June 9, 2015

Douglas Krofta
Chief, ESA Listing
U.S. Fish and Wildlife Service
Washington, D.C. 20540
Re: FWS–R1–ES–2014–0061

Dear Chief Krofta,

Thank you very much for this opportunity to comment on the status of the Northern Spotted Owl. Due to continued population declines across all demographic study areas, the lack of breeding success, past and ongoing habitat loss, lack of adequate regulatory mechanisms to conserve the subspecies on federal lands, and the Barred Owl incursion, American Bird Conservancy (ABC) urges that the Service propose to uplist the subspecies to endangered status and additional conservation measures promptly be developed and implemented to help prevent its extinction.

Enclosed in this letter are past comments from ABC and others that underscore some of the reasons endangered status is warranted and identify critical issues that need to be addressed to stabilize owl populations and eventually recover the subspecies.

Briefly, some of these issues include decisions within the 2012 Northern Spotted Owl Critical Habitat rule to protect only high quality owl habitat versus all suitable owl habitat, and the promotion of active management and fire risk reduction in owl habitat. Recent population declines and a significant number of newly published studies indicate these issues should be reexamined and new policies developed to augment habitat protection, reduce habitat loss, and minimize the risk of Barred Owl incursion from management activities.

The best available science and the continuing decline of Northern Spotted Owl populations indicate that the agency should protect all suitable owl habitat not just high-quality owl habitat. The definition of high quality owl habitat needs to be made more inclusive to ensure sufficient habitat will be conserved to allow for recovery.

In its review of the draft Northern Spotted Owl recovery plan The Wildlife Society raised concern about the Service's narrow definition of high quality owl habitat. The Society notes that the proposed definition is only a subset of suitable habitat. Their analysis then states:

"…by limiting the definition of high quality habitat to a fairly narrow range of habitat conditions, management agencies will be able to justify thinning or commercial harvest in a broad range of naturally regenerated stands. Most of these naturally regenerating stands originated from fire and usually are suitable spotted owl habitat; therefore, they are not likely to be greatly "improved" by management. In western Oregon and Washington such stands are typically comprised of large trees that are 80-160 years old, and include scattered (i.e., residual) old-growth trees that survived wildfires. These stands may not meet the strict definition of high quality habitat, but they are often the best remaining habitat in the heavily harvested or burned landscapes that are managed by the Bureau of Land Management and Forest Service. They often occur in small patches, isolated among large areas of young forest within these disturbed landscapes, and they often serve as nest sites for spotted owls as well as

refugia for species such as flying squirrels and tree voles, which are important prey of northern spotted owls. Because of the high timber volume in these stands there is intense pressure to log them. Commercial thinning is often recommended as a prescription to reduce risk of fire or improve forest conditions for owls in these stands, despite the fact that it is usually unclear if thinning will either improve these forests as habitat for owls or accelerate their transition from suitable to high quality habitat."

This uncertainty was one of the reasons the Northwest Forest Plan included recommendations to restrict thinning in naturally regenerated stands over 80 years old in western Oregon and Washington. ABC's comments on the draft rule on pages 7-58 and a critique of the final rule is on pages 58-88.

Another concern is the continued use of the rule's adverse modification standard to justify owl take and the elimination of mature forests eight years and older that are used by Northern Spotted Owls and prey. Please see the attached ruling on the White Castle Secretarial Pilot Project that proposed to log in mature forests utilized by owls. The ruling found this was a controversial practice likely to impact owls and therefore in need of a complete environmental analysis.

Another notable project that is an example of the current lack of adequate regulatory mechanisms on federal lands is the Westside Fire Recovery Project on the Klamath National Forest. The project is inconsistent with the Northwest Forest Plan and Northern Spotted Owl conservation due to proposed extensive post-fire logging in a late-successional reserve according to comments by Dr. Jerry Franklin which are on pages 105-114.

ABC drafted a comment letter of support for the California Spotted Owl petition for listing on pages 89-95which summarizes key points that we believe are also relevant to the Northern Spotted Owl status review. Recently published studies indicate California Spotted Owls are well adapted to fire, that logging practices are contributing to population declines, and that post-fire logging in particular threatens owls and eliminates otherwise suitable owl habitat. ABC urges that these scientific findings also be applied to the Northern Spotted Owl.

Proposed and planned revisions to the Northwest Forest Plan are raising concern that existing regulatory mechanisms will be replaced with new standards that do not provide an equivalent level of protection of Northern Spotted Owls in the near term, and fail to provide for adequate protection of mature forests needed to replace and augment old-growth forests and restore the late-successional ecosystem.

Complete analysis of the draft BLM RMP is underway, but an initial review indicates that it weakens existing protections for mature forests and riparian reserves. It is of great concern that the no-action alternative in the BLM's draft RMP is based on the Northwest Forest Plan as written, as opposed to the Plan as currently implemented. As a result, there is not an accurate baseline upon which to compare the action alternatives.

The Forest Service is on a slower timetable and is currently developing a science synthesis to guide their Northwest Forest Plan revisions. Several recent letters to the administration and agency are enclosed to detail our concerns about the plan revisions and reiterate our view that additional habitat protection is urgently needed for the Northern Spotted Owl and that proposals to weaken existing standards are not based on the best available science.

It is important to consider that the backdrop of these plan revisions is a precipitous drop in owl numbers and a general lack of breeding success in many areas. A brief review of the 2013 reports finds a disturbing downward population trend.

Southern Oregon Cascades
http://www.reo.gov/monitoring/reports/nso/CAS%20nso%20demog%20annual%20report%202014.pdf

The percentage of sites where spotted owls were detected on the study area (31%) represented a 4.0%

decrease from 2013. Overall, the mean percentage of sites with owls detected has remained similar for the Wilderness and LSR, although a gradual decline is evident on both areas. In 2014 the decline in sites where spotted owls were detected in the Matrix was greater than for most years. In 2014 there were 92 non-juvenile owls detected ($\bar{x}$= 160.1, SE = 7.4, n = 25 years), with 50 males, 41 females and 1 sex unknown; this was the fewest number of owls detected during the study (Appendix 5). However, despite our more extensive night time survey effort in the spring, the number of sites where spotted owls were detected in the last two years has been the lowest ever recorded. In 2014 productivity increased relative to 2013 and was greater than in most years. The total number of spotted owls detected and the number of previously banded owls identified in 2014 were the lowest recorded for the study. Spotted owl detections at historic territories were unchanged from 2013-2014 at LSR sites, whereas, the double digit decrease in spotted owl detections in the Matrix LUA well exceeded the slight decrease in detections recorded for the Wilderness sites. Overall this has been the long-term trend across the study area as detections of spotted owls have gradually declined.

East slope of the Cascade Range, Washington
http://www.reo.gov/monitoring/reports/nso/CLE%20nso%20demog%20annual%20report%202014.pdf

In 2014 we banded 5 juvenile owls and 2 adult owls, bringing the total number of owls banded during 1989-2014 to 857 (161 adults , 69 subadults, and 627 juveniles, Table 1). Our monitoring effort has remained relatively consistent after 1992, except for 8-10 territories we began monitoring with only 1 visit per year beginning in 2002. None of these "minimum-protocol" territories contained owls in 2014. We confirmed the bands of 14 Spotted Owls, and detected another 4 Spotted Owls on 11 territories. This compares to a high of 120 owls on 64 territories in the same area in 1992 (a decline of 85%,Figures 3,4 Table 2). Four of the 5 females for which we determined nesting status in 2014 nested. We found young at an additional territory after the incubation and rearing period. Of these 5 nesting females, all produced young. Thus, the reproductive potential of the Spotted Owl population on the Cle Elum Study Area has declined over time. At the current population size, the total number of young produced in an above-average reproductive year (e.g. 2014) is only slightly greater than the worst reproductive years when the population was much larger (e.g. 1993, 1997, Figure 10). The small number of reproductive females remaining on the study area is clearly a cause for concern should this situation persist, given recent analyses that suggest there is a genetic bottleneck in this region (Funk et al. 2009).

Oregon Coast Ranges
http://www.reo.gov/monitoring/reports/nso/COA%20nso%20demog%20annual%20report%202014.pdf

In 2014, we detected owls at 48 of the 172 sites surveyed (Fig. 2, Appendix A). Owls were detected at 56 sites in 2013 (Fig. 2, Appendix A). The percent of sites in which a spotted owl was detected has gradually declined over the course of the study from a high of 88 percent in 1991 to a low of 28 percent in 2014. This was a decrease in 2014, from 33 percent in 2012 and 2013 (Fig. 3, Appendix A). In 2014, pairs were observed at 17 percent of the sites, down from 20 percent in 2013. Single owls were observed at 9 percent of the sites surveyed. In 2014, there were 2 sites (1% of total) where both a male and female were detected, but pair status was not established (Fig. 3, Appendix A). Of 33 females that met protocols for determination of nesting status in 2014, 22 (67%) attempted to nest and 12 (55%) successfully fledged young.(Appendix D, F). Of 34 females that met protocols for reproductive status, 12 (35%) produced young (Appendix E). The total number of young produced by the 12 females that produced young was 20 and the mean brood size for those 12 females was 1.67 (SE= 0.14; Appendix H).

Willamette National Forest
http://www.reo.gov/monitoring/reports/nso/HJA%20nso%20demog%20annual%20report%202014.pdf

The number of sites surveyed in 2014 was similar to the number reported in past years (171 sites; Figure 1,

Table 1). Most of the non-juvenile spotted owls detections in 2014 were pairs (68%) with substantially fewer resident single owls (12%) or single owls with unknown residency status (20%; Table 1). The proportion of sites where either a pair or a single owl was detected decreased by 11% (Table 1) and the proportion of sites where pairs were detected increased by 1% between 2013 and 2014 (Figure 1). This is the second lowest proportion of territories where we detected pairs of spotted owls to date (Figure 1). We were able to survey 35 spotted owl pairs to determine nesting status prior to 1 June 2014 (Forsman 1995). Twenty-nine of these pairs (83%) initiated nesting prior to 1 June 2014; all but one (97%) successfully produced at least one young (Figure 4). The Final Revised Recovery Plan released in 2011 (U.S. Fish and Wildlife Service 2011) has withdrawn the MOCA network and recommended that managers continue to consider the LSR land use allocation under the NWFP as the current reserve network. The Fall Creek LSR has supported as many as 25 pairs of spotted owls, but currently supports only 11. Continued loss of spotted owl pairs in that LSR may render that area ineffective as a reserve. The South Santiam, Horse Creek, and Hagan LSRs have never supported more than 11, 8, and 3 pairs, respectively. These LSRs were not likely to support more than 20 pairs of spotted owls but may provide connectivity within the reserve network.

Klamath Mountain Province of Oregon
http://www.reo.gov/monitoring/reports/nso/KLA%20nso%20demog%20annual%20report%202014.pdf

In recent years there has been a steady decline in the number of non-juveniles detected (Appendix B) and an even larger decrease in the number of pairs detected (Appendix A). The number of non-juveniles detected in 2014 (102) was the lowest ever documented on the study area (Appendix B). The number of individual spotted owls during 2014 was 54.3% fewer than the high of 223 during 2002. The number of pairs detected on the study area has declined every year since 2005. The 38 pairs detected during 2014 was the lowest number documented during the study period. Although the number of sites surveyed during this period has remained relatively constant, the number of pairs detected at sites has declined and the number of unoccupied sites has increased (Appendix A). While the recent meta-analysis (Forsman et al, 2011a) indicated that survival on the KSA was stable through 2006, the most recent data regarding occupancy has shown a steady and rapid decline, which suggests the stability of the population may be in question. The decrease in the number of subadults is even more pronounced than the decrease within all non-juvenile age classes. The highest proportion of subadults ever documented in the KSA (25.1%) occurred during 2003 and has declined to under 10% during each of the past eight years (Appendix B). The nest success rate for 2014 (80.0%) was higher than the 1990-2014 average of 74.4%.

Barred Owl Impacting Spotted Owl Population
There is mounting evidence that barred owls may be negatively impacting the spotted owl population within the KSA. This is illustrated by several apparent population trends: (1) spotted owl detections have been steadily decreasing (Figure 6) and reached the lowest point in 2014, when barred owl detections reached their highest level; (2) fecundity rates appear to be declining (Figure 8) and in only 2 of the previous 10 years was the rate above the 25 year average; and (3) the fecundity rate for sites with known barred owl presence was lower than at other sites and is continuing to decline. Forsman et al. (2011a) noted that the consistency of the negative associations between spotted owl demographic rates and the presence of barred owls supports the conclusion that barred owls are having a negative effect on spotted owl populations. The recent KSA data, with the combination of decreasing occupancy and reduced fecundity, appears to reinforce this conclusion.

Northwestern California
http://www.reo.gov/monitoring/reports/nso/NWC%20nso%20demog%20annual%20report%202014.pdf
Reproductive patterns in northern spotted owls on our study area continues to follow a pattern of low reproductive output in “bad” years and average or, occasionally, high reproductive output in “good” years. In 2014, reproductive output by spotted owls was one of the highest observed (Table 6) during the 30 years of the study, only slightly less than reproductive output observed in 2001. In general, productivity and the proportion

of nests that fledge young have remained relatively stable while the proportion of birds nesting each year is primarily responsible for variation in reproductive output. The average rate of population change for the WCSA population was 0.975, suggesting the WCSA population was declining at a rate of 2.5% per year. Based on 95% confidence interval, this estimate was different than a stationary population. However, this average rate of decline does not reflect the fairly dramatic loss in the population observed in 2011 and 2012 (Figure 4) although there was no apparent loss in 2013.

Olympic Peninsula
http://www.reo.gov/monitoring/reports/nso/OLY%20FS%20nso%20demog%20annual%20report%202014.pdf

During the 2014 field season, we conducted 231 visits to 40 historical survey areas (mean survey visits per site = 6.0 ± 0.38 SE). Spotted owl pairs were detected at 5 sites (Tables 1–2). We detected spotted owls at 3 other sites during night surveys. Follow-up visits at the latter sites indicated that the spotted owl detections were from paired individuals that had been previously documented at adjacent sites. Of the 10 adult spotted owls detected in 2014, 6 were previously banded and 4 (2 male, 2 females) were banded for the first time (Table 3). The total number of territorial owls detected in 2014 decreased slightly from 2013 and was still far below historical levels (Table 1). In contrast, the number of survey areas in which we detected barred owls remained high (Fig. 3). All 5 females located in 2014 attempted to nest (Table 4) and 4 of the 5 females that nested produced young (Table 5). We documented 7 juveniles that successfully left the nest and 1 juvenile that was found dead at the base of a nest tree. As the total number of territorial adults detected on the study area in 2014 decreased slightly from 2013, the number of owls detected on the study area remained far below historical levels. This was the first year in which significant numbers of spotted owls nested on the study area 2 since 2010. Although this is a positive sign, the generally low level of reproduction in most years since 2010 is resulting in an aging population.

Olympic National Park
http://www.reo.gov/monitoring/reports/nso/OLY%20NPS%20nso%20demog%20annual%20report%202014.pdf
In 2014, National Park Service personnel monitored and managed data on a sample of 52 spotted owl territories (hereafter "sites") to measure survival and reproductive rates, as well as site occupancy status. Crews made 233 visits to these sites, detecting spotted owl pairs at four and single spotted owls at six. This was the lowest proportion of sites with detections of spotted owls for any year of this study. At the ten sites where spotted owls responded, they were found on an average of 58% of monitoring visits. We documented four nest attempts and all were successful, fledging a total of six young. ONP crews banded three new adult spotted owls, one subadult, and one juvenile.

Tyee Density Study Area, Roseburg, Oregon
http://www.reo.gov/monitoring/reports/nso/TYE%20nso%20demog%20annual%20report%202014.pdf

In 2014, we documented 65 non-juvenile spotted owls in the DSA, including 27 pairs and 11 unpaired individuals (Appendix 2). This represents approximately 46% of the number of individuals that were located during the first year of the study in 1990 and was the lowest number of owls detected since inception of the study (Fig. 2). It also represents the first year that the population of spotted owls has dipped below 50% of the original 1990 population level. A comparison of the proportions of known-age owls detected in the study area in 1996, 2005, and 2014 indicates an aging population, with low recruitment of young owls in recent years (Fig. 3). Within the DSA we documented only 3 individuals under the age of 5 years old in 2014 as compared to 34 individuals in 1996. Median age in 1996 was 6 years old for males and 7 years old for females. It was very similar in 2005 where the median age for males was 7 years old and for females it was 6 years old. By 2014, the median age had raised to 10 years old for both sexes. In 2014, the number of pairs and the total number of non-juvenile spotted owls detected was the lowest recorded for the 25 year survey period (Fig. 4). In 2014, approximately 81% of the pairs (N=27) and 64% of the nesting pairs (N=11) in the DSA were located on federal

land and 36% were on private land. Although proportion of females nesting in 2014 was higher than the previous year, (0.40, 95% CI = 0.20- 0.60), the proportion of those that actually were successful (2 out of 10) was well below the 62.7% average. The number of females actually nesting has severely declined in the last 5 years and remained low as the population of spotted owls continued to decline (Fig. 2). For all years combined, the annual percentage of females that nested averaged 48.6% (N= 25 years, Table 1). The average number of young produced per female in 2014 was 0.172, which was considerably lower than the average of 0.506 for all years (N=25) (Appendix 3). The data continued to indicate that most measures of reproductive performance of spotted owls were lowest for 1-yr-old owls, intermediate for 2- yr-old owls, and highest for adults (Tables 2–3).

Hoopa Valley

Of 60 historic spotted owl territories within and adjacent to the DSA, All were surveyed using night calling while 54 received at least one day-time site visit with a total of 188 site visits during the 2014 season. Twenty four activity centers were confirmed occupied during the 2014 season with 15 pairs and 9 single males within the DSA and the 2 territories in the ANNEX portion of the reservation along the southeast boundary (Table 1). In addition, 1 territory outside the DSA was also surveyed, off the NE corner which supported a pair. Of the 15 pairs checked for nesting status, 5 were nesting (Tables 1 and 2). The five nesting pairs fledged 10 young and the number of young fledged (NYF) per female monitored was 0.67 owlets per female monitored (Table 2). The estimate of RJS for the period 1995-2013 was 0.972 (SE 0.01 and 95% CI 0.953-0.991). This point estimate of lambda indicates that the population is declining by 2.3% annually. The top random effects model included a quadratic time trend $\phi(t)$ $p(t)$ $\lambda(t)$: RE (T+TT) (Figure 3). The recent decline in survival, the point estimate of RJS and the actual number of birds detected this past season all point to a population that is in fact, declining. This apparent decline in spotted owls corresponds with an increase in total annual barred owl detections and proportion of spotted owl territories with barred owl detections (Figure 1).

The Northern Spotted Owl 2014 Demography Studies, **http://www.reo.gov/monitoring/reports/northen-spotted-owl-reports-publications.shtml** are now available. Also please incorporate the results of the January 2015 spotted owl demographic meta-analysis workshop held in Corvallis. You can obtain a copy from USGS, which has embargoed its public release.

We believe a 12-month finding for endangered status would offer the Service an opportunity to review and analyze recent scientific studies and assess current management practices. Meanwhile, we urge the Service to develop and adopt interim protections for the Northern Spotted Owl. Specifically, we ask that the Service not allow for take of Northern Spotted Owls in connection with forest management activities on federal lands and to develop an outreach strategy to state and private landowners to adopt Habitat Conservation Plans or other measures to reduce take and to conserve suitable habitat.

Thank you for considering these comments on behalf of American Bird Conservancy. I can be contacted at sholmer@abcbirds.org, or 202-888-7490 if you have any questions or if I can be of further assistance.

Sincerely,

Steve Holmer
Senior Policy Advisor
American Bird Conservancy

American Bird Conservancy Comment Letter on Draft Northern Spotted Owl Critical Habitat Rule

July 6, 2012

Public Comments Processing
Attn: FWS-RI-ES-2011-0112
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Dr. MS 2042-PDM
Arlington, VA 22203

Thank you for this opportunity to comment. This letter and attached appendices on the proposed designation of Critical Habitat for the threatened Northern Spotted Owl are submitted on behalf of American Bird Conservancy (ABC).

Additional habitat protection is needed to stabilize and eventually recover the Northern Spotted Owl's population and ABC appreciates that the U.S. Fish and Wildlife Service (the Service) has identified nearly 14 million acres of potential Critical Habitat necessary to recover the threatened species and the old-growth ecosystem upon which it depends. With some modest additions, the Final Rule can provide a path towards eventual recovery and delisting of the species.

ABC supports designating as Critical Habitat all of the 13,961,684 identified acres, and adding all areas within the late-successional reserve network that were excluded, plus any occupied or suitable Northern Spotted Owl habitat that was not identified in the draft.

ABC is deeply concerned about the draft Rule's encouragement of active management in Northern Spotted Owl Critical Habitat, the changes it suggests to management plans and projects, and logging projects in suitable owl habitat that have already been initiated. The 2010 Final Northern Spotted Owl Recovery Plan is already influencing management changes on federal forests potentially detrimental to the restoration of large blocks of habitat needed to recover the Northern Spotted Owl such as regeneration of moist forests to create early-seral habitat. The draft Critical Habitat rule could expand this harmful policy and should be revised to instead to favor reducing forest fragmentation by maintaining the system of late-successional reserves to allow the continued formation of large blocks of suitable habitat.

A number of the Recovery Actions in the Final Recovery Plan appear to be contradictory, some calling for the protection of additional owl habitat, while others allowing, even encouraging increased adverse modification. This contradiction is also found in the draft Critical Habitat rule which proposes a significant increase in Critical Habitat acreage while at the same time green-lighting logging techniques proven harmful to owls and owl habitat, eliminating the proven late-successional reserves necessary to ensure large blocks of habitat, and recommending protection only for the very highest quality owl habitat.

The Environmental Assessment concluded that a wide degree of uncertainty would be created in regard to

timber outputs, depending on how the Rule was implemented, and which of the advisory Recovery Actions were followed by the land management agencies. While the assessment did analyze different scenarios for timber production, it did not analyze a reserve-less strategy that could potentially allow for logging in currently-protected forests older than 80 years but not yet old enough to be considered high quality owl habitat. At the same time, the Service appears to endorse a policy of reserve-less management on page 94.

A more complete Environmental Assessment is needed for the public to be able to fully assess the potential consequences of this Rule. Similarly, the Economic Analysis is faulty and offers an incomplete look at the economic effects of the Rule by analyzing only the potential value of timber production, while ignoring the monetary benefits of other important values provided by maturing and old-growth forests such as stable stream flows, clean water supplies, and carbon storage.

Based on the available information in the draft Rule and Environmental Assessment, we must assume the elimination of late-successional reserves is a potential application of this Critical Habitat rule and Final Recovery Plan. Therefore the effects of eliminating the reserves should be fully analyzed by the Rule and companion Economic Analysis and Environmental Assessment. And because this analysis is notably absent, and because the Economic Analysis did not analyze the vast majority of economic activity on the forests affected, the public is currently unable to determine the full consequences of the pending rule.

We therefore urge the Service to make abundantly clear to the public and to the land managing agencies that elimination of the reserves is not an application of, or a recommendation of the final Rule, economic analysis, or environmental assessment.

The Service is promoting an unacceptably risky strategy in the Final Recovery Plan, Draft Rule and ESA consultations in regard to short-term losses of Northern Spotted Owl, a species that the evidence indicates merits endangered status. The draft Rule leaves many important questions unanswered. There is a lack of quantification of how many Northern Spotted Owls can be taken or habitat acres degraded, no thresholds are provided that land managers should not exceed, nor is there any indication how many additional owls may (or may not) be gained by the claimed long-term habitat benefits of the projects, or how and where large blocks of habitat will be recovered absent the reserves. Given these uncertainties, a more cautious approach that maintains the reserves created by the Northwest Forest Plan is warranted.

Thank you for this opportunity to comment. In the pages that follow are additional comments on the proposed Critical Habitat rule, essential background, and supporting materials that we hope you will find useful as you develop the final Rule. We look forward to working with the Service to preserve and recover the Northern Spotted Owl.

Siskiyou National Forest, Oregon.

Comment Letter to President Barack Obama

Below is a comment letter concerning the Draft Critical Habitat rule from conservation groups and scientific organizations sent to President Barack Obama asking the mature and old-growth forests be protected and the Rule be changed to ensure the system of late-successional reserves created by the Northwest Forest Plan are maintained:

American Bird Conservancy ⁘ Natural Resources Defense Council
Sierra Club ⁘ Center for Biological Diversity ⁘ Friends of the Earth Endangered Species Coalition
⁘ Oregon Wild ⁘ Conservation Northwest WildEarth Guardians ⁘ Cornell Lab of Ornithology ⁘
Geos Institute

July 2, 2012

The Honorable Barack Obama
President of the United States of America
The White House
1600 Pennsylvania Ave NW
Washington D.C. 20500

Dear President Obama,

The undersigned organizations urge your support for the conservation of the mature and old-growth

forests in the Pacific Northwest. These magnificent forests provide clean drinking water for millions of Americans, a world-class tourism destination, sustainable forestry, and habitat essential to the survival of hundreds of species of wildlife.

Conservation of the old-growth ecosystem as symbolized by the Northwest Forest Plan developed under the leadership of President Bill Clinton was a significant environmental advance that ended decades of unsustainable management practices in the region.

Studies show that the Northwest Forest Plan is working as intended to retain mature and old forests, and that the highly fragmented forest ecosystem is growing back into the large blocks of mature forest habitat needed to maintain water quality and recover threatened species such as the Northern Spotted Owl, Marbled Murrelet and Pacific salmon stocks.

Your administration recently released a draft Critical Habitat proposal for the Northern Spotted Owl that identifies sufficient habitat necessary to conserve the threatened species and the old-growth ecosystem upon which it depends. We commend the agency's use of modeling to identify the proposed acreage which we believe represents the best available science.

However, the draft plan and accompanying Presidential Memorandum raise concern because of the proposed active management in owl critical habitat that is not supported by the best available science. Three major scientific societies are advising the administration to conduct more research on the effects of active management on owl populations before treatments are applied more broadly. We agree with the scientists' call for caution.

The draft also includes provisions that could have the unintended consequence of weakening or eliminating habitat protections of the Northwest Forest Plan. We respectfully urge the administration to modify the proposed Critical Habitat rule to ensure that the protected reserves of the Northwest Forest Plan are maintained so that future generations of Americans will be assured they will have an opportunity to enjoy the splendor of these old-growth forests.

Sincerely,

George Fenwick, Ph.D.
President
American Bird Conservancy
The Plains, Virginia

Debbie Sease
National Campaign Director
Sierra Club
Washington, D.C.

Andrew Wetzler
Director, Land and Wildlife Program
Natural Resources Defense Council
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Kierán Suckling
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Eric Pica
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Washington, D.C.

Leda Huta
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Endangered Species Coalition
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Mark Salvo
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Birmingham, Alabama

Suzette Russi, Conservation chair
Prescott Audubon Society
Prescott, Arizona

Nancy Meister, President
Yuma Audubon Society
Yuma, Arizona

Allan Mueller
Conservation Chair
Arkansas Audubon Society
Conway, Arkansas

Don Schmoldt, President
Sacramento Audubon Society
Sacramento, California

Jeff Ebright
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Palomar Audubon Society
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Rodney Siegel, Executive Director
The Institute for Bird Populations
Point Reyes Station, California

Howard Clark
Fresno Audubon Society
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Kimberly Baker
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Executive Officer
The Urban Wildlands Group
Los Angeles, California

Dan Silver, Executive Director
Endangered Habitats League
Los Angeles, California

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Northcoast Environmental Center
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Pauline P. Reetz
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Bill Stewart
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Donnie Dann
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Beth Deimling, President
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Ned Gerber
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Millie Kriemelmeyer
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Southern Maryland Audubon Society
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Fred Charbonneau,
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Detroit Audubon Society
Southfield, Michigan

Kay Charter
Executive Director
Saving Birds Thru Habitat
Omena, Michigan

Louis Asher
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St. Paul, Minnesota

James R. Fossard
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Matthew Koehler
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Denise Boggs, Executive Director
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Staff Ecologist
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Chadron, Nebraska

Valerie Freer, President
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Loch Sheldrake, New York

Gigi Spates, Conservation Chair
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Payne County Audubon Society
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Dominick DellaSala, Ph.D.
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Corvallis, Oregon

Dave Willis, Chair
Soda Mountain Wilderness Council
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Biodiversity Conservation Alliance
Laramie, Wyoming

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APPENDICES

A. Petition to list the Northern Spotted Owl as Endangered prepared by the Geos Institute

B. Comments on the Draft Economic Analysis of Critical Habitat Designation for the Northern Spotted Owl by Ernie Niemi

C. Email from David Iverson, Region 4, dated August 6, 1990, Goodbye Thoughts, and "Inside Out" by Steven P. Smith, a farewell commentary by a Willamette National Forest biologist.

D. Scientific Societies Request for Environmental Impact Statement of Proposed Active Forest Management in Spotted Owl Critical Habitat

E. Open Letter to President Barack Obama from 229 Scientists in Support of Northwest Forest Plan

F. The Wildlife Society Peer Review of the 2010 Draft Revised Recovery Plan for the Northern Spotted Owl

G. Summary of Key Findings, Northwest Forest Plan: The First 15 Years (1994-2008), (Davis et al 2011), R6-RPM-TP-03-2011

H. Watershed Condition Status and Trend (Laningan et al 2012), General Technical Report PNW-GTR-856, February 2012

I. Comment letter submitted by Earthjustice on behalf of plaintiff groups

J. Forest Service and BLM Volume Offered under Northwest Forest Plan (FY 1995 – FY 2010), Region 5 & 6 PTSAR Report, and BLM Timber Sale Information System.

K. What is Wrong with the Secretarial Pilot Projects by Francis Eatherington, Cascadia Wildlands

Executive Summary

Draft Critical Habitat Rule Weakens Habitat Protection for the Northern Spotted Owl

Studies show that the Northwest Forest Plan is working as intended to retain mature and old forests, and that the highly fragmented forest ecosystem is growing back into the large blocks of mature forest habitat needed to maintain water quality and recover threatened species such as the Northern Spotted Owl, and Marbled Murrelet.

With some modest additions the draft Critical Habitat proposal for the Northern Spotted Owl identifies sufficient habitat necessary to conserve the threatened species and the old-growth ecosystem upon which it depends. ABC commends the agency's use of modeling to identify a significant increase in proposed acreage which we believe represents the best available science. We support designating all of the identified acres, plus additional areas

that warrant designation such areas in late-successional reserves, currently occupied and suitable owl habitat.

However, the draft plan and accompanying Presidential Memorandum raise concern because of the proposed active management in owl critical habitat that is not supported by the best available science. Three major scientific societies are advising the administration to conduct more research on the effects of active management on owl populations before treatments are applied more broadly. We agree with the scientists' call for caution.

The draft also includes provisions that could have the unintended consequence of weakening or eliminating habitat protections of the Northwest Forest Plan. In particular, the provisions in the draft plan encouraging unproven thinning and restoration logging, combined with the expansive definition of adverse modification that allows degradation of owl habitat, have the potential to allow for logging of areas now protected by the Northwest Forest Plan, including mature forests that the Plan had intended to become old-growth.

These provisions, which were repeated numerous times in the draft, appear to intend a substantial increase of timber harvest in the region while providing a minimum of habitat protection, in terms of both total acreage by encouraging unwarranted exclusions, and weaker management standards than the standards and guidelines of the Northwest Forest Plan's late-successional reserves. This language has the potential to allow excessive logging to the detriment of the Northern Spotted Owl population and may foreclose owl recovery by not providing adequate late-successional forest necessary to ensure high quality owl habitat in the future.

There is also concern about changes to land management plans resulting from the Critical Habitat rule and Final Recovery Plan. The Service tacitly endorsed elimination of the owl reserves east of the Cascade Crest by including language favorable to that approach in the Owl Recovery Plan. The proposed Okanogan-Wenatchee Forest Plan revision would eliminate the existing owl reserves and in the Environmental Assessment (p. 94), it says that would be consistent with Recovery Plan and therefore compatible with owl recovery.

We strongly disagree. It should be noted that this portion of the Draft Recovery Plan was strongly criticized by peer reviewers, but in the Final Plan, their concerns were not addressed.

We respectfully urge the U.S. Fish and Wildlife Service to modify the proposed Critical Habitat rule to ensure that the protected reserves of the Northwest Forest Plan are maintained so that future generations of Americans will be assured they will have an opportunity to enjoy the splendor of these old-growth forests.

Recommended Changes

We urge that the Final Critical Habitat Rule make clear that eliminating the system of late-successional reserves would be detrimental to owl recovery and is not a recommended outcome of this rulemaking, or the Environmental Assessment and Economic Analysis.

The proposal encouraging adverse modification of habitat for ecoforestry purposes is not supported by the best available science. We recommend it be removed from the final rule.

We recommend that the determinations of adverse modification be at the appropriate fine scale to ensure ESA compliance.

We recommend that the standards and guidelines of the Northwest Forest Plan late-successional and riparian reserve systems be used to preclude inappropriate or unsustainable management practices. The Northwest Forest Plan allows for restoration and provides standards and guidelines that are more protective of owls and better suited to experiments in ecological restoration.

Prescriptive requirements to retain trees above a certain age or size to restore the deficiency in old forests, and mapping where large blocks of closed canopy forests will be retained and allowed to mature is necessary to ensure these values will be not become subject to mismanagement or overcutting.

Active management in owl habitat should be considered experimental, conducted on a small scale, and monitored to determine its impact on Northern Spotted Owls. The necessity and benefits of active management in owl habitat remains in dispute.

We recommend the Service develop an environmental impact statement to devise a research strategy that addresses this question.

American Bird Conservancy

American Bird Conservancy (ABC) is a 501(c)(3) non-profit organization whose mission is to conserve native birds and their habitats throughout the Americas. It achieves this by safeguarding the rarest bird species, restoring habitats, reducing threats to bird species, and building capacity to advance bird conservation.

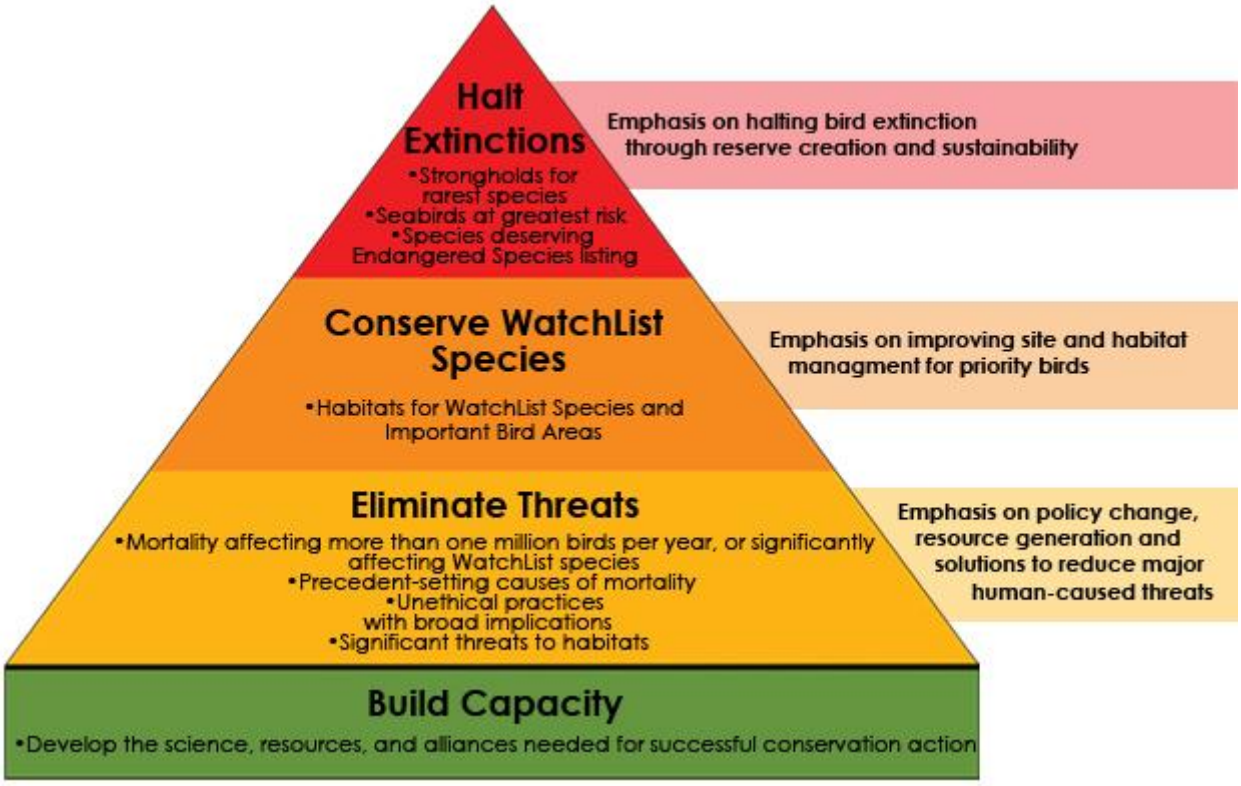
ABC is the only U.S.-based group with a major focus on bird habitat conservation throughout the entire Americas. ABC has more than 8,000 individual members and 30,000 constituents. ABC's members, supporters, and activists enjoy viewing, studying, and photographing migratory birds. Some of its members and constituents routinely observe the Northern Spotted Owl in California, Washington, and Oregon.

ABC is a leading organization working to reduce threats to birds from habitat destruction; from collisions with buildings, towers, and wind turbines; and from toxins such as hazardous pesticides and lead.

ABC uses a variety of mechanisms to achieve these objectives including scientific research and analysis; advocating for bird conservation at the local, state, regional, and federal levels; forming bird conservation partnerships; and pressing for meaningful regulatory changes to address such threats effectively through various means, including rulemaking petitions and litigation. See, e.g., ABC v Fed. Communications Commission, 516 F.3d 1027 (D.C. Cir. 2008) (in response to ABC's review petition seeking protection of migratory birds from collisions with communications towers, the court vacated a part of the order for violation of the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 et seq.).

ABC's staff includes more than 20 scientists with expertise in bird conservation. ABC's scientists have published in many reputed journals such as the Antarctic Journal of the United States, The Auk, Biodiversity Conservation, Biological Invasions, Biological Sciences, Bird Conservation International, Boletin SAO, Canadian Field Naturalist, Chelonion Research Monographs, Colonial Waterbirds, Condor, Cotinga, Ecological Applications, Ecology, Emu, Florida Field Naturalist, International Zoo Yearbook, Journal of Avian Medicine and Surgery, Journal of Field Ornithology, Journal of Raptor Research, Journal of Wildlife Diseases, Journal of Wildlife Management, Molecular Ecology, Neotropical Birding, North American Bird Bander, Oecologia, Ornitologiá Columbiana, Ornitologiá Neotropical, Oryx, Pacific Conservation Biology, Proceedings of the National Academy of Science, Proceedings of the Western Foundation of Vertebrate Zoology, Wilson Bulletin, Wilson Journal of Ornithology, and Zoo Biology.

The American Bird Conservancy Strategic Bird Conservation Framework



The problems facing birds today are myriad and complex, requiring a far-reaching, bold vision for conservation. ABC has developed a unique and successful strategy to preserve bird diversity and maintain or increase wild bird populations. This strategy is fully articulated in *The American Bird Conservancy Guide to Bird Conservation* published in 2010 by University of Chicago Press (ISBN-13:978-0-226-64727-2).

The highest bird conservation priority is halting extinctions, followed by conserving and restoring habitats. In the case of the Northern Spotted Owl draft Critical Habitat rule, the Service is proposing to place lower priority general habitat needs before the specific needs of an endangered species, even to the point of allowing large numbers of Northern Spotted Owls to be killed (taken) and significant habitat to be degraded or completely eliminated for decades. While the stated goal to improve future habitat conditions for the owl is well-intended, this activity is not supported by peer-reviewed studies showing owl populations will benefit, and it is, in fact, pushing an already extremely imperiled species closer to extinction and should be immediately halted.

Review Indicates Endangered Status Warranted for Northern Spotted Owl

A review of the extensive literature on the Northern Spotted Owl, forest ecology, and conservation biology published over the two decades since the subspecies was listed indicates Northern Spotted Owl populations have continued to decline and now meet the Endangered Species Act's definition of an *endangered* species, that is, it is *"…in danger of extinction throughout all or a significant portion of its range…"*. As a result, stronger conservation measures are needed than the Service is currently considering.

On federal lands, Northern Spotted Owl populations not only continue to decline despite the Northwest Forest Plan, the decline is accelerating and vital rates are deteriorating (Forsman *et al*. 2010). In study areas not managed under the Northwest Forest Plan owl declines are significantly greater (Anthony *et al*. 2006). A recently published large-scale demographic study (Forsman *et al*. 2010) found that the species is declining on seven of eleven active demographic study areas at about 3% annually range-wide, and concluded that the Northern Spotted Owl clearly is on a trajectory towards extinction. Funk *et al*. (2010) provides evidence for recent genetic bottlenecks in northern spotted owls that increase the vulnerability of the Northern Spotted Owl to extinction.

Currently, the subspecies is already nearly extirpated in much of its range. In British Columbia, as far as we know, all remaining birds are in captivity; few remain on the Olympic Peninsula, Southwest Washington, and the northern portion of the Oregon Coast Range. Populations are very small and isolated in most of Washington where rates of decline are highest. Areas that have little federal land support few or no owls, and Forsman *et al*. (2010) state that as a result, too few Northern Spotted Owls exist in four regions (southwestern Washington, the Coast Range of northwest Oregon, the California Cascades, and much of Washington's Olympic Peninsula) to conduct a demographic study with their methods. Further, the literature suggests these declines are not likely to lessen even with the latest owl recovery plan in place due to the un-quantified and unmitigated risks accepted in the plan.

Considering that the best available science has documented an ongoing, range-wide decline of the Northern Spotted Owl and its extirpation in many regions that historically were occupied, we are requesting that the Service upgrade the Northern Spotted Owl's Endangered Species Act listing status from *threatened* to *endangered* and take decisive action to stop the further deterioration of the Northern Spotted Owl's population and degradation of its habitat.

The Northern Spotted Owl meets the Endangered Species Act's definition of an *endangered* species because of impacts under four of five criteria established under the Endangered Species Act for determining the status of a species. A brief summary is provided here and the full analysis developed by the Geos Institute is available in the appendix.

1. **The present or threatened destruction, modification, or curtailment of the owl's habitat or range**

The Northern Spotted Owl is endangered by loss and modification of habitat, due especially to historic and ongoing logging and fire associated management. Over a century of logging has removed much of the Northern Spotted Owls' habitat. In 1990, habitat loss was estimated at 60-88% since the early part of the 19th Century. Since the owl was listed in 1990, habitat loss has continued throughout the owls' range. While much of this loss

has slowed on federal lands due to the Northwest Forest Plan, habitat loss continues at relatively high rates on nonfederal lands. Additionally, it appears that the effects of past logging still are occurring on both federal and nonfederal lands as increased fragmentation and habitat loss propagate through the ecosystem.

The Northwest Forest Plan assumed a period of decades would be necessary before habitat in many of the late-successional reserves became suitable for owls; only about 36% of the reserves currently are functioning as old-growth forests, with most of the reserves still in various stages of recovery from logging. Additionally, other human actions, including post-disturbance logging and extensive fuel treatments, urban development, livestock grazing, mining, recreation, and road construction, have contributed to past and continue to contribute to present cumulative losses and degradation of Northern Spotted Owl habitat and their prey.

2. Disease or predation

The Northern Spotted Owl is subject to disease and predation pressures that have increased substantially since its listing. Changes in habitat that result in more open areas (e.g., from forest thinning) and increased fragmentation of older forests likely cause an increase in predation by Great Horned Owls, Northern Goshawks, and Red-Tailed Hawks that either increase mortality on adult Spotted Owls or on dispersing juveniles. In addition, Leskiw and Gutiérrez (1998) present evidence of predation on Spotted Owls by Barred Owls, a risk that is growing with increasing overlap in distribution of Spotted and Barred Owls.

3. Inadequacy of existing regulations to protect the owl and its habitat

The Northern Spotted Owl is endangered and its habitat is subject to adverse modification due to the inadequacy of existing state and federal regulations. Existing regulations have failed to truly protect the Northern Spotted Owl and its habitat on private, state, or federal lands. This failure is evidenced by the continued loss and degradation of owl habitat, the failure to restore habitat damaged by past management practices, and by a demonstrated failure to reverse the decline of the Northern Spotted Owl over the last two decades.

4. Other natural or human caused factors

The Northern Spotted Owl is endangered by threats associated with the continued increase in Barred Owl populations. These detrimental impacts may be interacting with habitat loss and fragmentation to accelerate the decline of Northern Spotted Owl populations. Barred Owls compete with Northern Spotted Owls and are considered a major threat to Spotted Owls. Collapse of Northern Spotted Owl populations has followed the north to south invasion of the Barred Owl and areas that recently have been invaded by Barred Owls are beginning to show signs of population declines.

A Conservation History of the Northern Spotted Owl

The conservation history of the Northern Spotted Owl offers important lessons that should advise the options developed by policymakers. The consequences of past active management and agency misconduct have engendered mistrust with the public, and are a reason for caution whenever new proposals for active management in owl habitat are considered.

The damage caused to the National Forests by overcutting during the 1960s, 1970s, 1980s, and 1990s has yet to be addressed by the land management agencies. For example, there remains an excess of logging roads on the National Forests and an estimated $10 billion backlog of road maintenance. The impacts to publicly owned forests are reduced water quality, increased water filtration costs for downstream communities, and diminished fisheries and aquatic ecosystems.

Agency scientists first confirmed the Northern Spotted Owl's decline and connection to old-growth forest habitat in 1983. But instead of taking steps to moderate habitat loss, a series of legislative riders allowed for record logging levels in owl habitat from 1983 – 1990 and listing of the species as threatened was delayed until 1990.

Aerial view of fragmentation and road impacts in Oregon's Coast Range.

In 1990, Congress passed an old-growth logging rider (section 318 of the FY 1990 Interior Appropriations bill) that overturned two court injunctions that had halted over 140 old-growth timber sales, and orders the Forest Service and Bureau of Land Management (BLM) to offer a fixed volume of timber in Washington and Oregon during that year, about 9.6 billion board feet. It also includes sufficiency language saying citizens could not challenge these projects if they violate environmental laws except for the Endangered Species Act. Many of these projects did not have stream buffers to protect water quality or other minimal environmental safeguards.

Defeat of the next legislative amendment offered in 1991 to prevent environmental review of timber sales in owl habitat, opened the court house door to legal challenges against timber sales proposed in owl habitat. In 1991, Federal Judge William Dwyer then ruled the agency had systematically and deliberately failed to abide by wildlife protection laws.

Regeneration harvest fragments habitat which is detrimental to the Northern Spotted Owl. Mt. Hood National Forest, Oregon.

Judge Dwyer's scathing ruling and resulting injunctions shut down the region's timber sales program on federal lands. In Congress, public pressure was building for permanent protection of the ancient forests. Only the intervention of Speaker of the House Thomas Foley prevented a House vote on the Ancient Forest Protection

Act, a bill that had been championed by Rep. Jim Jontz.

The injunctions and political gridlock prompted intervention by incoming President Bill Clinton. A forest summit was held in Portland, Oregon in 1993, and agencies were directed to develop the Northwest Forest Plan. This was a first of its kind, multispecies and ecosystem conservation plan intended to protect late-successional forests and riparian areas, as well as the Northern Spotted Owl, Marbled Murrelet, Pacific Salmon stocks, and 600 other old-growth-dependent species. The Plan went into effect in 1994 and it remains today the best available conservation framework of its kind.

The Emergency Rescissions Act of 1995, better known as the "salvage logging rider" or "lawless logging", suspended most environmental laws from June 1995 until December 1996 to allow the Forest Service to address forest health emergencies. Instead of legitimate restoration, the public witnessed hundreds of old-growth and roadless area timber sales offered for sale, including dozens in the Pacific Northwest that had been previously ruled illegal by federal courts.

Strong public opposition and hundreds of protests ensued. Pressure on the Clinton Administration led then Secretary of Agriculture Dan Glickman to cancel over 150 of the roadless area projects that had been offered under the Rider, but many of the old-growth sales were logged.

Agency budgeting and the system of incentives created by Congress to boost logging played a role in the management abuses that occurred under the rider. In 1976, the Forest Service Salvage Fund was created to expedite the removal of insect-infested, dead, damaged, or down timber. Salvage sale revenues are deposited in the Salvage Fund to pay for additional projects. The Fund created an incentive for managers to promote salvage sales, because forest managers keep the sales receipts instead of returning the funds to the Treasury.

The Interagency Review on the Salvage Program of 1996 found that the fund creates a financial incentive for agency managers to choose salvage logging when other restoration activities that do not return receipts to the agency would be more appropriate. Other incentives such as the KV fund were found to create a similar problem. By allowing the Forest Service to keep all timber sale receipts instead of returning the proceeds of selling the public's timber to the Treasury, a powerful incentive has been created for the agency to overcut the forest to maintain their own budgets and staffing levels.

In the aftermath of the Salvage Logging Rider, multiple attempts were made in Congress and by the subsequent Bush Administration to expedite logging by weakening or eliminating environmental protection and public involvement for timber sales nationwide. Most of these efforts, such as Rep. Bob Smith's Forest Health Bill of 1997, were unsuccessful, but the Healthy Forests Restoration Act of 2003 did pass and was signed into law by President Bush, although only after significant changes were made to target projects towards thinning around homes and communities.

Repeated attempts were also made to reduce or eliminate key protections of the Northwest Forest Plan, including agency proposals to eliminate the survey and manage requirement, and the aquatic conservation strategy protecting streams and degraded watersheds. The Northern Spotted Owl Critical Habitat designation and Owl Recovery Plan offered by the Bush Administration were heavily criticized as scientifically flawed and biased against the Northwest Forest Plan.

A later investigation by the Department of Interior's Inspector General confirmed that political interference had prevented the Service from preparing a scientifically sound Recovery Plan. This contributed to the Recovery Plan being remanded and the Critical Habitat designation being thrown out.

In addition, BLM developed and publicly promoted the Western Oregon Plan Revisions (WOPR), a scientifically

flawed plan that would have eliminated the late-successional reserves or allowed logging in reserve to increase logging of federal mature and old-growth forests managed by BLM in Oregon by 400%. Independent scientific reviews, including those by the U.S. Environmental Protection Agency and National Marine Fisheries Service, found the plan would likely cause significant harm to the forests, water quality, and threatened species. A review of the draft plan by BLM's own science assessment team found numerous deficiencies.

The WOPR planned for the elimination of 680 known nesting sites of the threatened Northern Spotted Owl, and another 600 known nesting sites of the Marbled Murrelet, a threatened sea bird that also depends on old-growth forests. The BLM's flawed WOPR analysis concluded that owl and murrelet populations would not be harmed by increased logging, but BLM refused to consult with Service wildlife experts on its plan. A federal judge rule the WOPR illegal in March 2012.

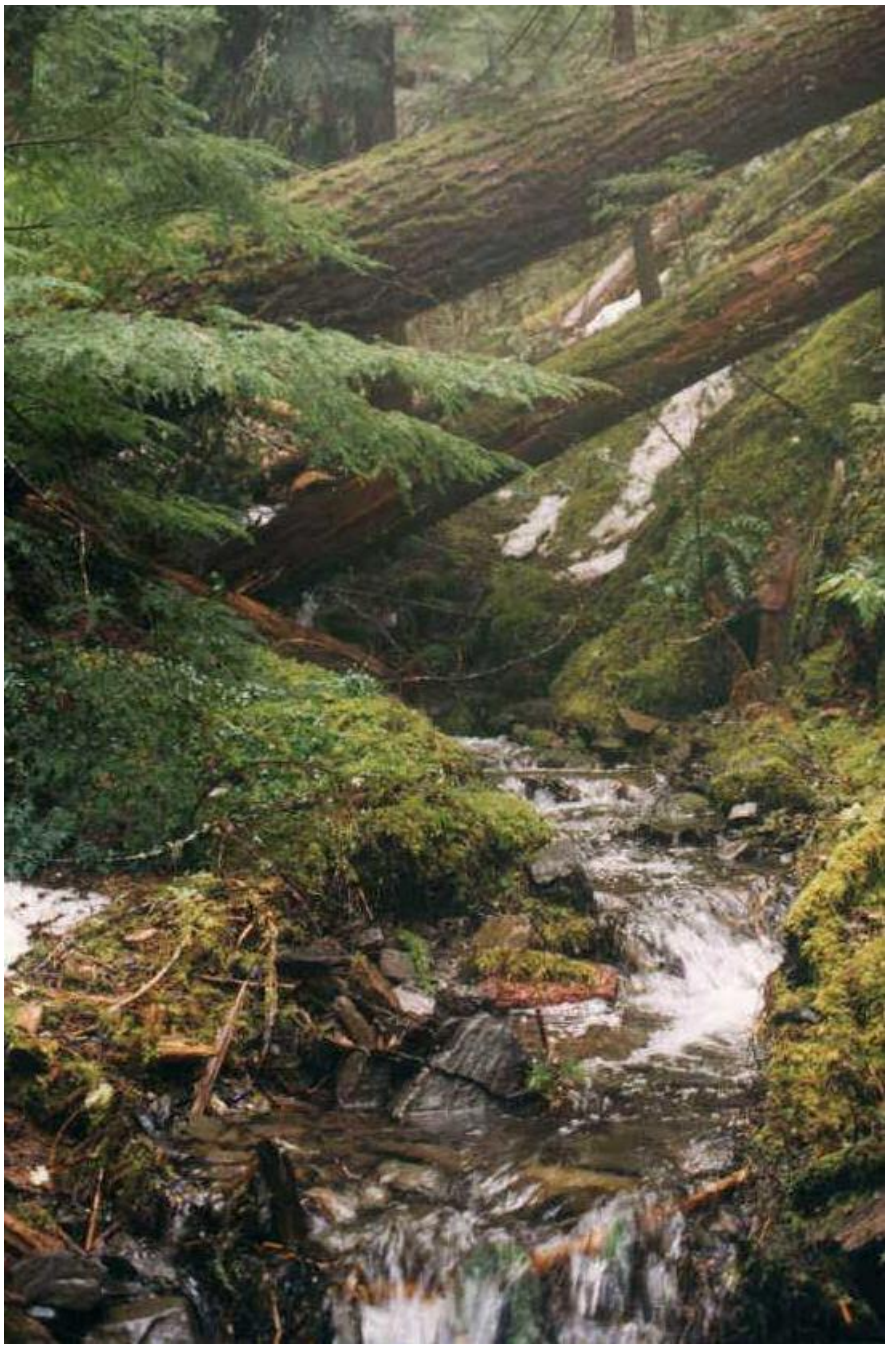
Administration Proposes another Western Oregon Plan Revision

The Administration has announced a new planning process for BLM-managed lands in Oregon. Based on the Notice of Intent (NOI) and the Administration's press statements, the plan shows a bias towards active management and proposes a significant departure from the Northwest Forest Plan by encouraging regeneration in moist mature forests. This is harmful to the Northern Spotted Owl by risking take of individual birds and habitat, increasing forest fragmentation, and setting back the needed expansion of the old-growth forest ecosystem over time to provide for owl recovery.

For example, the NOI states:

"The revisions to the existing RMPs will determine how the BLM will actively manage BLM-administered lands in western Oregon to further recovery of threatened and endangered species, provide clean water, restore fire-adapted ecosystems, produce a sustained yield of timber products, and provide for recreation opportunities."

The statement shows a high degree of bias because it falsely assumes active management can accomplish all of those things. In fact, past active management that resulted in excessive logging and road building is the reason we have threatened and endangered species in the region. Active management, while producing timber volume, also harms water quality and diminishes recreational opportunity. Active management has also been shown to increase, rather than decrease fire risk if expensive follow up treatments to remove or burn slash piles and to conduct managed burns are not carried out.



The Northwest Forest Plan is working to restore degraded watersheds and protect clean drinking water supplies. Willamette National Forest, Oregon.

It also ignores the benefits of preservation. The Wilderness Society has released a report Wilderness and Water Mix Well on the relationship between healthy watersheds and protected lands in the National Forest System. The report found that only 38% of watersheds where active management is greatest were functioning properly, 58% were at risk, and 5% were impaired. In contrast, protected lands scored much higher; 80% of Wilderness is functioning properly and only 18% at risk and 1% impaired. Roadless areas scored in second place with 64% functioning properly, 34% at risk and 2% impaired.

This new WOPR planning effort is essentially BLM pulling out of the Northwest Forest Plan. This undermines the integrity of the Plan, which provides an adequate regulatory mechanism to conserve the Northern Spotted Owl and other wide-ranging species. The importance of consistent management across the owl's range has been

cited in past court cases.

Two key assumptions behind the biological analysis of the Northwest Forest Plan were that (1) "[r]iparian and Late-Successional Reserves (LSRs) will retain reserve status and will not be available for timber production other than as provided in Alternative 9" and (2) "[a]lternative 9 applies to Forest Service and BLM lands; all future actions on these lands would be consistent with Alternative 9, as adopted in the Record-of-Decision (ROD)." See FEIS at 2-33 to 2-34. (Earthjustice comment letter).

BLM's indicated management direction as expressed by the NOI, violates both of these assumptions.

Okanogan-Wenatchee National Forest Plan Revision

The Okanogan-Wenatchee National Forest Plan Revision has also raised great concern by proposing the elimination of the existing system of late-successional reserves. A Region 6 Forest Service Assessment found that late-successional forests are generally below their historic range of variability, and the availability of snags larger than 20 inches, and snag habitat is generally lacking in some forest types because of past management practices.

While the notice of intent proposes that a designated percentage of the forest will be managed for the owl's benefit, there will no longer be areas where the species' protection is guaranteed. This proposal is not consistent with the Northwest Forest Plan, which provides reserves with guaranteed protections that cannot be ignored at the discretion of the local land managers.

The Forest Service claims that static reserves are no longer a viable strategy for conserving the owl, but to date has not produced credible evidence to support that contention. Portions of the now discredited Northern Spotted Owl Recovery Plan of 2008 reached the same unfounded conclusion, and inclusion of similar language in the 2010 Draft Recovery Plan spawned strong opposition from the scientific societies that peer-reviewed the plan.

The Final Owl Recovery Plan calls for conserving older stands that have occupied or high-value spotted owl habitat, and to "Continue to manage for large, continuous block of late-successional forest." Without the system of late-successional reserves remaining in place, the agency has not provided any mechanism to ensure that the land management agencies will provide for large, continuous blocks. In fact, given the management history, and continued proposals to further fragment the forest, the importance of maintaining the reserve system should be that much more apparent.

The reviewers found that the science included in the draft was incomplete because numerous studies to the contrary had not been considered. In the final draft, a greater effort was made to reference the omitted studies, but the conclusions remained the same. For example, evidence presented in Hanson *et al*. (2009) on fire risk was cited but not used.

Several new studies have been published that also analyze satellite images of the forest, and have found that high intensity, "catastrophic" fires have not been increasing in Northern California, or on the Eastside. As a result, we believe the plan overestimates fire risk. Similarly, the Hanson study was also not used regarding the rates of recruitment relative to rates of loss to stand-replacing fires, resulting in an overestimation of the amount of reserve likely to be lost.

In addition, the management standards proposed for portions of the former late-successional reserves could be potentially harmful to many species of wildlife, including the Northern Spotted Owl. The proposed Okanogan-Wenatchee forest plan would allow for significantly greater road densities (more than 15%) than allowed in the

current six owl reserves and possibly eight others depending on agency interpretation changes in summer road use. Allowing greater fragmentation and road densities would reduce the amount of suitable owl habitat in those areas, not to mention increasing fire risks, and should not be allowed.

Volume Driven Restoration is Not Restoration

The Obama Administration has committed itself to a significant increase in logging on the National Forests as indicated by the February 2012 report "Increasing the Pace of Restoration and Job Creation on our National Forests." A March Forest Service memo to Region 6 calls for a 20% increase in volume this year, and that it is to fall under the rubric of restoration.

We question whether legitimate restoration can be accomplished when meeting timber volume targets is the primary management directive. Hard timber targets on the National Forests were ended because evidence emerged that it was causing harm to the forests, and to the Forest Service itself.

Included in the appendix is a farewell letter from Steven Smith, a wildlife biologist from Willamette National Forest detailing mistreatment of agency biologists at the hands of timber managers. Here's one excerpt:

"Even more disheartening is attending meetings where the spotted owl gets blamed for this internal crisis as well. A strange paradox since Forest Service managers are ultimately responsible for the spotted owl crisis as well."

A return to timber target driven management would mark a huge setback that threatens to undo the agency's progress towards professional integrity and stewardship. We urge the Service to oppose Forest Service and BLM plans to increase timber production under the guise of restoration. It threatens the Northern Spotted Owl and risks returning the Forest Service and BLM to the errant ways of their past as well as delegitimizing other much needed restoration work on federal lands.

Flawed Final Northern Spotted Owl Recovery Plan

Northern Spotted Owl. Photo by the Service.

Concern is being raised by scientists that active management in suitable owl habitat is not supported by the best available science. There are currently no peer-reviewed studies showing Spotted Owls benefit from the proposed logging treatments, while others show short-term harm to owl and prey base from thinning with declines lasting up to 30 years.

Estimates of owl habitat loss from fire are not based on defensible data sources and we remain concerned that the agency is operating on the unproven and unanalyzed assumption that Northern Spotted Owls are not resilient to fire. All three subspecies of Spotted Owl exist in fire adapted forests. At the same time, the agency fails to address the problem of post-fire logging which degrades and eliminates legacies, habitat for the owl's prey base, and owl foraging areas.

Given the 2.9% annual decline in owl population, it is not acceptable to allow for short-term losses of owls in the hope that improved habitat conditions might prove beneficial to the species someday in the distant

future. But this is precisely what the draft Plan is calling for.

"While proposed Federal actions must comply with requirements of the Act, actions with some short-term adverse impacts to spotted owls and critical habitat, but whose effect is to conserve or restore natural ecological processes and enhance forest resilience in the long term, should generally be consistent with the goals of critical habitat management."

(Executive Summary p. 8)

The proposed Critical Habitat rule relies heavily on the Final Northern Spotted Owl Recovery Plan and cites it as if it were a peer reviewed document. However, the Final Owl Recovery Plan was never peer reviewed. In addition, peer reviewers identified many faults in the Draft Recovery Plan, particularly concerning active management and the need for maintaining owl reserves that were never corrected in the Final.

For example, the summary of The Wildlife Society (TWS) review states:

"Other aspects of the 2010 DRRP are flawed and many are not based on best available science. The lack of a permanent proposal for a reserve system is a major problem that prevents full review of the 2010 DRRP. We believe this will necessitate further peer review prior to finalization of a recovery plan. The Service's strategy for no reserves in dry forests in the eastern Cascades is exacerbated by the proposals for aggressive management of these dry forests because the treatments will reduce the amount of closed canopy forests in the landscape and reduce the amount and suitability of habitat for the subspecies. These proposals are not based on a complete review of the available science and they rely on unpublished reports. In addition, there has been no formal accounting of how closed canopy forests can be maintained with the widespread treatments that are being proposed. Management actions, which are not based on good science, in dry forests with no reserves will likely lead to failure to achieve recovery criteria."

The TWS review also noted that in at least a dozen instances, important studies with bearing on these issues, and that often contradicted the intended management direction were excluded from the analysis. It can be concluded that the agency had cherry-picked studies supporting one view while actively ignoring opposing studies. The Society concluded in its typically diplomatic fashion that:

"In summary, we commend the Service for their intent to use the best available science in developing the 2010 DRRP for the Spotted Owl; however, we found strong evidence that this was not the case throughout much of the Plan. The Service should make a comprehensive effort to base their recommendations and guidelines on the best available science so that they are in compliance with Secretarial Order #3305 issued by Interior Secretary Salazar on September 29, 2010 and the Presidential Memorandum of Scientific Integrity."

Unfortunately, no such effort was made to correct the scientific deficiencies identified in the TWS review. While some of the omitted studies were cited in the final recovery plan, the same unsubstantiated conclusions in support of logging in owl habitat and eliminating owl reserves on the Eastside were reached.

Another team of five scientists (Hansen, Bond, Odion, DellaSala, Baker) that reviewed the draft concluded, *"…there are considerable deficiencies in the 2010 draft recovery plan where the Fish and Wildlife Service did not make use of best science, untested assumptions regarding risks of active management vs. fire, and unpublished literature in assessing forest recruitment vs. late-successional "losses" post-fire."*

The group of scientists urged the Service to recommend retention of all existing late-successional reserves, additional new reserves to create greater connectedness across the landscape, and greater protections from logging, especially post-disturbance logging within late-successional reserves.

Old-growth forests in the Pacific Northwest and northern California store more carbon per acre than any other forests in the world.

Research on Effects of Logging on Owl Populations

The scientific societies are urging the agency to develop an Environmental Impact Statement on the effects of thinning and ecoforestry on Northern Spotted Owl populations. To date the agency has no evidence that thinning or ecoforestry benefits owl populations, but we know that many of the projects will, in fact, cause short-term harm.

The need for this type of research was identified by Jack Ward Thomas in the 1990 Interagency Science Report, which also found that logging had not been found to be compatible maintaining suitable owl habitat, and the need for a precautionary approach that requires treatments be proven before broadly implemented.

"We propose a two-part conservation strategy. The first stage, prescribes and implements the steps needed to protect habitat in amounts and distribution that will adequately ensure the owl's long-term survival. The second stage calls for research and monitoring to test the adequacy of the strategy and to seek ways to produce and sustain suitable owl habitat in managed forests. Insights gained in this second stage can be used to alter or replace habitat conservation areas prescribed in the first stage, but only if the modified strategy can be clearly demonstrated to provide adequately for the long-term viability of the owl." (ISC p 2)

"The ability to harvest timber in currently suitable owl habitat and have that habitat remain suitable has not been clearly demonstrated." (ISC p 104)

"Allow silvicultural treatments that have been tested or demonstrated through experimentation to facilitate the development of suitable habitat, such as planting trees." (ISC p 325)

More recently the Forest Service Fifteen Year Monitoring Report on the Northwest Forest Plan states:

"First, there is very little research documenting the effect of wildfire on spotted owls and spotted owl demography. In light of losses of nesting/roosting habitat to wildfires as high as 10 percent in some provinces, we need to understand how fire severity, spatial patterns of wildfire, and fuel reduction management treatments might affect owl habitat use, prey populations, and owl demography. We recommend increased research and monitoring on this subject to better inform managers on how to manage habitat in fire-prone areas."

High Quality Habitat Is Insufficient

The best available science and the continuing decline of Northern Spotted Owl populations indicate that the agency should designate as Critical Habitat and protect all suitable owl habitat, not just high-quality owl habitat. The definition of high quality owl habitat needs to be made more inclusive to ensure sufficient habitat will be conserved to allow for recovery.

In its review of the draft recovery plan The Wildlife Society raised concern about the narrow definition of high quality owl habitat being proposed. The Society notes that the proposed definition is only a subset of suitable habitat. Their analysis then states:

"…by limiting the definition of high quality habitat to a fairly narrow range of habitat conditions, management agencies will be able to justify thinning or commercial harvest in a broad range of naturally regenerated stands. Most of these naturally regenerating stands originated from fire and usually are suitable spotted owl habitat; therefore, they are not likely to be greatly "improved" by management. In western Oregon and Washington such stands are typically comprised of large trees that are 80-160 years old, and include scattered (i.e., residual) old-growth trees that survived wildfires. These stands may not meet the strict definition of high quality habitat, but they are often the best remaining habitat in the heavily harvested or burned landscapes that are managed by the Bureau of Land Management and Forest Service. They often occur in small patches, isolated among large areas of young forest within these disturbed landscapes, and they often serve as nest sites for spotted owls as well as refugia for species such as flying squirrels and tree voles, which are important prey of northern spotted owls. Because of the high timber volume in these stands there is intense pressure to log them. Commercial thinning is often recommended as a prescription to reduce risk of fire or improve forest conditions for owls in these stands, despite the fact that it is usually unclear if thinning will either improve these forests as habitat for owls or accelerate their transition from suitable to high quality habitat.

This uncertainty was one of the reasons that the Northwest Forest Plan included recommendations to restrict thinning in naturally regenerated stands over 80 years old in western Oregon and Washington. This restriction should be retained in the final Critical Habitat Rule.

Downed woody debris and legacy trees are important elements of quality habitat for the Northern Spotted Owl and its prey base.

Under the proposed Rule, it is likely that the issue of whether a particular habitat meets the high quality standard will become an area of ongoing controversy and dispute, and as the TWS analysis indicates, it has the potential to leave unprotected large acreage in the 80-160 year range. These forests are currently protected if they are in late-successional reserves, but if the reserves are eliminated, these areas become subject to logging that will set back the recovery of owl habitat by many decades.

TWS recommended changes to the draft that were not incorporated into the final:

"Therefore, we recommend that the Service use a more inclusive definition of high quality habitat that would encompass a variety of late-successional forest types (i.e. mature and old-growth forests) in which spotted owls nest, roost, and forage. We also recommend that the Service take a more conservative approach and not recommend thinning in naturally regenerated stands over approximately 80 years old, especially when those stands include remnant old-growth trees. These stands will be the spotted owl nesting habitat of the future (if they are not already), and thinning them will most likely represent habitat loss for spotted owls and their prey, both in the near and long term. Such habitat loss will be in conflict with the Service's recovery criteria and delisting objectives as stated in the recovery plan."

Timber Sales Harmful to the Northern Spotted Owl

Forest Service Region 5 and now the BLM with the Pilots are moving forward with the type of active management envisioned in the Final Recovery Plan and Draft Critical Habitat rule. The results are not encouraging. Projects are resulting in take of Northern Spotted Owls, loss of Critical Habitat, controversy, appeals

and litigation. There are better policy alternatives.

The Beaverslide Project

The Beaverslide Project on the Six Rivers National Forest proposes to remove and degrade owl habitat claiming it will provide long-term benefits after causing short-term harm. The proposed active management will degrade 850 acres of "low to moderate quality" nesting and roosting habitat, and 2,162 acres of foraging habitat.

The project was approved only several months before the owl Recovery Plan was completed and is being challenged by Conservation Congress and Environmental Protection Information Center who argue that due to new information from the Recovery Plan and other studies, the Fish and Wildlife Service should reinitiate consultation.

The plaintiffs argue that the agency has violated the ESA for failing to consider new information and for failing to use the best available science; violated the National Environmental Policy Act for failing to consider direct, indirect, and cumulative effects for its action the owl, its habitat, and its prey; and that the Forest Service violated the National Forest Management Act by failing to comply with monitoring requirements of the Six Rivers National Forest plan.

The 2011 Recovery Plan requires that "active management" projects explicitly evaluate the short-term effects to Spotted Owls and their prey while considering the long-term benefits of such projects, especially in Spotted Owl core areas. There are significant adverse short-term direct impacts to owls and to the owl's prey from commercial thinning and other management activities (Forsman et al. 2004, Manning et al. 2012). The Forest Service failed to consider these studies in its Biological Assessment because it predated the Recovery Plan.

The 2011 Revised Northern Spotted Owl Recovery Plan states:

"Research directly evaluating spotted owl responses to vegetation management including thinning, fuels reduction, and management intended to restore ecosystem functions is needed to address...whether thinning operations designed to create future spotted owl habitat result in site abandonment during or after the operation and what types of vegetation management operations will spotted owl to persist in existing territories (2011 RP at III-46 to III-47)."

This lack of information should cause the Service to take a precautionary approach, but instead the agency appears to be moving ahead as though those questions have been answered. To date, we see no indication the agency is even attempting to answer these questions and its work on the Beaverslide project shows a remarkable abdication of the agency's responsibility to conserve and recover a threatened species.

In the project area, "twelve of the thirteen Northern Spotted Owl territories are currently below threshold within the 0.7 mile radius and all territories are below threshold within the 1.3 mile radius" below which reproduction is diminished. But, the Service failed to consider the 2011 Recovery Plan's discussion about direct effects of thinning on Northern Spotted Owl's, or several other studies concerning decreased use by Northern Spotted Owl of harvested areas and reduced forage in stands that have been thinned or selectively logged for one to five decades. Without an explicit evaluation of short-term impacts to Northern Spotted Owls, it appears that implementation of the project will likely adversely affect the Northern Spotted Owls in the project area.

In an expert declaration in the case, Dominick DellaSala, chief scientist of the Geos Institute states: "The fact that all of these owl territories are below the Services' thresholds is a significant factor in analyzing potential harm to the resident owls in this area because any further degradation of the owl's structural habitat, or the owl's prey habitat is likely to cause significant short-term adverse effects on the owls, which may disrupt essential behavior

patterns, including breeding, feeding, or sheltering...there is no analysis in the Biological Assessment that describes the short-term effects on the spotted owls that reside in the remaining territories...and the Service only presents its conclusions about the long-term habitat needs of the owl. The Service ' fails to ensure that they meet the requirements of the 2011 Recovery Plan that the area, "retain sufficient nesting, roosting, and foraging habitat within the provincial core-use area and within the provincial home range to support, breeding, feeding, and sheltering."

DellaSala also notes the area is already heavily fragmented from past active management and that "any additional fragmentation from road building (even temporary roads) or logging is likely to adversely impact owl occupancy" and could facilitate invasion of the area by Barred Owls.

In addition, the Forest Service failed to take a hard look as required by the National Environmental Policy Act at the short-term effects on the owls and their prey. The agency analysis admits that "timber harvest and associated management activities may have a short-term negative effect on Northern Spotted Owl by modifying suitable owl habitat", but it never provides the necessary "hard look" to determine whether this short-term negative effect could cause additional reductions in "productivity and survivorship" in these below threshold activity centers, and it also failed to discuss the potential adverse indirect effects from the short-term reduction in the owl's prey base.

The Forest Service then makes numerous statements about the project benefits, but never provides any quantifiable or the required detailed hard look to substantiate those conclusions. For example, there is no disclosure that flying squirrels may not again use these areas for 20 years or that Northern Spotted Owls may not again forage in these areas for decades, or that this may lead to a loss of productivity and survivorship. The Forest Service' failure to take a hard look at the direct and indirect impacts of thinning and other management activities on the Northern Spotted Owls and their prey base in already degraded activity centers is unreasonable, arbitrary, capricious, and otherwise in violation of NEPA.

Because the project would reduce the amount of snags in the project area, it is important to look at the effect that would have on species that require snags such as the Western Screech Owl. There is essentially no Western Screech Owl population data for the project or planning area making Forest Service assertions that these species habitats are sufficient impossible to verify. Other species that may be negatively affected by snag removal in the project area include the Red-breasted Sapsucker, White-headed Woodpecker, Downy Woodpecker, Hairy Woodpecker, Brown Creeper, Vaux's Swift, and Flammulated Owl.

<u>Goose Logging Project</u>

Conservation groups have filed a legal challenge against the 2,100 acre Goose timber sale in the Willamette National Forest, Oregon for the potential damage to streams and endangered species habitat it may cause if carried out unchanged. The project would remove large mature trees from riparian buffers, adversely modify 454 acres of suitable Northern Spotted Owl habitat, and the agency did not analyze or disclose the impacts the logging will have on competition with Barred Owls.

<u>Rio Climax Timber Sale</u>

Four conservation groups are protesting a BLM Medford District’s plan to log trees larger than 30 inches in diameter and construct a new logging road because this will likely to adversely affect habitat of the Northern Spotted Owl.

<u>Kelsey Peak Timber Sale, Six Rivers National Forest</u>

The project proposes 1,521 acres of commercial thinning, 51 acres of late mature forest restoration and another 237 acres of low thinning considered as stand improvement (TSI). There are 13 owl activity centers in the project area. Fuel and thinning treatments within nesting-roosting habitat would amount to 327 and 85 acres respectively, for a total of 412 acres for all action alternatives. (DEIS p. 94) Within Northern Spotted Owl territories, Alternative 2A and 4 would thin 83 acres and Alternative 3 would thin 82 acres of nesting, roosting Northern Spotted Owl habitat that may cause short-term habitat degradation (DEIS 252).

Algoma EIS, Shasta-Trinity National Forest

The project area is in Northern Spotted Owl Critical Habitat and proposes to thin 5,600 acres of mixed conifer in natural stands and plantations, including 930 acres of sanitation treatments and 640 acres in Riparian Reserves, 1,100 acres of natural and activity generated fuels with mechanical and prescribed fire and an additional 200 acres with under burning. Including the future projects in the CHU from Table 14, there will be a 50 percent degradation of Northern Spotted Owl foraging habitat for 30 years, possibly longer. One stated purpose of the project is to produce LSR reserves to serve as habitat for the Northern Spotted Owl, yet the entire project area is in already suitable owl critical habitat. This logic would make sense if the FS were converting unsuitable habitat or plantation habitat to become nesting/foraging habitat. There is no need for forestry "improvements".

Mudflow EIS, Shasta-Trinity National Forest

The agency preferred Alternative 2 proposes 1626 acres of thinning of mixed conifer stands, 594 acres of plantations, 185 acres of ponderosa pine sanitation, 197 acres of regeneration, 189 acres of wet meadow logging, 121 acres of shaded fuel break, 45 acres of black oak restoration. 134 acres of regeneration is proposed for a plan amendment that would reduce the 15% retention guidelines. 88% of the project area is within designated Critical Habitat CA-2 for the Northern Spotted Owl.

Pettijohn HFRA LSR EIS, Shasta-Trinity National Forest

The project is within Clear Creek Late Successional Reserve (LSR) and Critical Northern Spotted Owl Habitat. Silvicultural methods include 802 acres (and 58 acres in Riparian Reserve (RR)) of Tractor thinning from below, 104 acres (and16 acres in RR) of Cable logging, 153 acres (and 22 acres in RR) of Helicopter logging and 1,995 acres of FMZs that include mastication and hand pile/burn concentrations. The Biological Assessment page 51 for the Pettijohn project determined that the proposed actions "may affect and likely adversely affect the northern spotted owl through the reduction of habitat quality". Existing NRF habitat would be degraded in about 1,793 acres due to FMZ and thinning prescriptions. Existing foraging habitat would be downgraded to connectivity habitat in about 288 acres due to thinning prescriptions.

Gemmill EIS, Shasta-Trinity National Forest

1,279 acres commercial logging, 10 Northern Spotted Owl Activity Center's - The project proposes to; commercial thin 1,279 acres of that 300 acres is within Riparian Reserves (RR), 751 acres of mature forests and 528 acres of old-growth forest, thin from below 268 acres to reconstruct a 30 year old ridge top fuel break, 44 acres of plantation thinning, reduce fuels on 27 acres adjacent to private property, reconstruct 23.6 miles of road, construct 0.5 miles of "temporary" road. In LSR and Northern Spotted Owl Critical Habitat.

Petersburg Pines HFRA EA, Klamath National Forest

The project area boundary encompasses 10,380 acres. The proposed action is comprised of five main treatment types comprised of 7,350 acres: Thinning 2,332 acres with variable density thinning followed by fuels reduction activities (935 acres Tractor, 1,147 acres Skyline Yarder and 250 acres Helicopter); prescribed burning on 2,753

acres; fuel reduction activity in shaded fuel breaks on 879 acres; roadside fuels reduction activities on 1,288 acres and fuels reduction activities immediately adjacent to private property on 98 acres. The Proposed Action would "modify" 164 acres of N/R habitat within 1.3 mile home ranges and 755 acres of F habitat. Within Northern Spotted Owl 1.3 mile home ranges the Proposed Action may downgrade or remove approximately 79 acres of N/R habitat and 80 acres of forage habitat. Within Core Areas 17 acres of N/R and 45 acres of F would be modified.

Alternative 3 would modify 141 acres of N/R habitat and 834 acres of forage habitat. Understory burning and Fuel breaks could be detrimental to Northern Spotted Owl habitat and have the potential to downgrade and remove habitat within the project area by removing or reducing the suitable habitat characteristics within units. Shaded fuel breaks could be detrimental to Northern Spotted Owl habitat by reducing the amount and/or types of snags, CWD, understory vegetation and prey. Combined treatments within 1.3-mile Northern Spotted Owl home ranges would modify 560 acres of N/R and 1247 acres of foraging habitat. The Proposed Action would remove/downgrade N/R habitat within home range for a reproductive pair.

Smokey HFRA, Mendocino National Forest

Approximately 80% of the project area is within the Buttermilk Late Successional Reserve (LSR). 933 of commercial "thinning" is proposed within 737 acres in LSR and 196 acres in the Matrix land allocation. Mechanical fuels treatments are proposed on 637 acres, prescribed fire on 2689 acres, pre-commercial thinning on 400 acres, understory thinning and meadow enhancement on 1763 acres.

What is Wrong with Secretarial Pilot Projects in Moist Forests

Secretary of the Interior Ken Salazar has initiated a series of Pilot Projects on lands managed by the Bureau of Land Management that seek to test new ideas in ecoforestry. Two moist forest Pilot Projects are being implemented to test the theories of Drs. Norm Johnson and Jerry Franklin using regeneration harvest to produce high-quality early-seral forests. These are the Roseburg BLM Pilot and the Coos Bay BLM Pilot.

After tracking the BLM's two moist forest pilot projects, Cascadia Wildlands, a partner of American Bird Conservancy has identified significant problems, detailed in full in the appendix.

In our view, these moist forests are already providing Spotted Owl habitat and therefore should be retained. We encourage the BLM to discontinue implementation this type of harvest, especially in the new proposed Resource Management Plans. In addition, the Coos Bay BLM Pilot proposes to log over 900 healthy, rare, Port Orford Cedars and jeopardizes hundreds more that are retained, even old-growth trees.

The BLM has argued there is a need to break through "gridlock", implying that environmentalists have stopped all logging. This is not true. The Coos Bay BLM has been selling 150% of their target volume over the past five years with virtually no controversy. Roseburg BLM has been close to their target volume. There is no gridlock in our forests, and there are better ways to promote high-quality early-seral habitat, such as not salvage logging after a natural disturbance.

The Siuslaw National Forest in Oregon has operated a successful and noncontroversial timber sale program for the past decade.

Lack of Service Oversight Allowing Owl Take on Private and State Lands

The U.S. Fish and Wildlife Service needs to do more to enforce the ESA against take of the Northern Spotted Owl on private lands. When asked about this at a public open house concerning the draft Critical Habitat rule, Oregon State Director Paul Henson stated that the agency had tried to enforce ESA Section 9 against Boise Cascade in one case twenty years ago and was ruled against by the court, and therefore would not make another Section 9 enforcement attempt for take on private lands. We like to see federal agencies doing everything it can to conserve the rapidly declining owl.

During the last administration, a Service program to review California timber sale plans and provide technical assistance to landowners was discontinued. As a result, these sales, that were formerly were often modified to mitigate the most likely harm to owl or owl habitat, are now proceeding unchanged.

The Environmental Protection Information Center has been compiling owl take information gathered by analyzing Timber Harvest Plans of Sierra Pacific Industries, Inc. whose actions, including logging, road building and other disturbance in northern California that result in significant habitat degradation and destruction that is likely to actually kill and injure Northern Spotted Owls. Sierra Pacific's actions result in unlawful take of Northern Spotted Owl by significantly impairing the essential behavior patterns of nesting, roosting, and foraging in violation of Section 9(a) of the ESA.

A review of seventeen Timber Harvest Plans with at least one Northern Spotted Owl activity center in or near the THP boundary. In total these will destroy over 1,000 acres of nesting/roosting habitat, and over 3,500 acres of foraging habitat. This constitutes illegal take under the ESA. Additional habitat will be destroyed by Sierra Pacific in areas where occupancy and use by the Northern Spotted Owl is unknown, and because the company does not share all information about Northern Spotted Owl on its property, additional take can be assumed.

Sierra Pacific currently lacks an HCP for management of their lands. Conservations groups are requesting the company halt logging or disturbance of owl habitat and immediately begin working with the Service to develop an HCP. We further urge the Service to renew the program of review timber harvest plans in California.

Regarding management of state lands in Washington State, the Society for Conservation Biology review of the draft owl Recovery Plan states: "One reviewer who is familiar with the actions of state agencies in Washington suggests that the regulations seem designed to facilitate continued declines in, rather than recovery of, Northern Spotted Owl populations."

Forest practices on state and private lands in Oregon such as this are detrimental to Northern Spotted Owls, Marbled Murrelet and water quality.

Benefits of the Northwest Forest Plan

The Northwest Forest Plan is a significant environmental achievement of the Clinton Administration that should be built upon and extended by the Obama Administration. We believe this would be the best policy from a forest and wildlife management perspective. It is also the only mechanism available to provide legal certainty and ensure that an adequate regulatory mechanism remains in place to conserve and recover wide-ranging threatened species in the region.

What follows are a series of summaries and excerpts from Northwest Forest Plan documents detailing the management philosophy, standards and guidelines, and results.

The Forest Service Ten Year Review of the Northwest Forest Plan found that, overall, the Plan's conservation strategy and reserve network appear to be working as designed. The total area of medium and large older forests on federal lands in the Plan increased by more than 1 million acres during the ten-year period, almost double the anticipated amount. The Plan's outcomes for Spotted Owls were expected to take at least a century. Spotted Owl population declines were expected for the first 40 to 50 years under the Plan, with owl populations stabilizing in the mid-21st Century and possibly increasing after that as owl habitat recovery exceeded loss.

FEMAT: Report of the Forest Ecosystem Management Assessment Team

Option 9: thinnings are allowed in any stand regardless of origin up to 80 years; salvage of areas larger than ten acres where trees have been killed by catastrophic events.

The requirements for the Matrix under Option 9 vary by area:

For most National Forests in Washington, Oregon, and California, 15 percent of trees would be retained following harvest; half of that volume would be left in small intact patches of late-successional forest and the rest dispersed throughout the harvest unit.

For National Forests in the Oregon Coast Range, and the Olympic and Mt. Baker-Snoqualmie National Forests, retention requirements would be reduced because of the extent of Riparian Reserves and Marbled Murrelet protection in those areas.

For Bureau of Land Management districts in Oregon, retention varies from 6 to 25 large green trees per acre depending on location, with 150-year rotations prescribed for some areas.

* For federal forests in northern California, long rotations are prescribed for conifer and mixed conifer/hardwood (180 years) and hardwood (100 years) forests.

Five options (1, 3, 4, 5, and 9) specifically require **protection of specified rare and locally endemic species** associated with late-successional forests within the Matrix. All options except 7 and 8 require surveys and protection of occupied marbled murrelet nesting sites. Other protective measures may be added to provide for at-risk species under each option.

Late-Successional Reserves

Under Option 9, Late-Successional Reserves are based on boundaries that represent an Integration of previous efforts (Johnson et al. 1991; USDI 1992c). They incorporate some portion of the reserves from each of those previous efforts and include new areas designated to protect Key Watersheds. Thinning or silvicultural treatments inside Reserves require review by an interagency oversight team to ensure that they are beneficial to the creation of late-successional forest conditions. Activities that would be permitted in the western and eastern portions of the range are described separately below. Salvage of dead trees would be based on guidelines adapted from the Final Draft Recovery Plan for the Northern Spotted Owl (USDI 1992c) and would be limited to areas where catastrophic loss exceeded ten acres.

West of the Cascades

There is no entry allowed in stands older than 80 years of age. Thinnings (pre-commercial and commercial) may occur in stands up to 80 years of age regardless of the origin of the stands (plantations planted after logging or stands naturally regenerated after fire or blow down). The purpose of these silvicultural treatments is to be neutral or beneficial to the creation and maintenance of late-successional forest

conditions.

East of the Cascades and the eastern portion of the Klamath Province

Given the increased risk of fire in these areas due to more xeric conditions and the rapid accumulation of fuels as the aftermath of insect outbreaks and drought, there are additional management activities allowed in late-successional reserves. Guidelines to reduce risks to large-scale disturbance are adapted from the Final Draft Recovery Plan for the Northern Spotted Owl (USDI 1992c). These guidelines can be found at the end of the chapter.

Northwest Forest Plan Record of Decision & Standards and Guidelines

Late-successional reserves: Late-successional reserves are to be managed to protect and enhance old-growth forest conditions. For each late-successional reserve (or group of small reserves), managers should prepare an assessment of existing conditions and appropriate activities. No programmed timber harvest is allowed inside the reserves. However, thinning or other silvicultural treatments inside these reserves may occur in stands up to 80 years of age if the treatments are beneficial to the creation and maintenance of late-successional forest conditions.

In the reserves east of the Cascades and in Oregon and California Klamath Provinces, additional management activities are allowed to reduce risks of large-scale disturbance. Salvage guidelines are intended to prevent negative effects on late-successional habitat. Non-silvicultural activities within late-successional reserves are allowed where such activities are neutral or beneficial to the creation and maintenance of late-successional habitat. Thinning or other silvicultural activities must be reviewed by the Regional Ecosystem Office and the Regional Interagency Executive Committee.

Alternative 9, like all of the other action alternatives, applies the same criteria for management of habitat on both Forest Service and BLM lands. This was done in order to accomplish most efficiently the dual objectives discussed above -- that is, achieving the biological results required by law, while minimizing adverse impact on timber harvests and jobs. The inefficiencies involved in applying different criteria on Forest Service and BLM land have been noted in previous analyses. For example, in the Report of the Scientific Analysis Team ("SAT Report"), the team found that BLM's plans were relatively high-risk, when compared to the plans of the Forest Service, in terms of conserving the northern spotted owl. As a result, the SAT found that in order for the Forest Service to "make up for significantly increased risks," it would have to dramatically increase the size of protected areas on Forest Service land (SAT Report, pp. 12-13).

In addition, Alternative 9 offers one advantage that the other alternatives do not — its inclusion of adaptive management areas. Adaptive management involves experimentation, identifying new information, evaluating it, accounting for it in discretionary decisions, and determining whether to adjust plan direction. The object is to improve the implementation and achieve the goals of the selected alternative. Each of the alternatives incorporates the principles of adaptive management to some extent, but Alternative 9 is the only one that specifically allocates ten adaptive management areas, which may be used to develop and test new management approaches to achieve the desired ecological, economic, and other social objectives.

These AMAs offer the opportunity for creative, voluntary participation in forest management activities by willing participants. We recognize that this will take time, effort, and a good-faith commitment to the goal of improved forest management. Many of the potentially participating communities and agencies have different capabilities for joining this effort. Our approach to implementing this initiative will recognize and reflect these differences as we seek to encourage and support the broadest possible participation. Moreover, Alternative 9 allows silvicultural activities, such as thinning young monoculture stands, in late-successional reserves when those

activities will enhance late-successional conditions.

Forest Service Ten Year Review (2003)

Overall, the Plan's conservation strategy and reserve network appear to be working as designed.

- The total area of medium and large older forests on federal lands in the Plan area gained more than 1 million acres during the ten-year period, almost double the anticipated amount.

- Spotted Owl populations declined about 7.5 percent per year across their northern range and 2 percent per year across their southern range. Declines may have resulted from habitat loss, Barred Owls, and other factors.

- The loss of habitat was less than expected, as less timber was harvested and less habitat was lost to wildfire than expected.

The Plan's outcomes for Spotted Owls were expected to take at least a century. Spotted Owl population declines were expected for the first 40 to 50 years under the Plan, with owl populations stabilizing in the mid-21st Century and possibly increasing after that as owl habitat recovery exceeded loss.

Forest Service Fifteen Year Review (2008)

The NWFP projected that over a time horizon of ten decades, LSOG forest could be restored and maintained at desired levels. In this second monitoring cycle….these analyses indicate a NWFP-wide decline in federal LSOG slightly less than what was anticipated (FEMAT 1993); however, losses in some provinces (e.g. Oregon Klamath) were higher than the projected 2.5 percent decadal rate of loss. Helping to offset these losses is the potential for future recruitment in the next few decades (fig. 1-7). Furthermore, the results support assumptions made in the NWFP that the primary role in maintaining or restoring LSOG and related habitats would fall to federal lands. Specifically, federal lands contain less than half of the total forest land, but the federal share of total LSOG increased from 65 to 67 percent over the monitoring period. Harvesting removed about 13 percent (approximately 491,000 ac) of LSOG on nonfederal lands. Loss of LSOG on federal land due to harvest was less than 0.5 percent (approximately 32,100 ac).

The study found that: "…the current analysis of habitat within and around the large reserve network validates the assumption that the repetitive design of large reserves can absorb losses without resulting in isolation of population segments. Not enough time has passed for us to accurately detect or estimate significant recruitment of nesting/roosting habitat, however increases were observed in "marginal" younger forests indicating that future recruitment of nesting/roosting habitat will occur as anticipated, within the next few decades."

The most recent estimate for Northern Spotted Owl population trends on federally administered lands is a 2.8 percent annual rate of decline, which is slightly lower than the 2.9 percent estimated by Forsman et al. (2011), which included two additional nonfederal study areas not managed under the NWFP. The rate of decline is highest in the northern portion of the range (Washington), where populations are estimated to have declined 40 to 60 percent since 1994. Populations remain stationary in the central portion of the owl's range, located in southwestern Oregon (fig. 2-4).

Marbled Murrelet Findings in 15-Year Report

Declining murrelet population trends and habitat losses underscore the need to minimize the loss of suitable habitat, especially in the relatively near term (next 40 to 50 years at least), until re-growing forests develop the

structure needed for marbled murrelet nesting. The observed population decline, about four percent per year at the NWFP-area scale, was not unexpected, as population demographic models have predicted murrelet populations to be declining south of Canada in the range of three to seven percent per year (McShane et al. 2004, USFWS 1997).

In light of the observed population declines and habitat losses, continued management of federal NWFP lands to conserve existing potential nesting habitat and to promote development of new nesting habitat is essential. It is not clear what other actions could be taken on federal lands to help reverse the population decline. Management to reduce risk of losses to fire would be important if done so that the management action has minimal impact to nesting habitat. The possible causes of observed population decline will require further study, and likely involve several interacting factors. Timber harvest of higher suitability habitat on nonfederal lands is one factor that may contribute to these declines.

Watershed Condition Status and Trend 15-Year Report

A Forest Service analysis of watershed condition released in Feb. 2012 finds that the Northwest Forest Plan is working well to recover impaired watersheds across the region. Watershed Condition Status and Trend (Laningan et al 2012) published by the Pacific Northwest Research Station analyzed data from 1994-2008, the first fifteen years of the Northwest Forest Plan and found that 69% of the watersheds in the NWFP area had a positive change in condition as a result of road decommissioning and vegetation growth. The report summary notes: "Watershed condition was most positive for congressionally reserved lands, followed by late-successional reserves, and then matrix lands."

Clean water coming from the Willamette National Forest, Oregon.

Northern Spotted Owl Critical Habitat Rule

After the Bush Administration's owl Critical Habitat rule and Recovery Plans were remanded by a federal court in 2010, new plans were initiated with a court-ordered Nov. 15, 2012 deadline for the Critical Habitat designation. The best science indicates any final critical habitat designation and management recommendations should exceed the protections of the Northwest Forest Plan, not minimize or ignore them.

It is vitally important to note that this Critical Habitat designation will guide future management changes in the region. Following publication of the final rule, the land management agencies have indicated that forest and land management plans will be amended to conform to the Critical Habitat rule across the owl's range. Based on the available information, we must assume the elimination of late-successional reserves is a potential application of this Critical Habitat rule and therefore the effects of eliminating the reserves should be

fully analyzed by both the rule and companion economic analysis and environmental assessment. And, because this analysis is notably absent, the public is currently unable to determine the full consequences of the pending rule. Redoing the analysis at this point is impossible given the court-ordered deadline.

<u>We therefore urge the agency to make abundantly clear to the public and to the land managing agencies that elimination of the reserves is not an application of, or a recommendation of this rule</u>.

The rule as drafted endorses a significant departure from the standards and guidelines of the Northwest Forest Plan by promoting active management in owl habitat, potentially weakens habitat protection for the threatened owl further by endorsing elimination of late-successional reserves, neither of which reflect the best available science.

The final Critical Habitat rule should instead provide for additional habitat protection needed to reverse the owl's decline and allow for its eventual recovery. Given past mismanagement, continuing pressure to utilize these forests to meet economic needs and to pay for local government services, and the influx of the Barred Owl, it is essential that firm protections, such as the system of late-successional reserves provided by the Northwest Forest Plan remain in place and that suitable owl habitat be preserved, not subjected to logging.

The Draft Critical Habitat Rule Undermines the Northwest Forest Plan

The draft critical habitat rule notes that the Northwest Forest Plan "…has been successful in the conservation and recruitment of late-successional forest and associated species on Federal lands (Thomas et al. 2006. P. 283) (p.52), but then proceeds to recommend its dismantling based on three main justifications, that commercial timber harvest from matrix lands was insufficient, the lack of active restoration in areas that may contain "uncharacteristically high risk of severe fire," and the a lack of early-seral habitats in moist forests. A careful review of these claims reveals that none of them hold up to scrutiny.

It should be noted the Service appears to be biased against the Northwest Forest Plan by ignoring information and studies in the scientific literature Courtney et al. (2004), Lint (2004), DellaSala and Williams (2006) that demonstrate the importance of reserves and others that show the effectiveness of the overall strategy such as the Forest Service' fifteen year reviews mentioned above. Most recently 229 scientists sent a letter to President Barack Obama urging the preservation of the reserve system created by the Northwest Forest Plan. The letter is included in the appendix. This appearance of bias is of particular concern because that was one aspect of the political interference undermining the 2008 Critical Habitat Rule and Recovery Plan due to demands by Bush administration officials to ignore the requirements of the Northwest Forest Plan.

The Service on page 53-54 of the draft rule sites and appears to be agreeing with Thomas et al concerning improvements to the Northwest Forest Plan. Missing from the list however, was any mention of maintenance of large blocks of habitat necessary for the owl survival and recovery.

Fragmented forests. Willamette National Forest, Oregon.

The bias against the late-successional reserves is heard once again on page 54 where it repeats that *"Critical Habitat for the northern spotted owl is not intended to be a "hands off" reserve in the traditional sense. Rather, it*

should be a hands-on ecosystem management landscape that should include a mix of active and passive actions to meet a variety of conservation goals that support long-term spotted owl conservation."

However, on page 131 the draft contradictorily advises *"(3) Continue to manage for large, continuous blocks of late-successional forest.*"

And on page 274 directs for the East Cascades *"In the interim, management actions are needed to protect current habitat, especially where it occurs in large blocks on areas areas of the landscape where it is more likely to be resistant or resilient to fires and other disturbance events."*

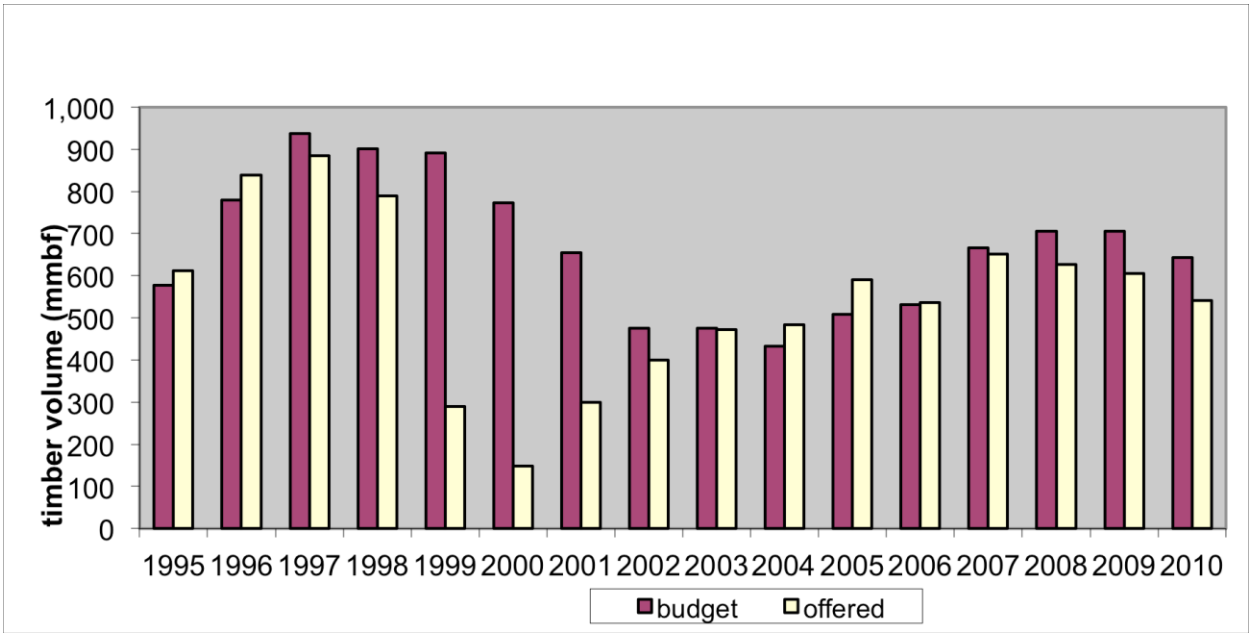
There is no indication how these requirements are to be accomplished under a reserve-less system. And nowhere is there any analysis showing that a reserve-less strategy allowing logging in owl habitat is going to be better for Northern Spotted Owl populations than the current system of protected reserves.

Timber Analysis: Agencies Meeting 96% of Funded Volume Target Since 2003

Timber sale data undermines the idea that the Northwest Forest Plan is not producing a stable flow of timber. The final Northwest Forest Plan was a political compromise that under-delivered on old-growth protection by placing 42% of the remaining acres in the matrix, and overpromised on timber volume. The plan's billion board foot estimate was never realistic because it is predicated on logging old-growth, which is not supported by the public and that in practical terms has generally been ruled in violation of wildlife protection laws. The estimate was also completed prior to the designation of the riparian reserve network which turned out larger than anticipated. The Bush Administration recognized these factors to a degree, and lowered the allowable sale quantify to 800 million board feet.

A look at timber sale output in the Northwest Forest Plan region reveals the agency is at a sustainable level and meeting the volume targets budgeted by Congress; see Forest Service and BLM Offered under the Northwest Forest Plan included in the appendix. Since 2003, the budget approved by Congress and the Administration has called for 4,668 million board feet from the Northwest Forest Plan area. The agencies have offered 4,507 board feet, or 96% of the planned budget.

In addition, exports from the region are skyrocketing. In 2010 over 2 billion board feet of logs and lumber were exported from the West Coast. In 2011 it topped 3 billion. There is no shortage of logging in the Pacific Northwest.



Source: Forest Service and BLM Volume Offered under Northwest Forest Plan (FY 1995 – FY 2010), Region 5 & 6, PTSAR Report, and BLM Timber Sale Information System.

The Probable Sale Quantity (PSQ) needs to be recalculated to offer a realistic assessment based on conservation needs. Here are some factors to consider:

Clearcutting and regeneration harvest are socially and scientifically unacceptable because removing the majority of the structure harms water quality and does not mimic natural processes. By increasing forest fragmentation it is particularly harmful to the threatened Northern Spotted Owl and Marlbed Murrelet.

The need to increase protection Northern Spotted Owls and meet Recovery Action 32 to protect all suitable nesting, roosting, foraging habitat indicates that all suitable nesting, roosting and foraging habitat should be removed from the timber base. Similarly, the need to protect Marbled Murrelet habitat, including both occupied stands, and mature forest to be recruited as high quality nesting habitat indicates that all the mature forests within the range of the marbled murrelet should be removed from the timber base.

The PSQ needs to be recalculated to mitigate for the increasing intensity of management on non-federal lands as a result of the current boom in raw log exports. Harvest rotations are getting shorter and ecological and watershed values are declining and habitat for the Northern Spotted Owl and Marbled Murrelet continue to be lost, so management of federal forest lands must be adjusted to compensate.

In addition, the Rule and accompanying Economic Analysis and Environmental Assessment fail to analyze a range of management options that could meet the objective of ecological restoration and forest resilience while also minimizing harm to the Northern Spotted Owl. For example, conservation groups have released a report Ecologically Appropriate Restoration Thinning in the Northwest Forest Plan Area identifying twenty-years of non-controversial thinning projects in Oregon and Washington that do not rely on removing owl habitat. We urge the Service consider this option as opposed to allowing regeneration of mature forests that are already providing suitable Northern Spotted Owl habitat.

Economic Analysis of the Draft Critical Habitat Designation

The *Draft Economic Analysis* has substantial flaws and fails to provide the Secretary with a sound basis for determining if the economic benefits of excluding any area from the Critical Habitat designation outweigh the economic benefits of including it. Instead, it provides a poorly informed, incomplete, and biased description of these benefits. Consequently, the *Draft Analysis* does not provide a reasonable basis for any determination by the Secretary to exclude any area from the final designation.

The *Draft Analysis* narrowly focuses on how the designation of critical habitat would affect the timber industry, disregarding its other effects on the economy. Extensive evidence confirms that timber constitutes a small percentage of the total value of goods and services provided by forests in this region. With its limited focus and pro-timber bias, the *Draft Analysis* cannot provide the Secretary with a solid foundation for weighing the full economic benefits of designating lands against the full economic benefits of excluding them.

The *Draft Analysis* misconstrues the designation's timber-related benefits. The *Draft Analysis* measures the benefits of increased timber production with one eye closed, looking only at the market value of the additional logs and ignoring the costs of producing them.

The *Draft Analysis* fails to comply with the requirements of Executive Order 12866. This executive order requires the Secretary, before adopting a final rule to designate critical habitat for the Northern Spotted Owl to describe for the public and base his decision on "the best reasonably available…economic…information concerning the need for and consequences of the intended regulation."[1] The *Draft Analysis* overlooks far too much of the best, readily available economic information to provide a full picture of the economic consequences of excluding areas from the designation. This conclusion is reinforced by comparing the *Draft Analysis* against the requirements of OMB Circular A-4, which provides guidance for complying with Executive Order 12866.

This guidance requires the Secretary to "consider any important ancillary benefits and countervailing risks" before making any decision to exclude areas from the designation, using "the same standards of information and analysis quality that apply to" the analysis of timber-related impacts.[2] In stark contrast, The *Draft Analysis* arbitrarily focuses on how the designation (or exclusion) of different areas would affect timber production, and applying dramatically different standards of information and analysis to describe the other important ancillary benefits of designation. Thus, the Secretary would violate Executive Order 12866 if he were to rely on the *Draft Analysis* as the basis for a decision to exclude any area from the designation.

These are the findings of Dr. Ernie Niemi who has drafted "Comments on the Draft Economic Analysis of Critical Habitat Designation for the Northern Spotted Owl." These comments are included in the appendix.

[1] Executive Order 12866, Section 1(7).
[2] OMB Circular A-4, p. 26.

Active management has economic and environmental costs not accounted for in the draft Rule and accompanying documents.

Active Management in Critical Habitat

The draft Critical Habitat rule includes extensive language supporting active management in all areas of owl Critical Habitat, including regeneration harvest in moist Westside forests. The draft goes so far as to suggest that forest management goals can take precedence over owl conservation, and that the conservation of this endangered species must be "compatible with broader landscape management goals":

We strongly encourage the application of ecosystem management principles and active forest management to ensure the long-term conservation of the Northern Spotted Owl and its habitat, as well as other species dependent on these shared ecosystems. (p. 13)

In conclusion, the designation and management of critical habitat for the spotted owl must be compatible with these broader landscape management goals if it is to conserve the spotted owl as required by the Act. It is therefore important to emphasize that spotted owl critical habitat should not be a "hands off" reserve in the traditional sense. Rather, it should be a "hands on" ecosystem management landscape that should include a mix of active and passive actions to meet a variety of forest conservation goals that support long-term spotted owl conservation. It would be inconsistent with the stated purposes of the Act, the Revised Recovery Plan (USFWS 2011), and the goals of the Northwest Forest Plan (NWFP) if spotted owl critical habitat was narrowly managed and, in so doing, discouraged land managers from implementing scientifically justified measures for conserving forest ecosystem functions and health.(p.15)

Likewise, in moist and some mixed forests, management of spotted owl critical habitat should be compatible with broader ecological goals, such as the retention of high-quality older forest, the continued treatment of young or homogenous forest plantations, and the conservation or restoration of complex early seral forest habitat (Spies et al. 2007b, pp. 57–63; Betts et al. 2010, pp. 2117, 2126–2127; Swanson at al. 2010, entire). In general, actions that promote ecological restoration and those that apply ecological forestry principles as described in the Revised Recovery Plan (USFWS 2011, pp. III-11 to III-41) are likely to be consistent with the conservation of the Northern Spotted Owl and the management of its critical habitat.

Recommendation for moist Westside forests:

"*Regeneration harvest, if carried out, should consider ecological forestry principles." (p.131)*

For example, some restoration treatments may have an immediate neutral or beneficial effect on existing Northern Spotted Owl habitat (e.g., roads management, some prescribed fire prescriptions). Other treatments, however, may involve reductions in stand densities, canopy closure, or ladder fuels (understory vegetation that has the potential to carry up into a crown fire)—and thus affect the physical or biological features needed by the species. At the stand scale, this can result in a level of conflict between conserving existing Northern Spotted Owl habitat and restoring dry-forest ecosystems. We typically cannot expect to meet both objectives on the same acre if that acre currently functions as suitable Northern Spotted Owl habitat. We can reconcile this conflict, however, by managing at the landscape scale.

This approach has raised the concern of Society for Conservation Biology, The Wildlife Society, and American Ornithologists' Union who wrote:

"These proposed policy changes have the potential to adversely impact federal lands in the Pacific Northwest to

Landslides and erosion are potential impacts of active management on steep or unstable slopes. Oregon's Coast Range.

the detriment of spotted owls and other federally threatened and endangered species….we are especially concerned about the potential habitat impacts of adopting untested "active management" forestry technique."

The groups are asking the Department of the Interior to prepare and Environmental Impact Statement to prepare a scientific approach to test active management forestry's impact on spotted owl prior to being used at a commercial or landscape scale. We agree with this assessment and urge an end to owl take until the agency can offer an analysis showing what the acceptable limits to owl take and habitat loss are while still providing a high degree of certainty of owl recovery.

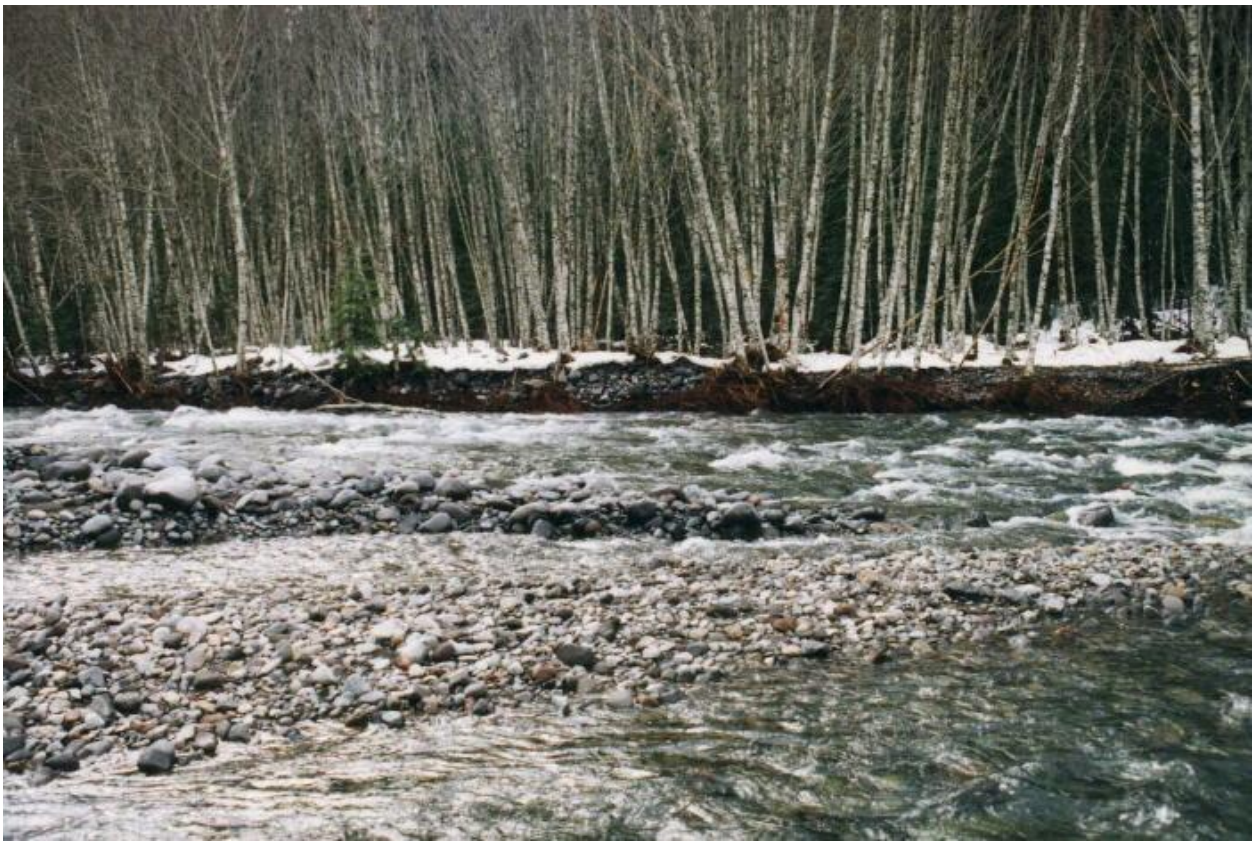
Adverse Modification of Habitat

The draft Critical Habitat rule further states that if projects have considered ecological forestry principles, that in general these activities would not be considered adverse modification of owl habitat by the Service. As a result of this provision, the normal protections provided by critical habitat to prevent adverse modification may not apply at the discretion of the Service.

In general, silviculture prescriptions that apply ecological forestry principles to address the conservation of broader ecological processes are compatible with maintaining the proposed critical habitat's essential features in the long term (USFWS 2011, p. III-14). (p. 14)

*We would anticipate that in most cases, restoration and thinning actions (see **Special Management Actions and Considerations**) at or below this size (500 acres) will likely not adversely affect a given critical habitat subunit; however, such a determination would have to be made on a case-by-case basis, after careful consideration of the specific conditions of the proposed action.*

The Service should evaluate adverse modification at the appropriate scale of individual owl home ranges as geographically defined for each proposed project action, particularly active management; determine jeopardy at the scale of the subunit (approximately 100,000 acres), and cumulative effects need to be evaluated to avoid a level of excessive loss that is currently not quantified.



The Northwest Forest Plan protects water quality, threatened salmon runs, and habitat for the Marbled Murrelet. Willamette National Forest, Oregon.

The 1993 Report of the Scientific Analysis Team (SAT) ironically, already thoroughly reviewed the risks associated with logging in suitable owl habitat, and concluded "intentions to selectively cut forest stands to create conditions favorable for spotted owls, represents increased risks to the viability of the spotted owl (SAT p. 145)."

The issue of short-term losses versus long-term habitat gains was also analyzed and the scientists concluded "*that the short-term effect of these actions on habitat loss may be much more significant than the long-term predicted habitat gains*."

The Scientific Analysis Team report said:

"Lacking experience with selective cutting designed to create spotted owl habitat, such practices must be considered as untested hypotheses requiring testing to determine their likelihood of success. ... Given the uncertainty of achieving such expectations, it is likely that some silvicultural treatments, which have been characterized as largely experimental, may well have an opposite effect from that expected. Consequently, such treatments may hinder the development of suitable habitat or they may only partially succeed, resulting in development of marginal habitat that may not fully provide for the needs of spotted owls. Results which fall short of the expected conditions could occur because of delay or failure to regenerate stands that have been cut, increased levels of wind throw of remaining trees, mechanical damage during logging to trees remaining in the logging unit, the spread of root rot and other diseases. Increased risk of wildfires associated with logging operations that increase fuels and usually employ broadcast burning to reduce the fuels also increase the risk of not attaining expected results. Such events may spread to areas adjacent to stands that are logged, thereby affecting even more acreage than those acres directly treated." [SAT p 147-148]

"The combined risks associated with treatment of spotted owl habitat or stands expected to develop into

suitable habitat for spotted owls, as discussed above, will likely result in situations where either habitat development is inhibited or only marginal habitat for spotted owls is developed. The exact frequency of these partial successes or failures is unknown. Given the likely cumulative relationship among the risks for each factor, it appears to us that the overall risk of not meeting habitat objectives is high. … Members of the Interagency Scientific Committee indicated that, because a plan (the Interagency Scientific Committee's Strategy) was put forth which proposes to reduce the population of a threatened species by as much as 50 percent, providing the survivors with only marginal habitat would be extremely risky and certainly in their minds not 'scientifically credible' (USDA 1991:45)." [SAT p 151].

"The transition period (1-50 years) between implementation of the Interagency Scientific Committee's Strategy and achievement of an equilibrium of habitat and spotted owls is a critical consideration. … Given the existing risks that face owl populations and the sensitivity of the transition period, the short-term effect of these actions on habitat loss may be much more significant than the long-term predicted habitat gains. We further conclude that, although research and monitoring studies are presently being initiated, no significant new data exist which suggest that the degree of certainty that is expressed in the Bureau of Land Management Draft Resource Management Plans for developing owl habitat silvicultural treatments is justified. Therefore, it is our opinion that the course prescribed in the Interagency Scientific Committee's Strategy, pertaining to timber harvest in Habitat Conservation Areas, remains the most likely course to result in superior habitat conditions within reserves (i.e., Old-Growth Emphasis Areas). The approach prescribed by the Interagency Scientific Committee's Strategy preserves options for adjustments in the course of management under a philosophy of adaptive management." [SAT p 151-152].

Olympic National Park, Washington State

According to forest policy expert Doug Heiken of Oregon Wild, "The SAT indicates that these comments apply equally to density management and patch cutting, both of which are being promoted as tools to enhance owl habitat. The SAT also cited concerns about the effect of logging on snags and down woody debris which are essential features of owl habitat. The authors of the Northwest Forest Plan took all this into account and determined that 80 years is a useful place to draw the line between younger forests that are likely to benefit from careful thinning and older forests that are likely to experience net negative consequences. There is no new

science to change that conclusion." ABC urges the Service to not allow for adverse modification of Northern Spotted Owl Habitat by active management or ecoforestry in stands greater than 80 years.

Lack of Scientific Evidence for Active Management

While early-seral habitats are desirable for some species, logging is not the best means to establish early-seral habitat within the range of the Northern Spotted Owl. We recommend that agency utilize natural disturbances and refrain from post-fire logging which has the potential to create abundant high-quality early-successional habitats.

In the draft Rule land managers are encouraged to develop early seral habitat to benefit a variety species but no evidence is presented showing the Northern Spotted Owl benefits from the creation of early seral habitat, nor is there analysis showing what potential harm may come to the threatened species if various levels of direct take and habitat loss or degradation were to occur.

Open meadows. Mt. Rainier National Park, Washington State.

The draft Environmental Assessment identified two endangered species, Fender's blue butterfly and Oregon silverspot butterfly whose open, early seral habitat such as grasslands, meadows, oak woodlands, or aspen woodlands may conflict with Northern Spotted Owl management intended to maintain closed canopy forests (p. 52). But the assessment notes that listed plant and butterfly species and their closely associated open habitats are explicitly not included in the proposed critical habitat revision (p.50). The Service concludes on page 62: *"that designation of critical habitat for the Northern Spotted Owl in this alternative would have a neutral effect on those species associated with open, early seral habitats."*

We see no justification to convert nesting, roosting, and foraging habitat of the Northern Spotted Owl to early-seral. Under the Northwest Forest Plan restoration of owl habitat, when it occurs, should hasten creation of owl habitat, not set it back by many decades. This provision is unrelated to owl recovery or sound forest management and should be removed from the final designation.

Other listed species may also be harmed by the proposed active management such as the Marbled Murrelet. The draft Environmental Assessment found that "Active forest management that is in the vicinity of murrelet nesting stands may be detrimental to the species survival and recovery." (p. 61) This results from increased fragmentation and opening the forests to crows, ravens, and jays, increasing predation pressure on nesting murrelets. Despite this, there is no prohibition in the draft Rule on the proposed active management to ensure murrelet nesting stands will not be disturbed.

The draft Rule on page 8 on the other hand states: *"Consistent with the best available science and the adaptive management principles outlined in the Revised Recovery Plan for the Northern Spotted Owl, we strongly encourage the application of ecosystem management principles and active forest management to ensure the long-term conservation of the northern spotted owl and its habitat, as well as other species dependent on these shared ecosystems."*

In reality, active management, if conducted near nesting murrelets would be harmful. There is also indications the prey base of the Northern Spotted Owl could also be harmed by active management including thinning, but these factors appear to be glossed over by the draft Rule. And unlike the Northwest Forest Plan, there is no detailed analysis how other listed species will fair under the active management being proposed by the draft Rule.

Studies by Hanson (2009 and 2010) and Miller (2012) have found that dry forests on the Eastside and in Northern California have not seen an increase in severe, high-intensity fires. Most of the acreage burned has been low to moderate severity with generally beneficial ecological effects. The risk of fire to owls also appears to be exaggerated in the final Owl Recovery Plan and draft Critical Habitat rule.

The agency recommends conserving old-growth trees and forests on wherever they are found, including in the matrix lands. This is the most positive development stemming from the final Recovery Plan and draft Critical Habitat rule.

The Rule recommends that for the moist forests in the West Cascades/Coast Ranges of Oregon and Washington "*…to conserve stands that support northern spotted owl occupancy or contain high-value northern spotted owl habitat (USFWS 2011, p. III-17). Silvicultural treatments are generally not needed to accomplish this goal*."

However despite this clear statement that active management is not needed in these moist forests, the Draft recommends "dynamic management" in threatened forest types that conserves all stages of forest development where tradeoffs between short-term and long-term risks are better balanced, and recognize the Northwest Forest Plan is now an integrated conservation strategy that contributes to all components of sustainability.

In plain language that says the Service is approving a more discretionary management approach that reduces protections to increase the amount of logging in owl habitat.

Presidential Memorandum

President Barack Obama issued a memorandum to Secretary of the Interior Ken Salazar stating that logging should be allowed and considered an acceptable practice in Northern Spotted Owl Critical Habitat. The memo is of great concern because it is not based on the best available science and makes exaggerated claims about the evidence supporting the Service's position. It appears to prejudge the outcome and effects of a federal rulemaking and seek a predetermined outcome before the public had even been given a chance to review or comment on the draft Rule. The text of a portion of the memo signed by President Barack Obama follows:

Importantly, the proposed rule recommends, on the basis of extensive scientific analysis that areas identified as Critical Habitat should be subject to active management, including logging, in order to produce the variety of stands of trees required for healthy forests. 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.

In order to avoid unnecessary costs and burdens and to advance the principles of Executive Order 13563, consistent with the ESA, I hereby direct you to take the following actions:

(1) publish, within 90 days of the date of this memorandum, a full analysis of the economic impacts of the proposed rule, including job impacts, and make that analysis available for public comment;

(2) consider excluding private lands and State lands from the final revised critical habitat, consistent with applicable law and science;

(3) 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;

(4) carefully consider all public comments on the relevant science and economics, including those comments that suggest potential methods for minimizing regulatory burdens;

(5) give careful consideration to providing the maximum exclusion from the final revised critical habitat, consistent with applicable law and science; and

(6) to the extent permitted by law, adopt the least burdensome means, including avoidance of unnecessary burdens on States, tribes, localities, and the private sector, of promoting compliance with the ESA, considering the range of innovative ecosystem management tools available to the Department and landowners.

The Society for Conservation Biology, The Wildlife Society, and American Ornithologists' Union raised the same concern about the President's memo stating:

"We are concerned that this memorandum overstates the quality and quantity of scientific research on the potential benefits of active forest management, especially in the Pacific Northwest on a federally threatened species. In particular, we are unaware of any substantial or significant scientific literature that demonstrates that active forest management enhances the recovery of spotted owls."

Additional Areas Where Critical Habitat Should Be Designated

ABC believes all occupied and suitable owl habitat should be designated Critical Habitat. Tribal lands important for the recovery of Northern Spotted Owl, such as the 5,400 acre Coquille forest have been excluded. Similarly, portions of the Coos Bay Wagon Road lands and the Cascade-Siskiyou National Monument area in Oregon have also been excluded with little explanation.

We urge the agency to allocate additional critical habitat in prime Northern Spotted Owl habitat adjacent and near to the Monument to include as much dispersal/connectivity habitat as possible. The Monument currently seems to be a functional island of designated Critical Habitat in its surrounding landscape.

Dave Willis, a local conservationist familiar with the area recommends some specific additions we believe

beneficial to the Northern Spotted Owl and would urge their inclusion.

"Some of the best canopy in the area is located outside the Monument in and NNW of the Monument's "missing northwest quadrant" in the western half of T39S, R3E. This forest canopy and Northern Spotted Owl habitat is as good or better quality than anything in the Monument CHU itself north of Highway 66. Yet the document designates only ~200 acres of CHU in the far extreme northwest Section 6 corner of the western half of T39S,R3E. The gap in CHU between northern CSNM CHU in ECS2 and the most southeastern CHU in Klamath East Subunit 5 is quite strange – skipping over and excluding some of the best forest canopy in the region. Likewise, in addition to the gap in CHU designation NNW of the Monument highlighted above, CHU designation on the Monument's east and west sides are also deficient.

Noting the inadequacy of the Monument's current boundaries, a group of scientists with much research and on-the-ground experience in the Cascade-Siskiyou National Monument area has recommended expansion of the Monument in exactly this outside-the-current-Monument area between the Green Springs Summit and Grizzly Peak. (See: Frost, Odion, Trail, Williams et al, *Interim Report – Cascade-Siskiyou National Monument Boundary Study: Identification of Priority Areas for Monument Expansion*, April 2011.) Rather than aid this needed biological bolstering outside current Monument boundaries, the current lack of CHU designation adjacent and near to the Monument undercuts the considered and informed recommendations of this site-specific scientific report – and degrades the habitat connectivity function of the existing Monument itself by further isolating it."

Coos Bay Wagon Road Lands

Similarly, here is a concern being raised by Francis Eatherington, a local expert regarding the lack of designation on federal lands with likely merit. We believe these lands should be reviewed and the occupied and suitable Northern Spotted Owl designated as Critical Habitat.

"Many of the sections of Coos Bay Wagon Road (CBWR) lands with mature and old growth forests were left out of proposed Critical Habitat, even though these lands had been designated in 1992. Out of 74,500 acres of Coos Bay Wagon Road in Coos Bay and Roseburg BLM Districts, only about 14,000 acres were proposed for critical habitat. The remaining 60,000 contain areas of significant old growth forests and mature forests over 120 years old. For instance, section 1, T28, R11, or section 1, T29, R10, or sections 5 and 19, T28, R7.

14,000 acres of critical habitat that was designated was in current LSR in Coos County. However, no CBWR lands in Douglas County were proposed for critical habitat, not even in the LSR or the ACEC lands managed by Roseburg BLM, where significant old growth forest exists.
In Coos County, and on Coos Bay BLM District lands, only some of the existing LSR was proposed a critical habitat. None of the existing matrix was proposed, even though these lands were critical habitat in 1992, and still contains significant stands of mature and old growth forests."

Exclusions

The draft has identified 13,962,449 acres of potential Critical Habitat, a significant increase in acreage above the 5.3 million acres currently designated. The Administration is recommending that some identified lands be exempted from Critical Habitat designation because they argue the lands are already being conserved or that conservation purposes can better be achieved through exclusion. Here's a brief summary of the proposed and potential exclusions:

Private lands with conservation agreements such as Habitat Conservation Plans (HCPs), and Safe Harbor agreements are proposed for exclusion 711,803 acres

State land with conservation agreements are proposed for exclusion	225,013 acres
State park lands are proposed for exclusion	164,776 acres
Congressionally reserved natural areas are proposed for exclusion	2,631,736 acres
Private lands without formal conservation agreements	555,901 acres
State lands without formal conservation agreements	281,247 acres

The draft includes language favoring the general exclusion of state and private lands, to exclude the proposed lands, and to strongly consider the exclusion of other state and private lands unless it is absolutely essential for owl conservation. Private and state lands without formal conservation agreements are also under consideration for exclusion. Private lands in Oregon were not included the modeling analysis.

If all exclusions were granted, a total of 9,391,973 acres would remain. ABC supports designating all 13,962,449 acres plus additional acres where occupied or suitable Northern Spotted Owl habitat is found.

Private and state land HCPs and Safe Harbor agreements are a means of encouraging landowner support and participation in species conservation. Providing an exemption in this case creates an incentive for landowners that have been cooperative and developed HCP or Safe Harbor Agreement. However, in regard to the Northern Spotted Owl stronger steps to ensure recovery are needed. This exemption should not be granted and all conservation agreements updated to include recovery goals in areas with proposed critical habitat.

Funding shortfalls have led to the potential closing of many California state parks. Some states have made severe cuts in environmental programs and public lands and their management have become increasingly politically polarized. Proposals to privatize public lands are being offered in many state legislatures. As a result, there is no assurance these state park lands will be managed for conservation purposes in the future.

Similarly, political polarization and ongoing efforts to boost logging in owl habitat, dispose of federal lands and to de-designate Wilderness and other conservation designations raise concern that these lands cannot assure the conservation benefits they currently provide. As a result of these threats, the owl should have the added assurance of all occupied and suitable habitat receiving the protection of critical habitat designation.

Private and state lands without conservation agreements should not be excluded. The Owl Recovery Plan states that an additional contribution to owl habitat protection is needed on private and state lands.

Oregon State Forests in particular are failing to comply with the owl recovery plan. On the Elliot State Forest, the Oregon Department of Forestry (ODF) has abandoned its HCP and its plans fail to comply with the recovery plan with sale proposals in violation of recovery actions 10, 19 and 32. The Elliott's Forest Management Plan says it will only "consider" the recovery plan, but to date, there is no indication it is being followed. ODF now claims forests as young as 51 years old can be suitable nesting habitat, while the agency is clearcutting forests 130-150 years old. In addition, any notion of adaptive management improvements over time is currently impossible. ODF admits that there is no budget for the monitoring necessary for adaptive management, and there is still not even a draft monitoring plan for the Elliott.

Legal Issues Related to Exemptions and Adverse Modification

A review of the draft Rule by Earthjustice found a number of concerns that also influenced ABC's decision to

oppose the proposed exemptions. Here is a brief summary of their analysis which is included in full in the appendices.

The proposed critical habitat rule proposes exemptions and active management in designated critical habitat not supported by the law or the best available science. It is recommended that the Service designate all lands, both federal and non-federal, identified as suitable habitat exclusions, and to adopt a much more cautious approach toward logging in designated critical habitat by eliminating or modifying language related to active management in the draft rule. The scale at which adverse modification of critical habitat will be assessed must be clarified to be at the appropriate subunit scale to comply with the intent of the ESA and provide for owl recovery.

Analysis: Draft Rule Lowers the Bar for Habitat Protection

The provisions in the draft plan encouraging unproven thinning and restoration logging, combined with the expansive definition of adverse modification that allows degradation of owl habitat, have the potential to allow for logging of areas that should be conserved to provide the additional habitat needed to stabilize Northern Spotted Owl populations and provide for recovery. This Rule, combined with the elimination of late-successional reserves could allow logging in areas now protected by the Northwest Forest Plan, including mature forests that the Plan had intended to become old-growth.

These provisions, which were repeated numerous times in the draft, appear to allow an increase of timber harvest in the region while minimizing habitat protection, in terms of both total acreage by encouraging unwarranted exclusions, and lax management standards weaker than the standards and guidelines of the Northwest Forest Plan.

This language encouraging active management in Northern Spotted Owl Critical Habitat, particularly on combination with the elimination of reserves has the potential to allow excessive logging to the detriment of the Northern Spotted Owl population and may foreclose recovery by not providing adequate late-successional forest necessary to ensure high quality habitat in the future. Changes to land management plans such as the proposed Okanogan-Wenatchee Forest Plan are being influenced by the Final Recovery Plan, and Draft Critical Habitat rule's and Environmental Assessment's encouragement of a reserve-less strategy.

We urge the Service to reconsider. This approach of allowing the land management agencies broad discretion for active management across the landscape was tested in the decades prior to the Northwest Forest Plan and proved disastrous to the Northern Spotted Owl and Marbled Murrelet and left only fragments of the old-growth ecosystem remaining.

Recommended Changes

We urge that the Final Critical Habitat Rule make clear that eliminating the system of late-successional reserves would be detrimental to owl recovery and is not a recommended outcome of this rulemaking, or the Environmental Assessment and Economic Analysis.

The proposal encouraging adverse modification of habitat for ecoforestry purposes is not supported by the best available science. We recommend it be removed from the final rule.

We recommend that the determinations of adverse modification be at the appropriate fine scale to ensure ESA compliance.

We recommend that the standards and guidelines of the Northwest Forest Plan late-successional and riparian

reserve systems be used to preclude inappropriate or unsustainable management practices. The Northwest Forest Plan allows for restoration and provides standards and guidelines that are more protective of owls and better suited to experiments in ecological restoration.

Prescriptive requirements to retain trees above a certain age or size to restore the deficiency in old forests, and mapping where large blocks of closed canopy forests will be retained and allowed to mature is necessary to ensure these values will be not become subject to mismanagement or overcutting.

Active management in owl habitat should be considered experimental, conducted on a small scale, and monitored to determine its impact on Northern Spotted Owls. The necessity and benefits of active management in owl habitat remains in dispute.

We recommend the Service develop an environmental impact statement to devise a research strategy that addresses this question.

Northern Spotted Owl Critical Habitat Final Rule Summary and Analysis

Protecting the old growth forests of the Pacific Northwest and northern California is a major challenge due to political and economic pressures to allow for a maximum timber harvest within wildlife protection legal constraints. In the case of the Northern Spotted Owl political interference preventing sustainable forest management was a primary factor in its' population decline and listing as a threatened species and it continues to be a major hurdle to recovery that has to be overcome by federal and state wildlife professionals and conservationists.

The Final Critical Habitat rule reflects the ongoing challenge to balance preservation with commerce due to the inclusion of additional habitat protection measures coupled with direction for increased active management. The ultimate impact of the final rule will be determined by the project-by-project Sec. 7 consultations required by the Endangered Species Act, and potential changes to federal forest management plans across the region that attempt to incorporate direction from the final Northern Spotted Owl Critical Habitat Rule and Final Recovery Plan.

Summary

The Northern Spotted Owl critical habitat final rule of 2012 designates 9,577,969 acres, an increase of 4,265,600 acres from the current designation. A total of 4.3 million acres determined to be important for the owl's recovery were exempted from the designation.

The rule also directs the land management agencies to conserve older forest, high-value habitat, and areas occupied by Northern Spotted Owls. An estimated 1.1 acres of occupied and high-quality owl habitat previously designated for timber harvest in the Matrix should now to be protected.

Another 1.1 million acres of designated critical habitat in the Matrix is not considered high quality or occupied owl habitat. For these areas of the Matrix, the rule promotes active forest management including application of "ecological forestry," which may result in an increase or decrease in timber harvest of approximately 25 million board feet depending on the extent in which the proposed active management prescriptions or habitat protection measures are applied by the land management agencies.

The rule acknowledges the supremacy and importance of the Northwest Forest Plan, but then endorses pending changes to the region's forest management plans proposed by the land management agencies to adopt the

active management principles espoused in the Rule and Recovery Plan. The Incremental Effects Memorandum concluded that the management standards of the Recovery Plan and proposed Rule are weaker that the standards and guidelines of the existing Northwest Forest plan.

This analysis, combined with the stated intentions of the land management agencies to increase harvest in the region by 20% or more, and the marked and continual decline of the Marbled Murrelet population, raises concern the proposed management changes to the Northwest Forest Plan are likely to have negative consequences for two listed bird species of highest conservation concern.

Presidential Memorandum

The draft 2012 Northern Spotted Owl critical habitat rule was accompanied by a Presidential Memorandum which was in keeping with the Obama Administration's recently announced deregulatory initiative to direct the agency to tailor regulations to "reduce burdens and maintain flexibility" based on the Jan. 18, 2011 Executive Order 13563.

The memo directed the agency to accomplish this in part by adhering to a new policy of "active management" including logging and to reject the "hands off" management approach of past critical habitat designations. The memorandum claimed there is "extensive scientific analysis" in support of active forest management in owl critical habitat. In fact, there are no peer-reviewed studies demonstrating that Northern Spotted owl populations benefit from the proposed logging. Dozens of other peer-reviewed studies show that if carried out in owl habitat, the proposed active management would likely be harmful to owl populations and their prey, and to the threatened Marbled Murrelet.

The memo further directed the agency to develop clear direction for logging in critical habitat. The final rule provides more detailed logging prescriptions than in the draft. The final rule also provides important clarifications narrowing the proposed the active management to younger stands in the Matrix not being utilized by the owl for nesting or roosting.

However, direction for Eastside forests raise concern due to the lack of adequate landscape scale protection, there is a lack of clear direction in the Klamath region, and standards for conserving high-quality owl habitat on BLM lands are lax. This will be discussed in more detail in the active management section.
The Presidential Memo appears to have influenced the modeling exercise which demonstrates a bias against inclusion of private and state lands. Appendix C of the draft rule provides a detailed sequential summary of the process that sought to limit acreage protected, and to restrict that protection to public lands. Private lands in Oregon were never included in any of the models.

Ultimately, the model chosen did not include the alternative with most acres (over 18 million), and it assumes that Barred Owl control will be taking place, thereby reducing the amount of needed habitat. There is considerable doubt that the shot-gunning of thousands of Barred Owls will happen on federal lands due to opposition from animal rights groups. Therefore, it possible the agency has underestimated the amount of acres needed for recovery.

The other main effect of the memo is the broad exclusions for private, state and congressionally designated lands. While some of these exclusions are consistent with other designations and agency policy in regard to private landowners with HCPs and other conservation agreements, other aspects of the decision exclude areas without adequate conservation agreements that account for recovery, or in the case of state lands, without adequate forest management standards being in place. The Society of Conservation Biology and Environmental Protection Information Center are developing detailed critiques of the exemptions, the need for recovery standards in HCPs, and exclusion of Critical Habitat in the Redwoods region.

FWS Response to Presidential Memorandum Finds No Substantial Regulatory Burden (*ABC Comments in italics*)

FWS responded to the Presidential Memorandum in the Final Rule that it had released an economic analysis, and provided a description of ecological forestry.

> "Consistency with Presidential Directive. On February 28, 2012, the President issued a memorandum to the Secretary of the Interior regarding the proposed revised critical habitat for the northern spotted owl, specifically on minimizing regulatory burdens." (p. 10)

The agency then notes it will be up the land management agencies to decide upon and implement ecological forestry:

> "We note, however, that this discussion of ecological forestry is provided to Federal, State, local and private land managers, as well as the public, for their consideration as they make decisions on the management of forest land under their jurisdictions and through their normal processes. This critical habitat rule itself does not take any action or adopt any policy, plan, or program in relation to active forest management." (p. 10-11)

FWS concludes that any concerns about the potential regulatory burden are unfounded and have been addressed in the final rule:

> "Our analysis indicated that the revision of critical habitat could have relatively little incremental effect above and beyond the conservation measures already required as a result of its threatened species status under the Act, and thus is not expected to impose substantial additional regulatory burdens." P. 11

FWS is committed to working closely with the land management agencies to implement active management and ecological forestry:

> "The Service is committed to working closely with the U.S. Forest Service and BLM to implement the active management and ecological forestry concepts discussed in the Revised Recovery Plan and this critical habitat rule. Both recommend that land managers use the best science to maintain and restore forest health and resilience in the face of climate change and other challenges.
>
> To meet this goal, we have prioritized the timely review of forestry projects that will be proposed in critical habitat. We have already completed section 7 conference opinions on the proposed rule with the agencies, and have recently held interagency coordination meetings with the section 7 Level 1 staff in Oregon, Washington, and California. In these meetings, we identified ways to streamline the section 7 process to ensure that potential projects can be implemented in a timely manner consistent with northern spotted owl conservation." (p. 271-272)
>
> "The Service has assured the BLM and FS that it is committed to working closely with them to evaluate and implement active management and ecological forestry concepts of the recovery plan and critical habitat rule into potential timber management projects." (p. 281)

FWS says the ecological forest management is compatible with owl recovery and may increase timber harvest. While we agree that timber harvest may increase for a variety of reasons, we do not see where FWS has demonstrated that ecological forestry is compatible with owl recovery. And while we appreciate the limitations prescribed in the final rule, we remain concerned that the rule inappropriately promotes logging in owl habitat.

> "In our proposed rule, we provided a description of ecological forestry management actions that are

compatible with both northern spotted owl recovery and timber harvest, as recommended in the Revised Recovery Plan for the Northern Spotted Owl (76 FR 38575; July 1, 2011), which, in some areas, may actually increase harvest relative to recent realized levels (but not necessarily to planned levels under the NWFP). While it is outside the purview of the Service to direct forestry management, we will consult with Federal action agencies and make recommendations on the best measures to provide protections for the owl and have minimal negative economic impacts." (ECON p. ES-3)

Importance of Northwest Forest Plan

The final rule appropriately acknowledges the importance of the Northwest Forest Plan in conserving habitat and populations of the Northern Spotted Owl. In addition, it recognizes the need to recruit additional owl habitat, and confirms that the Northwest Forest Plan has been successful at retaining and expanding owl habitat.

"In developing this critical habitat designation, we also recognize the importance of the Northwest Forest Plan (NWFP) and its land management strategy for conservation of native species associated with old-growth and late-successional forest, including the northern spotted owl. The designation of areas as critical habitat does not change land use allocations or Standards and Guidelines for management under the NWFP, nor does this rule establish any management plan or prescriptions for the management of critical habitat." (p. 7)

"The Service believes the NWFP has functioned as intended for the retention and development of late-successional forest habitat (Thomas *et al*. 2006; Davis 2012). (p. 622)

"We recently issued a Revised Recovery Plan for the Northern Spotted Owl (2011) that recommends more specific types of timber-harvest prescriptions in both areas managed for wildlife and areas managed for timber production, and also recommends extra protections for older habitat and spotted owl sites in non-reserved areas or areas managed for timber production. Currently, the guidelines for managing the large reserves of the NWFP are more restrictive than the recommendations for reserved lands in the Revised Recovery Plan or in the proposed revised critical habitat designation." (ECON p. B-4)

Misuse of Ecosystem Management

The Northwest Forest Plan is first and foremost, a multispecies management plan for listed species including the Northern Spotted Owl, Marbled Murrelet and salmon stocks that provides the land management agencies with an adequate regulatory mechanism to comply with the Endangered Species Act. The Northwest Forest Plan promotes an ecosystem management approach with the specific goal of protecting those listed species and perpetuating the late-successional forest ecosystem. The Final Rule misapplies the Northwest Forest Plan's ecosystem management approach to promote ecological forestry which has not been adequately field tested or monitored, and is likely to be detrimental to Marbled Murrelets and listed salmon by increasing fragmentation.

American Bird Conservancy has developed a unique and successful strategy to preserve bird diversity and maintain or increase wild bird populations. This strategy is fully articulated in The American Bird Conservancy Guide to Bird Conservation published in 2010 by University of Chicago Press (ISBN-13:978-0-226-64727-2). The highest bird conservation priority is halting extinctions, followed by conserving and restoring habitats.

In the case of the Northern Spotted Owl draft Critical Habitat rule, the Service is proposing to place lower priority general habitat needs before the specific needs of an endangered species, even to the point of allowing large numbers of Northern Spotted Owls to be killed (taken) and significant habitat to be degraded or completely eliminated for decades. While the stated goal to improve future habitat conditions for the owl is well-intended, this activity is not supported by peer-reviewed studies showing owl populations will benefit, and it is, in fact,

pushing an already extremely imperiled species closer to extinction and should be immediately halted.

> "Thus, to conserve the northern spotted owl as directed by the Act, one must also conserve the ecological processes that occur within the ecological landscape inhabited by the species. These processes—such as vegetation succession, forest fire regimes, and nutrient cycling—create and shape the physical or biological features that form the foundation of critical habitat." (p. 20-21)
>
> "A fundamental goal of critical habitat management should thus be to understand, describe, and conserve these processes, which in turn will maintain the physical or biological features essential to the conservation of the species. This ecosystem approach will ultimately have the highest likelihood of conserving listed species such as the northern spotted owl in the long term (Knight 1998, p. 43)." (p. 21)
>
> "Active adaptive forest management within critical habitat, as discussed herein for the consideration of land managers, may be fully compatible and consistent with these landscape-level ecosystems. Most importantly, this approach is compatible with the ecosystem-based approach of the Northwest Forest Plan." (p. 21)

Timber sale data undermines the idea that the Northwest Forest Plan is not producing a stable flow of timber. The final Northwest Forest Plan was a political compromise that under-delivered on old-growth protection by placing 42% of the remaining acres in the matrix, and overpromised on timber volume. The plan's billion board foot estimate was never realistic because it is predicated on logging old-growth, which is not supported by the public and that in practical terms has generally been ruled in violation of wildlife protection laws. The estimate was also completed prior to the designation of the riparian reserve network which turned out larger than anticipated. The Bush Administration recognized these factors to a degree, and lowered the allowable sale quantify to 800 million board feet.

A look at timber sale output in the Northwest Forest Plan region reveals the agency is at a sustainable level and meeting the volume targets budgeted by Congress; see Forest Service and BLM Offered under the Northwest Forest Plan included in the appendix. Since 2003, the budget approved by Congress and the Administration has called for 4,668 million board feet from the Northwest Forest Plan area. The agencies have offered 4,507 board feet, or 96% of the planned budget.

In addition, exports from the region are skyrocketing. In 2010 over 2 billion board feet of logs and lumber were exported from the West Coast. In 2011 it topped 3 billion. There is no shortage of logging in the Pacific Northwest.

> "While the NWFP has been successful in conserving large blocks of late-successional forest (Thomas *et al.* 2006, p. 283, Davis *et al*. 2011, p. 38), concerns have been expressed that it provides less than the anticipated level of commercial timber harvest on matrix lands, does not promote active restoration in areas that may contain uncharacteristically high risk of severe fire (Spies *et al.* 2006, pg. 359; Thomas *et al.* 2006, p. 277), and does not promote development of complex early-seral forest in areas where regeneration harvest has been conducted (Betts et al. 2010, p. 2117; Hagar 2007, p. 109; Swanson et al. 2011, p. 124). (p. 24-25)

Need for Additional Habitat Conservation

The rule confirms that additional habitat is necessary to conserve the Northern Spotted Owl in light of continued populations decline and the growing presences of the Barred Owl.

> "Although the rate of loss of habitat due to timber harvest has been reduced on Federal lands over the

past two decades, both past and current habitat loss remain a threat to the northern spotted owl. Despite implementation of habitat conservation measures in the early 1990s, Thomas et al. (1990, p. 5) and USDI (1992, Appendix C) foresaw that owl populations would continue to decline for several decades, even with habitat conservation, as the consequence of lag effects at both individual and population levels." P. 13

"The development of a critical habitat network for the northern spotted owl must take into account current uncertainties, such as those associated with barred owl impacts and climate change predictions (USFWS 2011, p. III-10)." (p. 17)

"Given the continued decline of northern spotted owl populations, the apparent increase in severity of the threat from barred owls, and information indicating a recent loss of genetic diversity for the subspecies, retaining both occupied northern spotted owl sites and unoccupied, high-value northern spotted owl habitat across the subspecies' range are key components for recovery (USFWS 2011, p. I-9)." (p. 17-18)

"This revision of critical habitat represents an increase in the total land area identified from previous designations in 1992 and 2008. This increase in area is due, in part, to: (a) the unanticipated steep decline of the northern spotted owl and the impact of the barred owl, requiring larger areas of habitat to maintain sustainable spotted owl populations in the face of competition with the barred owl (e.g., Dugger *et al*. 2011, p. 2467); (b) the recommendation from the scientific community that the conservation of more occupied and high-quality habitat is essential to the conservation of the species (Forsman *et al.* 2011, p. 77); (c) the need to provide for redundancy in northern spotted owl populations, by maintaining sufficient suitable habitat for northern spotted owls on a landscape level in areas prone to frequent natural disturbances, such as the drier, fire-prone regions of its range (in other words, —back-up areas of habitat so that owls have someplace to go if their habitat burns or trees die due to insect infestation, etc.)" (p. 85)

"(3) It ensures that adequate amounts of current and future habitat is available for spotted owls to persist and recover by designating a habitat network consisting of approximately 50 percent of the available high-suitability spotted owl habitat rangewide. An additional 21 percent of high-qualitiy habitat is encompassed within Congressionally Reserved lands that are not designated, but will retain their value for spotted owls. This high-quality habitat, in addition to areas required for population connectivity, is necessary to support rangewide populations with low extinction risk at both rangewide and regional scales.

(4) Compared to previous spotted owl conservation strategies, it provides increased redundancy in habitat to help buffer potential adverse impacts due to climate change and other stochastic (i.e., unpredictable) events by enlarging the total area of the final designation within the fire-prone portions of the northern spotted owl's range." (p. 175-176)

"In the development of habitat conservation networks, the intent of spatial redundancy is to increase the likelihood that the network and populations can sustain habitat losses by inclusion of multiple populations unlikely to be affected by a single disturbance event. This is essential to the conservation of the northern spotted owl because disturbance events such as fire can potentially remove large areas of habitat with negative consequences for northern spotted owls. Redundancy provides a type of —emergency back-up system to sustain populations in the wake of such events. While the modeling and evaluation process used by the Service did not formally analyze redundancy, we incorporated spatial redundancy at two scales: by (1) making critical habitat subunits large enough to support multiple groups of owl sites; and (2) distributing multiple critical habitat subunits within a single geographic region. This

was particularly the case in the fire-prone Klamath and Eastern Cascades portions of the range." (P. 557) "Likewise, in addition to our modeling results, peer review of both the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011) as well as our proposed rule to revise critical habitat, suggested that retention of high quality habitat in the matrix is essential for the conservation of the species. Population performance based on reserves under the NWFP, for example, fared very poorly compared to this final designation of critical habitat. As described in the section **Changes from the Proposed Rule**, we tested possible habitat networks without many of these matrix lands, which resulted in a significant increase in the risk of extinction for the northern spotted owl." (p. 567-568)

"We recommend that habitats with high value to the conservation of the northern spotted owl be conserved. High-value habitat includes mid-seral forests as one component. Mid-seral forests that are generally not occupied by northern spotted owls, however, may be appropriate areas for land management agencies to consider for active forest management that may increase their rate of development into high-quality habitats." (p. 594)

"Rangewide, the proposed revised critical habitat is comprised of approximately 4.6% younger forests that are essential to the conservation of the species, and where individual timber harvests may occur. (For analysis purposes we used a 40-acre minimum patch size to determine such areas, because areas smaller than 40 acres are not likely to have individual planned timber harvests. Based on our experience, harvests in areas smaller than 40 acres would likely be incorporated within a larger planning and consultation process). In particular, of the 63 critical habitat subunits proposed for designation, four (NCO-5, ORC-3, WCC-1 and WCS-6) contain proportionally greater areas of younger forests that are essential to the conservation of the species (10.03%, 10.29%,12.58% and 10.42%, respectively) because they can develop additional habitat necessary to support viable spotted owl populations in the future. These areas of younger forest may or may not presently be occupied by spotted owls. These areas are important for the purposes of distinguishing potential effects of the designation, because they represent cases wherein section 7 consultations may not be necessary but for the designation of critical habitat. In other words, impacts and resulting costs associated with consultation in these areas may be solely an incremental effect of the designation." (ECON p. B-7)

Need for Additional Habitat Due to Barred Owl

"The recovery of the northern spotted owl therefore requires both protection of habitat and management where necessary to provide sufficient high-quality habitat to allow for population growth and to provide a buffer against threats such as competition with the barred owl." (p. 139-140)

"As the barred owl is present throughout the range of the northern spotted owl, special management considerations or protections may be required in all of the critical habitat units and subunits to ensure the northern spotted owl has sufficient habitat available to withstand competitive pressure from the barred owl (Dugger et al. 2011, pp. 2459, 2467). In particular, studies by Dugger et al. (2011, p. 2459) and Wiens (2012, entire) indicated that northern spotted owl demographic performance is better when additional high-quality habitat is available in areas where barred owls are present." (p. 140)

"Including more habitat in critical habitat designation, as compared to the No Action Alternative, would provide increased conservation benefits for northern spotted owls in the face of predicted climate change and the threat from barred owls. Hotter, drier summers and wetter nesting seasons, as predicted for the Pacific Northwest, have the potential to negatively affect northern spotted owls. The presence of high quality habitat my buffer the negative effects of climate change (see section 3.4.3 Climate Change). In addition, maintaining additional habitat distribution across the range of the species may increase the likelihood that spotted owls will persist in areas where barred owls are also present (Dugger *et al.* 2011;

Forsman *et al.* 2011; Wiens 2012)." (EA p. 107)

Importance of Northwest Forest Plan Reserves

The documents reaffirm other federal studies showing the effectiveness and importance of the Northwest Forest Plan reserves for maintaining and providing for additional old growth forests and to enhance water quality across the region:

> "The system of reserves within the NWFP is essential for the conservation and development of large areas of late-successional forest across the landscape; however, because the NWFP was designed to benefit multiple species not every acre of the late-successional reserves (LSRs) provide high-quality habitat for northern spotted owls. In addition, barred owls have become increasingly abundant in the Pacific Northwest and likely have a large effect on the continued decline of northern spotted owl populations. With barred owls now sharing the range of the northern spotted owl, conservation of northern spotted owls outside NWFP reserved areas is increasingly important for species recovery." (p. 24)
>
> "To conserve the northern spotted owl it is essential to have larger, connected areas that are managed for the development of their habitat even though some of those areas may not currently be occupied by the species. As habitat develops over time, both within occupied and unoccupied areas, we anticipate northern spotted owls will colonize the unoccupied habitat and positively contribute to population demographics which contribute to conservation of the species." (p. 619)
>
> "The Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011a) recommends restoration-focused management in reserve and non-reserve areas to accommodate climate change and dynamic ecosystem processes, with the goal of maintaining or restoring forest ecosystem structure, composition, and processes so they are sustainable and resilient under current and future climate conditions. In addition, the plan recommends extra protections for older habitat and spotted owls sites in non-reserved areas (USFWS 2011a). Recovery actions recommended by recovery plans are not regulatory and are implemented at the land manager's discretion.
>
> "The current guidelines for managing the large reserves of the NWFP are aimed at creating and maintaining the habitat characteristics required by late-successional species, including the northern spotted owl, and, thus, are consistent with the objectives of the proposed critical habitat designation (USDA and USDI 1994a, b)." (EA p. 47)
>
> "The current guidelines for managing the large reserves of the NWFP may be more restrictive than the general recommendations provided by the Service in the proposed revised critical habitat designation. Therefore, reserved lands are already being managed to reduce impacts or for the benefit of the NSO, consistent with the objectives of proposed critical habitat designation." (ECON p. 4-4)

Eastside Reserves

The final rule doubts the viability of Eastside reserves as result of fires, a point that was strongly contested by The Wildlife Society and peer-reviewers. The Forest Service claims that static reserves on the Eastside are no longer a viable strategy for conserving the owl, but to date has not produced credible evidence to support that contention. Portions of the now discredited Northern Spotted Owl Recovery Plan of 2008 reached the same unfounded conclusion, and inclusion of similar language in the 2010 Draft Recovery Plan spawned strong opposition from the scientific societies that peer-reviewed the plan.

The Final Owl Recovery Plan calls for conserving older stands that have occupied or high-value spotted owl habitat, and to "Continue to manage for large, continuous block of late-successional forest." Without the system of late-successional reserves remaining in place, the agency has not provided any mechanism to ensure that the land management agencies will provide for large, continuous blocks. In fact, given the management history, and continued proposals to further fragment the forest, the importance of maintaining the reserve system should be that much more apparent.

The reviewers found that the science included in the draft was incomplete because numerous studies to the contrary had not been considered. In the final draft, a greater effort was made to reference the omitted studies, but the conclusions remained the same. For example, evidence presented in Hanson et al. (2009) on fire risk was cited but not used.

Several new studies have been published that also analyze satellite images of the forest, and have found that high intensity, "catastrophic" fires have not been increasing in Northern California, or on the Eastside. As a result, we believe the plan overestimates fire risk. Similarly, the Hanson study was also not used regarding the rates of recruitment relative to rates of loss to stand-replacing fires, resulting in an overestimation of the amount of reserve likely to be lost.

> "Widespread management of large, fully contiguous blocks of habitat east of the Cascades is not ecologically sustainable in many places, due to the dynamic ecological processes and fire regimes that shape the distribution of forested habitats in this region (Williams 2012, entire). We do, however, recommend land managers consider the conservation of larger blocks of current habitat on areas of landscapes where it is more likely to be resistant or resilient to fire and other natural disturbance. We encourage the use of landscape assessments to identify areas important for ecological process restoration and areas that are valuable for northern spotted owl conservation and recovery (see, e.g., NWFP Standards and Guidelines p. C-13)." (p. 593-594)

Economic Impacts

The economic analysis concluded that the final rule is not likely to have a major economic impact. For example, the reduction of potential harvest from high-quality owl habitat in matrix lands may be offset by a slight increase in harvest from other matrix lands as a result of the active management provisions in the Rule.

> "It concludes that only a relatively small portion of the overall proposed revised designation may result in more than minor incremental administrative costs. It found that potential incremental changes in timber harvests on Bureau of Land Management and U.S. Forest Service lands may occur on approximately 1,449,534 ac (585,612 ha) proposed for designation, or 10 percent of the total lands included in the proposed designation and that there is the potential for 307,308 ac (123,364 ha) of private land to experience incremental changes in harvests, or approximately 2 percent of total lands proposed. No incremental changes in harvests are expected on State lands." (p.12)
>
> "Most potential economic impacts would occur, if at all, on Federal matrix lands managed by BLM and the Forest Service, although we note that the amount of Federal matrix lands has been reduced from the proposed rule, as described in **Changes from the Proposed Rule**, which would have the effect of reducing the range of potential economic impacts presented by the FEA." (p. 307)
>
> "As outlined in the economic analysis timber harvest may increase, decrease or stay substantially the same as recent timber harvest levels depending on how the Forest Service and BLM decide to manage their lands within the designation. Furthermore, timber industry employment is affected not only by harvest trends but also by fluctuations in national and international markets; changes in land ownership;

and increasing mechanization and productivity in the industry." (p. 581)

"Of the matrix lands, approximately 1.1 million acres are predominantly younger forests (considered to be unoccupied) and 1.6 million acres are northern spotted owl habitat. Furthermore, we estimate that approximately 6.5 percent of northern spotted owl habitat is likely to be unoccupied. We find that incremental economic impacts to USFS timber harvest are relatively more likely in unoccupied matrix lands or approximately 1,158,314 acres of 2,629,031 total acres of all USFS matrix lands." (p. 661)

"The results of this assessment suggest that incremental changes in annual harvests are likely to be small, less than one percent of total harvests in the 56 counties overlapping the designation." (p. 676)
"Importantly, we note that under the third scenario analyzed in the DEA, the potential decrease in harvest from BLM lands represents approximately 2 percent of total harvests from BLM lands in these counties (Based on BLM transaction data over the last four quarters (2011Q4–2012Q3) viewed at *http://www.blm.gov/or/resources/forests/blm-timber-data.php*). Thus, if affected, impacts to revenue payments resulting from the designation are likely to be small." (p. 681)

"Finally, the designation is likely to reduce or increase annual timber harvests from Federal lands by less than one percent." (p. 682)

"These scenarios include: (1) administrative costs only; (2) potential positive incremental impacts to timber harvest on Federal lands; and (3) potential negative incremental impacts to timber harvest on Federal lands. Furthermore, the economic analysis presents a potential low impact and high impact outcome for each of the three scenarios. Thus under the positive impact scenario, the estimated annualized *increase* in timber harvest revenue on Federal lands range from $1,230,000 to $3,070,000. Under the negative impact scenario, the annualized *decrease* in timber harvest revenue on Federal lands ranges $2,460,000 to $614,000,000. In all three scenarios, the estimated annualized administrative costs on Federal lands are from $185,000 to $316,000." (p. 751)

"In addition, actual Federal timber harvests have not kept pace with the levels anticipated by the NWFP due in part to controversy over harvesting mature and old-growth stands, which were expected to be the primary harvest component in the first few decades of the plan. For example, planned annual harvest levels under the NWFP totaled over 800 million board feet from 1999 to the present, while actual harvest levels in recent years have been approximately 60 percent of this planned total (USFS, Pacific Northwest Region, Northwest Forest Plan—The First 15 Years (1994-2008): Socioeconomic Status and Trends, R6-RPM-TP-03-2011, 2011.). As the availability of Federal timber sales decreased, the relative importance of harvests from private lands increased." (ECON p. ES-6)

"Between 1990 and 2000, timber industry employment in the NWFP area declined by approximately 30,000 jobs. Meanwhile, there were increases in both population and total employment in the tri-state area of California, Oregon, and Washington; population increased by 15 percent and employment grew 18 percent, representing a total of 3.8 million jobs gained. Routman, K. 2007. Forest Communities and the Northwest Forest Plan: What Socioeconomic Monitoring Can Tell Us. *Science Findings* (95). Pacific Northwest Research Station, USDA Forest Service. (ECON p. ES 6-7)

"The 2012 Economic Analysis distinguishes the *incremental* costs of designation from *baseline* costs, and quantifies specific potential effects to timber harvest practices and volume along with administrative costs. As discussed in detail in this report, the annualized incremental impacts under the negative impact scenario range from a loss of approximately $2.65 to $6.48 million, while the positive impact scenario ranges from a gain of approximately $900,000 to $2.9 million. The analysis also contemplates an "administrative cost only" scenario, with annualized losses of $196,000 to $335,000." (ECON p. ES-10)

"Timber harvests between 2000 and 2010 did not keep pace with NWFP projections. The plan predicted that harvests from public lands within the NWFP area would be over 800 million board feet (MMBF) annually from 1999 to present.80 Predicted harvests have not been met within the NWFP area, in part due to controversy over harvesting mature and old-growth stands, which were expected to be the primary harvest component in the first few decades of the NWFP. (ECON p. 3-3)

Ecological Forestry and Increasing Timber Harvest

This section of the economic analysis attempts to analyze how much additional harvest could be expected if ecological forest was applied to non-high quality matrix. Approximately, a 10% increase above current volume levels can be expected.

"190. Compared to actual timber harvest levels in recent years, the Service and available literature suggest that there is the potential for increases in timber harvest on some Federal matrix lands if the USFS and BLM apply the considerations in the proposed critical habitat rule for active management in dry, mixed, and moist forests. The best opportunity for increases in Federal timber harvest, compared to the recent status quo, involve a mix of thinning and variable retention prescriptions in younger matrix forests consistent with existing standards and guidelines of the NWFP. The proposed critical habitat rule considers these methods and provides considerations for how to apply them in a manner consistent with NSO recovery and to avoid destruction and adverse modification of critical habitat.

191. Some published literature and reports exist that outline how these forestry practices might affect timber harvest practices and volumes. Ecological forestry methods are being applied in the Pacific Northwest, in part, in an effort to better reconcile competing economic and conservation goals.157 Specifically, we rely on research published by Dr. K. Norman Johnson and Dr. Jerry F. Franklin to support the analysis.158 This research contemplates that implementation of ecological forest practices, as envisioned by the Franklin/Johnson Moist Forest restoration strategy, could produce about two-thirds of the per-acre timber yields anticipated by the NWFP.159

192. We utilize this ratio, in combination with the ratio of historical actual harvest volumes relative to NWFP planned volumes, to derive an estimate of potential increases in harvest levels relative to the regulatory baseline. Historic timber harvest on Federal lands have equaled approximately 60 percent of the probable sale quantity (PSQ) envisioned under the NWFP.160 The two-thirds timber harvest yield resulting from ecological forestry practices as envisioned by Johnson and Franklin is also based on PSQ under the NWFP. Thus, for purposes of illustrating a potential increase in timber harvest resulting from critical habitat, we scale baseline projections up by 10 percent (0.66 ÷ 0.60 = 1.10)." (ECON p. 4-29)

Active Management

While we appreciate that the final Rule offers clarifications about where and under what conditions active management would be appropriate for owl recovery we remain concern that the benefits of active management are overstated and even under the more limited circumstance described in the final rule, could cause harm to owls and elimination of habitat.

The 1993 Report of the Scientific Analysis Team (SAT) thoroughly reviewed the risks associated with logging in suitable owl habitat, and concluded "intentions to selectively cut forest stands to create conditions favorable for spotted owls, represents increased risks to the viability of the spotted owl (SAT p. 145)."

The issue of short-term losses versus long-term habitat gains was also analyzed and the scientists concluded "that the short-term effect of these actions on habitat loss may be much more significant than the long-term predicted

habitat gains."

"As stated above, many areas of critical habitat do not require active management, and active forest management within such areas could negatively impact northern spotted owls. We are not encouraging land managers to consider active management in areas of high-quality owl habitat or occupied owl sites; rather, we encourage management actions that will maintain and restore ecological function where appropriate. In some areas, forest stands are not on a trajectory to develop into high-value habitat, ecological processes have been disrupted by human actions, or projected climate change is expected to further disrupt or degrade desired forest conditions." (p. 26)

"In general, prescriptions (e.g., vegetation management, prescribed fire, etc.) that apply ecological forestry principles to address the restoration and conservation of broader ecological processes in areas where this is needed, while minimizing impacts to structurally diverse or mature and old forest that does not require such management can be compatible with maintaining the critical habitat's essential features in the long term at the landscape scale (USFWS 2011, p. III-14). The Service has recently consulted on these types of management actions in occupied northern spotted owl habitat on Bureau of Land Management (BLM) and U.S. Forest Service (USFS) lands." (p. 28)

In sum, vegetation and fuels management in dry and mixed-dry forests may be appropriate both within and outside designated critical habitat where the goal of such treatment is to conserve natural ecological processes or restore them (including fire) where they have been modified or suppressed (Allen *et al.* 2002, pp. 1429–1430; Spies *et al.* 2006, pp. 358–361; Fielder *et al.* 2007, entire; Prather *et al.* 2008, entire; Lindenmayer *et al.* 2009, p. 274; Tidwell 2011, entire; Stephens *et al.* 2009, pp. 316–318; Stephens *et al.* 2012a, p. 13; Stephens *et al.* 2012b, pp. 557–558; Franklin *et al.* 2008, p. 46; Miller *et al.* 2009, pp. 28–30; Fule *et al.* 2012, pp. 75–76).

"Likewise, in some moist and mixed forests, management of northern spotted owl critical habitat should be compatible with broader ecological goals, such as the retention of high-quality older forest, the continued treatment of young or homogenous forest plantations to enhance structural diversity, heterogeneity and late-successional forest conditions, and the conservation or restoration of complex early-seral forest habitat, where appropriate (Spies et al. 2007b, pp. 57–63; Betts et al. 2010, pp. 2117, 2126–2127; Swanson at al. 2011, entire).

In general, actions that promote ecological restoration and those that apply ecological forestry principles at appropriate scales as described above and in the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011, pp. III-11 to III-41) may be, in the right circumstances, consistent with the conservation of the northern spotted owl and the management of its critical habitat. However, we emphasize that this rule does not take any action or adopt any policy, plan or program in relation to active forest management." (p. 30)

"The Service supports the goals of maintaining and restoring ecological function and development of future northern spotted owl habitat. We encourage land managers to consider a stronger focus on ecological forestry in areas where commercial harvest and restoration are planned. We recognize the need to balance both the conservation of current owl sites and the development of future owl habitat." (p. 31)

"…whereas other forest areas would likely benefit from more proactive forestry management. For example, in drier, more fire-prone regions of the owl's range, habitat conditions will likely be more dynamic, and more active management may be required to reduce the risk to the essential physical or biological features from fire, insects, disease, and climate change, as well as to promote regeneration

following disturbance.

While we recommend conservation of high-quality and occupied northern spotted owl habitat, long-term northern spotted owl recovery could benefit from forest management where the basic goals are to restore or maintain ecological processes and resilience, as discussed in detail in the Revised Recovery Plan (USFWS 2011, pp. III-11 to III-39). (p. 141)

"The Service believes that application of these ecological forestry goals and principles, including those generally described in Johnson and Franklin (2009, entire; 2012, entire), may result, in some situations, in fewer adverse impacts to northern spotted owl critical habitat when compared to application of traditional silviculture as currently applied or permitted on private, State, and Federal matrix lands." (P. 546)

"This rule does not establish management prescriptions for lands designated as critical habitat. However, the Service has made considerable effort to discuss, for the benefit of land managers, potential approaches to active forest management in dry forests, including actions that manage fuels and restore ecosystem health. We encourage land managers to consider active management of their forests that balances short-term impacts with long-term beneficial effects that ultimately support long-term conservation of the northern spotted owl. In dry forests, this could include using a landscape assessment approach to improve the estimation of effects of management actions on northern spotted owl habitat and to better identify and prioritize areas for treatments. The assessment may be used to provide support and rationale for treatment, especially in areas where active forest management actions appear to be in conflict with the conservation of high-value northern spotted owl habitat." (p. 586)

"Outside of LSRs, proposed timber sales may be designed to maximize timber extraction within the NWFP guidelines, including green-tree retention, coarse-wood retention, etc. Where spotted owl habitat would be harvested within proposed critical habitat in these land-use allocations, we would likely request a modification to the prescriptions in an effort to retain and improve spotted owl habitat to better meet critical habitat goals.

More recently, timber sales in all of these non-reserved areas that are occupied by spotted owls have been generally designed following the recommendations of the Revised Recovery Plan, which call for using ecological-forestry techniques to help create better spotted owl habitat more quickly than if the forest was left alone while retaining existing spotted owls at their nests. These ecological-forestry recommendations are consistent with the activities we also recommend within critical habitat in the proposed revised rule to help develop higher-quality spotted owl habitat. Therefore, we would not be likely to request significant changes in the project design due to critical habitat." (ECON p. B-11)

"On non-DOD Federal lands, we conclude that the highest potential for on-the-ground incremental effects due to the designation of spotted owl critical habitat is likely to be in unoccupied spotted owl habitat (1) in areas where regeneration-harvest timber sales were anticipated by the NWFP and (2) in post-fire salvage situations in non-LSR allocations." (ECON p. B-15)

Ecological Forestry

The sections below provide an honest assessment of the intent of ecological forestry which is to attempt to increase harvest while conserving the owl. In practice, ecological forestry is a more benign form of clearcutting than allowed by the letter of the Northwest Forest Plan. But it very important to note, clearcutting is currently only rarely allowed to happen by the courts on any significant scale as a result of impacts it has to wildlife habitat and water quality. So while not as bad as the clearcuts of old, ecological forestry is a step in the wrong direction

because right now there is little or no clearcutting on heavily fragmented federal lands, while extensive clearcutting is taking place on private and state lands.

BACKGROUND ON ECOLOGICAL FORESTRY

132. As discussed above, the Pacific Northwest timber industry has faced challenges over the past decade. Likewise, the forests themselves have undergone changes due to past management practices, shifting disturbance patterns, and climate change.125 In an effort to address some of these challenges, land managers are contemplating a shift to ecological forestry practices. Johnson, N.K. and J.F. Franklin. 2009. Restoration of Federal Forests in the Pacific Northwest: Strategies and Management Implications. Unpublished manuscript. August 15, 2009. 120 pp. Accessed at http://www.cof.orst.edu/cof/fs/PDFs/JohnsonRestoration_Aug15_2009.pdf on April 5, 2012.

133. The main goal of ecological forestry-based management is to achieve ecological goals while simultaneously providing economic and social benefits.127 In general, the approach follows the principles of natural forest stand development; it values the role of natural disturbances in initiating, developing, and maintaining forest ecosystems, and encourages active restoration of spatial heterogeneity and conservation of older stands and trees.128 In addition, it recognizes that desirable ecological conditions are maintained through a program of active management that includes periodic timber harvest.129

134. The Proposed Rule states that, ¡§In general, actions that promote ecological restoration and those that apply ecological forestry principles as described in the Revised Recovery Plan (USFWS 2011, pp. III¡V11 to III¡V41)¡Kare likely to be consistent with the conservation of the northern spotted owl and the management of its critical habitat.¡¨130,131 It recommends that land managers consider managing NSO critical habitat according to the following basic management practices, which are consistent with ecological forestry and recommended in the Revised Recovery Plan:

Conserve the older growth, high quality and occupied forest habitat as necessary to meet recovery goals; Implement science-based active vegetation management to restore forest health, especially in drier forests in the eastern and southern portions of the species¡¦ range;

Encourage landscape-level planning and vegetation management that allow historical ecological processes, such as characteristic fire regimes and natural forest succession, to occur on these landscapes throughout the range of the NSO. This approach has the best chance of resulting in forests that are resilient to future changes that may arise due to climate change.132

135. Ideally, implementation of ecological forestry would allow Federal land managers to increase the overall amount of timber harvested from Federal lands while simultaneously improving habitat for the NSO and other listed species. Exactly how these practices would be implemented by the land management agencies is currently uncertain. Various pilot projects on BLM lands are ongoing to test alternatives and learn more about the challenges and opportunities associated with ecological forestry practices.133 In addition, the land managing agencies must make decisions consistent with their land use management plans, forestry programs, and other statutory and regulatory responsibilities.134 Thus, capturing the interface between ecological forestry and critical habitat concerns, and assessing related economic impacts, is an uncertain exercise." (ECON P. 3-23 – 3-25)

Early Seral Management

We appreciate the clarification that high-quality or areas on a trajectory to become high-quality habitat should

not be removed to create early-seral habitats. We remain concerned about the potential effect of harvest to create early seral habitats and that passive restoration of post-fire environments be utilized instead of active management.

> "The Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011) suggests that management of early-seral habitats be considered where they are underrepresented and would improve landscape and biological diversity. Within that context, thinning and targeted variable-retention harvest in moist forests could be considered, where the conservation of complex early-seral forest habitat is a management goal. This approach provides a contrast to traditional clear-cutting that does not mimic natural disturbance or create viable early-seral communities that grow into high-quality habitat (Dodson *et al*. 2012, p. 353; Franklin *et al*. 2002, p. 419; Swanson *et al*. 2011, p. 123; Kane *et al*. 2011, pp. 2289–2290; Betts *et al*. 2010, p. 2127, Hagar 2007, pp. 117–118). Swanson (2012, entire) provides a good overview and some management considerations. The Revised Recovery Plan does not suggest that high-quality owl habitat or areas currently on a trajectory to become high-quality owl habitat be removed to create early-seral conditions. The Revised Recovery Plan recommends such treatments, if considered by the land management agencies, be applied in matrix areas consistent with the Standards and Guidelines of the NWFP." (p. 592)

Need for Additional Research

We appreciate the advisories calling for additional research and concur that the Experimental Forests are an appropriate place for experimentation. We remain concerned that the land management agencies are not being required to provide evidence of the benefits of active management to owl populations prior to proposed removal of owl habitat.

> "However, a better understanding of how ecological forestry approaches affect owls and their prey is needed. Studies have shown negative effects of commercial thinning and other conventional forestry practices on both northern spotted owls (Forsman *et al.* 1984, pp. 16-17; Meiman *et al.* 2003, p. 1261) and their prey (Waters *et al.* 1994, p. 1516; Luoma *et al.* 2003, pp. 343-373; Wilson 2010, entire).This need was recognized in Recovery Action 11 of the Revised Recovery Plan, which states —When vegetation management treatments are proposed to restore or enhance habitat for northern spotted owls (e.g., thinnings, restoration projects, prescribed fire, etc.), consider designing and conducting experiments to better understand how these different actions influence the development of northern spotted owl habitat, northern spotted owl prey abundance and distribution, and northern spotted owl demographic performance at local and regional scales. Furthermore, the recovery strategy outlined in the Revised Recovery Plan (USFWS 2011) identifies monitoring and research, as well as active adaptive forest management, as important steps in achieving recovery goals." (p. 31)

> "Towards this objective of learning critical new scientific insights from research and adaptive management, we especially encourage research and active adaptive forest management on the seven Forest Service Experimental Forests." (p. 32)

> "Five peer reviewers and numerous public commenters indicated that active forest management should be conducted in areas that are not currently high value for northern spotted owls and in an adaptive management framework given the uncertainties regarding how such management practices will impact northern spotted owls and their prey.

> The Service expects to support and design, in concert with the BLM, USFS, and researchers, scientific studies on the effects of ecological forestry projects in northern spotted owl critical habitat, to gain a better understanding of the short-term and long-term impacts of these silvicultural treatments on

northern spotted owls, their prey and forest vegetative structure. We are currently designing and funding just such a study through Oregon State University for the pilot project in the Middle Applegate Watershed." (P. 544).

Limitations on Active Management

We appreciate the limitations and clarifications on active management detailed in the following sections, particularly the Westside, but we remain concerned that adequate direction has not been provided for the Eastside or Klamath:

"Given these concerns, and recognizing that appropriate management actions will vary depending upon site-specific conditions, we provide the following suggestions regarding active forest management for consideration by land managers within critical habitat as consistent with the recommendations of the Revised Recovery Plan for the Northern Spotted Owl:

1. Focus active management in younger forest, lower quality owl habitat, or where ecological conditions are most departed from the natural or desired range of variability.

2. In moist forests on Federal lands, follow NWFP guidelines as informed by the Revised Recovery Plan and focus on areas outside of LSRs (i.e., matrix). In dry forests, follow NWFP guidelines and focus on lands in or outside of reserves that are most —at-risk of experiencing uncharacteristic disturbance and where the landscape management goal is to restore more natural or resilient forest ecosystems (see, *e.g.,* Davis *et al*. 2012, entire; Franklin *et al*. 2008, p. 46).

3. Avoid or minimize activities in active northern spotted owl territories (or the high-quality habitat within these territories)." (p. 32)

Determinations of Adverse Effects and Application of the Adverse Modification Standard.

"We have clarified that our discussion of ecological forestry and active management is intended for land managers to consider when developing management plans or planning projects, as in many areas this approach may be consistent with critical habitat for the northern spotted owl, but that such management is not mandated by the Service and is not required as the result of this rulemaking. We have also clarified this issue in the final rule language by stating that we have made the 16 U.S.C. 1532(5)(A)(i) determination that essential biological and physical features in occupied areas may require special management considerations or protection, but that the rule does not require land managers to implement, or preclude land managers from implementing, such measures." (p. 59)

"We have clarified language regarding development of diverse, early-seral forest to indicate that: (1) We do not recommend these actions in older forest stands or areas that currently function as owl habitat; and (2) this type of management is most appropriate where more traditional forestry methods have typically been conducted on matrix lands." (p. 59)

"Some areas of northern spotted owl habitat, particularly in wetter forest types, are unlikely to be enhanced by active management activities, but instead need protection of the essential features;" (p. 141)

"In moist forests that are currently providing mature and late-successional forest that functions as habitat for northern spotted owls, active management is generally unnecessary to conserve older growth forests (Johnson and Franklin 2009, p. 3)." (p. 142)

"If land managers are actively managing forests, we recommend that these activities be focused on lower quality owl habitat (lower relative habitat sustainability (RHS)); that these activities focus on ecological restoration, or apply principles of ecological forestry; and, where possible, evaluate the effects of these treatments on northern spotted owls and other species of concern using an active adaptive forest management framework." (p. 143-144)

"Within dry forests, the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011) emphasizes active forest management that could meet overlapping goals of northern spotted owl conservation, climate change response, and restoration of dry forest ecological structure, composition, and process, including wildfire and other disturbances (USFWS 2011, pp. III-20). For the rest of the northern spotted owl's range that is not fire-prone, the Revised Recovery Plan emphasizes habitat management that accelerates the development of future habitat, restores larger habitat blocks, and reduces habitat fragmentation." (p. 282)

"Second, we continue to encourage forest land managers to consider the application of ecological forestry principles to their commercial timber harvest (see response to peer review question 4a-c, above), and we believe that application of these principles in many instances may result in better long-term ecological conditions for northern spotted owls and other forest wildlife when compared to the application of traditional silviculture methods." (P. 549-550)

"Commercial thinning has been shown to negatively affect northern spotted owls and their prey, and we have included a more detailed discussion of this issue in the final rule. In areas where active management may be appropriate for consideration, the goal is to conserve and restore ecological function; however, we recognize that management agencies may have multiple management goals. In areas where actions such as commercial thinning may be considered (e.g., the matrix land use allocation), we are not encouraging them in areas of high-quality owl habitat." (p. 593)

"We have identified the major threats to owl recovery in this rule, including traditional timber harvest that resulted in the removal of large areas of old forest. Active management, in general, may affect water quality and recreational opportunities, but it may also restore habitat conditions or reduce fire risk if implemented properly. We encourage land managers to be mindful of these concerns and to protect important areas from long-term adverse impacts wherever possible." (p. 595)

"We emphasize that careful consideration should be given to any forest management activities occurring within northern spotted owl critical habitat… Further, we recommend that the focus of these treatments be outside of high-value habitat for northern spotted owls wherever possible and that high-quality habitats be conserved and recruited. Work inside of LSRs should be in accordance with the NWFP Standards and Guidelines." (p. 596)

"In the final rule, we have refined and expanded our discussion of ways land managers might implement active management to minimize potential risks to northern spotted owls and their habitat, and provide appropriate safeguards in the face of scientific uncertainties surrounding disturbance dynamics in dry forests and northern spotted owl responses to management." (p. 597)

"The Revised Recovery Plan for the Northern Spotted Owl also recommends the application of active forest management to restore forest ecosystem structure, composition, and processes. processes. In response to public comment regarding the appropriateness of this activity in critical habitat, we have clarified the relationship between this revised recovery plan recommendation and its application within spotted owl critical habitat. Its discussion in the revised critical habitat rule is provided primarily for consideration by Federal, State, local, and private land managers, as they make decisions on the

management of forest land under their jurisdictions and through their normal processes. This critical habitat rule does not take any action or adopt any policy, plan or program in relation to active forest management. Many areas of critical habitat do not require active management, and active forest management within such areas could negatively impact northern spotted owls. We are not encouraging land managers to consider active management in areas of high-quality owl habitat or occupied owl sites; rather, we encourage management actions that will maintain and restore ecological function where appropriate." (EA p. 55-56)

"Public commenters and peer reviewers were divided on the ecological effects of active forest management and forest restoration as described in the proposed revised rule. Much of the concern from those opposed to active management within critical habitat units derived from a false assumption that critical habitat designation would require these activities and would allow or encourage activities inconsistent with the objectives and standards and guidelines of the late-successional reserves of the NWFP. We did not propose any change to the NWFP in the proposed rule, nor does the Service have the authority to change the land management plans of other agencies. We have clarified this in the final rule, stating that actions within critical habitat would also need to be consistent with the objectives and standards and guidelines of all relevant agency management plans. In addition, although the proposed critical habitat rule refers to the active management recommendations of the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011), the critical habitat rule itself does not mandate or require any specific type of management by any agency or entity. It discusses the concept of active forest management only for future consideration by land managers as they make their own land management decisions. Finally, because all federal activities in designated critical habitat, regardless of objective, must avoid its destruction or adverse modification, the discussion of active forest management and restoration does not override the necessity to meet section 7(a)(2) requirements of the ESA. The only statutory requirement resulting from the designation of critical habitat is that Federal agencies ensure that their actions are not likely to result in the "destruction or adverse modification" of critical habitat, as that term is used in its statutory context, after consultation with the Service. Based on these clarifications regarding the discussion of active forest management in the preamble to the rule, we do not consider the impacts of the rule to be significant or highly controversial for this reason." (EA p. 151)

Limitations on Active Management – West Cascades/Coast Ranges of Oregon and Washington

"Special management considerations or protection may be required in areas of moist forests to conserve or protect older stands that contain the conditions to support northern spotted owl occupancy (RA10: USFWS 2011, p. 43) or contain high-value northern spotted owl habitat (RA32: USFWS 2011, p. 67). Silvicultural treatments are generally not needed to maintain existing old-growth forests and high-quality habitat on moist sites (Wimberly et al. 2004, p. 155; Johnson and Franklin 2009, pp. 3, 39).
Efforts to alter either fuel loading or potential fire behavior in these sites could have undesirable ecological consequences as well (Johnson and Franklin 2009, p. 39; Mitchell et al. 2009, pp. 653–654; USFWS 2011, p. III-17). Furthermore, commercial thinning has been shown to have negative consequences for northern spotted owls (Forsman et al. 1984, Meiman et al. 2003) and their prey (Waters et al. 1994, Luoma et al. 2003, Wilson 2010). Active management may be more appropriate in younger plantations that are not currently on a trajectory to develop old-growth structure." (p. 145)
"(1) Conserve older stands that contain the conditions to support northern spotted owl occupancy or high-value northern spotted owl habitat as described in Recovery Actions 10 and 32 (USFWS 2011, pp. III-43, III-67). On Federal lands this recommendation applies to all land-use allocations (see also Thomas et al. 2006, pp. 284–285).

(2) Management emphasis needs to be placed on meeting northern spotted owl recovery goals and long-term ecosystem restoration and conservation. When there is a conflict between these goals, actions that

would disturb or remove the essential physical or biological features of northern spotted owl critical habitat need to be minimized and reconciled with long-term ecosystem restoration goals.

(3) Continue to manage for large, continuous blocks of late-successional forest.

(4) In areas that are not currently late-seral forest or high-value habitat and where more traditional forest management might be conducted (e.g. matrix), these activities should consider applying ecological forestry prescriptions." (p. 146)

"Ideally, proposed actions within critical habitat should occur on relatively small patches of younger, mid-seral forest stands that do not cause reductions in higher quality northern spotted owl habitat. They should also be planned in such a way that their net occurrence on the regional landscape is consistent with broader ecosystem-based planning targets (e.g., Spies *et al.* 2007a, entire) to provide the physical or biological features that are essential to the conservation of the northern spotted owl. Within that context, thinning and targeted variable-retention harvest in moist forests could be considered where the conservation of complex early-seral forest habitat is a management goal. This approach provides a contrast to traditional clearcutting that does not mimic natural disturbance or create viable early-seral communities that grow into high-quality habitat (Dodson *et al.* 2012, p. 353; Franklin *et al.* 2002, p. 419; Swanson *et al.* 2011, p. 123; Kane *et al*. 2011, pp. 2289–2290; Betts *et al*. 2010, p. 2127, Hagar 2007, pp. 117–118)." (p. 283-284)

"In other words, such treatments can be dispersed across the landscape and over time to both accommodate northern spotted owl habitat needs and conservation of diverse and complex early-seral habitat." (p. 284)

Limitations on Active Management – Eastside/Dry Forests

A key difference in the recommendations for Westside and Eastside is for the Westside the agency recommends managing for large, continuous blocks of late-successional forest, but the forest the Eastside this is absent. There continues to be scientific controversy and uncertainty regarding the likely survival of eastside reserves. The agency has overstated the likelihood they will be lost.

"In order to preserve the essential physical or biological features, these dynamic, disturbance-prone forests should be managed in a way that promotes northern spotted owl conservation, responds to climate change, and restores dry forest ecological structure, composition and processes, including wildfire and other disturbances (USFWS 2011, p. III-20). The following restoration principles apply to the management that may be required in this dry forest region (USFWS 2011, pp. III-34 to III-35):

(1) Conserve older stands that contain the conditions to support northern spotted owl occupancy or high-value northern spotted owl habitat as described in Recovery Actions 10 and 32 (USFWS 2011, pp. III-43, III-67). On Federal lands this recommendation applies to all land-use allocations (see also Thomas *et al.* 2006, pp. 284–285).

(2) Emphasize vegetation management treatments outside of northern spotted owl territories or highly suitable habitat;

(3) Design and implement restoration treatments at the landscape level;

(4) Retain and restore key structural components, including large and old trees, large snags, and downed logs;

(5) Retain and restore heterogeneity within stands;

(6) Retain and restore heterogeneity among stands;

(7) Manage roads to address fire risk; and

(8) Consider vegetation management objectives when managing wildfires, where appropriate. (p. 147-148)

"The Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011) recommends that the dynamic, fire-prone portion of the northern spotted owl's range be actively managed to conserve northern spotted owls, but also address climate change and restore dry forest ecological structure, composition, and processes (e.g., wildfire) to provide for the long-term conservation of the species and its habitat in a dynamic ecosystem (USFWS 2011, pp. III-13, III-20). To do this, management actions should be considered to balance short-term adverse effects with long-term beneficial effects." (p. 285)

"Conflicts between objectives will remain in some locations, such as in places where removing younger, shade-intolerant conifers to reduce competition with larger, legacy conifers may result in a substantial decrease in canopy cover that translates into a reduction in northern spotted owl habitat quality." (p. 287)

"The Service has made considerable effort to discuss recommendations and descriptions of active forest management in dry forests, including actions that manage fuels and restore ecosystem health, in this critical habitat rule. This rule is different from previous designations of northern spotted owl critical habitat in that we are recommending a —hands on approach to forest management within critical habitat. We encourage land managers to consider active management of forests that balance short-term impacts with long-term beneficial effects, which ultimately supports long-term conservation of the northern spotted owl. In dry forests, we recommend that land managers consider a landscape assessment approach to improve the estimation of effects of management actions on northern spotted owl habitat and to better identify and prioritize areas for treatments." (p. 601)

Limitations on Active Management – Klamath

This is inadequate. It grants broad agency discretion in a region that is already beset with controversy over aggressive logging projects in owl habitat.

"In some areas, appropriate management will be more consistent with dry forest management strategies, while in other areas wet forest management strategies will be more appropriate. (p. 151)

Limitations on Active Management – Redwoods

"The long growing season in this region, combined with redwood's ability to resprout from stumps, allows redwood stands to attain suitable stand structure for nesting in a relatively short period of time (40–60 years) if legacy structures are present. Late-successional forest is an important component of nesting and roosting habitat in the Redwood Zone, and demographic productivity on northern spotted owl breeding sites has been positively correlated with the density of legacy trees in proximity to owl nest sites (Thome *et al.* 1999, p. 57). Forest management in this region should conserve older stands that contain the conditions to support northern spotted owl occupancy or high-value northern spotted owl habitat as described in Recovery Actions 10 and 32 (USFWS 2011, pp. III-43, III-67). On Federal lands this recommendation applies to all land-use allocations (see also Thomas *et al.* 2006, pp. 284–285)." (p. 152)

Active Management and Forest Planning

The Administration has announced a new planning process for BLM-managed lands in Oregon. Based on the Notice of Intent (NOI) and the Administration's press statements, the plan shows a bias towards active management and proposes a significant departure from the Northwest Forest Plan by encouraging regeneration in moist mature forests. This is harmful to the Northern Spotted Owl by risking take of individual birds and habitat, increasing forest fragmentation, and setting back the needed expansion of the old-growth forest ecosystem over time to provide for owl recovery.

This new WOPR planning effort, as announced, amounts to the BLM pulling out of the Northwest Forest Plan. The importance of consistent management across the owl's range has been cited in past court cases.
Two key assumptions behind the biological analysis of the Northwest Forest Plan were that (1) "[r]iparian and Late-Successional Reserves (LSRs) will retain reserve status and will not be available for timber production other than as provided in Alternative 9" and (2) "[a]lternative 9 applies to Forest Service and BLM lands; all future actions on these lands would be consistent with Alternative 9, as adopted in the Record-of-Decision (ROD)." See FEIS at 2-33 to 2-34. (Earthjustice comment letter). BLM's indicated management direction as expressed by the NOI, violates both of these assumptions.

The Okanogan-Wenatchee National Forest Plan Revision has also raised great concern by proposing the elimination of the existing system of late-successional reserves. A Region 6 Forest Service Assessment found that late-successional forests are generally below their historic range of variability, and the availability of snags larger than 20 inches, and snag habitat is generally lacking in some forest types because of past management practices. While the notice of intent proposes that a designated percentage of the forest will be managed for the owl's benefit, there will no longer be areas where the species' protection is guaranteed. This proposal is not consistent with the Northwest Forest Plan, which provides reserves with guaranteed protections that cannot be ignored at the discretion of the local land managers.

In addition, the management standards proposed for portions of the former late-successional reserves could be potentially harmful to many species of wildlife, including the Northern Spotted Owl. The proposed Okanogan-Wenatchee forest plan would allow for significantly greater road densities (more than 15%) than allowed in the current six owl reserves and possibly eight others depending on agency interpretation changes in summer road use. Allowing greater fragmentation and road densities would reduce the amount of suitable owl habitat in those areas, not to mention increasing fire risks, and should not be allowed.

> "Land managers should change from the practice of implementing many small, uncoordinated and independent fuel-reduction and restoration treatments. Instead, coordinated and strategic efforts that link individual projects to the larger objectives of restoring landscapes while conserving and recovering northern spotted owl habitat are needed (sensu Sisk *et al.* 2005, entire; Prather *et al.* 2008, entire; Gaines *et al.* 2010, entire). Some examples of this type of planning in the east Cascades that may be emulated or referenced include the Okanagon-Wenatchee National Forest (USDA 2010, entire), The Nature Conservancy (Davis *et al*. 2012, entire), and the Deschutes National Forest (Smith *et al*. 2011, entire). (p. 149)
>
> "We are also closely involved in and supportive of the respective Forest Service and BLM landscape-level planning efforts currently underway, and will work with the agencies to incorporate the conservation planning recommended in the Revised Recovery Plan and discussed in this final critical habitat designation." (p. 272)
>
> "Landscape assessments developed at the scale of entire National Forests, Ranger Districts, or BLM

Districts have the broad perspective that can improve ability to estimate effects of management activities on the function of critical habitat and better identify and prioritize treatment areas and the actions that will restore landscapes while conserving northern spotted owl habitat. The Okanogan-Wenatchee National Forest has developed a landscape evaluation process as part of their forest restoration strategy (USDA 2010, pp. 36–52) that can serve as an example for other administrative units when developing their own assessment approaches. We suggest that the value of such assessments in guiding vegetation management within critical habitat can be enhanced by spatially identifying locations where restoration objectives and northern spotted owl habitat objectives converge, are in conflict, or simply are not an issue (see, *e.g.,* Davis *et al.* 2012, entire)." (p. 287)

"Spies *et al*. (2012, entire) to help prioritize actions and consider tradeoffs such as northern spotted owl conservation, restoration of ecological conditions, and other land management goals. Given the wide geographic area of this critical habitat designation and the variety of landscape conditions and fire regimes, more precise planning and implementation should be done at the appropriate landscape scales such as the National Forest scale, consistent with the goals of the Northwest Forest Plan." (P. 549)

"The landscape assessment approach for the East Cascades provides the best basis for development of strategies to manage dry forest landscapes. Products of the landscape assessment can be used to describe the rationale for management actions. The Service is available to work with land managers to assist in the development and implementation of landscape assessments, but this rule does not mandate any specific management within the critical habitat network, which would be beyond the scope of this rulemaking." (p. 559)

"The BLM is revising its resource management plans for its western Oregon districts in part because of new science related to forest resiliency that was brought forth in the Revised Recovery Plan. Thus, Federal agencies seem to be starting to implement discretionary measures described in the Revised Recovery Plan, but it is too early to foresee the extent to which these recommendations will be applied." (EA p. 48)

"The BLM is beginning another revision of their resource management plans(BLM 2012), in part because of new science related to forest resiliency that has been applied in the northern spotted owl Revised Recovery Plan. BLM announced their notice of intent to develop an Environmental Impact Statement on March 9, 2012 (77 Fed. Reg. 14414), with scoping concluding on June 7, 2012. Though still in the very early stages of planning (that is, just concluding scoping) BLM has indicated a shift towards use of ecological forestry actions to further northern spotted owl conservation. While this action may likely benefit northern spotted owls, the extent and degree to which their resource management plans direct the implementation of these actions, and potentially other recommendations from the Revised Recovery Plan, is not reasonably foreseeable. As details of these actions develop, they will be subject to NEPA analysis, as will the individual projects implemented under these revised resource management plans; more specifics will be available in those analyses to more accurately determine effects." (EA p. 142)

"While the Forest Service still continues to operate under the NWFP within the range of the northern spotted owl, the Okanogan-Wenatchee National Forest is undergoing a revision of their land use management plan. This forest covers over 4 million ac in the eastern Washington Cascades, and most of it overlays the range of the northern spotted owl. The forest has a proposed action (USFS 2011) and is in the process of developing their draft Environmental Impact Statement, which is due out the first half of 2013. Key features of their proposed action relevant to spotted owl critical habitat are:

(1) A shift in focus from commodity production to ecosystem restoration.

(2) Addressing spotted owl recovery and better integrating habitat conservation with disturbance processes, climate change, and barred owl establishment by moving from smaller scale analyses and projects to incorporating a landscape-scale approach. The forest proposes managing habitat across the landscape, rather than limited to reserve areas, in configurations that are most likely to be, "sustainable, appropriately connected, and most resilient to changing climatic conditions." (USFS 2011, p. 39).

(3) Managing for spotted owl habitat, at the forest-wide scale, on 30 to 75 percent of the habitat capable lands, depending on forest type. Seventy-five percent of the habitat would be within a 1.8 mile radius of a northern spotted owl activity center.

The Forest's proposed action, as described above, mirrors recommendations from the Revised Recovery Plan for northern spotted owl conservation in dry-forest ecosystems and may provide additional conservation benefit to northern spotted owls. However, the forest is still developing their draft Environmental Impact Statement and it remains to be seen whether and to what degree these features are included in the final management plan. As details of these actions develop, they will be subject to NEPA analysis, as will the individual projects implemented under the revised forest plan; more specifics will be available in these analyses to more accurately determine effects." (EA p. 142-143)

"202. We note again that which of these scenarios, or combinations of these scenarios, comes to pass is largely dependent on the approaches undertaken by the land management agencies and the cooperative section 7 processes between the Forest Service or BLM and the Fish and Wildlife Service. Both the Forest Service and the BLM manage their timberlands under the direction of the NWFP, which includes provisions for management both within and outside of reserved areas. Inside reserves, the Service believes that the guidance for development of late-successional forest characteristics is consistent with recommendations for implementing ecological forestry methods to benefit the retention and development of spotted owl habitat. In the non-reserved, or the Matrix, portion of the landscape which these agencies manage, the NWFP provides minimum levels and sizes of standing trees that must remain post-harvest, depending on specific location within the range of the species. The NWFP does not, however, mandate that retaining only these minimum levels of retained trees is necessary. Indeed, in the past decade, the BLM and Forest Service have shifted their timber management emphasis in the Matrix from a regeneration harvest dominated program to one more focused on thinning prescriptions that leave more trees per acre than the minimums allowed under the NWFP. Since both the BLM and Forest Service have a track record of planning and implementing these thinning sales, the Service believes there will be a smooth transition to designing and implementing timber sales that are consistent with the ecological forestry recommendations in the Revised Recovery Plan and the proposed critical habitat designation and with the green-tree retention levels of the NWFP. We mention, however, that the timing of this implementation is uncertain. Thus, Scenario 1 may be more representative of likely outcomes in the near term." (ECON p. 4-36 – 4-37)

"(2) Potential for Future Revision of Management Plans
(a) Forest Service. The Forest Service has begun the process of revising its Land and Resource Management Plans (which outline the management of, usually, individual National Forests) with the Wenatchee-Okanagan National Forests, and has plans to continue these revisions through most of the range of the spotted owl in the coming decade or more. These revisions could modify the current land-use allocations (e.g., change late-successional reserve to matrix), which could greatly alter both the intended management on those specific areas and also the effect of having designated critical habitat within those areas. It is not possible for us to predict where or how these changes will align with the proposed revised spotted owl critical habitat, except to assume areas of designated critical habitat will continue to be in some sort of reserve or conservation-management status.
(b) Bureau of Land Management. In 2008, the BLM revised its resource-management plans for western

Oregon (where the large majority of its lands occur within the range of the spotted owl). Due to legal challenges, the BLM announced on March 9, 2012 that it was initiating the revision of their resource management plans in western Oregon. While we expect BLM to take into account the final critical habitat designation, it would be premature to predict the how management goals and objectives in their revision (including any potential land allocations) would correspond to spotted owl critical habitat. Until these revisions are complete the BLM will be managing their lands within the range of the spotted owl under the NWFP (per solicitor's email)." (ECON p. B-18 – B-19)

Post-Fire Forest Management

Stronger emphasis is needed on changes to post-fire management and restrictions on post-fire logging in owl habitat. While the Recovery Plan offers guidance to the agencies to this effect, only through the Section 7 consultation process can better management that deemphasizes post-fire logging become the norm. The result should be accelerated formation of high-quality owl habitat and nesting structures or multiple cavity-nesting species of conservation concern.

"Under the NWFP, post-fire salvage can occur in the Matrix, AMAs, and, to a much more limited extent, in LSRs (USDA and USDI 1994a, b). In areas where management is focused on development of spotted owl habitat (e.g., critical habitat), the Revised Recovery Plan (Recovery Action 12) recommends managing post-fire areas for, "conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood)" (USFWS 2011a, p. III-49). Again, it is too early in the implementation of the recovery plan to know the extent to which this recommendation will be applied by the agencies." (EA p. 48)

"Under the auspices of the Revised Recovery Plan's Recovery Action 12 recommendation, critical habitat designation could shift post-fire salvage management guidelines in the matrix from extraction of timber resources to "conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood)."138 Additionally, under the NWFP, Late Successional Reserves (LSRs) provide for salvage logging after fire events greater than ten acres in size that would likely be inconsistent with this recommendation." (ECON p. 4-5)

"Guidelines for management in LSRs, whether in spotted owl habitat or in younger forest, are generally more restrictive than our management recommendations in the Revised Recovery Plan and those outlined in the preamble to the proposed critical habitat designation. One exception would include timber management after a fire. The Revised Recovery Plan (Recovery Action 12 (RA 12)) recommends:

In lands where management is focused on development of spotted owl habitat, post-fire silvicultural activities should concentrate on conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood).

In the NWFP LSRs provide for salvage logging after fire events greater than 10 acres in size that would likely be inconsistent with RA 12, identified above. Otherwise, we don't anticipate requesting any project modifications to proposed projects in LSRs. While we do not expect that substantive changes to a project would be required to avoid adverse modification to critical habitat, in LSRs that are occupied or assumed occupied by the spotted owl the critical habitat designation will trigger an adverse modification analysis in addition to the baseline jeopardy analysis. As referenced above, the cooperative nature of inter-agency consultations makes jeopardy and/or adverse modification determinations for the spotted owl extremely rare. By minimizing the impacts of proposed projects to the spotted owl and its habitat we believe it is likely we've also minimized the impacts to the proposed critical habitat network, since many (but not all) of the minimization actions overlap both the species and its important habitat. Therefore,

we expect the addition of an adverse modification analysis to both existing and future consultations to be a relatively minor administrative burden of an additional 4-6 hours per consultation between all Federal staff working on the consultation." (ECON p. B-10)

Forest Service and Bureau of Land Management Ask That Matrix be Exempt

It is of concern that the Forest Service and BLM asked that matrix lands be excluded from the Critical Habitat designation in light of the Final Owl Recovery Plan that indicates high-quality owl habitat in the matrix must be conserved.

"Formal comments from the Forest Service requested that we consider large numbers of specific areas to be removed from, or added to, critical habitat, submitted to us in the form of GIS data. This proposal would have greatly reduced matrix lands in moist forest areas (Western Cascades, Oregon Coast Range, and North Coast Olympics) and eliminated Adaptive Management Areas and Experimental Forests from critical habitat. In addition, BLM requested removal of approximately 300,000 acres of selected BLM lands in western Oregon.

Population modeling results for Composite 8 indicated that many of the lands proposed for removal were essential to conservation of the northern spotted owl because the rangewide population declined by 39 percent and population risk increased by 44 percent. To bring the spotted owl population results back up to levels comparable to proposed critical habitat, the final critical habitat designation includes areas recommended by those agencies for elimination (and that had been removed in our test of Composite 8) because we determined they are essential to the conservation of the species." (p. 60-61)

"Overall, about 318, 296 acres of BLM and USFS lands were removed from critical habitat, 74 percent (236,887 acres) of which were matrix lands of relatively lower value to northern spotted owls." (p. 62-63)

Forest Service Request for 20% More Logging and Regeneration

We see no ecological benefit and likely harm resulting from the Forest Service push for 20% additional logging in the region, and the prospect the agency will begin clearcutting as the BLM is proposing to do. Volume driven logging undermines valid restoration and promotes unsustainable practices.

"The U.S. Forest Service questioned the DEA assumption about the distribution of timber harvested from Federal lands, and stated that the average estimated annual yield per acre may understate actual timber harvest, as well as the assumption that USFS harvest projections include only thinning activities and do not anticipate future regeneration harvest activities." (p. 659)

"The DEA based FS Region 6 projections on historical timber harvest quantities provided by USFS. Therefore, planned changes to timber harvest were not contemplated. To address this uncertainty in the amount of timber that could potentially be harvested in the future (i.e., if changes to timber harvest should occur), the FEA scales existing baseline projections upward to account for a potential 20-percent increase in timber harvest projection on USFS lands. The FEA also revised the language regarding projected timber activities to clarify that they may include both thinning and regeneration harvest." (p. 660)

"In Region 6, the FY2013 and FY2013 NWFP timber program is expected to increase by 20 percent in terms of acres and volume. USFS also disagrees with the assumption that —USFS harvest projections include only thinning activities and do not anticipate future regeneration harvest activities (page 4-18)."

(p. 660)

"USFS: Information provided by USFS Region 6 suggests that projections based on historical timber harvest may underestimate future levels of timber harvest. Specifically, the Region 6 timber program is endeavoring to increase production in FY 2013 and FY 2014.165 USFS will undertake future actions related to the use of active forest management targeting a 20 percent increase in terms of timber harvest volume and acres. Therefore, we contemplate a sensitivity analysis in which the baseline timber harvest accounts for a 20 percent increase in USFS Region 6 relative to historical yields." (ECON p. 4-38)

O & C Lands

We remain concerned about proposals to privatize or manage federal forests as though they were industrial lands. A letter was recently sent go Governor John Kitzhaber by a coalition of conservation groups pointing out that the Northwest Forest Plan requires conservation in these areas, and if they were to be logged, private and state forest lands would likely have to reduce production to compensate.

"In some areas, for example the O&C lands, our modeling results indicated that those Federal lands make a significant contribution toward meeting the conservation objectives for the northern spotted owl in that region, and that we cannot attain recovery without them." (p. 567)

"The O&C Act (pertaining to lands in Oregon and California) does not limit the Service's authority to designate critical habitat for the northern spotted owl. The designation of critical habitat is not a land use allocation and does not impose management prescriptions." (p. 583)

Fire Impacts and the Creation of Suitable Owl Habitat

The rule details the owl's life history, but the role of fire in the creation of suitable owl habitat is largely absent. Moreover, the rule repeatedly notes that nesting and roosting habitat are generally characterized by "Large snags and large accumulations of fallen trees and other woody debris on the ground," which typically result from past fires. Then, at the same time the Rule justifies extraordinary active management measures in owl habitat to reduce fire risks; it makes apparently contradictory claims like those below.

Studies by Hanson (2009 and 2010) and Miller (2012) have found that dry forests on the Eastside and in Northern California have not seen an increase in severe, high-intensity fires. Most of the acreage burned has been low to moderate severity with generally beneficial ecological effects. The risk of fire to owls also appears to be exaggerated in the final Owl Recovery Plan and draft Critical Habitat rule.

"The question of protecting critical habitat from the effects of fire is beyond the scope of this rulemaking." (P. 510)

"Second, there is considerable scientific uncertainty over the risk of fire to northern spotted owl habitat." (p. 599)

"Wildfire Management: NSO habitat is particularly vulnerable to wildfire in drier forest systems, which have experienced recent wildfire losses that have exceeded the range of historical variability.35 Some habitat losses resulting from increased wildfire frequency, intensity, and size can be attributed to excessive fuel buildup resulting from many decades of fire suppression. Fire management activities that benefit the NSO may include modified fuel reduction and fire suppression practices." (ECON p. 1-7)

Current and Past Timber Harvest Listed as a Threat

Nearly all of the subunits proposed for designation managed by federal agencies had current timber harvest listed a significant threat to the species. It is of concern that FWS continues to forcefully promote active management, i.e. logging in owl critical habitat, when timber harvest continues to be such a major and prevalent threat to the species in nearly every single designated subunit.

> "Threats in this subunit include current and past timber harvest;" (p. 190, 191, 192, 193, 196, 197, 199, 200, 201, 208, 209, 211, 212, 214, 216, 217, 218, 219, 220, 221, 223, 224, 225, 227, 228, 229, 230, 231, 232, 234, 235, 236, 238, 239, 241, 242, 243, 244, 245, 247, 248, 250, 251, 252, 253, 254, 255, 257, 258, 259, 261, 262, and 263.)

Adverse Modification

This provision remains of concern because it allows for the adverse modification of habitat resulting from active management.

> "Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation function or purpose for the species." (p. 265)
>
> "The key factor involved in the destruction/adverse modification determination for a proposed Federal agency action is whether the affected critical habitat would continue to serve its intended conservation function or purpose for the species with implementation of the proposed action after taking into account any anticipated cumulative effects (USFWS 2004, in litt. entire). Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the northern spotted owl." (p. 267)
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> "In general, we would anticipate that management actions that are consistent with the overall purpose for which a critical habitat unit was designated would not likely destroy or adversely modify critical habitat as those terms are used in the context of section 7(a)(2) of the Act. Such actions include activities whose intent is to restore ecological processes or long-term forest health to forested landscapes that contain northern spotted owl habitat, such as those actions described in the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011) and elsewhere in this document. However, each proposed action will be considered on a case-by-case basis." (p. 269-270)
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> If the effects of the project have more than an insignificant or discountable impact on the ability of the PCEs to provide life-history functions for the northern spotted owl, then the project is likely to adversely affect northern spotted owl critical habitat, and formal consultation is warranted.
>
> …the determination of whether an action is likely to destroy or adversely modify critical habitat is made at the scale of the entire critical habitat network. However, a proposed action that compromises the capability of a subunit or unit to fulfill its intended conservation function or purpose could represent an appreciable reduction in the conservation value of the entire designated critical habitat. Therefore, the biological opinion should describe the relationship between the conservation role of the action area, affected subunits, units, and the entire designated critical habitat." (p. 277)
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> "As described above, in general, we do not anticipate that activities consistent with the stated management goals or recommended recovery actions of the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011, Chapters II and III) would constitute adverse modification of critical habitat, even if those activities may have adverse effects in the short term, if the intended result over the long term is an improvement in the function of the habitat to provide for the essential life-history needs of the northern spotted owl. However, such activities will be evaluated under section 7, taking into account the specific proposed action, location, and other site-specific factors." (p. 293)

"Each situation should be considered on a case-by-case basis, but, generally, actions that have short-term negative impacts may be consistent with the recovery needs of northern spotted owl when the intent of the action is (1) to improve long-term conditions for the species or (2) to improve the overall condition of the ecosystem. It could be argued either that where populations are greatly depressed there is more need for these actions or, conversely, that there is less flexibility to conduct these actions depending on the specifics of the action and the habitat needs of the owl in that area." (p. 558-559)
"Consequently, project modifications as a result of critical habitat designation may only occur on those portions of the Matrix and AMA that is either younger forests or unoccupied by spotted owls (IEc 2012). The economic analysis calculated the portion of Matrix and AMA that could be affected based, in part, on an assumption that 6.5% of these lands would be unoccupied by northern spotted owls (IEc 2012)." (EA p. 54-55)

Consultation

We remain concerned that current FWS consultations are not adequately protecting Northern Spotted Owl and Marbled Murrelet habitat. We appreciate the direction provided below and urge that FWS adopt a moratorium on the elimination of owl and Murrelet habitat on federal lands.

"Habitat-manipulation projects within unoccupied habitat often trigger formal consultation because of the impacts to the recovery potential of the species, dispersal, and reduced segregation from barred owls; however, in unoccupied spotted owl habitat outside of LSRs the designation of critical habitat may have more of an impact on the design of proposed timber sales. The NWFP guidelines anticipated that most of the timber volume from Federal land would come from these lands, although some provisions (e.g., downed wood and leave trees) were included to assist species remaining after harvest. Since critical habitat is designated to help conserve (recover) the species, the designation of critical habitat in unoccupied spotted owl habitat may result in the Service requesting that timber sales in these areas be designed to help retain existing habitat and speed the development of spotted owl habitat and late-successional characteristics (including after wildland fire) instead of to maximize the extraction of timber. These ecological-forestry techniques may include smaller pockets of tree removal to create openings, but they would likely be significantly different than a traditional matrix timber-harvest prescription." (ECON p. B-11 – B-12)

"(5) Potential project modifications
(a) Due to the presence of the listed species. The spotted owl protections and minimization and conservation measures triggered by the consultation process (which largely occur during the pre-consultation phase consistent with our streamlined-consultation guidance) include such parameters as:
Restrictions on the timing of activities to avoid disturbing spotted owls during critical nesting periods;
Planning timber sales to avoid existing spotted owl sites;
Planning timber sales to minimize the likelihood of exacerbating barred owl and spotted owl interactions, particularly at existing spotted owl sites;
Minimizing the impacts to existing spotted owl nesting, roosting, and foraging habitat at the localized scale and dispersal habitat at the landscape scale (including overall connectivity between populations); and
Following the recommendations of the Revised Recovery Plan for the Northern Spotted Owl, including conserving known spotted owl sites, retaining older, more-complex stands on the landscape, and following ecological-forestry techniques when conducting timber harvest in areas important to spotted owls. Due to the conservation mandate of critical habitat, our recommendations on actions in critical habitat in the matrix would likely be to change the focus from timber production to development of spotted owl habitat. Following the Revised Recovery Plan¡¦s RA 12 recommendation, our recommendations for post-fire salvage management would potentially shift from extraction of timber

resources to ¡§conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood).¡¨ The incremental effects would not be dependent on the occupancy status of the stands.

The above measures may be applied in areas known or assumed to be occupied by spotted owls, or in areas of suitable habitat whether occupied by spotted owls or not, and may result in the action agency modifying its proposed action." (ECON p. B-14)

Comments from Peer Reviewers

A review of the peer reviews indicates that there isn't real scientific consensus on how to manage forests within the range of the Northern Spotted Owl, there are currently no studies showing owl populations benefit from active management, and there are numerous studies showing potential harm to the owl, its prey based, and to other list species.

Active Management

"Reviewers were divided on the risks posed by climate change and forest health, and whether active management should be applied within critical habitat." (p. 491)

"Three reviewers disagreed with some of the science that was cited, or the interpretation of that science, and noted that the discussion did not adequately address studies that have documented negative effects of timber management on northern spotted owls and their prey." (P. 494)

"Four reviewers indicated that parts of the document were unclear on whether ecological science was applied appropriately, and highlighted the lack of understanding about how such management actions may affect owls and their prey. Two reviewers specifically indicated that they did not think that approach is appropriate." (P. 494)

"Five reviewers believed that the risks were not appropriately balanced, that the discussion was too vague in weighing the tradeoffs, or that there is too little specific scientific understanding of the explicit tradeoffs to conduct an informed discussion. Several of these reviewers indicated that there was too much emphasis on active management in the preamble to the proposed rule given the lack of understanding about how ecological forestry and restoration management might affect owls." (P. 495)

Matrix Protection

"Eight reviewers addressed this question, and all agreed that inclusion of matrix lands in critical habitat was supported. One reviewer noted that the barred owl issue needs to be addressed (see response to *0* for detailed discussion of this issue), and another reviewer was surprised that all habitat-capable lands in the western portion of the species' range were not included in critical habitat (see *0* for a more detailed discussion of this issue)." (p. 493)

Marbled Murrelet

Other listed species may also be harmed by the proposed active management such as the Marbled Murrelet. The draft Rule's Environmental Assessment found that "Active forest management that is in the vicinity of murrelet nesting stands may be detrimental to the species survival and recovery." (p. 61)

This results from increased fragmentation and opening the forests to crows, ravens, and jays, increasing predation pressure on nesting murrelets. Despite this, there was no prohibition in the final Rule on the proposed active management to ensure murrelet nesting stands will not be disturbed, and notably, the fact that active management may be detrimental to Murrelet nesting stands was not mentioned.

Active management, if conducted near nesting murrelets will likely be harmful. There are also indications the prey base of the Northern Spotted Owl could also be harmed by active management including thinning, but these factors are glossed over by the final Rule. And unlike the Northwest Forest Plan, there is no detailed analysis how other listed species will fair under the active management being proposed by the Rule.

We appreciate the concern expressed for the Murrelet and potential implications if its critical habitat is vacated. We are discouraged however, by the lack of discussion on potential negative consequences for the Murrelet of active management in owl habitat, and how adverse modification of owl habitat is in fact allowed by the Rule, and will not afford the Murrelet additional protection in that circumstance.

> "Currently 1,735,900 ac of the 2008 northern spotted owl critical habitat designation overlays critical habitat designated for the marbled murrelet. Critical habitat for the marbled murrelet is currently under litigation and may be vacated (see section 3.4.4 Cumulative Impacts). Should vacature occur, the nesting habitat components for marbled murrelets would generally be protected through avoidance or adverse modification of spotted owl PCEs in those areas where marbled murrelet critical habitat overlaps the 2008 spotted owl critical habitat. This 1.7 million acres of overlap will be a baseline from which to compare other alternatives to determine the amount of existing marbled murrelet critical habitat that may continue to be afforded incidental protections as a result of avoiding adverse modification of spotted owl critical habitat." (EA p. 90)
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> "Most of the PCEs for nesting habitat under this alternative (e.g., moderate to high canopy closure; multi-layered, multi-species canopy with large overstory trees; and a high incidence of large trees with various deformities) provide structural features that also meet the nesting structure needs of marbled murrelets. However, in some parts of the spotted owl range, PCEs that provide for foraging in the form of dense shrub and hardwood openings, or low density patches of forest, particularly in the Klamath, Northern California Interior Coast Ranges, and Redwood Coast Critical Habitat Units, may not be conducive to murrelet nesting habitat (See Section 2.2.1 Primary Constituent Elements). These vegetation pockets open up forest canopies and fragment the landscape for murrelets, inviting corvids (e.g., crows, ravens, and jays) and increasing the predation pressures on nesting murrelets, reducing the ability of this species to reproduce (Nelson *et al.* 2006). In these areas, protection of spotted owl foraging PCEs from destruction or adverse modification may not necessarily protect some of the habitat attributes required by nesting marbled murrelets. Nevertheless, avoiding adverse modification of spotted owl critical habitat may benefit marbled murrelets overall. Spotted owl critical habitat under this alternative overlaps 2,548,700 ac of marbled murrelet critical habitat. This is a 812,800 ac increase in overlap compared to the No Action Alternative. Should vacature of marbled murrelet critical habitat occur, the nesting habitat components for marbled murrelets would generally be incidentally protected through avoidance or adverse modification of spotted owl PCEs in the approximately 2.5 million acres where marbled murrelet critical habitat overlaps critical habitat designated for the spotted owl under this alternative. However, the specific effects to murrelets are not reasonably foreseeable because the specific responses by managers to critical habitat designation are not reasonably foreseeable (See section 3.1.2.2 Alternative B)." (EA p. 94)
>
> "Critical habitat designated for the marbled murrelet, is currently under litigation. On Jan. 25, 2012, plaintiffs American Forest Resource Council, Carpenters Industrial Council, and Douglas County, Oregon, filed suit in Federal district court, in part, challenging the rule designating marbled murrelet critical habitat. American Forest Resource Council v. Ashe, Civil No. 12-111-JDB (D.D.C.). On Aug. 20, 2011, the Service and the plaintiffs filed a joint motion for entry of a consent decree under which the Court would remand the murrelet critical rule to the Service for reconsideration, and the rule would be vacated pending completion of the remand. As of this writing, the Court has not ruled on this motion. Should the motion be granted, this would result in the removal of critical habitat for the marbled murrelet on the

landscape until the Service completes a revision of the rule. Effects of such an action would be a reduction in murrelet habitat protection by removing the requirement for Federal agencies to not destroy or adversely modify critical habitat. Protection for most of the critical habitat PCEs for nesting spotted owl habitat under all action alternatives (e.g., moderate to high canopy closure; multi-layered, multi-species canopy with large overstory trees; and a high incidence of large trees with various deformities) through avoiding their destruction or adverse modification may provide structural features that also meet the nesting structure needs of marbled murrelets. Thus, critical habitat designation for the northern spotted owl may provide some ancillary benefits to marbled murrelets. However, in some parts of the spotted owl range, PCEs that provide for foraging in the form of dense shrub and hardwood openings, or low density patches of forest, particularly in the Klamath, Northern California Interior Coast Ranges, and Redwood Coast Critical Habitat Units, may not provide features beneficial to nesting murrelets. These vegetation pockets open up forest canopies and fragment the landscape for murrelets, inviting corvids (e.g., crows, ravens, and jays) and increasing the predation pressures on nesting murrelets, reducing the ability of this species to reproduce (Nelson et al. 2006). In these areas, protection of some spotted owl PCEs through the avoidance of adverse modification may not provide the habitat attributes needed by nesting marbled murrelets. Should the motion for remand of marbled murrelet critical habitat be granted, the protections of marbled murrelet critical habitat would not be in place in these areas. However, where spotted owl critical habitat overlaps murrelet critical habitat, it may provide incidental protections to habitat attributes necessary for nesting marbled murrelets through the avoidance of destruction or adverse modification of spotted owl PCEs that also support nesting murrelets.

The current designation of spotted owl critical habitat overlaps 1,735,900 ac of marbled murrelet critical habitat. All Action Alternatives result in an increase in overlap of marbled murrelet habitat compared to the No Action Alternative, ranging from a minimum of approximately 2.1 million ac of overlap for Alternative E, to a maximum of approximately 2.5 million ac for Alternative B. Thus, even if the vacature of marbled murrelet critical habitat occured, compared to the No Action Alternative, all action alternatives provide an increase in the area of incidental protections that may be afforded to marbled murrelets through the avoidance of destruction or adverse modification of critical habitat for spotted owls, and would generally benefit murrelets. Even in those areas outside of critical habitat, the marbled murrelet would continue to be protected under section 7 (Federal actions must avoid jeopardizing the species) and section 9 (prohibition of take of the species without a permit) of the ESA. That is, habitat that is currently occupied will be protected through the consultation process and jeopardy analysis for actions with a Federal nexus (section 7 of the ESA), and the ESA section 9 prohibitions against “take” and the incidental-take-permitting process will also protect both occupied and unoccupied habitat.” (EA p. 143-144)

Northern Spotted Owl

We appreciate the hard work that went into the modeling effort and the development and completion of this rule. Despite some flaws and uncertainties, the rule offers renewed hope that the Northern Spotted Owl can be saved from extinction.

“Spotted owl population modeling results for this alternative (northern spotted owl population size of 3,224 females at year 350, and extinction risk of 3 percent of simulations with populations below 1,000 individuals) (Figures 20 and 21) indicate better population performance as compared with the No Action Alternative, and similar performance as compared with the Proposed Action (Alternative B).” (EA p. 106)

February 20, 2015

Doug Krofta
Chief, ESA Listing
U.S. Fish and Wildlife Service
Washington, D.C. 20240

Dear Mr. Krofta,

American Bird Conservancy (ABC) is writing in regard to the petition to the list the California Spotted Owl as threatened or endangered submitted by the Wild Nature Institute and John Muir Project of Earth Island Institute. ABC agrees that a review of the best science and current management practices reveals that the petition has merit and should be considered by the agency.

The petition argues that current land management strategies in California Spotted Owl habitat under the 2004 Sierra Nevada Framework are at the root of continued population declines. The evidence from a significant number of scientific studies cited within the petition is compelling and we urge its consideration.

Recent findings indicate that low and moderate severity fires are not a threat to California Spotted Owl populations, and that owl populations are declining in areas where there is post-fire logging and mechanical fuels treatments. Post-fire logging has been shown to be particularly detrimental to all three owl subspecies' populations by causing abandonment of burned areas that might otherwise remain occupied. The only areas where California Spotted Owl populations are stable are in National Parks.

Information on impacts to the California Spotted Owl should also be considered across the entire range of the species regarding management decisions affecting habitat of the threatened Northern and Mexican Spotted Owl. Based on recent studies, we anticipate current management will lead to a decline of Northern Spotted Owl populations. This comes at a critical population bottleneck for the northern subspecies resulting from historic and ongoing loss of habitat. The Northwest Forest Plan predicted it would not be for another 30 years that sufficient habitat would grow back into large blocks to see owl populations begin to recover.

The invasion of Barred Owl into Spotted Owl's range requires a higher level of protection than previously projected, and more than is being currently afforded by the critical habitat rule's adverse modification policy and post-fire logging of mature and old-growth forests that maintain important biological legacies for owls and a host of prey species found in the ensuing complex early seral and unsalvaged habitat. These activities threaten to undermine the functionality and future extent of the late-successional reserve network envisioned by President Clinton's Northwest Forest Plan.

Risk of fire to the Spotted Owl is being overstated in the Mexican Spotted Owl Recovery Plan, the Northern Spotted Owl Recovery Plan and Final Critical Habitat Rule and the Sierra Nevada Ecosystem Framework of 2004 and aggressive fuels treatments in owl habitat may be counterproductive to recovery. That is because projects now being undertaken in the name of fire prevention in Spotted Owl habitat are often harmful to the

owls and require take.

For that reason, we respectfully urge FWS to reexamine this policy and for the land management agencies to avoid Spotted Owl take pending completion of an updated analysis.

We look forward to working with you and the FWS staff to conserve and recover the Spotted Owl.

Sincerely,

Steve Holmer
Senior Policy Advisor
American Bird Conservancy

Cc: Michael Bean, Principal Deputy, Fish, Wildlife and Parks, Department of the Interior
Robert Bonnie, Undersecretary for Natural Resources and the Environment, Department of Agriculture
Tom Tidwell, Chief, U.S. Forest Service
Neil Kornze, Director, Bureau of Land Management

Summary of Wild Nature Institute and John Muir Project Petition

A fundamental premise of the listing petition is that new information merits revisiting the 2006 FWS decision to not list the subspecies based on uncertainties over its population size and response to wildfire and forest management. As the petition notes: "The CSO was denied protection in 2006 based on the assertion that fire represented the primary threat to its survival, and the threat was being addressed by Forest Service actions."

Analysis of demographic data of five California Spotted Owl populations concludes that since 2006 four out of the five populations' studied are declining. The other population, which inhabits National Parks is stable. Other studies published since 2006 indicate the owls are well-adapted to low and moderate severity fire, and that post-fire logging is likely to be the driver of owl population declines.

There is only an estimated population of the CSO based on the number of known occupied sites. In 2006 there were approximately 1,200 – 1,700 pairs. The demographic study estimates a 10-15% decline since that time so ABC estimates the current population is approximately 1,100 – 1,600 pairs.

The demographic data collection was initiated in the late 1980s and early 90s to estimate the subspecies population. The petitioners reviewed the results of multiple analysis methods to determine population trends in each of the five study areas, Lassen, Eldorado, Sierra, Sequoia-Kings Canyon, and San Bernardino, which total 1.4 million acres.

In two of the study areas in Sierra Nevada national forests, populations have declined approximately 10 percent since 2003 (Conner et al 2013), and the other Sierra Nevada study area has a 20 percent decline (Tempel and Guituerrez 2013, Tempel 2014). Population trends for the Lassen study area showed population declines in 2001, 2010, and 2013 (Blakesley et al, 2001, Blakesley et al 2010, and Conner et al 2013) and Conner et al estimated a 21-22 percent decline over the past 18 years. The Tempel 2014 study found the decline in the El Dorado area was as high as 50 percent from 1990-2012.

Gutierrez et al 2012 confirmed this decline stating "there has been a clear decline in abundance over the last fifteen years." Modeling also indicates that extinction is outpacing colonization leading to reduction in owl sites over time. Tempel and Guitierraz 2013 concluded areas are not being colonized due to habitat alternation.

Keane et al (2012) reported that the Meadow Valley fuels treatment project on the Plumas National Forest conducted from 2006-08. After the logging the number of territorial sites declined from 9 to 4 over a four year period (2007-2011). This was confirmed by Stephens et al (2014) which found a 43% loss of CSO within a few years of mechanical thinning. The authors noted that while the region's overall population is declining, the steep rate of decline in the fuels treatment study area were of "a greater magnitude" than elsewhere on the landscape.

Conner et al 2013 found that the Sequoia-Kings Canyon area analysis indicates a population increase of 16-27 percent over the seventeen year study period. Blakesley et al 2010 reported that at a minimum their analysis showed a stable population with a higher adult survival rate than other study areas. The authors suggested the higher survival rate of adults in the National Park resulted from "differences in habitat quality resulting from differences in forest management both before and during the study period…"

The petitioner's conclude on page 92 that: "the only area in the Sierra Nevada in which California spotted owl populations are known to be stable or slightly increasing is an area with an active mixed-severity fire regime and no mechanical thinning or post-fire logging (Sequoia/Kings-Canyon National Park), while all study areas on national forests and private lands (characterized by aggressive reduction of fire due to fire suppression, landscape-level mechanical thinning, and common post-fire logging) have declining populations (Conner et al. 2013, Tempel and Gutiérrez 2013, Tempel 2014, Tempel et al. 2014a). These findings indicate that mixed-severity fire (which includes a high-severity fire component) is, on its own, not a significant threat to California spotted owls. Instead, management activities that follow mixed-severity fire (post-fire "salvage" logging), or are conducted ostensibly to "save" owls from higher-severity fire (mechanical thinning), are primary threats to the owl."

The San Bernardino population declined at a 9 percent rate from 1987 to 1998 (LaHaye et al 1999). The region had extensive logging on private lands and the San Bernardino National Forest in response to a bark beetle outbreak.

Other studies have looked into the effect of habitat alteration. Seamans and Guitierrez (2007a) found the probability of territory colonization decreased, and territory occupancy decreased in areas with as little as 40 acres of logging. Bias and Guitierrez (1992) attributed low use of private timberlands by roosting and nesting CSOs to sanitation and high-grade logging that removed potential nest trees.

Clark et al (2013) concluded: "Our results also indicated a negative impact of salvage logging on site occupancy by spotted owls. We recommend restricting salvage logging after fires on public lands within 2.2 km of spotted owl territories (the median home range size in this portion of the spotted owl's range) to limit the negative impacts of salvage logging."

A 2012 Forest Service study (Lee et al) examining 11 years of CSO breeding season survey data from burned and unburned forests found no significant effects of fire on probabilities of local extinction and colonization. Roberts (2008) and Robert et al. 2011 found many Spotted Owl sites continued to be occupied and reproduced successfully after fire burned portions of their home ranges and core area, and Roberts (2008) also found a higher reproduction rate in mixed-severity burn areas over unburned areas. Williams et al (2011) found that owl home ranges in burned areas are similar to unburned areas. Jenness et al (2004) found that numbers of

successfully reproducing Mexican Spotted Owls territories did not statistically differ between burned and unburned forests.

In addition, management prescriptions to prevent fire, risk turning viable habitat into areas with less than 40 percent canopy cover which owls are likely to abandon. Under the Defensible Fuel Profile Zones and Strategically Placed Area Treatments, canopies are reduced the 40 percent cover, the minimum usuable by Spotted Owls. Gallagher (2010) found owls avoided foraging in these treatment areas. Bond (2009) found that Spotted Owls forage in all burn severities, and that owls have a slight preference for feeding in burned areas over unburned areas, and unlogged areas over logged forests.

Under the 2004 Framework, the Forest Service is defining suitable habitat too narrowly, automatically disqualifying burned areas even if owls continue to occupy the site. Despite exposure of agency wrongdoing by an Associated Press expose by Scott Sonner in 2004, the agency continues to assume burned habitat, particularly high-severity burn areas, are a complete loss as owl habitat, and therefore, can be opened to logging. This is a result of the 2004 SFNPA that states areas with stand replacing fires can be removed from Protected Activity Centers.

On page 100 the petition notes: In the Power Fire area and the Freds Fire area, the 2004 Sierra Nevada Forest Plan Amendment allowed the Forest Service to treat the higher-severity fire areas within the pre-fire PAC boundaries as being lost/unsuitable, which not only opened the PACs to post-fire logging, but also allowed the Forest Service to misleadingly claim that "0" acres of "suitable habitat" within the PACs would be salvage logged (Bond 2011).

Current policy also promotes landscape level mechanical thinning in spotted owl habitat, even allowing such activities in PACs and HRCAs. As noted above, the 2004 plan also promotes post-fire logging of owl habitat, assuming that it no longer habitat, and mechanical thinning, despite evidence this is causing severe harm to California Spotted Owls. As the petitioners note on page 95:

"Tempel et al. (2014b) found that mechanical thinning is significantly harming California spotted owls. The authors found that the amount of mature forest with high canopy cover (70–100 percent) was a critical variable for California spotted owl viability (survival, territory extinction rates, and territory colonization rates), and determined that "medium-intensity" logging—mechanical thinning under the 2004 Amendment, and earlier prescriptions generally consistent with the 2004 Amendment— significantly adversely affects California spotted owls at all spatial scales by targeting dense, mature forests with high canopy cover, degrading the quality of such habitat by reducing it to moderate canopy cover. This is adversely affecting California spotted owl reproduction (Tempel et al. 2014b)."

The evidence of negative impacts to owls from post-fire logging is of particular concern. Lee et al. (2012) report that mixed-severity (averaging 32 percent high-severity fire effects) did not reduce CSO occupancy. However, sites that were also post-fire logged saw complete abandonment.

It is also important to consider the historic loss of CSO habitat as a result of reduced abundance of large, old trees, and a decline in snag density. It will take many decades to restore late-successional conditions, and a change in post-fire logging policy to restore snags and downed woody debris. A review of Sierra Nevada National Parks by the SNEP Report found 55 percent of forests are in late-successional condition, but on other federal lands such conditions are found on only 19 percent of forest lands. Beardsley et al (1999) estimated that old growth forests declined from 45 percent to 11 percent of the landscape since 1945.

There is concern that the Forest Service is ignoring the available scientific literature to continue this management direction which is harmful to CSO. The 2013 forest plan for the Lake Tahoe Basin Management

Unit continues to claim still occupied habitat has been "lost" to fire, reduced canopy cover protection for owls, and allows clearcutting of owl habitat and cutting of large trees over 30-inches. Similarly the scoping document for the three early adapter forests in California promotes mechanical thinning and does not provide any significant protections for CSOs.

Negative Impact of Fire Risk Reduction Needs Further Analysis

There currently is a scientific debate about the role of mixed and high severity fires in providing habitat and nesting structures for Spotted Owls, and the degree to which fire is a threat to owl populations. This debate is a core issue for habitat management of all three subspecies, and aggressive management to reduce fire risk has been incorporated into recovery plans, forest plans, and critical habitat rules.

A number of recent studies (Bond et al, , Ganey et al 2014) indicate owls will forage in moderate and even in high severity burn areas due to an abundance of prey, and that these fires create future nest trees and snags and large wood debris beneficial to owl prey (Baker et al 2012).

Maintaining legacies is essential for future use by owls. North et al. (1999) notes "In our study area, stands with high use by owls typically included many "legacies" that survived a fire or windstorm that destroyed much of the previous stand." So, while fire risk reduction may be necessary to protect human lives and homes, scientific evidence is lacking that it is a critical conservation need of Spotted Owls.

Recovery Action 12 of the Northern Spotted Owl Recovery Plan recognizes this importance and recommends that ALL structures that take a long time to form such as legacies and large downed trees be retained. But post-fire logging projects such as the Douglass Fire Recovery and Westside Fire Recovery Projects propose to log extensive areas of suitable owl habitat and remove these legacies RA 12 says should be retained. In addition to removing suitable habitat, the Douglass Project proposes to directly take 24 Spotted Owls, and the Westside Fire Recovery project, still in scoping, contains over fifty owl activity centers within the proposed logging area.

A January 13, 2015 objection to the Four-Forest Restoration Initiative submitted by Dr. William Baker concludes that "…new science shows parts of the plan and Final EIS are not scientifically supported." Baker found that fire risks are overstated, in part because new habitat resulting from forest succession is not being considered, and recommended that the Final EIS suspend proposed treatments in MSO habitat until adequate analysis is completed.

"USFWS and the scientific community need to undertake needed analysis to accurately estimate fire risk to MOS relative to benefits of mixed- and high severity fire for MSO and rates at which new habitat is being produced by forest succession. During the suspension, it is important to conduct and complete small-scale experiments to determine the effects of thinning on MSO, since nothing is known about this."

Additional Resources

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Letter from Conservation Groups to Administration Regarding Principles for Northwest Forest Plan Revision

December 9, 2014
Robert Bonnie
Undersecretary for Natural Resources and Environment

U.S. Department of Agriculture
Washington, D.C. 20250

Jim Lyons
Deputy Assistant Secretary
Land and Minerals Management
U.S. Department of the Interior
Washington, D.C. 20240

Michael Bean
Principal Deputy
Fish, Wildlife, and Parks
U.S. Department of the Interior
Washington, D.C. 20240

Dear Mr. Bonnie, Mr. Lyons, and Mr. Bean,

The undersigned conservation organizations would like to follow up on a recent meeting with Forest Service regional foresters Randy Moore and Jim Peña and planning staff. Outlined below we express our concerns and offer a vision for the proposed revision to President Bill Clinton's Northwest Forest Plan (NWFP).

Our organizations are concerned by the proposed forest by forest revision process which lacks the overarching standards and guidelines of the NWFP, and past and current agency actions to weaken the NWFP, including the offering of projects inconsistent with conserving the Northwest's late-successional ecosystem and the birds, fish and other wildlife it sustains. We encourage the administration to consider a better course of action than the currently proposed NWFP revisions. We are confident one exists, and that it is consistent with the best available science and our collective efforts to combat climate change.

We urge the Obama Administration to keep the NWFP as a consistent, regional, interagency plan and continue the ecosystem management approach that accounts for the needs of multiple listed species which depend on the preservation and restoration of large blocks of mature and old-growth forests and intact watersheds that remain in short supply on the landscape. Recent science has reaffirmed the importance of the NWFP as a global model for ecosystem management and biodiversity conservation, particularly the reserve network[i]. We urge the administration to abide by the founding principles of the NWFP, particularly with respect to its emphasis on scientific credibility and legal defensibility as also outlined herein.

The NWFP is a success and an example of strong presidential leadership that provided the Northwest's old-growth forest ecosystem a needed breather from decades of intensive logging that all but eliminated a functional old forest ecosystem in the Pacific Northwest[ii] and the resulting national public controversy. Due to forest growth provided for by the NWFP, what was once a significant annual source of CO_2 due to logging of old forests is now a significant net carbon sink.[iii] Additionally, water quality has significantly improved due to the plan's watershed restoration emphasis and constraints on logging in riparian buffers[iv].

The NWFP as implemented (i.e., emphasizing commercial thinning in young plantations and de-emphasizing regeneration harvest (e.g. clearcutting) and preservation of mature and old growth forests) remains a solid foundation upon which to build and offers the best model to address numerous new stressors to this late-successional ecosystem. For example, radio-tracking studies demonstrate that Northern Spotted Owls have a higher likelihood of survival against Barred Owl invasion when larger blocks of late successional habitat are available[v].

Based upon the latest information about wildlife population declines, the influx of the Barred Owl, rising

carbon dioxide levels in the atmosphere and the likely impacts of climate change, additional protective measures for wildlife habitat, preservation of high biomass forests, and increased protection of stream buffers should be implemented by this plan revision.

We recommend that plan revisions build on the protective standards and guidelines and reserve allocations of the NWFP by incorporating new policy recommendations such as ecological integrity (as specified in the 2012 planning rule), climate resilience, connectivity, and especially carbon storage (as specified by the Council on Climate Preparedness and Resilience Climate and Natural Resources Working Group). Below are the following principles we believe are consistent with these new policies and best science.

Strengthening and Expanding Reserves

- Expand the late successional reserve and riparian reserve systems to provide refugia for late-successional species and to ameliorate new stressors, including Barred Owls and climate change.

- Prohibit post-disturbance logging in reserves to protect carbon sequestration of post-fire landscapes, provide habitat for threatened species and prey, and to provide complex early seral forests that are as rich as old-growth forests[vi] and increasingly rare due to post-fire logging.

- Designate additional reserves and larger no-logging buffers within the range of the threatened Marbled Murrelet to reduce habitat fragmentation effects.

- Designate all mature and old-growth forest, all high-carbon forests, all reserves, all critical habitat, all key watersheds, and all roadless areas larger than 1,000 acres, as "not suitable for timber production" to ensure that timber production does not take priority over ecological and restoration goals.

- Withdraw reserves and all administratively protected classifications from mining.

Protecting Watersheds, Aquatic Species

- Retain existing Aquatic Conservation Strategy (ACS) objectives and riparian reserve boundaries, and the standards and guidelines that emphasize restoration, and avoid actions that would retard or prevent achievement of the ACS objectives for all watersheds, over time.

- Preserve requirements that projects maintain and restore the aquatic functions and processes of streams and watersheds by demonstrating consistency with the nine Aquatic Conservation Strategy Objectives at scales relevant to those functions and processes.

- Prohibit grazing in riparian reserves and key watersheds and provide for voluntary federal grazing permit vacation to reduce cumulative effects of grazing[vii].

Reducing Stressors by Addressing Roads

- Rationalize the road system by reducing road densities and road-related impacts to listed aquatic and terrestrial species, improving all standards for road decommissioning and removal, and restoring connections to inventoried roadless areas.

- Accelerate implementation of Travel Analysis Report recommendations and Watershed Restoration Action Plan projects to implement a minimum road system.

Advancing Forest Restoration

- Promote variable density thinning in plantations to accelerate development of late-seral conditions and reduce fire risks. Limit tree thinning to 20 inch dbh to restore older tree characteristics to dry and moist forests.

Protecting High Biomass Forest Carbon Stores and Reducing CO_2 Emissions

- Conduct baseline inventory of carbon stocks and fluxes to identify and protect all high biomass forests[viii] for their carbon storage value.

- Analyze and mitigate for carbon dioxide emissions resulting from regeneration logging, forest thinning, post-fire logging, and biomass utilization[ix].

Re-Establishing Connectivity

- Establish and protect redundant habitat linkages for wolves and other wildlife along elevation gradients and north-south gradients and microrefugia (mainly low elevation and north-facing mature forests) for species movements and persistence in a changing climate[x].

- Protect all native (unmanaged) forest in all land allocations from logging to add connectivity and increased functionality of late-seral ecosystem needed to arrest declines in listed salmon populations and late-seral species such as Northern Spotted Owl, Marbled Murrelet, Pacific Fisher, Humboldt marten, and Red-tree Vole.

Protecting Drinking Water Sources

- Protect drinking water source areas for municipal water supplies from degrading activities including commercial logging, grazing, mining and off-road vehicle use.

Recommending Wilderness, Wild and Scenic and other Protected Areas

- Recommend new Wilderness Areas and Wild and Scenic Rivers, including tributary additions to existing Wild and Scenic Rivers.

- Complete the Research Natural Area System, designate additional Special Interest Areas and designate and protect National Recreational Trails.

Allowing for Appropriate Wildland Fire Management

- When appropriate, allow fires to burn safely in the backcountry and provide for un-salvaged early seral habitat for fire-dependent species. Focus thinning on the home ignition zone and flammable tree plantations.

Conversely, conservation groups are opposed to dissolution of the regionally integrated NWFP with each National Forest and BLM District Office adopting inconsistent and weaker standards that do not take a comprehensive ecosystem protection and restoration approach. Judge William Dwyer concluded that the BLM and Forest Service had to do an ecosystem-wide plan as opposed to forest-by-forest plans and ruled that the agencies could not, given the current conditions of the forests, meet their obligations under NEPA and the ESA "without planning on an ecosystem basis." *Seattle Audubon Society v. Lyons,* 871 F. Supp. 1291, 1311 (W.D. Wash. 1994) (emphasis in original).

The best available science does not support eliminating or shrinking the late-successional or riparian reserves or weakening of other protective management standards. As noted above, scientific studies indicate that Northern Spotted Owls have a better chance of coexisting with Barred Owls when there are more large blocks of habitat available. Logging in suitable or high quality Critical Habitat of the Northern Spotted Owl is inconsistent with recommendations to preserve existing habitat, and should be avoided. Clearcuts, including modified clearcuts (ecoforestry) on federal forests will hasten owl decline[xi] and degrade water quality and should therefore be opposed.

Past and recent agency actions to weaken protections of the Northwest Forest Plan and to offer extensive post-fire timber sales and other projects in the NWFP region that are inconsistent with the best available science or current understandings of climate adaptation and resilience have eroded public and scientific trust. We are greatly concerned the land management agencies are leading NWFP revision process in what appears to be a piecemeal and uncoordinated fashion. Specifically, we are concerned by:

- The BLM's Western Oregon Plan Revision and the Okanogan/Wenatchee National Forest draft plan revision that propose to eliminate or reduce reserves and weaken management standards in the Northwest Forest Plan.

- Proposals to replace the NWFP Aquatic Conservation Strategy with a modified Aquatic Conservation and Restoration Strategy that has weaker protection standards[xii], and to eliminate Survey and Manage Requirements.

- Large-scale post-fire logging in mature and old-growth forests and Key watersheds such as the proposed Westside post-fire logging project on the Klamath National Forest in California despite extensive science that indicates this type of logging is not consistent with ecological integrity or climate resilience[xiii].

- Raising the age of logging in late-successional reserves in California from 80 years to 120.

- Allowing for logging that downgrades or degrades suitable Northern Spotted Owl habitat in designated critical habitat.

- Not re-designating late-successional stands in the matrix as reserves or updating the current 800 million board foot Probably Sale Quantity to reflect the additional protections required by the Northern Spotted Owl critical habitat designation and the need to conserve forest carbon.

- Continuing to propose damaging logging despite lack of up to date regional population numbers for Northern Spotted Owl, Marbled Murrelet, Red Tree Vole, and Pacific fisher and the impact of these projects on these imperiled species.

- Lack of analysis of impact of large-scale thinning effects in Northern Spotted Owl and Marbled

Murrelet critical habitat and suitable nesting, roosting and foraging owl habitat.

In conclusion, we urge the land management and wildlife protection agencies under your purview to address these specific recommendations listed above as part of the upcoming planning process and build upon the protections of the historic NWFP. This will ensure that the plan continues to be a leading example of large-landscape conservation and ecosystem restoration. Thank you for your consideration.

We look forward to working with the administration and federal agencies on the NWFP, and are interested in meeting with you at your convenience to discuss these issues in more detail.

Sincerely,

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Letter to Regional Foresters Regarding Northwest Forest Plan Revisions

May 5, 2015

Jim Peña
Randy Moore
Regions 5 & 6
U.S.D.A. Forest Service

Dear Regional Supervisors Peña and Moore,

On behalf of the undersigned conservation groups we wish to express our continuing concern about the proposed revision of President Clinton's Northwest Forest Plan.

Our coalition supports maintaining and building upon the existing late-successional and riparian reserve systems, Aquatic Conservation Strategy, protections for rare species under the Survey and Manage program, and other protections of the Northwest Forest Plan and urges the agency to adopt a more aggressive effort to decommission forest roads to support watershed restoration and job creation. We are opposed to proposals that increase logging of mature forests that need to be conserved in order to restore the late-successional ecosystem, reduce stream and watershed protections, or reintroduce regeneration harvest to heavily fragmented landscapes.

We appreciate that the Forest Service has initiated a public process via the interviews, listening sessions and a science synthesis to help inform forest plan revisions within the Northwest Forest Plan area. We have several recommendations to ensure the public and scientists can fully participate.

Immediate questions related to the science synthesis include: 1) what are the topics and questions that will guide the synthesis, and 2) how will new and independent scientific information be incorporated? We recommend that a comment period and web portal be opened to ensure that a full range of views and scientific studies will be considered.

It remains unclear how the Forest Service's planning effort will be coordinated with the BLM's plan revisions already underway or how revised individual plans will address the regional needs and maintain viable populations of wide-ranging listed and candidate species such as the Northern Spotted Owl, Marbled Murrelet, North Oregon Coast Range DPS of the Red Tree Vole, Pacific Fisher, populations of Coho Salmon, as well as hundreds of survey and manage species that include many localized and rare endemics.

Attached is a report prepared by Geos Institute summarizing the best available science and the many accomplishments of the Northwest Forest Plan. As the 20-Year Monitoring reports are being released, we urge the Forest Service to include the findings of this report and highlight the successes of the Plan accordingly.

We also would like to thank you for the implementation successes of the Northwest Forest Plan that include improving water quality, turning the region's forests into a carbon sink, slowing the rate of decline of Northern Spotted Owls, and protecting and restoring large blocks of mature and old growth forests needed by hundreds of species.

We would like to request a meeting to discuss these issues and our recommendations.

Sincerely,

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Comments by Dr. Jerry Franklin on Westside Fire Recovery Project

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RE: Comments on the Draft Environmental Impact Statement for the Westside Fire Recovery Project

Dear Supervisor Grantham and Ms. Coats: April 6, 2015

I have reviewed the Westside Fire Recovery Project DEIS dated March 2015. I would like to offer the following comments based on my experience as a forester, scientist, and educator involved in the study and management of forest ecosystems in the Pacific Northwest. I rarely submit formal comments on projects but I feel I need to do so because extensive areas of Late Successional Reserves are proposed for treatment.

Summary

My comments are focused primarily on activities proposed for Late Successional Reserves (LSRs), a land use allocation that I helped to create and populate as a member of the Forest Ecosystem Management Assessment Team (1993). Excepting the proposed roadside salvage, approximately 72% of the proposed salvage logging in the preferred alternative (#2) is located within LSRs—roughly 4,900 acres out of 6,800 acres total. In part, the logging is justified in the DEIS on the basis that it is needed to assist in rapid re-establish late-successional forest conditions and Northern Spotted Owl habitat with the LSRs.[1] Given the important and well defined ecological role assigned the LSRs in the Northwest Forest Plan (NWFP) I have paid special attention to the scientific rationale offered for the extensive salvage logging that is proposed in LSRs.

The LSR network was designed as a robust system of ecological reserves, which could accommodate large intense natural disturbances and the natural recovery processes that were expected to follow them. The FEMAT team well understood that salvage operations would interfere with these recovery processes, which is why they recommended that salvage in LSRs should be very limited in the FEMAT report; this conservative direction with regards to salvage in LSRs was incorporated in the NWFP.

Salvage logging of large snags and down boles does not contribute to recovery of late-successional forest habitat; in fact, the only activity more antithetical to the recovery processes would be removal of surviving green trees from burned sites. Large snags and logs of decay resistant species, such as Douglas-fir and cedars, are particularly critical as early and late successional wildlife habitat as well as for sustaining key ecological processes associated with nutrient, hydrologic, and energy cycles.

[1] According to the DEIS, the purpose and need for post-fire treatments is: 1) worker and public safety and access; 2) safe conditions for firefighters performing fire suppression for community protection; 3) a project that is economically viable, meeting project objectives and benefiting our local communities; and 4) restored and fire-resilient forested ecosystems. DEIS, i.

Stand-replacement fires provide large pulses of coarse woody debris (CWD) including snags and logs, which lifeboat dependent species and processes until the regenerating forest begins to produce large and decay-resistant dead wood structures, which is typically not for a century or more. Since this pulse provides all of the large CWD that is going to be available to the ecosystem for at least the next 100 to 150 years, it is not appropriate to use the levels of CWD found in mature and old stands of a particular Plant Association Group (PAG) as a guide to levels of CWD that should be retained after salvage. Effectively none of the large snags and logs of decay-resistant species can be viewed as being in excess of what is needed to assist in natural recovery to late-successional forest conditions and, hence, appropriate for salvage on land allocations where ecological objectives are primary, such as LSRs. Retention of large snags and logs are specifically relevant to Northern Spotted Owl (NSO) since these structures provide the habitat that sustain most of the owl's forest-based prey species.

If large fuels are viewed as a critical fire control issue, this could be dealt by creating appropriate Fuel Management Zones or snag-free corridors. In summary, general salvage of large snags and logs is absolutely inconsistent with a goal of assisting recovery of late-successional forest conditions.

Extensive reforestation by planting is proposed within the LSRs in the Westside Project area. Slow re-establishment of forest cover can be expected after natural stand replacement disturbances in the Pacific Northwest if tree regeneration is allowed to develop naturally. Recent studies of the establishment of natural stands following wildfire has shown that it commonly took 40 to 60 years on average for tree establishment to be completed and closed forest canopies to develop (Freund et al. 2014 and Tepley et al. 2014). This slow natural tree regeneration process contributed positively to sustaining regional forest biodiversity because it allowed shrub-dominated habitat to persist for decades, which sustained a large array of early-successional species, many of which are early successional habitat specialists (Swanson et al. 2011). Many of these species require snags, logs, and diverse plant resources; some insect pollinators, for example, require CWD for their larval stages. I would also note that some of the early successional animals, such as wood rats, are important prey species for the Northern Spotted Owl. Naturally disturbed, early successional habitat undergoing slow natural reforestation (without salvage or planting) is currently the rarest of the natural forest developmental stages in the Pacific Northwest – even more so than old-growth forests. Yet, as research at Mount St. Helens has showed, these large, slowly reforesting disturbed areas are major hotspots of regional biodiversity.

Limited planting may be appropriate within the LSRs to establish tree seed sources for specific species and locations but this should not be done using traditional approaches, which are designed to create extensive areas of uniformly stocked forest stands. Uniform tree planting over large areas is inappropriate in LSRs even at low densities. Appropriate plantings in LSRs would be limited in area and spatially heterogeneous. The inappropriateness of creating dense uniform stands is apparent from the fact that since the origin of the NWFP we have undertaken major programs in variable density thinning in existing plantations in LSRs! Establishment of "fully stocked" plantations on sites characterized by Fire Regimes I and II is particularly inappropriate,

since it simply recreates the potential for the next uncharacteristic stand replacement fire. This last issue does not appear to have been addressed in the DEIS.

The DEIS does not appear to include some current and relevant information regarding habitat preferences of the NSO. Alan B. Franklin et al. (2000) report that in northwestern California, the highest habitat fitness for NSO is found in landscapes that are a mixture of mature and old forest with open vegetation types, such as brush fields and young forest, and not in landscapes dominated by old forests. The fact that an early successional species — the dusky-footed woodrat — is the primary prey for NSO in this region may be part of the reason that owls prefer a mixed landscape. In any case, the fact that habitat fitness for the owl is favored by a heterogeneous landscape mosaic should be factored into decisions regarding establishment of conifer plantations, both within and outside of LSRs.

Late Successional Reserves

A brief review of the conceptual basis for the Late Successional Reserve (LSR) system is appropriate before commenting specifically upon activities proposed for LSRs impacted by the 2014 fires on the Klamath National Forest. LSRs were established to provide for old-growth ecosystems and related natural processes and constituent species, of which the NSO is one. The LSR system was designed as a well-distributed geographic network using occurrences of high-quality late-successional forest as a primary criterion for locating boundaries of specific LSRs.

The team that designed the LSR system knew that large stand replacing disturbances would impact LSRs and, therefore, that the LSR network needed to be able to accommodate such disturbances. The team had had numerous experiences with such disturbances, including the 1980 Mount St. Helens eruption and the 1988 Yellowstone Fires. Hence, the team built sufficient redundancy into the LSR system so that it could accommodate large disturbances and still remain viable as a regional network. This redundancy would also allow for natural recovery processes within impacted LSRs. Building reserve systems that will accommodate natural disturbance regimes is, of course, a first principle in conservation biology (Lindenmayer and Franklin 2003).

Creating a resilient LSR network ultimately resulted in a higher density and greater total acreage of LSRs than a reserve system that would simply have accommodated current habitat needs for NSO. This point is illustrated by comparing the LSR system with the Habitat Conservation Area (HCA) system proposed (and, at that time, judged to be adequate) for NSO (Thomas et al. 1990). The HCA system proposed approximately 5.5 million acres of reserves in addition to areas already reserved from timber harvest by Congress and the management agencies. The LSR network incorporated 7.4 million acres (in addition to already reserved lands) with an additional estimated contribution of 2.6 million acres of Riparian Reserves. The ultimate adoption of the LSR network as the basis for the NWFP reserve system resulted in a network that provided for much larger numbers of NSO than the proposed HCA network (Noon and McKelvey 1996), because the LSRs were focused on incorporating the highest quality old-growth forests, has a greater total reserved acreage, and created some very large reserves.

I have documented the basis for my assertion that the LSR network was built to be resilient in the preceding paragraph; i.e. it was built to accommodate significant loss and continue to function as

an effective reserve system for old-growth related species. One could say that the LSR system was overbuilt in terms of immediate habitat needs. A major reason for doing this was the FEMAT planners belief that natural recovery processes could and should be accommodated following major disturbances to LSRs. Hence, guidelines for salvage included statements such as: "Management objectives [following natural disturbances in Late Successional Reserves] should focus on either simulating natural succession or allowing it to occur unimpeded," FEMAT 1993, p. IV-36, and "Because there is much to learn about the development of species associated with these [old-growth] forests and their habitat, it seems prudent to only allow removal of conservative quantities of salvage material from Late-Successional Reserves and retain management options until understanding of the process has improved." FEMAT 1993, p. III-36.

One might question the appropriateness of allowing natural recovery processes to proceed if stand-replacement fire behavior with the resulting high levels of fuels were not characteristic of the LSRs. However, approximately ¾ of the affected area in the LSRs are habitats that belong to PAGs on which either stand-replacement or mixed fire regimes are characteristic and, therefore, on which large fuel loads would have been experienced in past post-fire environments. Hence, it would appear to me that the fire effects experienced were characteristic of what would be expected in the majority of the LSR area proposed for salvage in the Westside Fire area.

One of the major motivating factors in conducting salvage logging in the Westside fire area – including the LSRs – seems to be economic and not ecologic (DEIS, 10-11), which is further indicated by the Chief's "Emergency Situation Determination" and the "Alternative Arrangements" secured from the Council on Environmental Quality. The NWFP specifically directs that, "Salvage will not be driven by economic or timber sale program factors" in LSRs (NFP SFEIS F-21). The teams that put together FEMAT and the NWFP specifically wanted the LSRs to be exempted from the pressures of programmed timber harvest, because the primary drivers in LSRs were ecological and not economic. Hence, it would seem that the salvage proposed within LSR segments as part of the Westside Salvage Project is inconsistent with the goals and principles of LSR management.

Snags, Logs, and Coarse Woody Debris (CWD)

The role of CWD in the development of late-successional forest habitat is an important factor to consider in evaluating the appropriateness of salvage activities in the Westside project area, particularly within the LSRs. Most of the salvage proposed in the LSRs is on PAGs where large volumes of snags and logs following wildfire are characteristic. Large snags and logs are the most important surviving structural elements or biological legacies of a forest disturbance(Franklin et al. 2002), excepting only surviving large live trees. Importance, in this case, refers to the roles of these structures in:

(1) Providing essential habitat for an immense array of species;
(2) Maintaining important ecosystem functions; and
(3) Structurally enriching the young forest stand, making it possible for mid- and late-successional species to re-colonize the stand much earlier in its chronological development than would otherwise be the case (Franklin et al. 1987).

The importance of large snags and down wood for a broad array of species is recognized in the EIS document. These structures provide habitat for early as well as late successional species and sustain many important ecosystem processes (e.g., Harmon et al. 1986). However, the long persistence and multiple roles played by the large pulse of snags, logs, and other CWD provided by the stand-replacement event (Harmon et al. 1986; Maser et al. 1988) do not appear to be adequately recognized in the analysis of how much of this wood should be retained. For example, large Douglas-fir logs continue to fulfill important ecological functions, such as habitat for small mammals and salamanders, for 200 to 250 years after their death. Cedar snags can persist for at least as long as 1 ½ centuries and as logs for over twice that long.

The massive input of large dead wood is characteristic and critical to stand development processes and the ultimate provision of habitat for late-successional species following stand replacement fires (Maser et al., 1988; Franklin et al. 2002). As noted these wood structures may persist and play functional roles for several centuries, particularly in the case of decay resistant species. Large pines may also persist as snags for several decades and additional periods as logs on the forest floor. In fact, the entire recovering forest ecosystem will depend upon this pulse of CWD until it reaches a point in its development where the new stand begins to generate snags and logs of comparable size and heartwood content—generally between 100 and 200 years (Maser et al. 1988; Franklin et al., 2002). Consequently, basing snag and CWD retention following salvage on levels of these structures found in existing mature and old forests is not appropriate; *all of this initial pulse of wood is needed to reach those levels one to two centuries from now!* Indeed, the use of mature forests as a standard for CWD is particularly inappropriate since this is the period when CWD levels are at their lowest level during the entire *natural* developmental sequence from stand-replacement fire to old growth (see diagram in paper by Spies in Maser et al. 1988). It certainly does not appear to me that the approach taken in the DEIS reflects an appreciation of the fact that this one-time input of large and decay resistant CWD is all that the recovering forest ecosystem is going to get for the next 100 to 200 years.

The importance of snags, logs, and other CWD is recognized in FEMAT's (1993) scientific analysis. For example (my underlining for emphasis):

> *Because of the important role of dead wood in late-successional and old-growth forest ecosystems, and because there is much to learn about the role of dead wood in the development of forests, only limited salvage is appropriate in Late-Successional Reserves . . . The Final Draft Recovery Plan [for the NSO] would allow removal of small-diameter snags and logs, but would also require retention of snags and logs likely to persist until the new stand begins to contribute significant quantities of coarse woody debris."* FEMAT 1993, p. IV-37.

> *Snags provide a variety of habitat benefits for a variety of wildlife species associated with late-successional forests. Accordingly, following stand-replacing disturbances, management should focus on retaining snags that are likely to persist until late-successional conditions have developed and the new stand is again producing large snags.* FEMAT 1993, p. III-37.

> *Following a stand replacing disturbance, management should retain adequate coarse woody debris quantities in the new stand so that in the future it will contain amounts similar to natural regenerated stands. The analysis that determines the amount of coarse woody debris to leave must account for the full period of time before the new stand begins to contribute coarse woody debris....* FEMAT 1993, p. III-37.

In summary, general salvage of large snags and logs is clearly antithetical to the goal of rapid recovery of fully functional late-successional forest habitat and inappropriate within the Late Successional Reserves. If large fuels are viewed as a critical fire control issue, then this could be dealt with by creating appropriate Fuel Management Zones or snag-free corridors.

Northern Spotted Owls

The NSO is a species of special interest and one that almost certainly has been significantly negatively impacted by the 2014 fires. Restoration of suitable habitat for NSO has been used as a justification for intensive salvage and tree planting programs, such as in Alternative #2 of the DEIS. However, there is no scientific evidence to support the hypothesis that either activity will contribute either significantly or positively to a more rapid recovery of NSO habitat or NSO populations than allowing natural recovery processes. In fact, it is certain that salvage will not do so; the potential value of some tree planting could be argued.

Unfortunately, the DEIS also fails to acknowledge some important information with regards to the ecology of the NSO in the Klamath–Siskiyou region, either in the literature review or in analyzing effects of various alternatives. In a study of NSO habitat fitness in relation to landscape conditions, A. Franklin et al. (2000) show that a mosaic of older forest interspersed with early successional vegetation types had the highest fitness for NSO. Landscapes dominated either primarily or exclusively by older forest or primarily by early successional vegetation provided lower levels of fitness than the mosaic based on estimates of survival and fecundity. Hence, landscape mosaics of mature and old forest and early successional habitats, the latter including brush fields, would be appropriate recovery targets for restoration programs focused on NSO habitat.

I also noted that the DEIS does not appear to have fully considered recommendations of the 2011 Final Revised NSO Recovery Plan. Specifically, Recovery Plan Action 10 advises, "Conserve spotted owl sites and high value spotted owl habitat to provide additional demographic support to the spotted owl population", which includes protecting both historically and currently occupied NSO sites (NSO Recovery Plan III-42 – III-47. It appears that numerous sites will be eliminated by the proposed salvage logging (DEIS 148-149). Recovery Action 12 advises, "In lands where management is focused on development of spotted owl habitat, post-fire silvicultural activities should concentrate on conserving and restoring habitat elements that take a long time to develop (e.g., large trees, medium and large snags, downed wood)" (NSO Recovery Plan III-49). LSRs are certainly lands where "management is focused on development of NSO habitat"! As noted in the DEIS, the Westside proposal will remove many of the medium and large snags: "salvage activities will reduce snag densities of trees equal to or greater than 14 inches in diameter at breast height (dbh)" (DEIS 122).

This significant information regarding NSO, as well as impacts of the Barred Owl, needs to be acknowledged and considered in the final EIS. Specific consideration needs to be given to the impacts of: (1) salvage on development of the debris-rich late-successional conditions characteristic of forested NSO (and prey) habitat; and (2) establishment of conifer plantations on the amount and distribution of shrub-dominated early successional habitat in which the woodrat resides.

Reforestation

Extensive reforestation by planting is proposed within the LSRs. Slow natural re-establishment of tree cover is common following natural partial and complete stand replacement disturbances in the Pacific Northwest, however. Two recent studies of Douglas-fir forests in Oregon and Washington document that 40 to 60 years was the average time lapse before closed forest canopies developed following wildfire and sometimes it took as much as 100 years (Freund et al. 2014; Tepley et al. 2014). Therefore, fifty years (a number mentioned in the DEIS) is not a long time to wait for establishment of forest cover where timber production is not a consideration (such as LSRs) and, in fact, it is apparently the norm for nature.

The "delay" in re-establishment of closed forest provides essential habitat for early successional species, including many vertebrate and invertebrate habitat specialists. Species of interest include many lepidoptera (butterflies and moths) and neo-tropical migrant songbirds. One reason for the biological richness of the early successional habitat is the abundant and diverse food sources, including many varieties of nutrient-rich herbage, fruits, seeds, nuts, and pollen and nectar sources, which form the base of numerous complex food webs. A second reason is the abundant snags and logs, which provided shelter, sources of additional food (e.g.,fungi), and critical habitat for both vertebrate and invertebrate animals; for example, many invertebrate pollinators live their larval stages in wood. This is also the habitat favored by dusky-footed woodrats, that important prey of the NSO.

Naturally disturbed habitat undergoing natural reforestation is, in fact, the scarcest type of forest habitat in the Pacific Northwest. I am referring here to naturally disturbed areas that have not undergone salvage logging or artificial reforestation (Franklin et al. 2000). Intensively managed forest lands, which are subject to clearcutting, intensive site preparation, and dense tree planting, provide few of the conditions needed by early-successional organisms. Large, slowly reforesting disturbed areas appear to be very important to maintaining regional biodiversity, as demonstrated by the Mount St. Helens National Volcanic Monument. The monument is the most important hotspot for biological diversity in the Washington Cascade Range, with extraordinary representation of almost all categories of animals, including birds, amphibians, small mammals, and medium-sized predators (Dale, Swanson, and Crisafulli 2005).

Planting may be appropriate within LSRs to establish tree seed sources for specific species and locations. However, planting should not be done following traditional approaches, which are directed to establishing uniformly stocked forest stands over large areas. Extensive, uniform plantings — even at the relatively low density proposed for some areas (200 trees/acre) — will not simulate the spatially heterogeneous pattern of natural seedling establishment.

Establishment of dense, uniform stands is completely inappropriate in LSRs as well as any PAG identified as fire regime types I and II. We are currently engaged in major programs of variable density thinning in dense plantations in existing LSRs in order to accelerate the development of late-successional structure in these overly dense stands; so, why would we set about creating more acreage of these dense uniform plantations within LSRs? Similarly, establishing uniform stands — even at a relatively low density of 200 trees per acre — on sites characterized by frequent fire is obviously inappropriate; this simply recreates the potential for the next "uncharacteristic" stand replacement fires on these sites!

Conclusion

A summary is provided at the beginning of these comments. I would conclude that the salvage activities proposed within LSRs as part of the Westside Fire Recovery Plan are inconsistent with NWFP intent and direction for management of LSRs, including their treatment following a major disturbance. Salvage will make no positive contribution to the reestablishment of late-successional forest habitat or to the early successional ecosystems that provide habitat for NSO prey species, among many others. Retention of large snags and logs are critical parts of the natural recovery processes and none of this wood legacy can be demonstrated as being in excess to ecological needs on moist forest sites; indeed, all of the scientific evidence is to the contrary. Removal of medium and fine fuels, but not large snags and logs, may be ecologically justifiable on sites characterized by PAGs with Fire Regimes I and II. Issues associated with fire suppression could be addressed by creating snag-free corridors or narrow FMZs. Some limited tree planting may be justified to provide seed sources for tree species otherwise likely to be absent or under-represented but the plantings should be carried out in low numbers and at variable density. Establishment of large areas of plantations, even at low density, is inappropriate within the LSRs or on sites characterized by Fire Regimes I and II. Finally, current knowledge regarding the ecology and recovery of the NSO should be considered during revision of the DEIS.

Sincerely,

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