereafter "DEIS"). Available at: <http://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/BarredOwl/Documents/DraftEIS.ExpRemoval2.20.12.pdf>

because it represents the most scientifically rigorous evaluation of the effects of Barred Owl removals across the greatest spectrum of habitats throughout Pacific Northwest.

The DEIS has identified seven possible alternatives for how FWS might move forward with Barred Owl removal experiments based on an array of scientific and technical considerations. The alternatives range from one to eleven study areas where experimental removals might occur.⁶ Under the FWS's proposed approach, each study area would be divided into two comparable segments, in which Barred Owls are removed from the treatment area but not from the control area, and then NSO populations are measured in both areas using the same methodology. These types of studies can provide even stronger conclusions when pretreatment data are available. Therefore, in those areas where pretreatment data are not available, the FWS has provided sub-alternatives where the agency may/may not collect pretreatment data prior to Barred Owl removals. FWS has also presented alternatives based on two possible study approaches for the Barred Owl removals: (1) demographic studies following individually marked owls to assess survival; and (2) occupancy studies to assess the presence or absence of NSO based on auditory surveys without identifying individual owls. Finally, the FWS has presented alternatives with respect to the methods used to remove Barred Owls, lethal control and live trapping/relocation. Depending on the research study methods, number of study areas, and pretreatment data collection, such experiments will take place over 3-10 years.

Based on the information presented in DEIS, we support Alternative 7, which includes the most study areas of all of the alternatives (11 study areas) over the longest period of time (10 years), uses a combination of demographic and occupancy studies, collects pretreatment data, and uses both lethal control and live trapping depending on the study location.⁷ As the DEIS acknowledges, for an experiment to be scientifically meaningful, the design requires replication because a single study area may not be representative of effects of Barred owl removal in other parts of the NSO's range. Alternative 7 evaluates Barred Owl control activities across the entire range of the NSO in 11 study areas. No other alternative presented has more than three study areas. While a study across multiple sites means greater total costs and more complexity, it represents a fuller range of conditions experienced by the NSO, allowing for better management prescriptions in different habitat types. Conducting demographic studies provides FWS with a greater ability to detect differences between the treatment and control populations, and together with pretreatment data, allows for more sophisticated management decisions. Alternative 7 is also preferable because it involves a combination of humane lethal control and live trapping so as to evaluate the effectiveness of each technique, and potential incidental take of non-target species.

The Service is to be commended for this thorough, yet succinct, DEIS and for the thoughtful approach to the experimental design alternatives. However, we note that in the DEIS, the FWS has not identified a preferred alternative, which is a recommended practice for agencies to follow in the Council of Environmental Quality's (CEQ) regulations that implement NEPA.⁸ And perhaps for this reason, many of the details of the study plan for whichever alternative is

⁶ DEIS at 2-39.

⁷ DEIS at 2-36.

⁸ See 40 C.F.R § 1502.14(e) (the agency shall "identify the agency' preferred alternative if one or more exists, in the draft statement, and identify such alternative in the final statement").

ultimately selected have yet to be developed. Because these details are not fully discussed, and given the number of Barred Owls to be removed, the geographic scale, and the temporal duration of each alternative, we believe that an independent peer-review of the exact details of the final experimental design chosen by FWS is warranted. Given the scope of the potential management decisions to be made on the basis of the data generated in this study, it is critically important that the study design be subjected to independent assessment by biologists with expertise in the components of the study. It is unlikely that the FWS would undertake a second study of this nature and scope; therefore, it is all the more critical to get the best possible study design. Waiting for pre-publication, or even post-publication reviews would not be a prudent approach because, if study design turned out to contain significant flaws, then basing management decisions on the results would be questionable at best. Specifically, components of the study design that should be peer reviewed include: (1) thoroughness of literature review, (2) basis of underlying assumptions, (3) statistical design, (4) ability/capacity to carry out planned control activities, and (4) whether the methods generate the data needed to answer the study questions. To further expand upon this last point with an example, if the study design calls for removal of only a percentage of the Barred Owls on the study site, will it be possible to detect an effect, and if so how long will it take for an effect to be detected?

Evaluating these experimental removals right the first time around is critical if the FWS hopes to use the information as the basis of its management decisions. We therefore recommend an independent peer review of the scientific methodologies proposed. However, we also recognize the potential difficulty of conducting a peer-review at this stage, given the timeline of the DEIS. Therefore, the best approach would be to include an expedited peer-review of the preferred alternative in the final environmental impact statement, as a mitigation measure as contemplated by the CEQ regulations.⁹ Peer-review makes it more likely that this experiment will not have to be repeated, and will ensure that the owls killed were not eliminated needlessly, both of which meet the mandate of CEQ's regulations to minimize "impacts by limiting the degree or magnitude of the action and its implementation."

Finally, to ensure that Barred Owl removal is as humane as possible, we recommend that the FWS comply with the Animal Welfare Act (AWA).¹⁰ Compliance with this law will ensure that "animal pain and distress are minimized, including adequate veterinary care with the appropriate use of...euthanasia."¹¹ Given that (1) all federal research facilities, which is defined to include agencies, must comply with the AWA,¹² and (2) that the Department of Interior Scientific Integrity Policy states that all employees, volunteers, contractors, cooperators, and partners will "adhere to the laws and policies related to protection of natural and cultural resources and to research animals and human subjects *while conducting science and scholarship activities*,"¹³ we believe that FWS is required to follow the AWA with respect to Barred Owl removal activities. We realize that FWS does not have a functioning Institutional Animal Care and Use Committee (IACUC) within the Pacific Northwest Region. Given that much of the proposed work will take place on lands managed by the National Park Service, it may be advisable to ask that agency's

⁹ 40 C.F.R. § 1508.20.

¹⁰ 7 U.S.C. § 2131 *et seq.*

¹¹ 7 U.S.C. § 2143(a)(3)(A)

¹² 7 U.S.C. § 2132(o); 7 U.S.C. § 2144

¹³ DOI Manual Part 305, Chapter 3, effective 28 January 2012 (emphasis added).

IACUC to undertake the required review. We greatly appreciate the FWS's sensitivity to the ethical aspects of this study, but only a formal review as required under the Animal Welfare Act would fully satisfy the FWS's ethical and legal obligations.

In conclusion, we strongly support the FWS's statement in the related critical habitat proposal for the NSO that, *only* upon the conclusion of the Barred Owl removal experiments, will FWS decide "how barred owls would be managed in the long term."¹⁴ This is a quintessential example of an informed decision making process for a difficult and complex question. But, we continue to stress that FWS must not lose sight of the primary reasons the NSO was listed in the first place—the destruction of its old-growth forest habitat. Although it may be necessary as one tool for the conservation of the NSO, Barred Owl removal should not be used as a substitute for NSO habitat protection. Continued habitat destruction and habitat degradation will most certainly magnify the threat from the current Barred Owl invasion by increasing competitive interactions as populations of both species are packed into smaller and smaller areas of optimal or even suitable habitat. We support FWS' continuing emphasis on the use of best available science and the scientific method in Barred Owl removal experiments. And we look forward to reviewing the scientific conclusions from the Barred Owl removal experiments in the years to come.

Sincerely,

Paul Krausman, CWB
President
The Wildlife Society

Ellen Paul
Executive Director
Ornithological Council

John Fitzgerald
Policy Director
Society for Conservation Biology

Literature Cited

Dark et al. 1998. The Barred Owl (*Strix varia*) invasion in California. *Auk* 115:50–56.

Gutiérrez et al. 2007. The invasion of barred owls and its potential effect on the spotted owl: a conservation conundrum. *Biological Invasions* 9:181–196.

¹⁴ *Revised Critical Habitat for the Northern Spotted Owl*, 77 Fed. Reg. at 14,066.



Kim Booth
<kbooth@yockimlaw.com>
m>

06/06/2012 02:32 PM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc: Dominic Carollo <dcarollo@yockimlaw.com>, Ron Yockim
<ryockim@yockimlaw.com>
Subject: Barred Owl Draft EIS

Good Afternoon Mr. Henson:

Attached please find a copy of the comments on behalf of the Douglas County Board of Commissioners relative to the above matter. The original has been placed in the mail.

If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

Kimberly Booth

Legal Assistant

Law Offices of Ronald S. Yockim

kbooth@yockimlaw.com

Direct 541-957-5900 | Fax 541-957-5923

LAW OFFICES OF RONALD S. YOCKIM

430 S.E. Main Street, P.O. Box 2456 | Roseburg, OR 97420

This message is intended only for the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not the intended recipient, or the agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited, and you are requested to return the original message to the sender.



20120606141405404.pdf

Law Offices of
RONALD S. YOCKIM

Ronald S. Yockim
ryockim@yockimlaw.com

Dominic M. Carollo
dcarollo@yockimlaw.com

430 S.E. Main Street
P.O. Box 2456
Roseburg, Oregon 97470
(541) 957-5900
FAX (541) 957-5923

June 6, 2012

Paul Henson, Field Supervisor
U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office
2600 SE 98th Ave., Suite 100
Portland, OR 97266

Re: Experimental Removal of Barred Owl EIS
Our File No. 91089

Supervisor Henson,

Please accept these comments on behalf of the Douglas County Board of Commissioners, a political subdivision of the State of Oregon, regarding the U.S. Fish and Wildlife Service's ("FWS" or "the Service") Draft Environmental Impact Statement for Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls (hereafter, "the EIS").

Douglas County has previously addressed the importance of addressing barred owls in its earlier-submitted comments to the FWS's Draft Recovery Plan for the Northern Spotted Owl. Douglas County believes that it is misguided to focus on withdrawing additional forestland from timber harvest when the impacts of barred owls on spotted owls—and/or the role of mature forest in barred owl dominance—are not fully understood.

It is the position of Douglas County that we are observing the process of natural selection taking place between these two species of owls. It is also the position of Douglas County that to artificially interfere with this process by killing the stronger, more adaptable owl in the hope of preserving the weaker of the species is a scientific, ethical and legal mistake.

If the Service goes forward with experiment removal of barred owls, we would ask your consideration of the following comments.

In selecting an alternative from the EIS, the Service should ensure that the design and scope of the experiment selected will provide the greatest level of understanding of the impacts of barred owls. The following comments focus on the need to apply sound science in selecting alternatives for consideration in the Service's Record of Decision:

- Any experimental removal action should be done in study areas where the Service has existing demographic information. This has been recommended for years by leading spotted owl experts. *See, e.g.,* Gutierrez et al., 2007. “The invasion of barred owls and its potential effect on the spotted owl; a conservation conundrum.” *Biological Invasions*, 9:181-196.
- Any experimental removal action should use a demographic study approach rather than an occupancy study approach. This was also recommended in Gutierrez et al., *supra*, as well as in the Sustainable Ecosystems Institute’s (“SEI”) “Scientific Review of the Draft Northern Spotted Owl Recovery Plan and Reviewer Comments” (April, 2008). Conducting a study in an area where the Service does not have existing demographic information would not only unduly delay the study but also raises serious questions as to scientific reliability and verifiability.
- The Service should place less emphasis on balancing non-lethal removal with lethal removal actions. The scientific consensus is that non-lethal removal at any significant scale is impractical. *See* Gutierrez, et al., *supra*.
- The Service should avoid selecting a barred owl removal site in Southern Oregon or Northern California because of the barred owls’ shorter history of occupancy and lower densities, and spotted owls’ slower rate of decline, in these areas. The Service should select study areas that have a higher concentration of barred owls and have more severely declining populations of spotted owls. This approach would have the best likelihood of showing whether there is a relationship between barred owl removal and spotted owl occupation and abundance.

Douglas County also submits the following comments addressing inadequacies in the EIS:

- The Service’s analysis of economic effects of the preferred alternatives on State and private forest owners is inadequate. The EIS states that the Service will explore opportunities to enter into safe harbor agreements with State and private forest owners, but does not explain or analyze how likely it is for such forest owners to enter into safe harbor agreements or whether safe harbor agreements would be adequate to alleviate the potential negative economic impacts. Forest owners should not be penalized simply because their land falls within the study areas the Service ultimately selects for barred owl removal experiments. The Service should incorporate specific safeguards that protect existing uses of State and private forest owners during the duration of the study and thereafter.

Paul Henson, Field Supervisor
June 6, 2012
Page Three

- The Service has not adequately explained or analyzed whether the preferred alternatives would be consistent with the Migratory Bird Treaty Act (“MBTA”). Opponents of barred owl removal are likely to rely on the MBTA to oppose the action alternatives.

Thank you for consideration of these comments. If you have any questions, please do not hesitate to contact our office.

Sincerely,



Dominic M. Carollo

/DMC

Cc: Client



Peter Carlson
<pcarlson@lamar.colostate.edu>
Sent by:
pccarlson@gmail.com

To: barredowlEIS@fws.gov
cc:
Subject: Fwd: Comments on draft EIS

06/06/2012 12:18 PM

Please find attached my comments on the draft EIS on Barred Owl Experimental Removal.

Peter Carlson
Research Associate
Colorado State University
Cooperative Fish & Wildlife Research Unit
field office: 530-629-9208



Comments on the draft EIS on BO Experimental Removal (Carlson).pdf BO EIS Demog SO survey costs.xls

Study Area	Years	Est. # SO Sites	Total Cost of SO Surveys	Total Cost of BO Surveys	Est # BO removed	Cost of BO removal	Total Cost
CleElum	7	99	910,000	353,400	962	535,200	1,798,600
Carlson's ests:			1,039,500	353,430			
Olympic Peninsula	5	126	970,000	321,300	2,059	1,044,300	2,335,600
Carlson's ests:			945,000	321,300			
Rainier	6	77	612,000	235,600	895	478,600	1,326,200
Carlson's ests:			693,000	235,620			
Oregon Coast Range:	4	275	1,324,000	561,000	2,372	1,120,000	3,005,000
Carlson's ests:			1,650,000	561,000			
Tyee	4	141	676,000	287,600	572	269,800	1,233,400
Carlson's ests:			846,000	287,640			
HJAndrews	4	189	908,000	385,600	1,049	495,300	1,788,900
Carlson's ests:			1,134,000	385,560			
Klamath	4	151	846,000	308,000	1,023	483,000	1,637,000
Carlson's ests:			906,000	308,040			
SouthCascades	4	206	896,000	420,200	1,950	920,412	2,236,652
Carlson's ests:			1,236,000	420,240			
Hoopa(Willow Creek)	5	115	900,000	293,200	257	130,300	1,323,500
Carlson's ests:			862,500	293,250			

Est BO removal cost on Hoopa study area:

Year	Est # BOs	# BO sites?	Est cost
1	97	48	24735
2	60	30	30600
3	35	18	26250
4	33	17	24750
5	33	17	24750
			131085

Comments on the draft EIS on Experimental Removal of Barred Owls

Peter Carlson
Research Associate, Colorado State University
Assistant Project Leader, Northwest California NSO Demographic Study
PO Box 501
Salyer CA 95563

General comments on alternatives:

Why do A2-4 use both lethal and nonlethal while A1 uses only lethal? Given the lack of placement locations for BO seems like using nonlethal on one study area would be more logical than on multiple study areas.

Why do occupancy based studies require up to 3 years of pretreatment data? That does not seem long enough to determine population trends and 2 years should be long enough to establish basic occupancy status.

Conducting the experimental removal on 1 study area does not seem to be a reasonable proposal because the results would be limited in application across the NSO range and logistical problems that arise on a given study area could have less of an impact if multiple study areas were included. Thus I can only support options 2, 4b, 6a, and 7. I think options 2 and 7, utilizing the abundance of pretreatment data and solid knowledge of owl sites on the demographic study areas, are the strongest options. Including the Hoopa (Willow Creek) study area in these two options makes sense to me given that they represent the southern Klamath region.

Specific comments (note, BO used for barred owl, NSO or SO for northern spotted owl):

Sec S.4.1 pg xxiv: each study area is an experimental unit; it is a single experiment whether 1 or 11 study sites are included.

Sec S.4.3 pg xxvi: occupancy data can be used to estimate population change but the estimates would be less precise than with demographic surveys because there is more chance for errors in assigning occupancy status (see comments on Appendix E).

Sec 2.2.2.3 pg 23 re: duration of studies. Demographic studies do not take longer than occupancy studies; they take more effort over the same time period to gather the additional data to estimate survival and/or reproduction.

Sec 3.1.4.2 pg 105: suggest separating some information on Hoopa and Willow Creek study areas as it was in the first part of the section on pg 104. For NSO demographic surveys, Willow Creek started in 1985, Hoopa in 1992. The BO information given for 1991-2009 is from Willow Creek study area, not combined study area. Hoopa study may have similar data available. Estimating potential BO sites on Willow Creek study area based on Hoopa surveys is not relevant because similar survey effort was done on the Willow Creek study area. In 2010, Willow Creek had 15 confirmed sites based on surveys and 29 NSO sites with detections (see

2010 annual report). Of the 15 confirmed sites, 13 were confirmed to have a BO pair, supporting the assumption that most BO sites are occupied by pairs.

Sec 3.2.1.2 pg 111-113: as noted above, the BO population on the Willow Creek study area has been surveyed with similar effort as on the Hoopa study area, and has consistently been lower than that on the Hoopa study area (see fig A-3 for trends in BO detections). For 2010, 15 confirmed BO sites were found, much lower than the 40 sites estimated based on the Hoopa study area BO density. I believe this discrepancy in estimated vs confirmed BO sites on the Willow Creek study area indicates the potential variability in BO density between different study areas. Differences in habitat, prey, geographic location to historic BO source populations and other factors could result in different BO densities; those found on the 3 representative study areas indicate a range in densities but may not represent a normal BO density for the specific region. While there may not be a better way to estimate the number of BOs for many of the study areas, this potential variability should be indicated. Figure A-3 supports this variability in BO densities; while the BO covariate is a crude measure, the fact that some study areas consistently have more sites with BO detections indicates higher numbers on BOs on those study areas.

Sec 3.3.2.1 pg 138: statement that NSO may remain on the landscape but do not vocalize and remain undetected until BO are removed is an overgeneralization. This sometimes occurs but in some cases NSO remain vocal and are located even when BO reside nearby (pers. obs).

Sec 3.3.2.2 pg 140: “when BO removed NSO quickly recolonized” Diller pers comm., yet Diller’s results show both species may recolonize after a BO removal and in some cases BO recolonized twice after removal (Diller presentation at HSU 2011).

Sec 3.4 Effects on demographic studies: In general, the discussion assumes that there will be a detectable difference in rates between treatment and control areas, which may or may not happen. The experiment would be done to determine if there is a difference. Data may be combined for general analyses if little effect is found. I disagree with a specific statement in this section. On page 154, the EIS states “During the removal period, demographic rates from the treatment portion of a study area would not be used to assess spotted owl demographic performance”. There is no reason that rates from treatment areas could not be used to assess SO demographic performance, it would simply need to be put in context of the BO removal. It seems like an important goal, whether specified in the recovery plan or not, to evaluate SO demographic trends with and without BOs affecting the population.

Sec. 3.9.1 Estimated costs, pg 209-212: Why not base costs on amount of habitat to survey rather than the estimated sites? As described in the EIS, all SO habitat would need to be surveyed for BO regardless, given the lack of prior information, and for some study areas without good prior data all habitat would need to be surveyed for NSO as well. Given that NSO may move from year to year, especially when BOs are present, it would be important to survey all habitat for any study area. It would simplify the EIS to base survey costs on amount of habitat (a known value) rather than estimated number of sites. Also, surveys for BO and SO could be combined to save costs given that both spp respond to both call types at different rates. Preliminary data indicate good response to combined call surveys (K. Hamm pers. comm.). Because BO sites are

not as well established as SO sites, should base cost estimates on amount of habitat not number of sites.

Under BO surveys the EIS states that the ratio of BO territories to SO territories is about 4:1; while this is true in some regions it is not true for the southern Klamath region. Our observations on the Willow Creek study area indicate a ratio of between 1:1 and 1.5:1; I believe the data from the Hoopa study supports a similar ratio. The variability in BO and SO territory densities is another reason to focus effort and cost estimates on amount of habitat rather than estimated territories.

At the top of page 211 it states “the remaining 0.67 percent”. I hope the typo is obvious.

For BO removal, several items are unclear in the description of the cost estimates. In paragraph 2 of sec. 3.9.1.3 the EIS states that you calculated the probable number of BOs; shouldn't this state the “estimated” number of BOs? The conclusion that BO removal cost would be about 1/3 of BO survey cost or 17% of SO survey effort appears to be based on generally visiting 1 area while multiple points are used for surveys. However, it makes more sense to say that the cost of BO removal would be 1/3 of survey effort because it generally would take 1 visit vs up to 3 visits for survey effort. The reason for assuming 1/3 cost of BO removal vs survey effort should be explicitly explained. Furthermore, it is unclear why it is assumed that the cost for BO removal would increase in subsequent years with fewer BOs recolonizing. The cost per BO removed would increase, but the general cost for removing BOs throughout the treatment area should be relatively constant I believe, given that the removal team will have to spend a similar amount of time (or maybe less time) on the study area during the removal period. Please explain why you believe the cost would increase with more single birds and more distance between sites (presumably occupied sites?). It is unclear why you multiplied the number of barred owls by the cost per site as stated on pg 12 when it is assumed that, initially, most sites have a pair of barred owls and that usually both could be removed in 1 visit. Finally, the timing of BO removal being different from BO and SO survey effort (presumably non-breeding season vs breeding season) should be pointed out in the section on estimated costs.

Sec 3.9.2.2 Estimated costs for option 2:

I attempted to duplicate the estimated costs for the demographic study areas in Table 3-83 using the description from sec 3.9.1, but I came up with different estimates for SO surveys. I did get the same estimates for BO surveys. See attached Excel worksheet (BO EIS Demog SO survey costs) for the estimates I based on the description in the EIS. The description for estimating costs for BO removal was not adequate to duplicate but I attempted to do so for the Hoopa study area. My estimate was similar but again I do not understand why do not account for pairs of BOs vs singles especially in year 1. Please explain better how the cost estimates were arrived at or why there appears to be a discrepancy in estimated costs.

NSO surveys on the Hoopa (Willow Creek) study area would likely continue in the future given that timber harvest continues on the Hoopa Reservation and thus they will need to continue some owl surveys and the Willow Creek area is part of the Effectiveness Monitoring Program (as pointed out for Tyee and Oregon Coast Range study areas). Also, we plan to continue BO surveys along with SO surveys on the Willow Creek area. Thus estimated additional costs for the

experiment would likely be much lower than presented, possibly as low as \$280,000 (for BO surveys and removal on the Hoopa portion).

The cost of doing the experiment on a large demographic study area, such as the Oregon Coast Ranges, could be reduced by treating less than ½ the study area. Including ¼ to 1/3 of the Coast Ranges study area as a treatment area would still provide a large sample of sites for an experiment.

Appendix E:

Occupancy studies have limitation for tracking owl population trends because detections can be from a neighboring territorial owl or a non-territorial owl (“floater”), and these are not always verified for occupancy surveys as they for demographic studies. The main problem is that owl sites are not discrete patches of habitat for which occupancy models were developed. The rate of “false” occupancy detections will vary between studies depending on population density, topography affecting distance imitated calls or responding owls are heard and experience of surveyors with the study area and population to determine the origin of a response. While occupancy studies can evaluate territory-level effects better than a site-specific approach, they are not as good as demographic studies for evaluating territory-level effects.

I disagree with the argument that occupancy rates are not directly comparable because they depend on the number of sites surveyed; a proportion is the appropriate way to compare across study areas (90% is 90%, but 10 occupied sites on a study area with 20 sites is not equivalent to 10 occupied sites on a study area with 50 sites). Occupancy rates may not be as comparable as demographic rates because of more variability in estimates caused by the lack of discrete sites where owls could only be located.

Appendix F: In sec F.3.1, I don’t understand the assumption that BOs that reoccupy sites where BOs were removed would also be removed by the end of the removal period. This would require that each site where BOs were removed be resurveyed during the removal period and I do not see that proposed elsewhere in the EIS. It does not seem to be an efficient strategy to continue surveying all sites where BOs were removed within the removal period, especially given that response rates would likely be lower in the fall and winter when the removal period is proposed. I do not agree with the assumption that 90% of reoccupying owls could be located and also removed with the same year. One option may be to focus removal in the late winter before the full nesting season when owls may be more responsive and easier to locate.

Appendix I:

Green Diamond and Hoopa are still ongoing, not inactive as stated on pg 378. The assumption that population trends will differ between treatment and control areas may not be true; that is the reason for doing the experiment, to see if there will be a difference. You should state that a difference could result from the experiment and if it does then the data could be used as described.



Susan Drummond
<susan@susandrummond.com>

06/06/2012 03:06 PM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: USFW Draft EIS, Barred Owl Removal - Comment from Klickitat and Skamania Counties

Mr. Henson,

Attached, please find Klickitat and Skamania Counties' comment on the USFW Draft EIS on Barred Owl Removal.

Law Offices of Susan Elizabeth Drummond, PLLC
5400 Carillon Point, Bldg. 5000, Ste. 476
Kirkland, Washington 98033
(206) 682-0767 c (206) 310-4709 f (425) 576-4040
<http://www.susandrummond.com>



CCE06062012_00000.pdf



Klickitat County
205 S. Columbus Avenue
Goldendale, Washington 98620



Skamania County
240 NW Vancouver Ave
Stevenson, Washington 98648

Submitted Via E-Mail (barredowlEIS@fws.gov) and U.S. Mail

June 6, 2012

Paul Henson, Field Supervisor
United States Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave., Suite 100
Portland, OR 97266.

RE: Comment on Draft Environmental Impact Statement: Environmental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls (March, 2012)

Dear Mr. Henson,

Klickitat County and Skamania County jointly submit this comment on USFW's Draft Environmental Impact Statement (DEIS) on barred owl removal. While the Counties support the effort to address the root cause of the spotted owl's decline, the counties have serious concerns about USFW's strategy for spotted owl recovery.

The DEIS identifies what is behind the spotted owl's decline. After twenty-years of working on this issue, we finally understand that: **“an increase in, or continued persistence of, barred owl could lead to local or large-scale extirpation of spotted owls including possible extinction of the species.”**¹ Yet, despite this recognition, barred owl removal is being considered in isolation from the overall recovery strategy. Perhaps most significantly, critical habitat mapping decisions are proceeding on an entirely separate track.

This piecemeal approach to environmental review violates the National Environmental Policy Act, 42 U.S.C. § 4321, et seq, and the Endangered Species Act, 16 U.S.C. § 1531 et seq. It also guarantees that despite the devastating economic ramifications from two decades of a failed approach to recovery, USFW continues to downplay the role of the barred owl, and has yet to revise its approach to recovery.

¹ DEIS, p. 138, emphasis added.

1. Environmental Review for Barred Owl Removal and Critical Area Mapping Are Being Impermissibly Piecemealed

The Counties appreciate the acknowledgment that “[w]e now consider competition from the barred owl to pose a significant threat to the northern spotted owl,”² and the recognition that barred owls interfere with spotted owl recovery.

Barred owls are slightly larger and more aggressive than spotted owls, and compete for the same habitat. ... If no barred owl removal occurs (No Action Alternative) within the proposed study areas, northern spotted owl populations would likely continue to show declines in the survival, reproduction, and population growth rates.³

The fact that spotted owl recovery depends on barred owl removal means that critical area habitat mapping decisions should not be made in isolation from decisions on the barred owl. The risk is that at great cost, habitat is preserved not for the spotted owl, but its competitor. The DEIS recognizes that this issue is particularly acute in Washington State, where "barred owls have been present for a long time and in high numbers" and spotted owls may no longer even be present on the landscape.⁴

Yet, USFW is considering mapping critical habitat separately from the barred owl removal strategy. This segmentation fails to provide USFW a reasonable disclosure of impacts associated with how the two strategies relate. This is impermissible piecemealing of environmental review.

2. The DEIS is Misleading and Fails to Consider Adequate Alternatives

The DEIS includes evidence on the role of the barred owl, but falls short on assessing how to approach this challenge. The document acknowledges that in areas where the barred owl is present, the spotted owl does not vocalize until the barred owl is removed. Vocalizing is necessary "to find mates, establish territories, and raise young."⁵ If this does not occur, spotted owl populations will not persist.⁶

² DEIS, p. 2.

³ DEIS, pgs. 2 and 138.

⁴ DEIS, p. 139, ¶ 4.

⁵ DEIS, p. 138, ¶ 3.

⁶ DEIS, p. 138, ¶ 3.

Yet, despite this evidence, the DEIS suggests that recovery need not be dependent on addressing the barred owl. “While evidence of threat is strong and very persuasive, it is not yet sufficient for the Service to consider undertaking a wider removal effort.”⁷ With respect to critical habitat designation and logging restrictions, the evidence is sufficient. Habitat is not the factor limiting spotted owl recovery; it is the barred owl. The evidence supports halting the assault on communities and families dependent on forestry and wood products industries, and addressing the actual cause of the spotted owl's decline.

Unless a comprehensive removal strategy is considered in conjunction with critical habitat mapping, there is not a reasoned disclosure of how these strategies relate. The DEIS must address the central issue - to revive the spotted owl, must barred owl removal be the primary recovery tool? If so, is there legal and policy support for choosing one species over the other? By developing analysis on the impacts associated with experimental alternatives on a fraction of the geographic territory being considered for critical habitat, the DEIS sidesteps these hard questions. NEPA was designed to ensure such questions are addressed.

3. Two Decades of Recovery Efforts Have Failed

Like most of the nation, the two Counties are in recession. But unlike most other counties, this recession did not begin a few years ago. It began with the original listing of the spotted owl. This decision has had significant economic consequences, possibly more so than the listing of any other species. “By the end of the century, timber harvest on 24 million acres of federal land had dropped 90 percent from its heyday. The spotted owl crystallized the power of the species-protection law. **No threatened animal has done more to change how we use land.**”⁸ One would hope, that with such cost impacts, after twenty-years, there would have been some success in recovering the spotted owl. That has not been the case.

The DEIS does not address the cumulative impacts from two decades of failed spotted owl recovery efforts. This failure has come at enormous economic and social cost to rural timber communities, including extensive loss of living-wage jobs, and rural economic decay. These impacts have been felt by the Counties' most vulnerable populations. In certain areas, these impacts have resulted in high subsidized school lunch and domestic violence rates. The choices made over the last 20-years are not only legally arbitrary, but environmentally and morally unsupportable.

⁷ DEIS, p. xxii, ¶ 4.

⁸ The Spotted Owl's New Nemesis, Craig Welch, Smithsonian Magazine (January, 2009), emphasis added.

Without acknowledging and assessing the abysmal failure to successfully implement the ESA and NEPA, the last twenty years will simply be repeated. Success can only be achieved by understanding not only the actual cause of the spotted owl's decline, but incorporating that understanding into a cohesive recovery strategy which is respectful of rural communities. Alternatively, success may entail admitting defeat, and allowing nature to determine the spotted owl's fate. USFW is contemplating spending millions of dollars on removal.⁹ Full disclosure on the basis for the strategy and its viability is required.

4. Conclusion

Thank you for the opportunity to submit comment. We look forward to working with USFW to address Klickitat County and Skamania County concerns.

Respectfully submitted,

KLICKITAT COUNTY PROSECUTING ATTORNEY
LORI LYNN HOCTOR



Lori Lynn Hoctor
Susan Drummond

SKAMANIA COUNTY PROSECUTING ATTORNEY
ADAM N. KICK



Adam N. Kick
Susan Drummond

cc: Skamania County Commissioner Paul Pearce
Klickitat County Commissioner David Sauter
Dave McClure, Klickitat County Natural Resources Dept. Director
Curt Dreyer, Klickitat County Planning Dept. Director
Karen Witherspoon, Skamania County Planning Dept. Director

⁹ See DEIS, pgs. 209-217.



"Hamm, Keith"
<KHamm@greendiamond.com>

06/06/2012 02:14 PM

To: "barredowlEIS@fws.gov" <barredowlEIS@fws.gov>
cc:
Subject: Green Diamond Resource Co. comment letter

Dear Mr. Henson:

Please see the attached letter regarding our comments on the barred owl Draft EIS.

Sincerely,

Keith Hamm



Conservation Planning Manager [GreenDiamond_BAOW_EIScomments.pdf](#)

June 6, 2012

Attention: Barred Owl Draft EIS
Mr. Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office
2600 SE 98th Ave., Suite 100
Portland, OR 97266

Dear Mr. Henson:

Green Diamond Resource Company (Green Diamond) appreciates the opportunity to comment on the U.S. Fish and Wildlife Service (FWS) Draft Environmental Impact Statement for Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls. Green Diamond was the first private landowner to develop a Habitat Conservation Plan (HCP) for northern spotted owls (NSO) and has been implementing the HCP on over 400,000 acres of its California timberlands since 1992. As a result of a comprehensive 10-year review requirement of the HCP, Green Diamond prepared and the FWS approved amendments to the HCP in 2007. One amendment was a requirement that Green Diamond conduct additional studies on the interaction of northern spotted owls and barred owls.

Over the 20 years that Green Diamond has implemented the HCP, we have learned a great deal about the prey and habitat requirements of NSO in the redwood region, and we continue to learn more about the other species that inhabit our timberlands. Using that knowledge, Green Diamond is currently developing a multi-species Forest Habitat Conservation Plan (FHCP) in California that will address NSO, three other terrestrial wildlife species and experimental studies on barred owls.

As a result of 20 years of implementing the HCP and 22 years of demographic studies on NSO, we have first-hand knowledge of the negative impacts of barred owls on NSO. Our demographic studies of NSO on the California ownership have shown that barred owls are increasing in our managed forests and their presence is having a negative influence on the apparent survival of NSO. Based on the most recent NSO meta-analysis, the trend in estimates of the realized population change indicated that the population of NSO on the Green Diamond study area was apparently stable or increasing until 2001 after which the population began an apparent downward trend. The barred owl covariate entered the top model for both survival and fecundity, which suggested that barred owls were the most likely cause for the recent decline of NSO on Green Diamond's study area. Green Diamond initiated a pilot experiment in 2009 to determine the impact of barred owls on

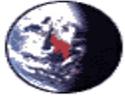
occupancy, survival and reproduction of NSOs. This pilot removal experiment used a paired treatment and control design in which barred owls were lethally removed in the treatment areas and allowed to persist and expand in the control areas. This experiment is ongoing, but evidence to date indicates that barred owl removal has a rapid, beneficial effect on NSO. These dramatic preliminary results, combined with barred owl control recommendations in the 2011 Revised Recovery Plan indicate that some form of barred owl removal is highly desirable for the conservation and recovery of the NSO. Green Diamond's draft FHCP proposes to continue experimental studies on barred owl consistent with Recovery Action 29 of the Revised Recovery Plan. However, the extent to which barred owls should be controlled, and the degree to which barred owls and NSO may be able to co-exist, is unknown. Consequently, the FHCP proposes a series of long-term experiments designed to address these data gaps and further recovery efforts for NSO.

The long-term goal of the 2011 Revised Recovery Plan for the NSO is to improve the status of the species so that it can be removed from protection under the Endangered Species Act. Given that barred owls pose a significant and complex threat to the NSO, we encourage the Service to implement in a timely manner multiple removal experiments in demographic study areas throughout the NSO range as identified in Alternative 2. This approach will provide for the most rigorous evaluation of the experimental effects due to the pre- and post-treatment data available on NSO population trends and vital rates. Many of the long-term demographic studies of NSO on federal lands were initiated to evaluate forest management plan effects (i.e., protection of habitat) on the recovery of NSO. These same demographic study areas are appropriate for studying experimental effects of barred owl removal on the NSO population so that the evaluation habitat protection on recovery efforts can resume. Thank you for considering our comments.

Sincerely,



Neal Ewald
Vice President and General Manager
California Timberlands



Anita Koh
<birdgirlak@gmail.com>

06/06/2012 02:46 PM

To: barredowleis@fws.gov
cc:
Subject: Barred Owl Draft EIS Comment

To whom this may concern,

Even though I do believe that the controversy of killing off one species so it can benefit another is against the laws of the natural world, and somewhat ironic to the cause, there is the possible theory that we humans are part of the reason as to why the barred owls moved westward, so I do support the study which the US Fish and Wildlife Service is about to commence. I also support this study because the northern spotted owls do need help, as they are an important native creature of this environment and were native yet defenseless against the barred owls' attacks.

I think that action alternative 4, sub-alternative a is the best alternative because the USFWS gets to see what happens to the northern spotted owls' population before and after removing the barred owls and see whether or not it helps the spotted owls' population level, and also whether its worth the effort in the big picture.

Thank you for taking my comment into consideration.

Sincerely,
Anita

Contact, email: birdgirlak@gmail.com



"Bob Sallinger"
<bsallinger@audubonportland.org>

06/06/2012 05:22 PM

To: <barredowlEIS@fws.gov>
cc: "Bob Sallinger" <bsallinger@audubonportland.org>
Subject: Audubon Society of Portland Comments on Barred Owl DEIS

Dear Mr. Henson,

Please substitute the attached comments from the Audubon Society of Portland regarding the Barred Owl DEIS for the comments submitted a few minutes ago by our organization. This version is the one that should be used.

Thank you,

Bob Sallinger
Conservation Director
Audubon Society of Portland
5151 NW Cornell Road
Portland, OR 97210

(503) 292-9501 ext. 110



Audubon Society of Portland Comments on Barred Owl DEIS 6-6-2012 (2).doc



June 6, 2012

President
Kristina Gifford

Vice President
David Mandell

Secretary
Barb Hill

Treasurer
Candy Plant

Past President
Jim Rapp

Pat Campbell
Tony DeFalco
Koto Kishida
Noelwah Netusil
John D. Osborn
Dan Rohlf
Michael P. Ryan
Anne Sammis
Mary Solares
Ron Spencer
Julie Wilson
Jay Withgott
Adrienne Wolf-Lockett

Mr. Paul Henson
Field Supervisor
U.S. Fish & Wildlife Service, Oregon Fish & Wildlife Office
2600 SE. 98th Ave. Ste. 100
Portland, OR 97266

Sent by email: barredowIEIS@fws.gov

Dear Mr. Henson,

I am writing on behalf of the Audubon Society of Portland (Audubon) and our 13,000 members in the Portland metropolitan region to provide comments on the Draft Environmental Impact Statement (DEIS) *Experimental Removal of Barred Owls (Strix varia) to Benefit Threatened Northern Spotted Owls (Strix occidentalis)*.

This is an issue of profound interest and concern to our members and it should come as no surprise that most Audubon members intuitively recoil at the possibility of killing vast numbers of protected owls, at great expense, for an extended and indefinite period of time. At the same time our membership has also made it clear that they view recovery of the northern spotted owl among the top conservation priorities in the Pacific Northwest and they have vigorously supported efforts to protect this species and the old growth ecosystems upon which it and myriad other species depend. We find ourselves in a proverbial "no win" situation pitting lethal control of large numbers of federally protected barred owls on one hand against the potential extinction of the northern spotted owl and the unique evolutionary lineage that they represent on the other.

After careful consideration, it is Portland Audubon's position that the highest priority must be placed on preventing the extinction of the northern spotted owl even to the degree that this entails lethal control of another protected species. However, we recognize all the seven action alternatives presented in the DEIS are fraught with profound ecological, economic and ethical uncertainty. It is of critical importance that the Service ensure that this experiment is conducted in a manner that provides the public with the maximum level of assurance that all other significant factors impeding the recovery of spotted owls are being addressed to the greatest degree possible and that the experiment will be conducted in a manner that maximizes research value while minimizing harm to barred owls. As currently proposed, we do not believe that the DEIS and related documents meet these standards. The Service should only move forward if specific issues outlined later in this letter are fully addressed.

Audubon Society of Portland
5151 NW Cornell Road
Portland Oregon 97210
(503) 292-6855
www.audubonportland.org

Background:

Audubon is deeply concerned about the ongoing declines of northern spotted owl populations. Despite more than eighteen years of protection under the Northwest Forest Plan, northern spotted owls continue to move ever closer to extinction. Populations have been virtually eliminated in British Columbia, are declining at an annual rate of 7% per year in Washington, and are declining at an annual rate of 4% over their entire range. While the original basis for listing the northern spotted owl as threatened under the Federal Endangered Species Act in 1991 was fragmentation and loss of critical habitat, we agree with the Fish and Wildlife Service that scientific data that indicates that direct competition from an influx of barred owls into the Pacific Northwest is likely having a substantial and potentially insurmountable impact on the ability of the spotted owl to recover.

The range of the barred owl was historically limited to the Eastern United States and Eastern Canada. Beginning in the early 1900's, the species began a rapid range expansion into the Western United States and Western Canada. Barred owls were first reported in British Columbia in 1943 and in Oregon in 1974. The species has been able to establish itself in conifer and mixed conifer-deciduous forests throughout the Pacific Northwest. It has demonstrated an ability to utilize a variety of forest age classes and to successfully nest in environments ranging from urban parklands to old growth forests. The range expansion of barred owls is not fully understood and may have involved from both natural and anthropogenic elements. Barred owls are fully protected throughout their existing range in the United States under the Federal Migratory Bird Treaty Act of 1918.

In general, Audubon Society of Portland supports continued, full protection for the barred owl throughout its range. There are more than 100 native avian species across the nation which have experienced significant range changes over the past century (Livezey 2010) and which continue to enjoy the full protection of the law. Range changes are likely to become even more common as the effects of global climate change become more pronounced. Barred owls are a beautiful, charismatic, and highly visible species that in the vast majority of occurrences across the Western United States can connect people to the landscape and serve as ambassadors for conservation. Audubon Society of Portland recognizes that barred owls will be a permanent resident of the Pacific Northwest landscape and generally encourages the public to enjoy these birds and protect the habitat on which they and other species depend.

However, Audubon also recognizes that at this point protection of old growth ecosystems alone, while crucial, may not alone be sufficient to recover the northern spotted owl. The limited research conducted to date indicates that nesting suppression caused by direct competition from barred owls is in fact adversely affecting severely imperiled spotted owl populations. Given the period of time it will take for old growth ecosystems to regenerate and spotted owl populations to recover, limited strategic control of barred owls may be necessary to prevent the spotted owl from going extinct. In the southwestern U.S., the Mexican Spotted Owl and Barred Owl coexist, so there is a chance, albeit a slim one, that, given time, northern spotted owls and barred owls might also achieve a partitioning of the landscape and/or habitat that would allow them to coexist.

The northern spotted owl's poor conservation status is a sad reflection of decades of poor stewardship of our old growth ecosystems, which has left spotted owl populations extraordinarily vulnerable to threats from a variety of sources including disease, invasive species, and stochastic events. Loss and fragmentation of old growth habitat has created the conditions under which the arrival of a new competitor such as the barred owl could have profound impacts on the survival of northern spotted owls. The barred owl serves as a sad

reminder of social, economic, ethical and ecological costs of allowing our ecosystems to become so degraded.

Audubon has participated extensively in discussions involving take of barred owls. This includes participating on the US Fish and Wildlife Service Barred Owl Stakeholder Group, submitting comments during the Barred Owl EIS Scoping Process, commenting in the national media on this issue, and conducting outreach to our members. We have also actively participated in other aspects of spotted owl recovery efforts dating back to the original listing under the Endangered Species Act.

Recommendations:

We would like to highlight four areas that we believe are of critical importance to address prior to moving forward with experimental control studies involving barred owls.

1. The US Fish & Wildlife Service must provide adequate protection of the old growth ecosystems on which the northern spotted owl depends:

Killing barred owls either as part of an experimental study or as part of a broader management study would be unconscionable unless adequate protections are put in place to protect, preserve and restore old growth ecosystems on which the spotted owl and myriad other species depend. At this time we do not believe that the US Fish and Wildlife Service can credibly claim to have achieved this objective.

Of foremost concern is the proposed Revised Critical Habitat Rule for the Northern Spotted Owl that FWS released concurrent with the Barred Owl DEIS. Based on our initial analysis, we do not believe that the proposed Revised Critical Habitat Rule protects all the lands necessary to recover northern spotted owls. In addition we are deeply concerned about other aspects of the rule as well. Specifically, we do not believe that the proposed strategies for "active management" contained in the rule are supported by the best available science. We believe that elements of the rule could substantially weaken the protections currently provided by the Northwest Forest Plan. Finally the Rule excludes private and state forests that are essential to recovery. We will be submitting more extensive comments on the proposed rule later this summer. Addressing significant concerns expressed by the conservation community and scientific community regarding the Revised Critical Habitat Designations should be a prerequisite for finalizing the Barred Owl DEIS.

In addition, we urge the Service to address inadequate mechanisms to protect spotted owl habitat on Oregon State Forests and on private lands in Oregon. The failure of the State of Oregon to modernize its Forest Practices Act as well as to develop Habitat Conservation Plans or other alternative strategies to guide the management of its state forests represents unacceptable obstacles to recovering spotted owls. In fact, the DEIS notes that "Oregon State law is less stringent than that in Washington and California" and there is a "potential for timber harvest on Oregon State lands within the study area" due to the fact that none of these lands are covered under habitat conservation plans or other Federal permit process that would allow for the take of spotted owls (DEIS at 204). It is critical that the Service work with the State of Oregon to ensure that real habitat protections are instituted on non-federal lands.

Lethal control studies only make sense if the Service is also putting in place adequate protections to address the original cause of decline. The continued decline of spotted owl populations and the increasing threat posed by the expanding range of the barred owl call for increasing habitat protections in order to both compensate for habitat lost to barred owl

occupation and to increase the potential for the two species to come into some degree of equilibrium over time. We urge the Fish and Wildlife Service to remedy deficiencies in the Spotted Owl Critical Habitat Rule.

2. The Barred Owl DEIS does an inadequate job of assessing the social and ethical implications of controlling barred owls:

We applaud the Service's decision to convene a Barred Owl Stakeholder Group and hire an environmental ethicist to consider the ethical implications of barred owl control. Audubon was represented on this stakeholder group by Bob Sallinger and Mary Coolidge. We believe that ethical considerations are an appropriate arena for discussion and analysis within the context of an EIS and that such discussions can result in broader public support, understanding and ultimately more innovative strategies to address environmental concerns.

We are therefore disappointed that the section of the DEIS focused on ethical considerations (3.6 Affected Environment and Environmental Consequences--Social and Ethical Considerations) is so sparse and cursory. We disagree with the conclusion that "the proposed experimental removal of barred owls will (not) change or impact social values in a manner that would affect the larger regional social environment" (DEIS at page 181). We would highlight two areas in particular that we believe merit further analysis and consideration.

First, we would urge the Service to consider how lethal control of barred owls may impact long-term public support for the spotted owl recovery program specifically as well as the Endangered Species Act in general. We are concerned that the proliferation of well publicized and controversial lethal control programs to remove one species in order to benefit another species is eroding public confidence for endangered species programs and causing an increasing portion of the public to question the efficacy of these types of approaches. The Service should not be lulled into a false sense of security by the fact that this DEIS focuses on a study rather than broad scale management; the reality is that this study would be far larger than any other effort worldwide to control a native raptor species to benefit a species of concern (Livezey 2010).

Second, we urge the Service to consider how this experiment might lead to increase poaching involving other avian species as well as reduced support for prosecutions of illegal take of protected birds. Specifically we are concerned about how this experiment might be perceived by the public as being diametrically at odds with longstanding legal protections for birds of prey. Why for example is it okay for the Service to kill thousands of barred owls but not legal for a citizen to shoot a red-tail that preys upon their chickens or a wind turbine to kill the occasional ferruginous hawk? ? The current increase in illegal killing of sea lions following permitted lethal control of sea lions at Bonneville Dam illustrates the very real nature of this problem. The Service should consider how to better distinguish between regulated take needed to save a species from extinction and other forms of illegal take by members of the public.

We urge the Service to expand its analysis of social and ethical impacts. We would also urge the Service to include an outreach and education strategy so that the public more fully understands this controversial and complex issue.

3. The Fish and Wildlife Service should include a more complete analysis of the feasibility of moving towards landscape scale implementation:

The Service should not use the fact that this DEIS is limited to an experimental study to avoid assessing the long-term feasibility of utilizing broad scale control of barred owls as a

management tool. This proposal is not being considered simply to expand our understanding of spotted owl-barred owl interactions--it is being conducted for the specific purpose of determining whether long-term lethal control of barred owls at a much larger geographic scale is warranted and practicable. While it is not possible to know the answer to certain biological and ecological questions until the experiment is completed, there is no reason to postpone a general analysis of other aspects of broad scale implementation of control activities.

One of the most pervasive criticisms that we hear about this DEIS is that it represents a waste of taxpayer dollars and public resources and will result in the unnecessary killing of barred owls because USFWS will not have the political, public or financial support to move from and sustain experimental control to broad scale application regardless of what the experiments demonstrate. It is important that the US Fish and Wildlife Service address this issue head-on in the current DEIS. The Service should take a hard look at the feasibility of sustaining a barred owl management program in virtual perpetuity. Factors that could be used to assess this feasibility include; 1) the challenges associated with sustaining the existing spotted owl recovery program up to this point, 2) FWS analysis of the challenges associated with implementing the different alternatives containing in the DEIS currently being considered, and 3) the Services ability to sustain current and past controversial lethal control programs of one species to benefit another. For example, if the Service determines that it is not economically feasible to implement the more robust alternatives contained in the current DEIS, there is little reason to believe that even more expensive management applications are likely to be implemented post study.

The barred owl experiments should only proceed forward if USFWS can demonstrate that it is reasonably certain that the agency will be able to move to broader management strategy should the experiments demonstrate that such an approach is warranted. While we concur that it is appropriate to conduct experimental control studies prior to adopting control as a management strategy, the experiment should not be used as an excuse to "kick the can down the road" in terms of assessing whether more broad scale and indefinitely sustained management application is politically, socially and economically feasible.

4. If the barred owl control experiment does proceed, we recommend selecting an option or combination of options that both minimizes lethal control of barred owls and is robust enough to assure the public that adequate data will be collected to provide scientifically defensible answers to the questions that the Service seeks to answer.

We recognize that the goals of minimizing loss of life and maximizing scientific rigor are in tension with one another. However they are not mutually exclusive. The Service presents seven different action alternatives in the DEIS but does not present a preferred alternative. While not necessarily a requirement of NEPA, we do believe that the failure to select a preferred alternative does a disservice to the general public in terms of being able to focus its comments and concerns. The alternatives presented represent a broad continuum in terms of cost, number of owls killed, and geographic scale and duration. The number of owls removed from the environment under the different options range from 257 to 8593. The length of these studies range from 3-10 years. The number of sites involved in these studies ranges from 1-11 locations. The total cost for the different alternatives ranges from about \$1.3 million to almost \$17 million.

It is important that the Service be able to demonstrate that whatever alternative or combination of alternatives is selected does not result in the unnecessary taking of barred owls but also that it is sufficient to provide data to allow the Service to make a scientifically defensible

decision as to whether and how to move to broader management application. Failure to address either or both of these issues would leave the Service open to challenges that it is wasting both owl lives and public resources.

5. The Service should avoid sites where the federally listed marbled murrelet (*Brachyramphus marmoratus*) could be negatively impacted by barred owl control activities.

The DEIS recognizes that there is a potential to disturb federally listed marbled murrelets. The Service writes, "We have identified a potential for disturbance to marbled murrelets from shotgun shots under certain conditions" (DEIS at page 163). The Service goes on to note that in some of the study areas, "marbled murrelets may still be nesting or feeding young during the first month of the removal period (September)" (DEIS at page 163). Effects could include reduced food delivery by parents to their young, flushing of adults from the nest thus increasing the risk of predation, and premature fledging of young (DEIS at page 164).

We urge the Service to take the utmost care to avoid disturbance of marbled murrelets as a result of actions associated with this experiment. Current research on marbled murrelet populations in the Pacific Northwest shows that populations are rapidly declining. 75 Fed. Reg. at 3,433 (noting a "significant population decline" documented in 2008 and since monitoring began in 2000); 75 Fed. Reg. at 3,425 (2007 and 2008 monitoring results were the lowest population estimates since 2000); Falxa, 2011 (noting an average annual decline in the CA, OR, WA population from 2001 to 2010 of 3.7%). "The 2000-2008 data represent an estimated 2.4 percent annual decline, while the 2001-2008 data represent an annual decline of about 4.3 percent . . ." *Id.*

It would be truly ironic for the Service to harm another federally listed, old growth dependent species in its effort to investigate potential actions to protect northern spotted owls. This outcome must be rigorously avoided and the Final EIS should include a much more robust analysis of this potential negative adverse impact.

Conclusion:

The poet Gary Snyder has spoken eloquently to the challenge of extinction in his meditation on nature, *Practice of the Wild*. He writes:

The extinction of a species, each one a pilgrimage of four billion years of evolution, is an irreversible loss. The ending of so many creatures with whom we have traveled this far is an occasion for profound sorrow and grief. Death can be accepted and to some degree transformed. But the loss of lineages and all of their future young is not something to accept. It must be rigorously and intelligently resisted.

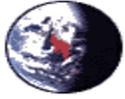
Recovering northern spotted owls is of paramount importance. The question we must now ask ourselves is whether this DEIS represents "rigorous and intelligent resistance" to this species' potential extinction under our watch. We respectfully urge the Service to fully and carefully address each of the concerns raised in these comments prior to proceeding forward with the proposed experimental control of barred owls.

Thank you for your consideration of our comments.

Respectfully,

A handwritten signature in black ink that reads "Bob Sallinger". The signature is written in a cursive, slightly slanted style.

Bob Sallinger
Conservation Director
Audubon Society of Portland



"Mary Porter-Solberg"
<hikernut@live.com>
06/06/2012 09:30 PM

To: <barredowlEIS@fws.gov>
cc:
Subject: Barred Owl DEIS Comments

Olympic Peninsula Audubon Society comments on the Barred Owl Draft EIS are attached.

Thank you,

Mary Porter-Solberg
Conservation Committee Co-chair
Olympic Peninsula Audubon Society
Sequim, Wa. 98382
phone: 360-683-8072
cell: 360-477-5229 (Verizon)



email: hikernut@live.com Barred Owl DEIS Comments June 6, 2012.docx

June 6, 2012

Mr. Paul Henson
Field Supervisor
U.S. Fish & Wildlife Service, Oregon Fish & Wildlife Office
2600 SE 98th Ave. Ste. 100
Portland, OR 97266

Sent by email:

Dear Mr. Henson,

On behalf of the Olympic Peninsula Audubon Society (OPAS) we appreciate this opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) regarding the *Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls*.

Olympic Peninsula Audubon provides birding and conservation of habitats through education programs, citizen science, and stewardship. The recovery of the spotted owl remains a high priority for our membership, but lethal control of barred owls continues to be a controversial issue which warrants a high level of assurance that the Service will endeavor to address the original reasons for the spotted owl decline and adequate protections are assured.

After careful examination of the DEIS, OPAS has taken the position to support a controlled, experimental, removal of the barred owl in order to prevent the extinction of the spotted owl. Our decision is based on scientific data that indicates that direct competition from an influx of the more aggressive barred owls into the Pacific Northwest has created a nesting decline which makes spotted owl recovery potentially impossible.

We support continued, full protection of barred owls under the Federal Migratory Bird Treaty Act of 1918, but are willing to concede to experimental removal only for the specific purpose of determining whether long-term lethal control of barred owls is warranted and practical. If the Service determines the experimental removal of barred owls is successful, it is important that all management strategies proposed in the DEIS are determined economically feasible.

We believe the most important aspect of the recovery of the spotted owl continues to be adequate habitat protection of remaining old growth forests. The proposed Revised Critical Habitat Rule for the Northern Spotted Owl could potentially weaken the protections currently provided by the Northwest Forest Plan. We plan to submit more comprehensive comments on the Revised Critical Habitat Rule by July 6th, 2012.

Thank you for your consideration of our comments.

Mary Porter-Solberg
Conservation Co-chair
Olympic Peninsula Audubon Society
Sequim, Washington

Jim Gift
Conservation Co-chair
Olympic Peninsula Audubon Society
Sequim, Washington



Brian Meiering
<brianmeiering@comcast.net>

To: "barredowleis@fws.gov" <barredowleis@fws.gov>
cc:
Subject: Experiment EIS

06/06/2012 10:23 PM

My primary comment relates to any alternative which alters data collection for the demographic studies currently in place. There are several options for demographic sites which have been dropped, but i don't think it is reasonable to interfere with current demographic data collection. These studies contain the most consistent and temporally complete sets of data available and a temporary experiment, even one with assumed positive results for spotted owls, should be relegated to non-demography study areas. It is assumed that the effects of the experiment after 10 years will allow for some predictability in effects on the demography studies if the removal were to continue as a management tool.

To summarize, i don't want demographic data to be confounded at this point by an unknown effect of the experiment. Use of previous demographic sites, since abandoned, should be used if they contain historic baselines and are suitable control or removal areas.

sent from field



Jeremy Rockweit
<rockweit@rams.colosta
te.edu>

06/06/2012 11:54 PM

To: barredowlEIS@fws.gov
cc:
Subject: comments of draft barred owl removal EIS

To whom it may concern:

Attached please find my comments on the draft barred owl removal experiment EIS.

Sincerely,
Jeremy Rockweit

--

Jeremy Rockweit
Research Associate
Cooperative Fish and Wildlife Research Unit
Colorado State University
201 Wagar Building
Fort Collins, CO 80523
530-788-8039



Draft EIS - BO removal experiment (JR comments).pdf

4 June 2011

U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, OR 97266

RE: Comments on Barred Owl Removal Experiment Draft EIS

Dear Paul Henson:

Please find below my comments on the draft barred owl removal experiment environmental impact statement. I have been associated with the Willow Creek Study Area, which is included in several proposed alternatives, since 2000, and have served as assistant project leader since 2006. In general, I think this EIS includes several alternatives that represent well-conceived experiments designed to finally address the spotted owl / barred owl issue, and that these experiments should begin as soon as possible. Additionally, I was asked by Ray Bosch of the Arcata field office to comment on several specific items and I highlight those items below.

2.1.1 Number of study areas

I wish the Service would have included more alternatives with > 3 study areas. Alternative 7, with its 11 study areas is probably not feasible due to financial considerations. I also think the alternatives with only 1 study area are not appropriate because the inferences drawn would only apply to the region in which the study was conducted, and we cannot assume a barred owl effect would be the same across all regions. Including more alternatives with 5-7 study areas would allow for greater inference across the species' range, while reducing the cost compared to alternative 7.

2.1.2 History of barred owl presence

The statement that "barred owls have been found for less than a decade on most [southern Oregon/northern California] study areas" is wrong. Barred owls have been detected on most study areas by the early- to mid-1990s.

2.1.3 Type of study

Given the highly contentious nature of this EIS and the great need to thoroughly address this issue with a well-conceived study, I think the option of occupancy study designs is far from ideal. Occupancy studies cannot answer the question of if and how barred owls are influencing spotted owl demographics. For example, an increase in spotted owl detections in the treatment area could result from a true increase in population size or immigration from outside the treatment area. Additionally combining an occupancy study with information on reproductive success would entail the same amount of effort as a demographic study, but without the added benefit of apparent survival estimates (i.e., one would still need to walk into these territories to assess reproductive status). Demographic studies will be able to fully address the research questions asked, provided the study is well-designed.

2.2.2.3 Duration of study

I am concerned about the duration of some of the proposed alternatives. While spotted owl apparent survival will presumably increase fairly quickly after barred owl removal, any effects on reproduction may be delayed several years. The 4 year removal duration of several of the alternatives may not be long enough to observe an effect on reproduction because other factors such as weather and prey base may mask removal effects. Increasing study duration will help parse out these other effects and better deal with any potential lag effects. Additionally, studies conducted in WA and OR may take longer than 4 years to detect changes because barred owls have been around much longer and have taken over much more historic spotted owl habitat.

3.9.1.3 Cost of barred owl removal

I do not understand the logic used to estimate the cost of removal. Why does the cost increase to as much as half the cost of spotted owl demographic studies by year 3? Even if the remaining barred owl sites are farther spaced in subsequent years, that certainly wouldn't double the cost compared to the preceding year because the whole study area needed to be traversed that first year. Thus, traversing the length of a study area in the second year wouldn't cost any more. I would think the cost of removal would be approximately equal all years.

Below are my responses to the items Ray Bosch requested my input on.

How representative do study areas need to be to cover the species' whole range?

Ideally, the more study areas spread across the range of the species the better for inferential strength, but given the constraints of limited funding, I would argue that 5 study areas would be sufficient to draw inferences to the species' range. My reasoning is as follows: the Cascade crest divides WA and OR into 2 distinctly different climate regimes, which in turn results in a 'wet' western forests and 'dry' eastern forests. Given that we think barred owls prefer mesic forests to xeric forests, I think 1 study area on each side of the Cascade crest in both WA and OR and 1 study area in northwest CA will adequately capture the variability between different habitat types to be able draw inferences to the species' range. An additional study area in the redwood region of CA would also be of benefit, but the ongoing removal experiment on Green Diamond lands should suffice.

Of the alternatives listed in this EIS, I do not think consideration should be given to those with only 1 study area. I think 3 study areas would be the absolute minimum needed to generalize across the species' range, but even this would be a stretch.

3.1.4.2 Is the study area description for Hoopa (Willow Creek) accurate?

The barred owl population information for this study area needs updating. Our most recent annual report indicated that we (Willow Creek) had 17 barred owl sites in 2011 (15 sites in 2010). This information is comparable to Hoopa's estimate of barred owl sites because we have been conducting barred owl-specific surveys of the study area since 2009. The estimate of 40

barred owl sites on the Willow Creek is not accurate and should be changed to reflect our rigorous barred owl survey efforts.

3.2.1.2 Barred owl population estimates

The Willow Creek study area also has rigorous barred owl data which was not included in this EIS. It is known that the barred owl numbers on the Willow Creek have lagged behind those of the Hoopa study area and this is reflected by our current estimate of barred owls sites. Because this EIS estimates barred owl numbers on the Willow Creek based on numbers on Hoopa, tables 3-43 and 3-44 overestimate both the density and number of barred owls on the Willow Creek.

3.4.1 Use of demographic study areas for removal experiment

As part of the NWFP effectiveness monitoring program for the spotted owl, I understand the concern of using these study areas for the removal experiment. However, I believe these study areas are perfectly poised to help answer this issue, and any differences in vital rates between treatment and control areas that might arise can be accounted for with covariates. The alternative, in my opinion, is to continue to monitor the decline of the northern spotted owl.

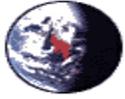
3.9. Survey effort

The ratio of 4:1 barred owl sites to spotted owl sites may be accurate in WA and portions of OR, but it is not appropriate for the study areas being considered in CA. I think a more accurate ratio of barred owl to spotted owl site for CA would be in the neighborhood of 1:1 or 1.5:1. Additionally, why did you use the number of spotted owl sites to determine the cost of barred owl surveys? It seems like a more appropriate cost estimate for barred owl surveys would be based on the amount of habitat (all forested areas for barred owls) to survey because this does not change, whereas the number of sites does.

Appendix D

I think this section is well thought out, but one concern I have with the timing of removal is that spotted owls presumably begin prospecting for territories in late summer. Because of this, I would think it would be best to remove the barred owls as early in the season as possible to increase the likelihood that a territory will be re-occupied by spotted owls. If barred owls are not removed until late winter, it may be too late for that site to be occupied early enough by a pair of spotted owls to successfully reproduce that breeding season. I understand not removing barred owls when they have dependent young, but I think summer would be the best time to remove the barred owls to maximize the chance the site is re-occupied by spotted owls. Wording the removal guidelines such that, “dependent young are not left to starve” would provide some leeway to remove the entire barred owl family, not just the adults after the juveniles disperse.

Jeremy Rockweit
Research Associate II
Colorado State University
Fort Collins, CO 80523



Tim Fox
<tim@gilafox.com>
06/07/2012 05:09 PM

To: barredowleis@fws.gov
cc:
Subject: Fwd: Notice for Barred Owl Removal Experiment EIS

----- Forwarded message -----

From: <Robin_Bown@fws.gov>
Date: Mon, May 14, 2012 at 6:31 AM
Subject: Re: Notice for Barred Owl Removal Experiment EIS
To: Tim Fox <tim@gilafox.com>

please resend to our comment email box, rather than mine individual box. The address is barredowleis@fws.gov. Thank you for the comments.

Robin Bown
US Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave, Suite 100
Portland, OR 97216
[\(503\) 231-6179](tel:(503)231-6179)

-----Tim Fox <tim@gilafox.com> wrote: -----

To: Robin_Bown@fws.gov
From: Tim Fox <tim@gilafox.com>
Date: 05/13/2012 08:20AM
Subject: Re: Notice for Barred Owl Removal Experiment EIS

Dear Robin Brown,

I've attached an essay that will serve as my comments on the draft EIS proposing the removal of barred owls from spotted owl habitat in selected study areas.

Thanks,
Tim Fox

On Wed, Apr 25, 2012 at 12:13 PM, <Robin_Bown@fws.gov> wrote:

The U.S. Fish and Wildlife Service has prepared a draft Environmental Impact Statement (EIS) for a permit under the Migratory Bird Treaty Act for an experiment to test the effects of barred owl competition on northern spotted owl populations through removal of barred owls from select study areas. Comments on the draft EIS are due June 6, 2012.

We will host open meetings on Thursday, May 3, 2012, at Seattle Pacific University in

Otto Miller Hall, 3307 3rd Avenue West in Seattle to seek public input on a draft EIS on experimental removal of encroaching barred owls from northern spotted owl habitat. These information sessions will run from 3:00 - 5:00 p.m. and 6:00 - 8:00 p.m. PDT.

We will also provide one or more webinars in the following weeks for those unable to join us at the meeting. Dates and information on how to join the webinar will be available on our website at www.fws.gov/oregonfwo under "Barred Owl Information" as they are scheduled.

Robin Bown
US Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave, Suite 100
Portland, OR 97216
[\(503\) 231-6179](tel:(503)231-6179)



Intruder2.docx

Tim Fox
91435Horse Creek Road
McKenzie Bridge, OR 97413
(541) 822-805
tim@gilafox.com

Intruder
By Tim Fox

My experience with the northern spotted owl began in 1989 with the BLM in southern Oregon, during the peak of the so-called owl war. At that time, barred owls were not yet a significant factor in the spotted owl survival equation. Over the next twelve years, I worked with the spotted owls in the forests of the central Oregon Cascades (4 years as a wildlife technician for the Forest Service and 8 years as a research assistant on a long-term population demography study with the Oregon Cooperative Wildlife Research Unit). Throughout that period, more and more barred owls turned up in places we normally found spotted owls. The trend worried me. Compared to the larger, more aggressive barred owls, there is something special about spotted owls. And it is for them that I feel the deepest empathy.

That said, shooting barred owls for the sake of spotted owls strikes me as a deflection from the real imperative the arrival of the barred owl represents: we must stop using the spotted owl (via the Endangered Species Act) as the means by which to protect the old growth forest ecosystem and begin protecting the old growth for its own sake. If that means drafting and implementing an Endangered Ecosystems Act, then so be it. The fate of the forest is too much to hang on a single species.

Once we focus our attention directly on the real heart of the issue -- protecting the old growth forest ecosystem -- then we will be able to see the relatively recent arrival of the barred owl in the northwest over the last thirty-five or so years for what it truly represents, a rare opportunity to observe what

happens when two closely related species that have been separated from a common ancestor for a very long time suddenly come into contact again. One thing we already know is that the situation is not as cut and dried as recent popular news media accounts would have us believe. Yes, there's no denying the dramatic cases of aggression and spotted owl displacement by barred owls, but less publicized are the numerous instances of spotted/barred owl interbreeding, which results in fertile offspring called 'sparred' owls. These hybrids can be hard to identify, and when they breed back with spotted owls, the distinction between the species blurs even more, which could easily result in cases of mistaken identity where well-intentioned biologists accidentally blast the wrong owl. In fact, according to one school of taxonomic thought, the ability to interbreed means the spotted owl and barred owl are not separate species at all. And this makes the imperative to find a new means of forest protection all the more pronounced.

There are simply too many variables and uncertainties to justify lethal interference, and that is what shooting barred owls represents: interfering with a natural dispersal process (that could teach us a great deal) in favor of trying -- through the imposition of relatively extreme and violent measures -- to preserve some idealized notion of historic conditions in a time of great change. As children of an aggressive culture, this seems natural to us. We've spent millennia playing god, often with unforeseen and disastrous results, which we've too often overlooked, when we've become aware of them at all.

It is time to show some humility, lock up the shotguns, and carefully watch what unfolds as the spotted owl and barred owl do their dance (all the while separating the protection of the old growth forest ecosystem from the outcome of that dance). This stance should not be taken as advocating inaction. On the contrary, profound action on our part is required, but shooting barred owls is the wrong action.

I've heard, in passing discussions among people who earn their pay cutting trees, that they hope the barred owl will drive the spotted owl extinct so that all the regulatory impediments to logging imposed on the spotted owl's behalf will be lifted. Then the wood will flow again from the last pockets of forest we call old growth. That prospect is what puts real fear in my heart. And preventing it will require not guns, but a cultural maturation beyond the prevailing reductionist past-conditions-directed/species-by-species approach to an integrated natural-processes-inspired/ecosystem approach.

Really, this situation is not about the owls or even old growth, it's about our relationship with the land; our expectations and assumptions and above all else, our efforts to be in control. The arrival of the barred owl serves as a call for us to change those expectations, assumptions and dominator impulses. The desensitization required to look down the barrel of a twelve-gauge and squeeze the trigger on a bird we have no intention of eating and no real reason to kill is what we must truly overcome. If we can do that and re-sensitize ourselves to the land on *its* terms, there is no telling what unforeseen truths and opportunities we might discover, not only with regard to owls and forests, but with regard to ourselves as well.



"Shawn Cantrell"
<Shawnc@seattleaudubon.org>

06/08/2012 09:15 AM

To: <barredowlEIS@fws.gov>
cc:
Subject: FW: Seattle Audubon comment letter on Barred Owl DEIS

<<20120605 SAS Comment Letter Barred Owl DEIS.pdf>>

I am resubmitting the attached comment letter on the March 2012 DEIS regarding the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls. As is noted in the email trail below, the FWS server was not accepting emails on Wednesday June 6th when Seattle Audubon attempted to submit our comments.

In speaking with FWS employee Robin Bown, yesterday, she stated that there was indeed a problem with the agency's email server on Wednesday and that because of that problem, the FWS would accept comments that are submitted now.

Please confirm receipt of this email and that Seattle Audubon's comment letter will be accepted as timely.

Thank you.

Shawn Cantrell

Executive Director

Seattle Audubon

206-523-8243 ext. 15

shawnc@seattleaudubon.org

www.seattleaudubon.org

From: System Administrator
Sent: Wednesday, June 06, 2012 3:27 PM
To: Shawn Cantrell
Subject: Undeliverable: Seattle Audubon comment letter on Barred Owl DEIS

Your message did not reach some or all of the intended recipients.

Subject: Seattle Audubon comment letter on Barred Owl DEIS

Sent: 6/6/2012 3:24 PM

The following recipient(s) cannot be reached:

barredowlEIS@fws.gov on 6/6/2012 3:27 PM

There was a SMTP communication problem with the recipient's email server. Please contact your system administrator.

<seattleaudubon.org #5.5.0 smtp;550 Neither MX nor MTA found for domain:fws.gov - psmtpt>

From: Shawn Cantrell
Sent: Wednesday, June 06, 2012 3:24 PM
To: 'barredowlEIS@fws.gov'
Subject: Seattle Audubon comment letter on Barred Owl DEIS

Attached is a pdf copy of Seattle Audubon's comment letter on the March 2012 DEIS regarding the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls.

Please contact me if you have any problems with the attachment; also please continue to keep our organization informed of your agencies processes and decisions on this issue.

Thank you.

Shawn Cantrell

Executive Director

Seattle Audubon

206-523-8243 ext. 15

shawnc@seattleaudubon.org



www.seattleaudubon.org 20120605 SAS Comment Letter Barred Owl DEIS.pdf



June 6, 2012

Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave. Suite 100
Portland, OR 97266

Dear Paul,

Seattle Audubon is providing the following comments on the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft Environmental Impact Statement (DEIS) dated March, 2012.

Founded in 1916, Seattle Audubon's mission is to cultivate and lead a community that values and protects birds and the natural environment. With approximately 5,000 members, we are the largest Audubon chapter in Washington and actively engaged in bird conservation.

Listed as Threatened under the Endangered Species Act in 1990, the Northern Spotted Owl (NSO) has continued to decline at alarming rates. Seattle Audubon has been engaged in helping with the protection and recovery of the NSO for over three decades. Our primary concern is and will continue to be the protection of critical habitat for this species. Under no circumstances can NSO recovery occur without committed and focused on-going habitat protection and restoration efforts.

Seattle Audubon acknowledges that there are many stresses on the NSO population, including Barred Owl competition. While the Barred Owl has displaced the NSO from some suitable habitats, reduced NSO breeding success, and sped NSO decline, Barred Owls' impacts on NSO cannot be used as an excuse to not address habitat loss issues. Barred Owl should not become a scapegoat for the decline of NSO (pg. 322). The 2011 federal Revised Recovery Plan for the Northern Spotted Owl states that Barred Owl presence actually *increases* the need for additional habitat protection. Seattle Audubon strongly agrees with your agency's statement in the Recovery Plan that "*In order to reduce or not increase this potential competitive pressure while the threat from barred owls is being addressed, this Revised Recovery Plan now recommends conserving and restoring older, multi-layered forests across the range of the spotted owl*" (Revised Recovery Plan for the Northern Spotted Owl, pgs. I-9). Potential Barred Owl management is no substitute for critical habitat preservation.

In the context of the DEIS, "experimental removal" and "treatment" mean killing Barred Owls. As a bird advocacy organization, killing birds is a contentious and serious ethical matter. Seattle Audubon's conditional support of experimental removal is reliant on USFWS' consistent application of a rigorous, independently verified, scientific approach that minimizes the killing of Barred Owls.

Seattle Audubon supports *experimental* removal of Barred Owls to determine the potential benefits to NSO with the following comments:

CRITICAL FACTORS

Seattle Audubon has reviewed the DEIS and has identified several critical factors in determining the attributes of a final preferred action alternative:

1. Demographic vs. Occupancy Study

Seattle Audubon supports a demographic study approach. Considering the controversial and invasive nature of lethal Barred Owl removal, it is critical that as much pertinent information be obtained from the removal study as possible. As noted in the DEIS (pgs. 12-13) occupancy studies do not allow identification of most NSO vital rates that may be affected by Barred Owl competition, including annual survival and recruitment. Demographic study is needed to assess change in population growth rates, annual survival, reproduction, and recruitment between treatment and control areas. This approach, though labor intensive, provides the most accurate information on how Barred Owl removal might impact the population dynamics of NSO.

2. Pretreatment Data

Existing pretreatment data is a crucial part of timely Barred Owl management discussions, and experiments without any pretreatment data are unacceptable. Considering the controversial nature of this study and the rapid expansion of the Barred Owl population, Seattle Audubon supports the use of ongoing NSO demographic study areas. The DEIS notes that "...the presence of pretreatment data, particularly 10 or more years worth, substantially improves the ability of the study to detect differences (strength of inference) of the results and applicability of the conclusions" (pg. 17). On Alternatives 4b and 6b, the DEIS concludes that "Lack of pretreatment data reduces the strength of the study approach" (pg. 30 and 34).

Removal experiments need to be well designed. Demographic studies yield even stronger conclusions when pretreatment spotted owl data is available for both treatment and control areas: "The presence of pretreatment data allows comparison populations before and after the treatment on the treatment area, strengthening the results by eliminating other potential differences between the control and treatment areas" (pg. 12).

Additionally, the number of NSO study areas each encompassing 100-200 sites and the over 15 years of NSO data gathered on those study areas (survival, recruitment, and rate of population change) give this approach substantial strength of inference for assessing effects of Barred Owl removal (pg. 342).

3. Number of Study Areas

The Final EIS should identify a preferred alternative which includes multiple study sites because they "better represent the range of conditions experienced by spotted owl populations, allowing better inferences across their range" (pg. 10). Extrapolating the results of a single study area over the entire range of the NSO would be extremely challenging, limiting the results' applicability to only a portion of the NSO's range (pg. 25). Using multiple study areas provides a greater ability to detect differences (strength of inference) than a single study area

because a wider range of habitats are included and also provides greater statistical power to detect change in population trends between treatment and control areas (pg. 145, 149, and 380).

4. *Time*

Seattle Audubon supports experimental designs that obtain high quality data in less time. NSO populations are continuing their rapid decline and, to stem their decline, timely information about the effects of potential Barred Owl management is critical. Certain NSO populations are so at risk, that the DEIS states, "... removal experiments may be the only way to keep some spotted owl populations (e.g. Cle Elum in Washington) from declining to zero" (pg. 378). Additionally, NSO populations must be present in viable numbers to recolonize sites after barred owl removal (Pg. 378).

The existing DEIS alternatives range in duration from 3 to 10 years. In alternatives that utilize study areas with existing pretreatment data, long-term trend analysis can occur and Barred Owl removal could begin immediately, resulting in shorter duration studies with better comparative data. Alternatives that utilize sites without pretreatment data yet allocate extra time to gather the data, including 5 years of demographic pre-treatment data collection in Alternative 4a, significantly delay potential Barred Owl removal, putting the NSO at increased risk in Washington State.

5. *Number of Barred Owls Removed*

The number of Barred Owls proposed to be removed by the study varies from 257 to 8,953 animals, depending on the alternative. Even in alternatives that utilize both lethal and non-lethal removal methods, it is not anticipated to find placement for more than 100 owls (pg. xxviii). The ethical issues and policy implications of killing Barred Owls and the resulting loss of life cannot be minimized. Seattle Audubon seeks significant and high quality results from an action alternative; killing more owls does not necessarily translate into better study results.

6. *Statistical Power*

The EIS contains a Power Analysis for the Barred Owl Removal Experiment (Appendix H). Any selected alternative, especially as alternatives require lethal Barred Owl removal, should obtain the most significant and highest quality results, and should be able to be evaluated via power analysis before actual implementation.

Power Analysis was also conducted for the occupancy studies (Alternatives 5 and 6). Because there are not established databases for site occupancy for the areas included in the occupancy alternatives and existing data have not been analyzed in an occupancy model framework, a "hypothetical power analysis" was conducted for the occupancy study alternatives to examine power to detect changes in occupancy under the scenarios believed to be likely/reasonable for Alternatives 5 and 6 (pg. 369). While power analyses for occupancy studies can be conducted, the analyses for occupancy studies are not directly comparable to those for demography studies because they look at different measures of population dynamics (pg. 366). This result supports Seattle Audubon's assertion that demographic studies that build on existing demographic result will yield better, more timely results (see critical factor #1 above).

A formal power analysis for Alternative 4 could not be conducted due to lack of pretreatment data (pg. 368), nor for Alternative 7 given the complexity of this alternative and the lack of data for a number of areas (pg. 371). The power analysis for Alternative 1 indicates the importance of more NSO study sites because they have greater power to detect changes in population growth rate resulting from Barred Owl removal (pg. 367).

In any case, the power analysis shows the statistical attributes of Alternatives 1 and 2. For Alternative 2 the powers of 1.00 for two out of three study area combinations for $\lambda = 1.05$ and 1.10 for a 5 year study (Table H-2). This means a 100% ability to detect NSO populations increasing at 5% per year and 10% per year. Seattle Audubon support the use of power analysis to ensure that any selected alternative will be able to measure its effects.

SECONDARY FACTORS

While the critical factors listed above address the USFWS' "Considerations Used in Developing the Alternatives" (pgs. 10-17), Seattle Audubon acknowledges several secondary factors that should also be addressed in the analysis.

1. Use of On-going NSO Demographic Study Areas

Historical and ongoing habitat loss has caused the continuing decline of the NSO across its range. Long-term, ongoing, demographic studies across the NSO's range originally documented the NSO's decline and continue to document the on-going decline and demography trends. Seattle Audubon values the central role that these studies play in documenting the NSO's decline and demonstrating the pressing need for habitat protection. Removing Barred Owls on portions of study areas reduces (pg. 342) the sample size of NSO for the demographic study by 50 percent, increasing the variance of estimates of demographic rates for both treatment and control areas (pg. xxxiii). Such a reduction in size affects how results from ongoing spotted owl demographic study areas can be compared before, during, and after a removal experiment (pg. 342).

Existing pretreatment data is a crucial part of timely and productive Barred Owl management discussions. Experiments without any pretreatment data are unacceptable (see Critical Factor #2 above). The best pretreatment data comes from the nine ongoing NSO demographic study areas. It's these study areas that initially provided the data documenting the alarming decline in NSO populations and that now provide the best, most timely pretreatment data to assess the effectiveness of Barred Owl removal.

Only Alternatives 1, 2, and 7 include the removal from up to one-half of one to three ongoing NSO demographic study areas. Alternatives 3, 5, and 6 propose using the ongoing NSO demographic study areas as control areas, not treatment areas and Alternative 4 does not include any such study areas. Furthermore, since treatment-control effects can be incorporated into the modeling process for demographic analysis, the USFWS states that these studies will be able to continue evaluation of population trends (pg. 381 and 342) and, post-experiment, can be recombined with control area(s) (pg. xxxiii).

Seattle Audubon supports the utilizing the best science possible to support Barred Owl management decisions. Assuming that (as USFWS states) studies will be able to continue

demographic studies (with variations), Seattle Audubon supports the use of existing NSO demographic study areas because they provide immediately available, quality long-term data across the NSO range.

2. *Study Sites Within Range of the Marbled Murrelet*

The Marbled Murrelet, a Washington- and Federally-listed Threatened species, is present in all Washington study areas except for Columbia Gorge, and several of the Oregon and California areas (pg. 385). Additionally, seven of the nine ongoing NSO demographic study areas are within the inland range of the Marbled Murrelet.

DEIS Appendix D notes that removal will occur "...during the late fall to early spring period..." (pg. 375). Since study areas include the inland range of Marbled Murrelets, the issue of potential disturbance of Marbled Murrelets must be addressed. As currently planned, some late nesting Marbled Murrelets may be disturbed in the fall removal period. We strongly recommend that Barred Owl removal does not occur during Marbled Murrelet nesting season and that adjustments to the removal protocol are made to minimize risk to Marbled Murrelets in areas of high potential for overlap.

CONCLUSIONS

Seattle Audubon cultivates and leads a community that values and protects birds and the natural environment. Our community wants to see the recovery of NSO across its historic range and supports the use of strong science to inform decision making.

The primary emphasis for Northern Spotted Owl recovery should continue to be on habitat management, preservation, and enhancement. In particular, Seattle Audubon continues to believe that there is a need to change industrial forest practices on both public and private lands to preserve and foster sustainable mixed species with multiple canopy layers, large trees, horizontal patchiness, and understories of native shrubs and forbs. A comprehensive approach would promote structural and functional diversity, conferring ecological resilience. Such resilience provides benefits to multiple wildlife species and a robust flow of ecosystem services - both of which are important overall conservation objectives beyond the preservation of the Northern Spotted Owl.

Seattle Audubon supports the implementation and continuation of statistically rigorous research studies on Barred Owl ecology and Barred Owl-Northern Spotted Owl interactions in order to inform future management decisions. After review of the DEIS, Seattle Audubon affirms that rigorous research studies regarding Barred Owl removal are timely, demographic studies that evaluate multiple sites and include sufficient pre-treatment data. In the DEIS, only Alternative 2 provides for all the critical factors detailed above. Other alternatives utilize occupancy studies (limited data), have limited/no pre-treatment data, utilize only one study area, or delay removal experiments in order obtain pre-treatment data.

Seattle Audubon recommends that the USFWS create a review team of independent scientists to monitor the entire experimental process and keep the public informed about the progress. This panel should monitor the lethal removal of Barred Owls to ensure humane treatment of the birds, to sustain a rigorous removal protocol, to monitor the process, and to ensure scientific transparency. We urge the

USFWS to establish this review team because independent scientific evaluation, separate from the USFW staff, will be critical to the credibility of the results and in future decisions.

As a bird advocacy organization, Seattle Audubon is deeply concerned about the future prospect of managing one bird species for the preservation of another bird species, especially when the changes to commercial logging (quantity and practices) would have a significant habitat impact on NSO recovery. While the alternatives in this DEIS strive to understand the biological interactions between Barred Owls and NSO, the DEIS neglects the fact that humans are a major factor in NSO's decline. Increased human use of forests lands, increased forest developments, and other habitat alternations impact the NSO. Ultimately, NSO issues are not about Barred Owl but the future of our older-growth forests and the need for changes to commercial logging practices.

Thank you for considering our views and please keep us informed as this environmental review process moves forward. If you have any questions regarding these comments, please contact either Chris Karrenberg (cwkarrenberg@yahoo.com) or me (shawnc@seattleaudubon.org).

Sincerely,

A handwritten signature in cursive script that reads "Shawn Cantrell".

Shawn Cantrell
Executive Director



PWR_Regional_Director
@nps.gov
Sent by:
Karen_Washington@nps
.gov

To: barredowlEIS@fws.gov
cc: Laurie_Lee_Jenkins@nps.gov
Subject: National Park Service comments on the Experimental Removal of
Barred Owls to Benefit Threatened Northern Spotted Owls Draft
Environmental Impact Statement (DEIS)

06/08/2012 01:33 PM

Please see the subject memorandum. If you have any questions please
contact Laurie Lee Jenkins at Laurie_Lee_Jenkins@nps.gov.

(See attached file: NPS_Barred_Owl_DEIS_Comments_Final.doc)

Christine S. Lehnertz



Regional Director, Pacific West Region [NPS_Barred_Owl_DEIS_Comments_Final.doc](#)

OFFICIAL ELECTRONIC MAIL SENT VIA EMAIL
NO HARD COPY TO FOLLOW

National Park Service
Pacific West Region
333 Bush Street, Suite 500
San Francisco, California 94104-2828

N2219 (PWR-NR)

June 6, 2012

Memorandum

To: State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office

From: Regional Director, Pacific West Region

Subject: National Park Service comments on the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft Environmental Impact Statement (DEIS)

The National Park Service (NPS) is supportive of the proposed Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls (March 2012 DEIS). Scientific and scholarly activity is essential to the NPS mission. National parks are scientific laboratories and, as such, are appropriate places to conduct science-based experiments as long as the experiments constitute rigorous peer reviewed research that will not cause unacceptable effects to park resources and values. For these reasons, the NPS recommends that the U.S. Geological Survey be involved in design and review of this study given their expertise and independent perspective. We understand that the relative lack of confounding habitat loss (from logging, grazing, mining, etc.) makes NPS lands attractive sites for the removal experiments (as well as control sites); however, we have concerns about access difficulties, crew safety and the potential for unacceptable impacts to park visitors if the proposed experiment is not properly managed.

The NPS understands the proposed action to be a relatively short term scientific experiment only, and does not constitute initiation of any ongoing management action. This distinction is very important to the NPS because we believe any prospects for long term management of barred owls would need to be determined under a future NEPA process, informed in part by the results of this proposed experiment. The results of this experiment do not imply future NPS endorsement of any specific technique, methodology or other barred owl management action.

Our NPS Management Policies 4.4.2.3 Management of Threatened or Endangered Plants and Animals, state that the NPS will survey, protect, and strive to recover all species native to national parks listed under the Endangered Species Act (ESA). The NPS may also control native pest species to conserve threatened, rare, or endangered species, or unique specimens or communities under Section 4.4.5.1. of the same policy. The NPS intends to fully meet our

obligations under our Organic Act and the ESA to proactively conserve the northern spotted owl while attempting to prevent detrimental effects on this threatened species.

While we feel it is important to test the hypothesis that barred owls are contributing to the decline of northern spotted owls in forest reserve areas, we also believe that evaluating the feasibility of barred owl removals to counter this threat is an equally important result of the proposed experiment. We believe that conducting this experiment now will provide the flexibility to make management decisions before the species declines to a more critical level, and consequently we support implementing the experiment as soon as possible. This likewise argues for a study that will yield results in a relatively short time frame (five years or less), as well as conducting a demographic study (rather than occupancy) with pre-treatment data.

While the statistical power analysis points to one or a few large study areas, several geographically distributed and heterogeneous areas would inform managers of the feasibility of removing barred owls in various settings. For this reason, we believe several smaller sites may be preferable to a single large study. We believe that the advantages of conducting the experiment on one or more demographic study areas outweigh any compromise of their use in tracking northern spotted owl population trends. The use of these demographic monitoring areas in this experiment supports their role in understanding the effectiveness of management aimed at restoring viable northern spotted owl populations. Any confounding impacts will be temporary and likely can be accounted for in the analysis of the data.

The NPS recognizes the need to investigate barred owl removal as a possible tool for spotted owl recovery, with the understanding that scientific experimental research must precede any management decisions or actions. For this reason, we recommend against Alternative 7, because it explicitly aims to maximize the area where barred owls are removed, making it functionally a management action. Additionally, population-level effects of experimental manipulation are often expensive to conduct and changes are difficult to detect.

Overall, the NPS supports the general premise of the proposed research experiment in light of the critical information it may bring to conservation of the northern spotted owl throughout the Northwest. The broader topic of natural resource paradigm change is of great interest to the NPS because the changing landscape of our planet will likely continue to present changes in immigration, species distribution, and trophic synchrony at broad scales. These changes may affect the state of refuge offered to species throughout the national park system and understanding these processes will enable NPS to make informed decisions on conservation, management and stewardship. Like all land management agencies, NPS is confronted with such landscape-scale challenges, and looks forward to collaborating and cooperating with other agencies in the interest of sound scientific inquiry.

General Comments and Recommendations:

- Should the proposed project be approved by the U.S. Fish and Wildlife Service (USFWS) and a Record of Decision (ROD) issued, each national park affected by the decision would need to complete a park-specific NEPA checklist /Environmental Screening Form process. This process/checklist would determine the appropriate level of NEPA compliance needed to issue the NPS Scientific Research and Collecting Permit (research permit). It is anticipated that a Categorical Exclusion tiered to the USFWS EIS/ROD

would be the appropriate NEPA vehicle to allow parks to move forward and issue the research permit. The purpose of the research permit is to ensure that appropriate conditions are followed for each NPS unit in order to minimize impacts to park resources and values, and to visitor experiences. The research permit is approved by park superintendents.

- If NPS lands are included as part of the experiment, the Principal Investigator for the project is responsible for securing the research permit (explained above). As stated in our NPS Management Policies, [4.2.2 Independent Studies](#), all research/studies must conform to NPS policies and guidelines regarding the collection and publication of data, the conduct of studies, wilderness restrictions, and park-specific requirements identified in the terms and conditions of the NPS research permit.
- Several NPS units with federally designated wilderness are being considered for this research. If any of these study sites are selected, then the research methods must be consistent with NPS Management Policies, [6.3.6 Scientific Activities in Wilderness](#). These policies generally encourage scientific activity in wilderness; however, such activities must be appropriate in wilderness and must use the minimum tool or force necessary to accomplish project objectives. Issuance of a research permit would include a minimum requirements analysis in order to determine the appropriate, park-specific permit conditions for minimizing impacts to wilderness character.
- All lethal removal of barred owls on NPS lands must be done by professional biologists or trained biological technicians working under close supervision of the Principal Investigator in order to avoid accidentally killing northern spotted owls (which to the untrained eye have a superficial resemblance to barred owls) and to assure the most humane removal of barred owls possible. NPS recognizes the need for a combined removal approach because a finite, and presumably small, number of barred owls can be placed in appropriate captive environments. If nonlethal removal methods are used on NPS lands, consultation with the NPS, Biological Resources Management Division would be necessary in order to clarify policy as related to the custody and ownership of resources (including live animals) leaving NPS lands. In addition, work on NPS lands would be subject to approval by the NPS Institutional Animal Care and Use Committee.
- Should NPS lands be selected as the preferred alternative for the removal of barred owls, we recommend that a firearm/shotgun suppression technology be investigated and utilized if possible. Silenced firearms will have less impact on wildlife, the visiting public, and the soundscape in general. Additionally, the NPS supports your proposed use of lead-free shot.
- At any time of year, working off-trail and at night in very remote, rugged terrain presents a safety risk to crews conducting the work, even if the crews are skilled, professional biologists. This issue presumably applies for all components of the study, regardless of location. We note the DEIS does a very good job of describing potential impacts and concerns to public safety (e.g. National Park users), but does not appear to address the potential safety impacts to crews conducting the work. We believe the final EIS could be strengthened by evaluating the risks and identifying mitigation measures. Safety is our paramount priority; we would be happy to collaborate with FWS on this issue.

- The NPS will not provide funding for this proposed removal experiment. NPS understands that implementation of the proposed experimental removal of barred owls is the responsibility of the U.S. Fish and Wildlife Service. That being said, the NPS will cooperate and support project field personnel as much as possible to ensure safety, effective field logistics, resource protection and visitor understanding and awareness.

Olympic National Park Comments:

- NPS notes that about one third of the owl territories in the Olympic National Park Demographic Study Area would be difficult to access prior to the barred owl breeding season in a typical year. However, by combining early season work at accessible sites with late season work at the rest of the sites, the park believes a solution exists, and does not view access as an intractable problem.

Mount Rainier National Park Comments:

- NPS notes that funding for the Mount Rainier National Park portion of the Rainier Demographic Study Area is volatile and is currently at risk. The park experienced severe cutbacks in funding in FY12, and has not yet identified a long-term consistent funding source. Mount Rainier National Park is currently expecting a \$30,000 shortfall for FY13 demographic study implementation.
- Access to Mount Rainier National Park during the fall and winter presents significant difficulties. During the winter, the park has heavy snows, and only one road (the road to Paradise) is kept open, allowing access to only a few territories. Any barred owl reductions should be planned to occur in the time window between the tourist season and first snows when the roads are closed.
- In section 3.5.1.1 of the DEIS, the premise is that spotted owls will replace barred owls with a barred owl removal. Thus, for some prey species there may not be a decline in predation (depending on owl densities, etc.). Barred owl predation (and, to some extent competition) effects may be replaced by increased spotted owl densities. With a more specialist species like the spotted owl, for some species (e.g. flying squirrel), predation may increase.
- The Mount Rainier Wilderness (228,480 acres, 97% of Mount Rainier National Park) is not included in your wilderness acreage for the Rainier Demographic Study Area (Fig 3.75 and Fig. 3.80, Section 3.1.1.6, page 62, paragraph 4)

North Cascades National Park Complex Comments:

- Access issues at North Cascades National Park Complex are similar to the other large Pacific Northwest parks. The terrain is very rugged and remote, and accessing backcountry areas in late fall, winter and early spring is challenging due to the snowpack and associated avalanche dangers. Careful planning, seasoned backcountry skills and

judicious route finding (e.g. avoidance of avalanche terrain) would be needed to reasonably mitigate the risk.

- Confining barred owl removal activities to areas and times that visitors are not present will be difficult in some areas. If selected, the park would probably choose to temporarily close certain areas in order to minimize potential conflicts and safety concerns.

Redwood National and State Parks Comments:

- It is inaccurate to assume that northern California has experienced lower numbers of barred owls and a slower barred owl colonization rate. For example, in Redwood National and State Parks, the number of spotted owl occupied territories currently stands, optimistically, at seven from a previous high of approximately 40 territories in the early to mid-1990s. (As of this date spotted owl surveys this year have detected one individual spotted owl, and a number of barred owls including pairs.) Barred owls were first detected in the late 1980s in the northern area of the parks and rapidly spread throughout, with annual increases in both numbers of detections and the number of spotted owl sites with barred owls in them. The current best estimate of the number of barred owl territories in the parks is 54, including 29 former spotted owl territories, or territories where spotted owls are now unresponsive to surveyors. Spotted owls have not been detected in many of the historic sites in many years. There's a high likelihood that spotted owls are on the verge of extinction within Redwood National and State Parks.

Point Reyes National Seashore / Golden Gate National Recreation Area Comments:

- The northern spotted owl population in Marin County, California, represents the southern extent of this species' range and is characterized by a high density and genetic isolation. Barred owls have only recently expanded into Marin County, with first detections in Muir Woods National Monument in 2003. Currently, we have relatively small numbers of known barred owls in the County, with breeding only known from Muir Woods, while spotted owl occupancy remains high. So far in our 2012 monitoring, of the 32 historic spotted owl sites being monitored, 26 sites are occupied by a pair of spotted owls and we have only detected 4-5 barred owls.
- Despite low numbers of barred owls, we have observed some potential impacts of displacement of northern spotted owls from areas inhabited by barred owls. We are concerned about more dramatic adverse impacts on northern spotted owls in this area as the barred owl population grows. In order for the results of the experiment to be applicable range-wide, including Marin County, we suggest that the selected alternative include a study area in southern Oregon/northern California with a more recent invasion history of barred owls.

Thank you for the opportunity to provide comments on this DEIS. We believe this to be an important research experiment and useful to help understand options for preserving and protecting the northern spotted owls. Should your agency require further coordination from the

NPS or if you have additional questions, please do not hesitate to contact either Dr. Raymond M. Sauvajot, Natural Resource Program Chief, at 415-623-2201 or via email at *ray_sauvajot@nps.gov*, or NPS Northwest Forest Plan Representative, Laurie Lee Jenkins, at 360-854-7206 or via email at *laurie_lee_jenkins@nps.gov*.

Sincerely,

/s/ Christine Lehnertz
(signed original on file)

Christine S. Lehnertz

cc: Associate Director, Natural Resources Stewardship and Science, National Park Service
Deputy Regional Director, Resource Management and Planning, Pacific West Region
Chief, Natural Resource Programs, Pacific West Region
Regional Chief Scientist, Pacific West Region
NPS Representative, Northwest Forest Plan
Superintendent, Mount Rainer National Park
Acting Superintendent, Olympic National Park
Acting Superintendent, North Cascades National Park Complex

JC 12-764

PM-TEs, RI ~~5/8~~ 5/8
Forward → OFWO
(comment letter to be
addressed in BAOW DEIS
process)

Rose Harrison
65 Hospital Street
Waynesville, NC 28786
February 29, 2012

510101

RECEIVED

2012 MAR -8 PM 3:03

OFFICE OF THE
EXECUTIVE SECRETARIAT

Mr. Ken Salazar
Interior Secretary
U.S. Department of the Interior 1849 C Street, N.W.
Washington DC 20240

Dear Mr. Salazar:

You decision to kill the Barred Owl in support of the Spotted Owl is disturbing on so many levels; it is difficult to choose just one. I don't understand the reasoning behind some of the really *stupid* decisions that have been made regarding the Spotted Owl. This species has been on the endangered list for almost 21 years---just how much protection does one species need? The owl has been fed, diapered, and put to bed and still it cannot make it without government intervention. Nature has a way of weeding out breeds that cannot make it in the environment where they live---to sacrifice one owl for another other owl is asinine---I cannot even believe this is going to happen. Perhaps, like the dinosaur, the Spotted Owl is doomed and should be left to its own demise.

Where is the justice in this? The stronger of the species is surviving and the weaker cannot compete. To quote the online article from The Washington Post, *The government set aside millions of acres of forest to protect the owl, but the bird's population continues to decline — a 40 percent slide in 25 years.* Does anyone in the Obama Administration not see the stupidity of killing the Barred Owl to save the weaker Spotted Owl? I guess not---it is difficult to determine **which** decision coming from Washington is most ridiculous these days.

I hope the outcry from the public is so great about this that the decision to kill the Barred Owl that it is stopped.

Rose Harrison



Seriously, do you know which is which?



MAY 29 2012

May 23, 2012

Mr. Paul Henson, Field Supervisor
Oregon Department Fish and Wildlife
2600 SE 98th Ave. Suite 100
Portland, OR 97266

Dear Mr. Paul Henson,

This letter concerns the ODFW policy of shooting barred owls that have encroached on spotted owl habitat. I learned about this policy by reading an article in the Corvallis Weekly newspaper. This issue concerns me because of my appreciation for wildlife. I graduated from Oregon State University with a degree in Forest Resources.

Although shooting Barred Owls might seem effective in the short term, I think that there are some significant risks to implementing this policy. First, killing as a method of population control of such a cryptic nocturnal animal seems inefficient as well as inhumane. Even if this policy did result in the successful elimination of some of the barred owls from spotted owl sites, there would still be many more surviving barred owls lurking in the forests. These survivors would quickly close the population gap by breeding and move right back into the spotted owl sites. Shooting the birds simply seems futile.

Second, barred and spotted owls are similar enough in appearance for mistaken identity to occur – especially under poorly lit conditions. It would not be difficult for someone to accidentally shoot a spotted owl thinking it was a barred owl. This defeats the purpose of the policy.

Finally, spotted owls are sensitive to human disturbance at their nesting sites – especially loud noise. If there are shots being fired at nesting sites, it is possible the spotted owls may abandon their nest sites altogether.

Instead of shooting barred owls, what about adopting a nest box program for the spotted owls? This would be a more humane and less intrusive way of helping these birds. Spotted owls have been known to make their nests in cavities. Nest box programs have helped several other cavity-nesting birds such as wood ducks, bluebirds, and several other owl species. Bluebirds were being outcompeted for nest sites by starlings. But, because they are smaller than starlings, they fit into specialized bluebird boxes that starling are too large to fit into. Bluebird populations have rebounded thanks to these boxes. Spotted owls are also smaller than barred owls. A specialized nest box that fits spotted owls – but not the larger barred owls – could give the spotted owls a competitive advantage at their nest sites.

These boxes could be installed at known spotted owl nest sites before the start of the breeding season, and then be monitored by ODFW to see whether the owls are using them.

I realize a nest box program for spotted owls might not be successful, but given past success stories with other threatened species, I think it is worth a try.

Sincerely,
Dana Glennon

(541) 829-3187

MAR 21 2012

Fly Owl Fly!

I just can't believe environmentalists would want to shoot those cute Barred Owls! Is this the Final Solution? Just because barred owls are better at surviving than the spotted owl is no reason for this extreme intolerance.

The fossil record shows Oregon had many species that reached an evolutionary dead end or thrived elsewhere, for instance the Dawn Redwood. Some could say the real crisis is that Barred owls have bred with spotted owls, thus creating a more adaptable, vigorous prodigy, which ironically could be the ultimate salvation for the spotted owl species, will they shoot these sparred owls as well? Probably if the enviro community has it's way.

An owl that lives in harmony with loggers would be an environmentalist's nightmare. Remember the mantra of evolution called "survival of the fittest"? What if our "best science" unwittingly destroys the only hope for the spotted owl's macro-evolution into a higher species? What about the owls in parks and wilderness areas that don't get included in those official counts? Will they be going into Crater Lake Park for an ethnic owl cleansing?

Every environmental publication has a re-occurring theme "humans are bad, nature is good". Maybe humans need to quit playing god and let nature's God work out the details. Just think of all the grief and taxpayer's money we could save if Government didn't create a master race (of owls) with the barrel of a gun.

Edward Schattenkerk
8108 Hwy 42
Tenmile OR 97481
541-679-9575

RB 12-516

Oregon Fish & Wildlife Office

ATTN: PAUL HENSON

MAR 05 2012

DEAR SIR,

I AM SURE THAT ANOTHER
SOLUTION TO THIS PROBLEM
CAN BE EMPLOYED; SUCH AS
RELOCATION OF PARTS OF EACH
OF THE SPECIES.

THANK YOU,
CONCERNED
UNITED STATES
CITIZEN;
Judy Phillips

STOP THE KILLING OF ~~THE~~

BARRED OWL
E.I.S.

RB 12-632

S. Fletcher Skillings
4516 68th Ave NE
Olympia WA 98516

Oregon Fish & Wildlife Office
Oregon Fish & Wildlife Office

APR 06 2012
APR 6 2012

March 31, 2012

Paul Henson, State Supervisor
U.S. Fish & Wildlife Service
Oregon Fish & Wildlife Office
2600 SE 98th Ave Suite 100
Portland OR 97266

Re: Barred Owl EIS

I am concerned that shooting barred owls will NOT be good for the entire owl population.

- Identification of the spotted owl can be confusing. Yes they are smaller than the barred. However, seeing one sitting alone in a tree, the actual size can NOT be determined.
- Both owls look the same from the back and side views. You need to see the breast to identify the horizontal barring compared to vertical barring.
- Both owls have dark eyes and bill color is similar. One has an orange-yellow bill and one has a yellow bill. Can you tell the difference in the field?
- Fledglings look very much alike and make similar begging sounds.
- Adult voices can be confusing especially during spring. While the barred owl has a distinctive two part hoot. He also makes a wide variety of hoots that are again very much like the voice of the spotted.
- You have variation in shading of both birds depending on where they are from.

Here are more pressing concerns.

The barred and spotted owls hybridize in areas where you have both populations. (The SIBLEY Guide to Birds –David Allen Sibley) This will make identification even harder.

Does the EIS address a barred/spotted hybridized owl?

Many birds hybridize. We have hybridization among the Western Gull, the Glaucus Gull and the Herring Gull here in the Pacific Northwest.

Global warming is changing bird habitat. Snowy Owls are now visiting the west coast of Washington State.

Even if you CAN identify them properly, that still doesn't make it a good idea.

BIRDS are adjusting to the changes forced on them by our actions. There will be many more changes coming. We need to do what we can to reduce global warming and **leave the ever changing bird populations alone.**

Are we using the spotted owl controversy to make changes to the logging industry? Let's address the real problem of logging old growth forests that need our protection.

Final notes of concern

COST - We have over eleven varieties of owls in the Pacific Northwest. What will it cost to hire qualified birders to control the shooting or removing of this one variety?

IDEA – Why not pay farmers, who own pasture land, to grow fir trees for harvesting, logging, in the future.

Please keep me informed of the progress or decisions made regarding the Barred Owl Environmental Impact Statement.

Sincerely,

A handwritten signature in blue ink, appearing to read "S. Fletcher Skillings". The signature is fluid and cursive, with a large initial "S" and a long, sweeping underline.

S. Fletcher Skillings
4516 68th Ave NE
Olympia WA 98516
sskills@comcast.net

Please do not take any action to remove barred owls from habitats that had been designated for the northern spotted owl. Killing barred owls to save spotted owls cannot be justified by any moral or ethical reason. The proposed policy of shooting barred owls that encroach on spotted owl habitat is particularly deplorable and ridiculous for numerous reasons. First, the spotted owl has been decreasing in numbers over the years despite efforts to save them and just cannot compete with the barred owls for food. Barred owls will have to be hunted forever, because they will just keep moving into spotted owls' habitats, and there is no certainty that hunters will not mistake some spotted owls for barred owls and shoot them instead – especially because there is little difference between them. Since barred owls and spotted owls can interbreed, the genes of the spotted owl will not be lost, so killing barred owls cannot be justified on that basis. Besides, haven't you ever heard of Darwin and survival of the fittest. Just let nature take its course in this case and stop wasting the taxpayers money trying in vain to control every aspect of nature; in the long run it won't work.

Metadata:**city:** : Port Townsend**commenton:** : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl**mailing address:** : 32 S. Stromberg Ave.**name:** : David Tonkin**postal code:** : 98368**received date:** : 03/09/2012

received: : March 09, 2012
rin: : 1018-AX69
state or province: : WA
status set by: : Bagbonon, Michel (FWS)
status set date: : 03/12/2012
status: : Posted
submission type: : 3
submissiontype: : Web
title: : Comment on FR Doc # 2012-05042
tracking number: : 80fd2eb1
trackingno: : 80fd2eb1

Codes and Coders

I am, commenting on the Spotted Owl recovery plan that includes the option of shooting Barred Owls. What purpose is filled by killing Barred Owls? What does the Spotted Owl bring to the ecosystem of the forest that the Barred Owl or a combination of owls does not bring? Since both owls interbreed, it appears they are the same species, but the Barred Owl is the stronger. It seems to be a natural evolution. In the history of the world species have evolved long before man came into existence. Why should man interfere? What effect would shooting Barred Owls have on the ecosystem of the forest, number of rodents, etc? How do you know that the effect of interfering with the natural process will be more beneficial to the ecosystem than allowing nature to take its course? The idea of killing Barred Owls seems preposterous, and a huge waste of time, effort and tax dollars.

Metadata:

city: : Sequim

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl

country: : United States

email address: : salnick@olympen.com

mailing address: : 773 Ravens Ridge Rd

name: : Sally M Schaefer

postal code: : 98382

received: : March 08, 2012

state or province: : WA
status set by: : Bagbonon, Michel (FWS)
status set date: : 03/12/2012
status: : Posted
submission type: : 3
submissiontype: : Web
title: : Comment on FR Doc # 2012-05042
tracking number: : 80fd25a8
trackingno: : 80fd25a8

Codes and Coders

PLEASE, no shooting or otherwise killing of any other owl species. The long term success of this brutal method is doubtful. Don't do it.

Metadata:

city: : Forks

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl

mailing address: : PO Box 153

name: : Susan Lee Shane

postal code: : 98331

received: : March 12, 2012

state or province: : WA

See attachment Attachments Killing Barred Owls

Before anyone begins killing wildlife we need to ask ourselves several questions:

1. What is our goal?

Is it to preserve the current spotted owl population?

If so, two more questions must then be answered:

2. Will killing the barred owls do that?

3. If so, then why are we going to this extreme to preserve the spotted owl?

Let us assume the answer to the first most question is yes; we want to preserve the spotted owl (SO) population. Then the answer to the second question is not at all certain. In order to prevent the barred owl (BO) from interbreeding with the SO it would be necessary to reduce their ranks to the point that they themselves would become an endangered species on the west coast. This is assuming that BOs from the east and north would not enter our area; if that were so (and it is likely), near complete extinction of the BO would be necessary. It seems odd that wildlife authorities would fly in the face of Darwin by eradicating a better adapted species in order to preserve a weaker, less adaptable one.

All of which brings us to the third question; even if this succeeds why do we want to preserve the SO?

Is it because it is valuable as an indicator species? Is it to preserve ecological balance? Is it for financial reasons? Is it just because it is on an "endangered list."

If it has had any use as an indicator species in the past that use will become meaningless when we artificially promote its preservation.

If it is to preserve ecological balance we are heading the wrong direction. Evolution and ecologic impetus favors the interbreeding of the two owls.

I know of no financial reason to preserve one species at the cost of another, but I can certainly envision a sizeable financial expenditure to try.

If this is somehow required because the SO is on an "endangered list" then we need to re-evaluate what the consequences and associated requirements should be for species on that list.

The major obstacle to a rational environmental policy in the past has been an insistence by many that the environment be viewed as a snapshot. The Park service did not want digitalis in the park because it was not there in the 1800s.

Sorry to break the news, but things change. Life is a movie, not a snapshot. Before the SO there was a different bird that it displaced. The BO is going to replace it now. The BO will probably be displaced itself eventually.

The government is not noted for making good decisions. This is an egregiously bad one.

Metadata:

address: : Washington

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised
Critical

Habitat for the Northern Spotted Owl

name: : Ken

Schindler

received: : March 13, 2012

state or province: : Washington

See attached file(s) Attachments Barred Owl Comment

It is not scientifically or ethically appropriate to kill the barred owl in the attempt to try to save the northern spotted owl. I am completely against the experimental plan to exterminate barred owls in Washington and Oregon as proposed by the US FWS. I feel it is a poorly thought out experiment and doomed to failure.

There are questions that have not been answered but should be answered before the US FWS proceeds with the experiment.

1. What is the justification for the opinion that the barred owl must be “managed?” If the barred owl is evolutionarily a more advanced species than the northern spotted owl, is there a true evolutionary reason the northern spotted owl should be saved by destroying the barred owl? Searching the USFWS website, I could not find any information specifying that the barred owl is a threat to environment, other than it is a threat to the pet project of “scientists to “save the NSO” at all costs. The idea that the NSO is an “indicator species” is a fabrication of non-scientific evaluations by inexperienced and uneducated researchers, though they are well meaning.
2. Is there a mandate to save endangered species at the expense of other evolutionarily stronger species thus interfering with successful evolution? If so, we need to re-evaluate the mandate to determine if it is scientifically and ethically unsound. Axioms should be re-evaluated.
3. The barred owl habitat includes areas of neighboring British Columbia, Canada. If the barred owls in Washington and Oregon are killed, what will prevent the barred owls from Canada repopulating in the US?
4. The US FWS website hints that the demise of the NSO is largely due to the interference of nature by humans. Yet, these same people seem to think that their interference with NSO habitat by killing or removing barred owls will be a good interference with nature. Are they assuming some deified character in themselves?

Again, I am totally against the proposal to conduct experimental removal of barred owls from certain areas throughout the NSO range. I feel I am qualified to express this opinion because of my extensive University background of ecology, genetics, botany, zoology & anatomy, microbiology, biochemistry, chemistry, physics, statistics and mathematics as well as 45 years of experience, plus published studies.

Metadata:

city: : Forks

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants:
Revised

Critical Habitat for the Northern Spotted Owl

name: : Judy Schindler

postal code: : 98331

received: : May 09, 2012

state or province: : WA

this species should get the highest level of protection. it is time that the spotted owl was truly protected. all too often psycho gun wackos shoot them to death. all hunters should be banned from the sites where they live. wildlife watchers outnumber and outspend hunters so keeping the site where this species lives highly protected is a must. hunters do not care what they shoot and want dead animals for their rugs and walls, so they are not safe to have around if you want to save a species. ban all hunters from the area saved for this species. the taxpayers of america, who own and pay for this land are 300 million strong and we count. the small number of psycho animal murderers are so small in number you need to stop catering only to them. the pandering to this small group by fws is outrageous. they don't pay for anything. you send the bills for operation to the entire country for this land. remember that and save it for this species.

Metadata:

commenton: : FWS-R1-ES-2011-0112-0018 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for Northern Spotted Owl

name: : jean public

received: : May 10, 2012

See attached file(s) Attachments Barred Owl Removal DEIS Comments 5-15-12

May 15, 2012

Public Comments Processing
Attn: FWS-R1-ES-2011-0112
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Drive, MS 2042-PDM
Arlington, VA 22203

Dear Sir or Madam:

On behalf of the National Parks Conservation Association (NPCA) and our nearly 600,000 members and supporters, I respectfully submit the following comments on the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft EIS. NPCA generally supports Alternative 3, which calls for a demographic study using a combination of lethal and nonlethal removal methods. NPCA supports this study primarily due to its partial use of nonlethal removal methods and the location of the study area outside of national parks.

There are several factors we have considered in arriving at our support of Alternative 3. These include:

- NPCA supports efforts to increase numbers of Northern Spotted Owls and believe that removal of barred owls may lead to an increased population of Northern Spotted Owls. However, at the experimental stage, we believe removal of barred owls from national parks (Mount Rainier, Olympic, and North Cascades National Parks) and designated wilderness areas is a mistake. As the document states, national “parks are often some of the last places where ecosystem processes and species are allowed to proceed naturally.” The removal of barred owls during the experimental stage could have unforeseen impacts on the natural processes of national park ecosystems. NPCA supports this experiment outside of national parks and/or the use of national parks only as control areas.
- NPCA is concerned about removing barred owls in national parks due to, as the document states, “impacts to the visitor experience through changes in the soundscape from the discharge of shotguns during removal.” Many visitors to national parks, especially those who venture from their cars and into more remote areas, do so in part to enjoy the value of the natural soundscape. Shotgun blasts used in the barred owl removal destroy the natural soundscape and may cause serious concern and distress among park visitors who do not expect to hear those sorts of sounds within the park.
- Barred owls, while evidently detrimental to spotted owl populations, are not technically nonnative species. NPCA supports the removal of nonnative invasive species, such as those cited in the document, including feral rabbits in the Channel Islands, Burmese pythons in the Everglades, mountain goats in Olympic and feral hogs from Great Smoky Mountains National Parks. These species are obviously nonnative species to these areas and arrived purely through human introduction. Meanwhile, barred owls have arrived naturally in the Northwest over time. NPCA does not support the removal of species that arrive naturally, even if they were not historically present.

- Alternative 3, which NPCA supports, calls for study in the Veneta and Union/Myrtle areas of Oregon. These areas are outside of national parks, but also allow for more efficient use of Fish and Wildlife Service resources due to the presence of pretreatment data. These areas have been studying spotted owl population trends for 10 or more years' duration, which, as the document states, "greatly improves the ability to detect differences (strength of inference) of the results and applicability of the conclusions." Therefore, resources that would have been expended creating a baseline will be saved and the baseline information already available will be more complete and valuable due to the longevity of the study

In conclusion, if it is determined after the experimental phase that removal of barred owls does indeed result in an increase in spotted owls, NPCA may support removal to achieve recovery and sustainment of spotted owl populations within national parks. Until then, we support study areas that take place outside of national parks, unless national parks are used as control areas. The experiment can still proceed and useful data obtained without unnecessarily impacting national parks.

Thank you for taking our comments into consideration.

Sincerely,

David G. Graves
Northwest Program Manager
Northwest Regional Office

National Parks Conservation Association
1200 5th Ave, Suite 1925
Seattle, WA 98101
PH: 206-903-1645
Cell: 206-462-0821
FX: 206-903-1448
dgraves@npca.org
www.npca.org

Protecting Our National Parks for Future Generations

Metadata:

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl

mailing address 2: : Suite 1925

mailing address: : 1200 5th Ave

name: : David Gilman Graves

organization name: : National Parks Conservation Association

postal code: : 98101

city: : Seattle

received: : May 15, 2012

state or province: : WA
status set by: : Bagbonon, Michel (FWS)
status set date: : 05/15/2012
status: : Posted
submission type: : 3
submissiontype: : Web
title: : Comment on FR Doc # 2012-05042
tracking number: : 8100f43e
trackingno: : 8100f43e

Codes and Coders

I am opposed to shooting barred owls to save spotted owls. Humans should not be playing god and deciding which animals are worthy to live and which should die. Every time you kill off or try to kill off a species, it never works and ends up backfiring. Animals can work this out without humans "help". Killing animals is always wrong. Please don't shoot the barred owls. Thank you.

Metadata:

commenton: : FWS-R1-ES-2011-0112-0001 Endangered and Threatened Wildlife and Plants: Revised Critical Habitat for the Northern Spotted Owl

first name: : Linda

name: : Linda

posted: : April 11, 2012

submissiontype: : Web

PH-TES, R1 ~~ME~~ 5/8
Forward → OFWO
(Comment letter to be
addressed in BAOW DEIS
process)

Ken Salazar
Secretary of Interior
US Dept of Interior
Washington DC.

Dear Mr. Salazar,

March 1, 2012

I am writing to you to ask that the department reconsider the proposals regarding the spotted owl and the barred owl.

The idea that elimination of competing barred owls will help the recovery of the spotted owl is dubious at best. It might help a few local birds but is not likely to help the spotted owl species in general. Since I am unaware of any scientific studies that show the barred owl was a major factor in the original decline of the spotted owl it seems quite unreasonable to assume because it now may contribute to the spotted owl decline that this will fix the problem.

I have always understood that there is significant evidence that the main reason for decline in the spotted owl was the loss of large areas of habitat due largely to logging and other cutting of suitable old growth forest needed by the spotted owl. Unless the loss of such old growth forest is stopped in critical areas the future of the spotted owl is dubious.

The statement that "Appropriate timber harvests consistent with ecological forestry principles (should) be encouraged." is very misleading, not scientific, and certainly not in tune with the intent of the Endangered Species Act. The statement may be valid and mean something in areas that are not critical habitat for the spotted owl. However in these critical areas the habitat may have already been damaged so severely that the spotted owl has little chance to survive. It is most likely that it is the damaged habitat that has allowed the barred owl to move in. The ecology has been modified which has probably already made significant changes in populations of small rodents and insects seriously impacting the local food chains to the detriment of the spotted owl and in favor of the barred owl.

To save the spotted owl critical habitat must be preserved and the ecological damage and changes already caused must be stopped to give the owl any chance. Killing a few barred owls on the edge or moving into these critical area may feel good and give a temporary reprieve for a few spotted owls, but in the long term only will help if better habitat is provided for the spotted owl and no more critical old growth forest is destroyed.

I urge you to get advise from some avian biologists and ecologists before any major change is made in forestry practices in any areas of critical habitat for the spotted owl.

Sincerely,

Donald Bruning
Donald Bruning Ph.D

Retired Curator and Chairman of the Department of Ornithology
Wildlife Conservation Society New York

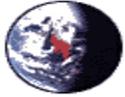
Now living at 156 Troon trail, Durango, Colorado 81301 970 375 0303

EXECUTIVE SECRETARIAT
OFFICE OF THE

2012 MAR -9 PM 3: 27

RECEIVED

510111



karenkunde@comcast.net

06/11/2012 07:02 PM

To: barredowlEIS@fws.gov
cc:
Subject: Barred Owl Experiment

Dear Sir or Madam,

I am trying again to email you my comments after repeated unsuccessful attempts. Thank you for extending the public comment period, and for working diligently to protect the spotted owl.

I am writing in strong opposition to the killing of barred owls. Many wildlife species are on the move, finding new niches due to habitat loss and climate change, and we know these stresses will only increase with time. I would support your efforts to increase habitat and wildlife corridors for both spotted and barred owls, as well as coordinating with agencies in areas where barred owls are relocating from to find out if improvements there could expand options for the birds. I think the birds should be radio monitored to increase our knowledge, and if they are removed, it should be nonlethal, and for the purpose of relocation.

Thank you in advance for your time and please know how much I appreciate all of the owls and the many people dedicated to their well being.

Respectfully,

Karen Kunde
9718 Sixth Avenue NW
Seattle, WA 98117
(206)245-5643



"Rosenberg, Dan - FW"
<Dan.Rosenberg@oregonstate.edu>

06/21/2012 04:29 PM

To "Paul_Henson@fws.gov" <Paul_Henson@fws.gov>

cc "Robin_Bown@fws.gov" <Robin_Bown@fws.gov>,
"betsy_glenn@fws.gov" <betsy_glenn@fws.gov>

bcc

Subject

Dear Dr. Henson,

Attached are comments from the Oregon Wildlife Institute, including myself, Dave Vesely, and Jennifer Gervais, regarding the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls, Draft Environmental Impact Statement.

We realize we have submitted our comments past the deadline for public comments, but we hope that you will be able to include our comments in your reconsideration of the EIS and your selection of the Alternatives.

Thank you very much for all of the effort you and your staff have put into the Draft EIS on the challenging issue of recovering northern spotted owls in the face of the expansion of the barred owl.

I would appreciate a brief reply so that I know you received our comments.

Thank you once again for considering including our comments in the review process.

Sincerely,
Dan Rosenberg

Daniel K. Rosenberg, Ph. D.

**Oregon Wildlife Institute
AND
Department of Fisheries and Wildlife
Oregon State University**

**Phone: (541) 757-9041
E-mail: dan.rosenberg@oregonstate.edu
OSU Web: <http://oregonstate.edu/~rosenbed/>
OWI Web: <http://oregonwildlife.org>**



***** OWI Comments Barred Owl Removal Draft EIS June 21 2012.pdf

Oregon Wildlife Institute



Box 1061, Corvallis, Oregon 97339
Phone: (541) 757-9041 (Rosenberg)
Email: dan@oregonwildlife.org
www.oregonwildlife.org

June 21, 2012

Dr. Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave.
Suite 100
Portland, OR 97266

RE: Comments on Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls, Draft Environmental Impact Statement

Dear Dr. Henson:

Thank you for the opportunity to provide comments to the DRAFT EIS on the experimental removal of barred owls. We realize we have submitted our comments past the deadline for public comments, but we hope that you will be able to include our comments in your reconsideration of the EIS and your selection of the Alternatives. We also thank you for your work in developing a very comprehensive, well-written, and thoughtful evaluation of the difficult issue of how to manage barred owl populations as part of the recovery actions for the northern spotted owl.

We are wildlife ecologists that have expertise with experimental and observational research on wildlife populations, including the northern spotted owl, and with conservation planning for species in the Pacific Northwest. Daniel Rosenberg co-directs the Oregon Wildlife Institute and serves as courtesy Associate Professor in the Department of Fisheries and Wildlife at Oregon State University. He has a Ph.D. in wildlife ecology, has conducted research on northern spotted owls, and has served as an expert witness on two court cases that involved the northern spotted owl. David Vesely co-directs the Oregon Wildlife Institute, has a M.S. in forest science, and has worked

extensively in forest planning and wildlife monitoring. He has also conducted research related to northern spotted owls and their habitat. Jennifer Gervais is a wildlife ecologist with the Oregon Wildlife Institute and serves as a courtesy Assistant Professor at the Department of Fisheries and Wildlife at OSU. She has a Ph.D. in wildlife ecology and has conducted research on a broad array of species in the Pacific Northwest and elsewhere. Our work is published in regional, national and international journals.

ARGUMENT IN FAVOR OF NO ACTION ALTERNATIVE

Of the 8 Alternatives evaluated in the DRAFT EIS, we find all 7 Action Alternatives unacceptable. We thus favor the No Action Alternative. We argue that the removal studies should be part of an adaptive management strategy, and thus the studies described in the DRAFT EIS should not be conducted in isolation of feasible management strategies. We believe all of the Action Alternatives will result in no guidance to feasible management strategies. We provide the basis for these conclusions below. Our comments are based on decades of published research not only on northern spotted owls and their interactions, but also on the extraordinarily extensive and intensive set of research studies on competition of closely related and ecologically similar species. We believe these studies will better inform developing initial management plans than conducting a few additional short-term studies as identified in the Action Alternatives. We believe there are very important ethical, economic, and opportunity costs associated with the Action Alternatives. We also feel strongly that loss of public trust would likely be one of the greatest consequences of any of the Action Alternatives.

The reasons for our strong recommendation to select the No Action Alternative to any of the 7 Action Alternatives are as follows:

1. **We agree with Draft EIS that the data are very strong regarding the expansion of barred owls into northern spotted owl ranges and that there are negative effects on northern spotted owls.** We further add that there are decades of research on competition of closely related species. The preponderance of the evidence, both from observational and experimental studies, is that the removal of a closely related species that are similar in their ecological requirements, will lead to a positive effect on the remaining species when the other is removed or reduced in number. Theoretical work and current ecological thinking all point to this as the likely and expected outcome. The great breadth of such studies, both from northern spotted owls and barred owls and other species, provides greater evidence of a positive response from removal than the planned removal experiments can provide, given their limited context and duration.

2. The cart is being placed before the horse: you can't design the appropriate experiments to guide management without clear articulation of feasible management options in terms of location, scale, frequency, and duration.

- a. Conducting a removal study without directly linking it to management actions is likely to be ineffective and is inappropriate from ethical, economic, and public education perspectives. The arguments for a removal study would be strengthened if outcomes lead to specific (and feasible) management strategies. Rather, the Draft EIS states another EIS would have to be developed to evaluate management options.
- b. There are good reasons to suspect that there will not be a feasible management option of removing barred owls at a scale that will be effective for long-term conservation of northern spotted owls. Barred owls are spreading rapidly, can breed in a wide variety of habitats, and readily live near human activity. In order for removal to be an effective conservation strategy, it would need to be performed at a very large scale into the indefinite future. Neither the funding nor the public are likely to support such an effort.
- c. What is eventually thought of as feasible and likely effective management strategies may be quite different than what would be informed by the Action Alternatives. This strongly suggests developing management alternatives and including the removal (and other) research as part of an adaptive management plan. This is the perfect example of what USFWS, and other natural resource agencies, promotes for management strategies.
- d. If long-term removal is not a feasible management strategy, research would be more productive if it addresses attempting to understand factors that may contribute to the co-existence of northern spotted owls and barred owls. The important question for research is not whether barred owls negatively affect northern spotted owls but rather learning under what conditions co-existence is favored because this is likely the only possible long-term strategy that is feasible. We realize that the DRAFT EIS does not rule out other research, but conducting the barred owl removal studies (the Action Alternatives) will reduce the likelihood of conducting other research, as described below (e).
- e. The removal experiment, prior to designation of feasible management approaches, will be wasting funds that could be used for other approaches such as studies on coexistence and distracting researchers and management agencies and others that will be engaged in the removal study from other options (opportunity costs).

3. **The DRAFT EIS states the reasons for the removal study include estimating costs and logistics of removing/killing barred owls.** This can be reasonably estimated without the proposed removal study. Furthermore, without feasible management strategies identified, the estimation of costs and logistics may be incorrect for the management plans ultimately adopted. The killing of barred owls, for gaining this information without clear directions on how to apply it, is ethically inappropriate and a waste of public funds.
4. **There are 3 possible outcomes to the proposed removal studies (all 7 Action Alternatives), none of which will inform more effective management.**
 - a. Positive result: confirms previous understanding of northern spotted owls and barred owls and decades of ecological studies on competition. This does not guide future management directions beyond what is already known other than perhaps the time it takes barred owls to fill in vacant territories after each removal event, which leads to information on the frequency of shooting that would be required at each territory, a metric that is likely to be highly variable within and among study areas
 - b. Negative result: no “significant” effects are found. Because of how science is conducted, this will not confirm that barred owls do not negatively impact northern spotted owls, but rather this will lead researchers to pose WHY they didn’t find effects, and given all of the other evidence, it is unlikely to be because there are no effects of removing a similar species. Rather, the experimental conditions will be argued to be at fault, reasons which are likely to include (1) the scale was too small, (2) the temporal length was insufficient, (3) the sample size was too small, and (4) unique conditions at some study areas contributed greater variability than expected resulting in imprecise estimates and hence the failure to find statistically significant effects.
 - c. Inconsistent results: some sites showed effects but others did not. The small number of study areas will unlikely result in a reliable understanding of what factors contributed to the variation in the response to removal. See concerns about experimental conditions raised in [b0](#) above.

All of these outcomes demonstrate that very little is to be learned from what is already available to guide management. Therefore, particularly in light of the very high research costs, the ethical consideration of killing barred owls, and the opportunity costs associated with the removal experiment, the Action Alternatives have little justification. Any removal experiment must be designed to lead to specific and successful management outcomes. We argue that management-oriented research is not effective unless management has articulated how it will respond to known outcomes, as you would expect in an adaptive management

framework. Furthermore, public support for wildlife management overall and the USFWS in particular is likely to be severely eroded by removal studies that bear a high ethical and financial cost but supply no measurable benefit in return.

5. **Many examples of removal efforts demonstrate the futility of trying to remove a competitor (or predator) that is a generalist species (such as barred owls).** This is demonstrated by numerous removal efforts in North America. We argue the few exceptions (i.e., success in recovering a species by removal of another) are for small areas at key locations, such as the removal of burrowing owls at North Island, California to protect an important nesting colony of the endangered California least tern.

6. **Alternatively, we recommend that the USFWS design management actions that can be conducted under an adaptive management strategy, which may include removal of barred owls in some locations under some circumstances.**
 - a. This meets the stated goal of conducting work to recover northern spotted owls
 - b. This demands that feasible management approaches are developed
 - c. This incorporates linking research directly with management, which is consistent with the USFWS emphasis on adaptive management approaches.

Thank you for the opportunity to present our comments on the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls, Draft Environmental Impact Statement. We would be happy to support our arguments with citations from the published literature and to further discuss with you our concerns over the Action Alternatives. We recognize you face an extremely challenging situation with the complexity of recovering the northern spotted owl in the face of the expansion of the barred owl.

Sincerely,

Daniel Rosenberg

David Vesely

Jennifer Gervais



Ray
Bosch/AFWO/R1/FWS/DOI
06/08/2012 02:55 PM

To Robin Bown
cc
bcc
Subject Fw: Comments of Draft EIS

FYI

Comments from Mark Higley. Arrived in email today. I am not sure if he sent them to the designated email address for Barred Owl EIS comments, so I thought I should send to you for inclusion in case he had not. I have not yet had a chance to read them, but will do so before our call next week.

~~~~~  
Ray Bosch | Biologist, Endangered Species Program | U.S. Fish & Wildlife Service | 1655 Heindon Road, Arcata, CA 95521-4573  
Land Line: 707.825.5143 | Email: ray\_bosch@fws.gov | Fax: 707.822.8411 | www.fws.gov/arcata

----- Forwarded by Ray Bosch/AFWO/R1/FWS/DOI on 06/08/2012 02:53 PM -----



"Mark Higley"  
<mhigley@hoopa-nsn.gov>  
06/08/2012 01:48 PM

To "Ray Bosch" <Ray\_Bosch@fws.gov>  
cc  
Subject Comments of Draft EIS

Ray,

Since it is past the deadline for public comments I thought I would send you mine directly in case you have use for them. I have worked on them off and on most of the week. Doesn't feel like I covered very much of the document though.

Now it's time to read the BO!

Mark

J. Mark Higley  
Hoopa Tribal Forestry  
P.O. Box 368  
Hoopa, CA 95546

(530) 625-4284 Ext. 117  
cell (530) 784-7704  
mhigley@hoopa-nsn.gov



Comments on the draft EIS on Experimental Removal of Barred Owls\_Higley\_Hoopa.pdf

## Comments on the draft EIS on Experimental Removal of Barred Owls

J. Mark Higley  
Wildlife Biologist  
Hoopa Tribal Forestry  
P.O. Box 368  
Hoopa, CA 95546

### General Comments:

First of all I have to state that I think it is extremely important to move forward with experimental removal of barred owls (BO) so that we can determine if it can be used effectively for northern spotted owl (NSO) conservation efforts. I believe that it is entirely unacceptable and irresponsible to adopt the No Action Alternative at this time given the demographic trends in the northern spotted owl population and the strong circumstantial evidence pointing towards the barred owl as an important factor in the decline of spotted owls.

I strongly support Alternative 2 and believe that it would result in a strong data set and analysis that would achieve the goal of evaluating the potential of removal of barred owls as a management tool to conserve northern spotted owls and to determine the impacts of BO on NSO. Alternative 7 would likely produce the most compelling results but may be a bit more intensive than necessary to achieve meet the goal. I worry about Alternative 1 being too small to produce convincing results and would not provide for extrapolation throughout the range. I generally do not feel that the occupancy only approach is the way to go and do not believe that the perceived cost savings are worth the trade off with data quality and richness. I also suggest that the more intensive demography study approaches be designed in such a way as to collect data which can be analyzed using an occupancy framework along side the demographic analysis, so that both occupancy and demography analyses can be completed and results compared. This could provide valuable information for consideration in future management decisions regarding monitoring if BO removal were to be incorporated into NSO conservation long term. At Hoopa we have been conducting BO and NSO occupancy surveys since 2009.

One of my concerns regarding an occupancy only framework stems from recent observations from our Hoopa Study area where barred owls have increased rapidly and our banded NSO have been shifting around on the landscape. Some of our banded individuals have been detected in more than one territory center during a single season and often found roosting in multiple locations within their territories in a given year. If the survey effort were strictly based on an occupancy framework we would have the illusion of a much higher occupancy rate than is supported by the demographic data. This seems to be far worse during recent years when BO have increased rapidly and NSO have decreased. At best this phenomenon seems like it might hinder the occupancy only framework study design to produce reliable results and at worse it could in some cases appear that the treatment sites (removal) have reduced NSO occupancy rates while the control sites (no removal) could appear to have increasing NSO occupancy rates.

Since there are so few places willing to take live barred owls it seems misleading to include both non-lethal and lethal methods of removal in some alternatives. I think it would be clearer to state that removal would be primarily by lethal methods and that non-lethal methods would be used as the opportunity arises rather than making it sound like non-lethal methods might be a significant percentage of the removal in some alternatives by inclusion in the alternative description side by side with lethal removal.

#### Specific Comments:

Sec 3.1.4.2 pg 105: Might be best to retain separation between the Willow Creek and Hoopa sites in the Spotted Owl and Barred Owl Population Information. On page 104 you had mentioned when the demographic data collection began at Willow Creek (1985) and Hoopa (1992) which is correct. But in the population information section you have blended it all together and not described things accurately enough especially when describing the barred owl information. For example, you stated that there was 1 barred owl site in 1991 and 9 in 2009. Then state that there are 43 potential barred owl sites on the Hoopa portion. At Hoopa there were 2 barred owl sites in 1991, and 25 in 2008. By 2010 there were 43 barred owl sites.

#### Sec. 3.9.1.2

In anticipation of potentially implementing a BO removal experiment we began working on the development of a BO survey design for the reservation and began surveys in 2009. We have divided the reservation landscape up with the use of a 500 hectare hexagon grid overlay. We were not sure what the number of survey visits should be to achieve good results so we started with 6 barred owl specific night callings within each of 30 randomly selected hexagons regardless of whether BO were detected or not. In the remainder of the hexagons, surveys were discontinued once BO were detected. Analysis of the barred owl specific survey data and BO and NSO data combined indicated that 4 BO specific survey visits combined with at least 1 NSO survey visit achieved the best results. In other words I am not sure that basing cost estimates on a 3 visit protocol is appropriate. In fact, after determining that 4 visits was adequate in 2009 we implemented a 4 visit protocol in 2010 and found that due to a much reduced response rate, that 4 visits was not enough. In 2011 and so far in 2012 the BO response rates were/appear to be high enough to ensure that a 4 visit protocol will suffice. You may want to bump up the cost estimates slightly for BO surveys, at least for studies that are purely occupancy based.

#### Sec. 3.9.1.3 Cost of BO removal

I was not able to follow the method of estimating costs for the act of removal. Since removal will be conducted during the non-breeding season, annual survey effort will occur primarily outside of the removal period. I therefore took some time to estimate costs of removal at Hoopa and came up with the following range:

Table 1. Estimated expected and worst case annual cost of BO removal at Hoopa with a summary of cost by alternative.

| Year    | Expected | Worst     |
|---------|----------|-----------|
| Year 1  | \$12,267 | \$40,000  |
| Year 2  | \$6,667  | \$28,000  |
| Year 3  | \$4,000  | \$24,000  |
| Year 4  | \$4,000  | \$16,000  |
| Year 5  | \$2,667  | \$12,000  |
| Year 6  | \$2,667  | \$12,000  |
| Year 7  | \$1,600  | \$12,000  |
| Year 8  | \$1,600  | \$12,000  |
| Year 9  | \$1,067  | \$12,000  |
| Year 10 | \$1,067  | \$12,000  |
| Alt 1.  | \$29,600 | \$120,000 |
| Alt 2.  | \$26,933 | \$108,000 |
| Alt 7.  | \$37,600 | \$180,000 |

The table of costs for removal at Hoopa presents our best guess at the “expected” cost and the “worst” case. The method used to generate these costs was to first estimate the cost of a removal crew (1 to 2 people expected and worst) for one night of effort (removal attempts). We then estimated the number of BO to remove annually and number of BO expected to be removed per attempt. Then calculated the number of attempts needed per year and multiplied by the cost of each attempt. We assumed that there were 88-100 BO to remove in year 1 and estimated different levels of recruitment in subsequent years. We also varied the number of birds expected to be removed per attempt from 0.5 to 2 BO per attempt. The numbers in the table represent our expected crew cost which would include some use of both 1 and 2 person crews (50:50 ratio) per attempt and our expected number of BO to be successfully removed per attempt (1.5) compared to our worst case (0.5) and variation in number of BO to be removed annually representing moderate and high recruitment rates. The costs are clearly most sensitive to the success rate (birds removed per night of crew effort and recruitment). However, requiring 2 people at every removal effort could double the cost. It is likely that some situations will clearly need or benefit from a crew of 2 while many others could be accomplished with a single highly experienced person.

There are a lot of unknowns in estimating the costs of removal but I think it should be expected that the cost of removal will decline over time as the number of BO’s decline and the crews become more proficient.

Sec 3.9.2: Costs

Table 3-89 (Cost of Alt. 7) is not right. Check Hoopa (Willow Creek) line, should be  $1,800,000+586,400+260,600 = 2,647,000$  or close to this, not,  $1,800,000+58,650+32,300 = 366,000$



Ray  
Bosch/AFWO/R1/FWS/DOI  
07/03/2012 10:28 AM

To: Robin Bown/OSO/R1/FWS/DOI@FWS  
cc  
bcc  
Subject: Fw: Comments on Draft Environmental Impact Statement on  
Experimental Removal of Barred Owls to Benefit Threatened  
Northern Spotted Owls

See attachment.

~~~~~  
Ray Bosch | Biologist, Endangered Species | U.S. Fish & Wildlife Service | 1655 Heindon Road, Arcata,
CA 95521-4573

Land Line: 707.825.5143 | Email: ray_bosch@fws.gov | Fax: 707.822.8411 | www.fws.gov/arcata

-----Forwarded by Ray Bosch/AFWO/R1/FWS/DOI on 07/03/2012 10:27AM -----

To: "Paul_Henson@fws.gov" <Paul_Henson@fws.gov>
From: "Franklin, Alan B - APHIS" <Alan.B.Franklin@aphis.usda.gov>
Date: 07/02/2012 03:42PM
cc: "Clark, Larry - APHIS" <Larry.Clark@aphis.usda.gov>, "Dunaway, Alton - APHIS"
<Alton.Dunaway@aphis.usda.gov>, "Ray_Bosch@fws.gov" <Ray_Bosch@fws.gov>
Subject: Comments on Draft Environmental Impact Statement on Experimental Removal of Barred Owls
to Benefit Threatened Northern Spotted Owls

Paul,

Attached are my comments on the Draft Environmental Impact Statement on Experimental Removal of
Barred Owls to Benefit Threatened Northern Spotted Owls. I apologize that these are late but they
needed to go through APHIS review prior to submission. I have since received agency approval to
submit these comments.

Let me know if you have any questions.

Alan

Alan B. Franklin, Ph.D.

Project Leader

Ecology of Emerging Viral & Bacterial Diseases in Wildlife Project

USDA/APHIS/WS National Wildlife Research Center

4101 Laporte Avenue

Fort Collins, Colorado 80521-2154

970-266-6137 (phone)

970-218-5800 (cell)

970-266-6157 (fax)

alan.b.franklin@aphis.usda.gov

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.



Draft EIS - Barred Owl Removal (Franklin comments Final).pdf



5 June 2012

Animal and
Plant Health
Inspection
Service

Wildlife Services

National Wildlife
Research Center
4101 LaPorte Ave
Fort Collins, CO
80521
(970) 266-6000

Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Avenue
Suite 100
Portland, OR 97266

Dear Mr. Henson:

As requested by the U.S. Fish and Wildlife Service, I reviewed the Draft Environmental Impact Statement (DEIS) entitled *Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls*. In general, I was impressed with the breadth and rigor that was evident in the document. Because the DEIS was a very large document and somewhat daunting to review, I kept my comments to what I felt were larger issues and categorized my comments as follows:

Use of Non-Lethal Control in Alternatives: I agree with the concerns in the DEIS expressed by state agencies (Appendix C) in terms of translocating barred owls to their historic range. In particular, I would be very concerned about the spread of pathogens, such as blood parasites, in these proposed actions. There is evidence that blood parasite communities are different in the western U.S. than in the east and the potential to introduce novel pathogens is probably high through translocation. Introduction of novel pathogens into naïve wildlife populations in the past have had disastrous consequences (e.g., the introduction of *Plasmodium* into the naïve avifauna of Hawaii). Therefore, I agree with the DEIS conclusion that translocation would not be a feasible option and would be biologically indefensible. I think the remaining option of permanent captivity is also not feasible because of the lack of facilities available to house captured barred owls, as was pointed out in the DEIS. In addition, barred owls can live up to 24 years in the wild (see http://www.pwrc.usgs.gov/bbl/longevity/Longevity_main.cfm) so permanent captivity for hundreds to thousands of barred owls would be a very long-term and expensive commitment. In terms of the combined removal methods, considerably more effort will be required to capture, treat and locate barred owls (even if it is only one capture attempt per site, as stated on p. 22) than using lethal methods alone. The extra effort expended even at a reduced level has the potential to jeopardize the rigor of studies (see Choice of Study Designs below). For these reasons, I would argue that alternatives that include a combination of nonlethal and lethal removal methods should be reconsidered in terms of using only lethal removal.

Choice of Study Design: Given that the DEIS proposes to kill a large number of barred owls, regardless of whether lethal control or a combination of nonlethal and lethal control is used, the experimental design for a removal experiment needs to be

as rigorous as possible and with the strongest inference possible. This is an ethical consideration analogous to what a researcher faces with an Institutional Animal Care and Use Committee (IACUC) review of their proposed research. Under most IACUC reviews, lethal control is acceptable as long as the study design will adequately address the question appropriately and non-lethal methods are not available to address the questions in a similarly rigorous manner (also see my comments above on non-lethal removal). In this way, individuals are not needlessly killed in non-rigorous studies that do not adequately address the research question. Given this, I think the demographic study approach would be the most rigorous and appropriate design (see also my comments below). The occupancy approach has merit under some circumstances but will not address ecological mechanisms (i.e., which spotted owl demographic trait is affected by barred owls). In addition, there are no occupancy-based studies that have pre-treatment data similar to the existing spotted owl demographic studies. For these reasons, I would eliminate alternatives 5 and 6.

Choice of Alternatives: Ideally, I think a rigorous study design for the removal experiment would include:

1. A large potential treatment effect, that is, a large potential effect on the metrics of interest when the treatment has been applied (effect size)
2. Control and treatment areas with pre-treatment data for both (i.e., the necessary components of a BACI design)
3. Replicated (>1) studies
4. Large samples of spotted owl and barred owl sites within each study area
5. Logistically feasible for removal of barred owls
6. Demographic response variables, such as survival, fecundity, recruitment, and annual rates of population change.

These are all considerations that were included in the DEIS, which again point to the use of the demographic study areas in the removal experiment. However, I am not sure all of these were used to choose appropriate alternatives. From the demographic studies outlined in the DEIS, I found only 4 study areas that meet criteria 1, 2, 4, and 6 above. These study areas were Cle Elum, Olympic Peninsula, Rainier, and Oregon Coast Ranges (see Table 1). Of these 4 areas, only Cle Elum and Oregon Coast Ranges would meet criteria 5 above (logistic feasibility for removal) because there are considerable roadless areas in both the Olympic and Rainier study areas. Although not as restrictive as my choices, Johnson et al. (2008:25) arrived at these same conclusions concerning spotted owl demographic study area selection to be used in barred owl removal experiments. Beyond these two study areas (Cle Elum and Oregon Coast Range), I think there is a reduced chance of finding effects, especially where estimated rates of population change (λ) are close to 1 (a stationary population). I also was not convinced that studies need to be replicated across the full range of the spotted owl. If the effects of barred owls on spotted owls are species-specific, then one might expect that differences in range-wide conditions might not be all that relevant. Based on this reasoning, I think the design proposed in Alternative 2 will provide the strongest inferences (as pointed out in the DEIS), except that this

alternative could be modified to include only 2 demographic study areas rather than three.

Table 1. Characteristics of four northern spotted owl demographic study areas meeting criteria for rigorous study designs						
Study Area	State	No. NSO Sites Surveyed ^a	Current λ Estimate ^b	Change in λ to achieve $\lambda = 1$	% NSO Sites with BO ^a	Years of Pretreatment Before 2012 ^a
Cle Elum	WA	75	0.937	0.063	35	23
Olympic	WA	114	0.957	0.043	50	25
Rainier	WA	68	0.929	0.071	28	20
Coast Range	OR	198	0.966	0.034	70	22

Given that 1) the use of existing demographic studies provides the most rigorous study design, and 2) the best of these study areas (i.e., Cle Elum and Oregon Coast Range) are also part of the Northern Spotted Owl Effectiveness Monitoring Plan, some balance needs to be achieved with meeting the goals of the effectiveness monitoring program and conducting a rigorous barred owl removal experiment. As pointed out in the DEIS, there is considerable concern about using demography study areas that are part of the Effectiveness Monitoring program. This may require reduction in replicates for the removal experiment to maintain replicates in the Effectiveness Monitoring program. In considering this balance, a question that needs to be addressed is: *are the Effectiveness Monitoring study areas intended to just document trends until some populations reach demographic extinction or whether they can help elucidate the factors causing those declines and possibly reverse declining trends?* I think that a modified Alternative 2, which includes only the Cle Elum and Oregon Coast Range study areas, would represent an appropriate balance in addressing this question.

I hope these comments help.

Sincerely,



Alan B. Franklin
Research Biologist and Project Leader

JC 12-855



Humboldt Redwood
COMPANY, LLC

Oregon Fish & Wildlife Office

JUN 09 2012

FOREST
OPERATIONS
P.O. Box 712
125 Main Street
Scotia, CA 95565
(707) 764-4472
www.hrcllc.com

Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
2600 SE 98th Ave., Suite 100
Portland, OR 97266

RE: Draft Barred Owl Removal Experiment EIS

Dear Paul:

The purpose of this letter is to provide comments on the Draft Barred Owl Removal Experiment EIS on behalf of the Humboldt Redwood Company (HRC).

HRC owns approximately 211,000 acres of redwood and Douglas-fir forestlands in Humboldt County, California. HRC has operated under a Federal and California State approved Habitat Conservation Plan (HCP) since its beginnings in 2008 when it emerged from the financial restructuring of the Pacific Lumber Company. HRC adopted the HCP at that time and agreed to implement the HCP conservation strategy for northern spotted owls and other species, while also bringing with it other significant conservation measures developed by its sister company, Mendocino Redwood Company (MRC), including the retention of old growth trees and use of uneven-aged forest management. The HRC HCP covers 17 total species, including the northern spotted owl (*Strix occidentalis caurina*) (NSO), and the marbled murrelet (*Brachyramphus marmoratus*).

I am Forest Sciences Manager and Senior Wildlife Biologist for HRC. I have over twenty years of experience working with the northern spotted owl and forest management in the redwood region of northern California. Based on the scientific information that has been gathered, including for the USFWS Northern Spotted Owl Recovery Plan, and my personal experience, the barred owl represents the most significant threat to the continued existence of the northern spotted owl. We encourage the USFWS to move forward as soon as possible with removal of barred owls from northern spotted owl territories within their range.

HRC lands have a relatively high density of northern spotted owl (SPOW) activity sites, along with Green Diamond Company, among the highest densities known. We currently have approximately 190 SPOW activity sites on HRC property, and are currently conducting surveys and monitoring of them according to our HCP

requirements. As you know, the success of our HCP is tied to the ongoing success of the SPOW, not the BDOW.

We have witnessed the gradual encroachment of barred owls (BDOW) onto our lands in Humboldt County, CA, starting with detections on surveys in 1991. At the present time, we know of at least ten BDOW activity sites on HRC lands, and expect there are more based on other survey contacts, and on a recent telemetry study conducted on and near our lands by NCASI. We are seeing the effect of the BDOW increase in the behavior of the SPOW. The spotted owls are much more difficult to contact at their activity sites now, and this requires a great deal more of searching their territories to locate them and protect their nest sites. HCP trends in SPOW occupancy and reproductive rates are down while BDOW detections continue to increase.

We agree with the USFWS that the BDOW removal experiment will allow collection of data on the impact of BDOW removal on both SPOW and BDOW populations. We need this information as soon as possible to understand our ability to reduce BDOW populations and increase SPOW populations. We also agree that the experiment will help the USFWS and private landowners to better estimate the cost involved in BDOW removal, and further to understand the cost of not conducting BDOW removal. The treatment and control study designs that are proposed should provide robust data in a relatively short period of time.

Conclusion

For the reasons discussed above, we encourage the USFWS to select an alternative that removes the greatest number of BDOW over the largest area of SPOW habitat, and promotes the rapid recovery of the SPOW.

Thank you for considering our concerns. If you have any questions about our HCP or this comment letter, please do not hesitate to contact me at (707) 764-4299.



Sal Chinnici
Forest Sciences Manager
Humboldt Redwood Co. LLC



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

June 29, 2012

Oregon Fish & Wildlife Office

JUL 02 2012

Paul Henson, State Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Ave., Suite 100
Portland, Oregon 97266

Re: U.S. Environmental Protection Agency (EPA) Comments for the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls Draft Environmental Impact Statement (DEIS) (EPA Project Number: 09-071-FWS).

Dear Mr. Henson:

This review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 specifically directs the EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Under our Section 309 authority, our review of the DEIS considers the expected environmental impacts, and the adequacy of the EIS in meeting procedural and public disclosure requirements of NEPA.

The DEIS analyzes a no-action alternative and seven action alternatives to experimentally determine if removing barred owls will benefit northern spotted owl populations and to inform decisions on whether to move forward with future management of barred owls. The action alternatives vary by the number and location of study areas, the type of experimental design, duration of study, and method of barred owl removal.

The DEIS does not identify a preferred alternative. In cases where no preferred alternative is identified, it is the EPA policy to assign a rating to each action alternative. In our review of the action alternatives in this DEIS we did not identify any environmental impacts that should be avoided in order to fully protect the environment. We are therefore assigning a rating of LO (Lack of Objections) to each of the action alternatives (an explanation of this rating is attached). We do, however, offer the following comments, observations, and recommendations for your consideration as you move forward with drafting the Final EIS.

On page 4, the DEIS states that in order to make future decisions about the use of removal in the management of barred owls, two types of information are needed: efficacy (will removal work?) and efficiency (feasibility and cost). To address efficacy, the removal experiment would measure how much the reduction in barred owl populations on a portion of the study area affects spotted owl site occupancy, survival, reproduction, and population trend. To address efficiency, the removal study would document costs and techniques.

The extent to which each study design would be able to provide this information is discussed sporadically throughout the document, but the document does not show a direct comparison of each alternative’s ability to provide the desired information. One way to present this information might be to use a matrix that crosswalks the alternative study designs against the desired information (the following is only offered as one possible example):

	Alt 1	Alt 2	Alt 3	Alt 4a	Alt 4b	Alt 5	Alt 6a	Alt 6b	Alt 7
Site Occupancy									
Survival									
Recruitment									
Reproduction									
Population trend									
Cost									
Technique Feasibility/ Level of Effort									
Strength of Inference									

Even a qualitative scoring (red, yellow, green for example) of the alternatives on their ability to provide the desired information would help to put the alternatives into sharper relief for the purposes of selecting a preferred alternative.

Based on our own analysis of the information presented in the DEIS, we believe some of the alternatives meet these information needs better than others. In particular, we believe that the demography area studies offer advantages over the site occupancy studies:

- The demography approach would allow measurement of underlying vital rates (survival and recruitment).
- The demography approach is better able to detect differences between treatment and control.
- Because this study could be conducted on existing demography areas, we believe there is opportunity for economic efficiency. If the northern spotted owl effectiveness monitoring program under the Northwest Forest Plan can be used to help fund the monitoring associated with this experiment (or vice versa), we believe that option should be seriously considered.

We also support using a demography area with existing pretreatment data:

- Study areas with existing pretreatment data would have greater power to detect effects of barred owl removal.
- The DEIS states that information on the effectiveness of a removal program is urgently needed (DEIS p. xxii). Similarly, the Spotted Owl Recovery Strategy states that because the abundance of barred owls continues to increase, the effectiveness in addressing this threat depends on action as soon as possible” (USFWS 2011, p. III-62). Utilizing a demography area with existing pretreatment data would address this need for urgency by allowing experimental removal to proceed without delay. Further, this approach would produce results more rapidly than the other proposed approaches.

Taken together, this means that the EPA is most supportive of Alternative 1 or 2. The key difference between Alternatives 1 and 2 is the number of study areas included in the experiment (one and three respectively). In order to best represent the range of conditions experienced by spotted owl populations (thereby allowing for better inference across their range) we support the idea of multiple study areas (Alternative 2). However, given the level of controversy, we wonder whether an alternate approach might be to take a phased approach whereby the experiment initially gathers results from one study area. Should that experiment yield positive results, the experiment could be applied to the additional two study areas.

Finally, our review identified errors in section 2.2.3.8 "Summary of Action Alternatives". Specifically, the number of study areas identified for Alternatives 3, 4a, 4b, 5, and 6b in section 2.2.3.8 are different than elsewhere in the DEIS. We recommend that these numbers be reconciled in the FEIS.

Thank you for this opportunity to comment and if you have any questions or concerns please contact me at (206) 553-1601 or by electronic mail at reichgott.christine@epa.gov, or you may contact Teresa Kubo of my staff at, (503) 326-2859 or by electronic mail at kubo.teresa@epa.gov.

Sincerely,

A handwritten signature in cursive script that reads "Christine B. Reichgott".

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

Enclosures:
EPA Rating System for Draft Environmental Impact Statements

**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.



File Code: 2670

Date: July 6, 2012

Public Comments Processing
ATTN: FWS-R1-ES-2011-0112
Division of Policy and Directives Management
U.S. Fish & Wildlife Service
4401 N. Fairfax Drive, MS 2042-PDM
Arlington, VA 22203

Dear Sir or Madam:

The U.S. Forest Service (FS) is providing comments to the U.S. Fish and Wildlife Service (FWS) proposed revision to designate critical habitat for the Northern Spotted Owl, *Strix occidentalis caurina*, (Federal Register Notice, Vol.77, No.46/Thursday, March 8, 2012), the Economic Analysis of Critical Habitat Designation for the Northern Spotted Owl and the Draft Environmental Impact Statement (DEIS) for the Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls. The comments in this memo and enclosures include input from affected Forests throughout the Pacific Northwest Region (PNW) and the Pacific Southwest Region.

Critical Habitat Rule

The FS supports the emphasis the FWS has placed on ecologically based landscape scale restoration and active management. Throughout our discussions with the FWS about proposed critical habitat, the FS has consistently supported the expansion of critical habitat boundaries in the dry, fire-prone provinces if accompanied by language that encourages active forest management. The proposed critical habitat in the dry provinces and the associated language meets our multiple use needs.

However, in the moist west side provinces within the range of the Northern Spotted Owl (NSO), we can achieve recovery plan objectives in the matrix without designation as critical habitat and maintain harvest levels that are currently well below NWFP assumptions in these provinces. The FS supports the earlier approach with NSO critical habitat unit boundaries aligned with existing Northwest Forest Plan (NWFP) large block reserves and matrix land allocations excluded from critical habitat. Short-term fire risk is generally lower in moist forests so management activities are different than those needed in dry forests. We still maintain this position and request the FWS make changes in the final rule to exclude matrix from critical habitat designation on the moist west side. Our continued management of large, continuous blocks of late-successional forest as outlined in the NWFP is consistent with the revised NSO Recovery Plan and the proposed critical habitat rule.

Adaptive Management Areas and Experimental Forests should also be excluded from critical habitat designation. The purpose of these areas is to support adaptive management and research on forests, streams, and watersheds, and to foster strong collaboration among ecosystem science, education, natural resource management, and the humanities. Placing additional constraints on our actions in these areas will limit our ability to conduct scientifically credible work.



If a decision is made to include the matrix land allocation, Adaptive Management Areas and Experimental Forests in the final critical habitat rule for the wet west side provinces, then the FS requests the FWS further strengthen and clarify the language in the rule which permits a variety of active management silvicultural prescriptions in the moist forests. Our request is tied to the February 28, 2012, Presidential Memo to the Secretary of the Interior to: “develop clear direction, as part of the final rule, for evaluating logging activity in areas of critical habitat, in accordance with the scientific principles of active forestry management and to the extent permitted by law.”

Specific changes recommended by Region 5 and 6 to the proposed critical habitat rule are included in Enclosure 1 & 2. Maps with our recommended refinements to the FWS critical habitat rule were electronically accepted by the Service’s Ecological Services Oregon State Office in Portland Oregon on July 2, 2012.

The FS supports including wilderness as critical habitat. Wilderness areas are currently providing habitat for a number of spotted owl activity centers. Inclusion would more accurately reflect the acreage that the FS is currently contributing toward recovery, and would have limited impacts to our ability to manage these areas for their designated purpose.

We appreciate that FWS has worked with us on how to evaluate the effects of our actions on a landscape scale consistent with the 2011 Recovery Plan and the model used to designate proposed critical habitat units. However, multiple Forests commented that they need additional guidance on how to make effect determinations in critical habitat at the 500-acre scale. In an attempt to meet this need we have developed an approach based upon conversations with the FWS field staff and some of our field units, but at this time, we have been unable to present the methodology to FWS staff. This methodology, combined with a common understanding regarding the thresholds for “may affect, not likely to adversely affect” and “may affect, likely to adversely affect” when evaluating our proposed actions in critical habitat will be essential to our ability to implement the proposed rule. The FS will request a meeting with the FWS to clarify our joint understanding of this part of the rule before finalization. Without common understanding and agreement, Level 1 consultation teams will individually reach multiple interpretations on how to conduct an effects analysis resulting in increased time for ESA section 7 consultation and inconsistent evaluations across the range of the owl.

Economic Analysis

The FWS analyzed three different scenarios in the economic analysis: Scenario 1 – no action; Scenario 2 – 10% increase in timber production; and Scenario 3 – 20% decrease in timber production. Our review indicates that the methods used to calculate FS harvest may lead to an underestimation of the negative economic impacts. Specifically, we are concerned with some of the assumptions used in the analysis including reductions in volume removal and the effects of additional consultation requirements.

The FWS calculates an average, annual FS harvest of 63 board feet (BF) per acre from a weighted average of all FS acres. The analysis states: “We then use a weighted average of national forest acres by subunit to distribute harvest volumes. Therefore in the absence of

detailed geospatial information on timber management activities, we assume that harvests are approximately evenly distributed within national forests managed by USFS (page 4-18).” The assumption that harvests are evenly distributed is problematic because timber is harvested from a subset of FS lands. A more specific analysis of the subunit data may yield estimates that are orders of magnitude higher than 63 BF per acre, which would result in a commensurate increase in the final economic impact.

According to the FWS economic analysis for critical habitat under Scenario 3 (Page 4-32, Exhibit 4-12), which is based on 63 BF per acre and a 20 percent harvest reduction, the estimated loss of timber harvest would be 24 MMBF per year on National Forest System (NFS) lands for the entire species’ range. The FS believes that this estimate is too low. For example in Region 5, without this proposed critical habitat revision, the FS would expect to harvest approximately 106.4 MMBF from a sample of 4 National Forests in California (last 5 year harvest volume averages: Shasta-Trinity NF- 64 MMBF, Six Rivers NF - 10 MMBF, Klamath NF-25 MMBF, Mendocino NF-7.4 MMBF). Assuming a 20 % percent harvest reduction from 106.4 MMBF, then harvest reduction on just these four NF’s in Region 5 would account for a reduction of 21.28 MMBF. This is not much less than the 24 MMBF estimate used by the FWS in their draft economic analysis for the entire range of the species on FS lands. In Region 6, the FY 2012 NWFP timber program is assigned at 393 MMBF, a 20 percent reduction would equate to about 79 MMBF. Furthermore, the Region 6 timber program for NWFP Forest’s is expected to increase in FY 2013 and FY 2014.

The estimated reduction in timber harvest ranges from 24 to 100 MMBF on NFS lands. This broad range should be validated by the FWS and FS Level 1 field teams by testing the estimation methodology on various National Forests with differing vegetation characteristics prior to finalization of the critical habitat rule.

The economic analysis assumes that thinning will be the only forest management activity in areas outside of the Critical Habitat designation. The analysis states, “USFS harvest projections include only thinning activities and do not anticipate future regeneration harvest activities (page 4-18).” We believe this assumption is incorrect and is inconsistent with the active management approaches that are proposed throughout the range, including the use of ecological forestry concepts. These concepts include small scale regeneration applied across landscapes. The FS suggests including an analysis of the economic impacts of potential future regeneration harvest activities. This would be consistent with current Northwest Forest Plan level direction and emerging science.

Forest personnel are particularly concerned about administrative costs associated with Critical Habitat designation. The analysis considers only minimal administrative costs. “...critical habitat designation would result in very little additional staff effort to consider impacts to critical habitat. In areas where consultation would have already occurred due to the presence of the species, consideration of impacts of proposed projects on critical habitat is likely to result in four to six additional person-hours per consultation across all Federal staff in addition to the baseline level of effort spent considering impacts to the NSO itself (page 4-26).” We believe that the additional person-hours per consultation will likely be substantially higher. In addition, the time lost due to increased consultation requirement may also affect our scheduled program of work on

any given NF. Program scheduling is time sensitive and delays in program delivery can have compounding effects to our project timelines.

Barred Owl DEIS

Barred owls appear to be one of the two main threats to the northern spotted owl's continued survival (habitat loss is the other). Region 6 understands and supports the need to evaluate the effects of experimentally removing barred owls and the effect of barred owl removal on NSO. We agree that while the evidence of the threat is strong and very persuasive, additional information is needed on the effect barred owl removal may have on spotted owl population trends, as well as the efficiency of removal as a management tool.

The FS appreciates the care the FWS took to identify a wide range of alternatives in the Barred Owl DEIS including several alternatives that avoided experimental barred owl removal within the federal demographic study areas or used them only as "controls" for removal experiments in adjacent areas (ALTs 3, 4, 5, 6, and 7). We are satisfied with the additional analysis provided in Appendix I of the DEIS showing the potential impacts of the experiment on long-term NSO population monitoring if an experimental removal does occur within a demographic study area. The analysis indicated that while our ability to monitor provincial and range-wide spotted owl population trends could continue, it would be "compromised to some degree" (because of reduced sample size in a study area) during the removal period and likely for several years afterward. This would result in more uncertainty in our demographic status and trend estimates. We would like to avoid or at least minimize this impact to the extent practical, and feel that Alternatives 3 thru 7 are designed to do this, followed by Alternative 1. Alternative 2 results in the largest impact to monitoring and is therefore our least preferred option.

We would like to acknowledge and show appreciation to the FWS in Regions 1 and Region 8 for their continued coordination and willingness to meet with the FS on these issues.

The FS believes the proposed critical habitat rule reflects the intent of the 2011 NSO Recovery Plan. We appreciate this opportunity to comment on the proposed rule, associated economic analysis and the Barred Owl DEIS.

If you have any questions about our comments, please contact me at (202) 205-1523, or Chris Iverson at (202) 205-3199.

Sincerely,

/s/ Leslie A. C. Weldon
LESLIE A. C. WELDON
Deputy Chief, National Forest System

Enclosures

[« previous](#) [next »](#)

Title: FWS-R1-ES-2011-0112 2012-05-25 20-01-02_docs/FWS-R1-ES-2011-0112-0007-A1.docx

Before anyone begins killing wildlife we need to ask ourselves several questions: What is our goal? Is it to preserve the current spotted owl population? If so, two more questions must then be answered: Will killing the barred owls do that? If so, then why are we going to this extreme to preserve the spotted owl? Let us assume the answer to the first most question is yes; we want to preserve the spotted owl (SO) population. Then the answer to the second question is not at all certain. In order to prevent the barred owl (BO) from interbreeding with the SO it would be necessary to reduce their ranks to the point that they themselves would become an endangered species on the west coast. This is assuming that BOs from the east and north would not enter our area; if that were so (and it is likely) , near complete extinction of the BO would be necessary. It seems odd that wildlife authorities would fly in the face of Darwin by eradicating a better adapted species in order to preserve a weaker, less adaptable one. All of which brings us to the third question; even if this succeeds why do we want to preserve the SO? Is it because it is valuable as an indicator species? Is it to preserve ecological balance? Is it for financial reasons? Is it just because it is on an "endangered list." If it has had any use as an indicator species in the past that use will become meaningless when we artificially promote its preservation. If it is to preserve ecological balance we are heading the wrong direction. Evolution and ecologic impetus favors the interbreeding of the two owls. I know of no financial reason to preserve one species at the cost of another, but I can certainly envision a sizeable financial expenditure to try. If this is somehow required because the SO is on an "endangered list" then we need to re-evaluate what the consequences and associated requirements should be for species on that list. The major obstacle to a rational environmental policy in the past has been an insistence by many that the environment be viewed as a snapshot. The Park service did not want digitalis in the park because it was not there in the 1800s. Sorry to break the news, but things change. Life is a movie, not a snapshot. Before the SO there was a different bird that it displaced. The BO is going to replace it now. The BO will probably be displaced itself eventually. The government is not noted for making good decisions. This is an egregiously bad one.

Metadata:

Codes and Coders

[« previous](#) [next »](#)

Title: FWS-R1-ES-2011-0112 2012-05-25 20-01-02_docs/FWS-R1-ES-2011-0112-0020-A1.docx

It is not scientifically or ethically appropriate to kill the barred owl in the attempt to try to save the northern spotted owl. I am completely against the experimental plan to exterminate barred owls in Washington and Oregon as proposed by the US FWS. I feel it is a poorly thought out experiment and doomed to failure. There are questions that have not been answered but should be answered before the US FWS proceeds with the experiment. What is the justification for the opinion that the barred owl must be "managed"? If the barred owl is evolutionarily a more advanced species than the northern spotted owl, is there a true evolutionary reason the northern spotted owl should be saved by destroying the barred owl? Searching the USFWS website, I could not find any information specifying that the barred owl is a threat to environment, other than it is a threat to the pet project of "scientists to "save the NSO" at all costs. The idea that the NSO is an "indicator species" is a fabrication of non-scientific evaluations by inexperienced and uneducated researchers, though they are well meaning. Is there a mandate to save endangered species at the expense of other evolutionarily stronger species thus interfering with successful evolution? If so, we need to re-evaluate the mandate to determine if it is scientifically and ethically unsound. Axioms should be re-evaluated. The barred owl habitat includes areas of neighboring British Columbia, Canada. If the barred owls in Washington and Oregon are killed, what will prevent the barred owls from Canada repopulating in the US? The US FWS website hints that the demise of the NSO is largely due to the interference of nature by humans. Yet, these same people seem to think that their interference with NSO habitat by killing or removing barred owls will be a good interference with nature. Are they assuming some deified character in themselves? Again, I am totally against the proposal to conduct experimental removal of barred owls from certain areas throughout the NSO range. I feel I am qualified to express this opinion because of my extensive University background of ecology, genetics, botany, zoology & anatomy, microbiology, biochemistry, chemistry, physics, statistics and mathematics as well as 45 years of experience, plus published studies.

Metadata:

Codes and Coders