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*Via Email*  
NSORPComments@fws.gov

Field Supervisor  
U.S. Fish & Wildlife Service  
Oregon Fish and Wildlife Office  
2600 S.E. 98<sup>th</sup> Avenue, Suite 100  
Portland, OR 97266

Re: Conservation Group Comments on the Draft Revised Recovery Plan for the  
Northern Spotted Owl (75 Fed. Reg. 56131 (September 15, 2010))

Dear Field Supervisor:

On behalf of the Geos Institute (formerly the National Center for Conservation Science & Policy), Oregon Wild, Klamath-Siskiyou Wildlands Center, Environmental Protection Information Center, Center for Biological Diversity, American Bird Conservancy, Umpqua Watersheds, Cascadia Wildlands, Conservation Congress, Klamath Forest Alliance, Conservation Northwest, Audubon Society of Portland, and Seattle Audubon Society (collectively “Conservation Groups”), we offer the following comments on the Draft Revised Recovery Plan for the Northern Spotted Owl (75 Fed. Reg. 56131 (September 15, 2010)) prepared by the U.S. Fish and Wildlife Service (“FWS”) pursuant to section 4(f) of the Endangered Species Act (“ESA”), 16 U.S.C. § 1533(f), and released for public review on September 15, 2010. These comments supplement any comments that may be submitted by any of the individual conservation groups joining this letter. Please include these comments in the administrative record for any final recovery plan that may be adopted. Additionally, under separate cover we are providing you with scientific studies, our comments on the 2007 draft and the 2008 final recovery plan, the peer reviews of those plans, and other documents cited in this letter. Please make sure to include these additional materials in the administrative record for the spotted owl recovery plan.

As you know, Dr. Dominick DellaSala of the Geos Institute was involved in recovery planning efforts for the northern spotted owl as a member of the spotted owl recovery team in 2006-2008. Dr. DellaSala and others raised concerns that the 2007 draft recovery plan, the 2008 final recovery plan, and the resultant 2008 critical habitat revision were not based on best available science as required by the Endangered Species Act. The Department of the Interior Inspector General’s office confirmed those concerns when it determined there was evidence of political interference in the recovery planning process. These concerns ultimately persuaded the

U.S. District Court to remand the 2008 final recovery plan and 2008 critical habitat designation to the Service for revision. Carpenters' Industrial Council and Seattle Audubon Soc'y v. Salazar, No. 08-01409 EGS (D.D.C. Oct. 12, 2010) (remand order setting schedule).

Given the recent history of the Service's spotted owl decision-making, the public, conservation groups, and scientists have high expectations for the 2010 recovery plan—it is a litmus test for whether the Service can fully respond to the 2007 and 2008 peer reviews by producing a recovery plan that is based on the best available science. It is also incumbent upon the Service to produce a recovery plan based on best science in order to be in compliance with Secretarial Order #3305 issued by Interior Secretary Ken Salazar on September 29, 2010, the March 9, 2009 Presidential Memorandum on Scientific Integrity, and the expected 2010 guidance and recommendations of the White House Office of Science and Technology Policy.

Unfortunately, the 2010 Draft Recovery Plan fails to fully address the peer reviews of the 2007 and 2008 recovery plans and otherwise fails to meet the best available science requirement. The Draft Plan also fails to comply fully with the legal requirements of the ESA. For these reasons, we ask the Service to revise the recovery plan to meet the concerns outlined in this letter.

#### I. RECOVERY PLAN LEGAL STANDARDS.

ESA section 4(f) describes the recovery planning duties of FWS as follows:

(1) The Secretary shall develop and implement plans (hereinafter in this subsection referred to as "recovery plans") for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote the conservation of the species. The Secretary, in developing and implementing recovery plans, shall, to the maximum extent practicable—

...

(B) incorporate in each plan—

(i) a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;

(ii) objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list;  
and

(iii) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

16 U.S.C. § 1533(f).

At the most fundamental level, a recovery plan for the northern spotted owl "is supposed to be a basic road map to recovery, *i.e.*, the process that stops or reverses the decline of a species and neutralizes threats to its existence." Fund for Animals v. Babbitt, 903 F. Supp. 96, 103 (D.D.C. 1995). The ESA requires the FWS to adopt a recovery plan with "objective, measurable criteria which, when met, would result in a determination ... that the species be removed from the list." 16 U.S.C. § 1533(f)(1)(B)(ii).

Congress has spoken in clarion terms: the objective, measurable criteria must be directed towards the goal of removing the endangered or threatened species from the list. Since the same five statutory factors must be considered in delisting as in listing, the Court necessarily concludes that the FWS, in designing objective, measurable criteria, must address each of the five statutory delisting factors and measure whether threats to the [species] have been ameliorated.

Fund for Animals, 903 F. Supp. at 111 (citations omitted). Pursuant to the ESA, the five delisting factors are:

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence....

16 U.S.C. § 1533(a)(1). Additionally, because FWS is required to make listing and delisting decisions "solely on the basis of the best scientific and commercial data available," 16 U.S.C. § 1533(b)(1)(A), the objective, measurable criteria in a recovery plan must also be based on the best scientific and commercial data available. See also FWS, Notice of Interagency Cooperative Policy on Information Standards Under the Endangered Species Act, 59 Fed. Reg. 34,271 (July 1, 1994) (committing agency to ensuring that information used to develop and implement recovery plans is reliable, credible, and represents the best scientific and commercial data available).

II. THE DRAFT PLAN DOES NOT QUALIFY AS A RECOVERY PLAN BECAUSE IT IS MISSING ESSENTIAL ELEMENTS AND FAILS TO DEMONSTRATE THAT IMPLEMENTATION OF THE PLAN WILL RECOVER SPOTTED OWLS.

The Draft Plan fails to include the required elements for a recovery plan, and, more fundamentally, it fails to demonstrate how the general measures it proposes will actually lead to a stable, self-sustaining population of owls that no longer requires the protections of the ESA. Before getting into details, the Conservation Groups wish to note three more general concerns that are especially problematic.

First, as described in these comments, the Draft Plan cannot qualify as a recovery plan because it lacks habitat reserves and measures for addressing inadequate regulatory mechanisms on non-federal lands throughout the range of the owl. The Draft Plan acknowledges that habitat reserves and increased protections on non-federal lands are essential to recovery of the species. Yet the Draft Plan includes neither. Because the Plan excludes those necessary elements, it is little more than a set of recommendations for doing things that might assist owls sometime, somewhere. But under the law the Service is required to do more—it is required to develop a plan that is based on the best available science and that when implemented will in fact recover the species. For northern spotted owls, facing the threat of habitat destruction throughout their range, this means the Service must include habitat reserves and effective measures on non-federal lands in the final recovery plan.

Second, the Conservation Groups are very concerned about the Draft Plan's claim that only 30 years are needed to recover northern spotted owls—that the owl will be recovered and eligible for de-listing by 2040. If supported, this prediction would be cause for celebration. Unfortunately, this estimate flatly contradicts estimates in the Northwest Forest Plan, where the Service estimated that northern spotted owls would *continue to decline* for 50-60 years after adoption of the Northwest Forest Plan in 1994, or until 2044-2054. Since then we have learned that demographic predictions in the Northwest Forest Plan were overly optimistic, and that global climate change, barred owls, and documented genetic bottlenecks present very serious, additional threats to the species. Because circumstances have worsened for the owl, it is safe to assume that the species will decline for longer than estimated in the Northwest Forest Plan or that owl abundance by 2040 will be significantly lower than originally expected. Either way, the Conservation Groups are very concerned about this new 30-year recovery estimate because it contradicts the best available science on spotted owl demography, including the Northwest Forest Plan, and because the change in position—the new 30-year recovery estimate—is not backed by any scientific analysis or data whatsoever.

The Conservation Groups are especially concerned about the Service's new 30-year recovery estimate because it implies that the Service believes that spotted owls could be delisted when populations are at their nadir—that after decades of decline no increase in spotted owl

abundance would be required before the species could be delisted. That the Service believes delisting could occur at a time when spotted owls are at historically low abundance is also reflected in Recovery Criterion 1, which appears to allow the owl to be delisted when “the overall population trend of spotted owls throughout the range is stable or increasing over 10 years, as measured by a statistically reliable monitoring effort.” Draft Plan at 39. Given present concerns about genetic bottlenecks, isolated subpopulations, and other concerns about metapopulation dynamics for northern spotted owls, it will be absolutely essential after decades of population declines to increase owl abundance before delisting the species. The Service’s implied support for delisting the species when owl abundance is at historic lows conflicts with the best available science on conservation biology, metapopulation dynamics, and northern spotted owl ecology.

Third, and more generally, the recovery criteria are legally deficient because the Service has not demonstrated how meeting the recovery criteria would result in meeting criteria for delisting spotted owls, as required. See Fund for Animals, 903 F. Supp. at 111. The Draft Plan fails to demonstrate that meeting the three recovery criteria will actually lead to a stable, self-sustaining population of owls that no longer requires the protections of the ESA. There is no discussion of the numbers or distribution of owls that FWS believes would constitute a recovered population, no life-cycle or other population viability modeling to show where the population is today and where it would need to be to achieve recovery, no effort to connect the generically described habitat management approaches of the Draft Plan to prior population performance analyses, or any other rational account to connect the proposed recovery criteria to the conclusion required by the ESA of a recovery plan—that it will lead to conservation of the species.

### III. THE DRAFT PLAN IS DEFICIENT BECAUSE IT DOES NOT CONTAIN THE SITE-SPECIFIC MANAGEMENT ACTIONS THAT ARE NECESSARY TO RECOVER NORTHERN SPOTTED OWLS.

The ESA states that the Secretary and the FWS shall, “to the maximum extent practicable,” incorporate into each recovery plan “a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species.” 16 U.S.C. § 1533(f)(1)(B)(i). “[T]he phrase ‘to the maximum extent practicable’ does not permit an agency unbridled discretion. It imposes a clear duty on the agency to fulfill the statutory command to the extent that it is feasible or possible.” Fund for Animals, 903 F. Supp. at 107 (citations omitted). “[W]hile the legislative history suggests that incorporation of ‘site-specific management objectives’ is supposed to assure that recovery plans ‘are as explicit as possible in describing steps to be taken in the recovery of a species,’ ... the FWS has the flexibility under the ESA to recommend a wide range of ‘management actions’ on a site-specific basis.” Fund for Animals, 903 F. Supp. at 106 (citations omitted).

Given that the primary threat facing the species has been the loss of habitat, any recovery plan for northern spotted owls must protect all existing habitat and also plan to create additional habitat. Here, the single most important piece missing from the 2010 Draft Plan is its failure to include a habitat reserve system that is based on the Northwest Forest Plan. FWS is not writing on a blank slate—habitat protection for northern spotted owls has been long studied and modeled, and there is no reason to ignore that prior work. Furthermore, the continued decline of the owl and peer reviews of the previous flawed plans illustrate that any recovery plan must protect additional habitat, not just the select “best of the best” high quality habitat. All suitable habitat for nesting, roosting, foraging, and dispersal is needed. Unfortunately, the provisions in the Draft Plan that are intended to protect owl habitat actually promote untested and risky management activities instead of adopting a precautionary approach to all management actions.

A. The Draft Recovery Plan Fails to Link Habitat Protection to the Species’ Recovery.

The proposed approach to conservation of northern spotted owl habitat does not provide any scientific analysis that connects the habitat actions to spotted owl population performance. Simply announcing habitat management strategies and describing various recovery criteria without making an effort based on the best scientific and commercial data available to determine whether the former will meet the latter disconnects recovery planning from species recovery.

For example, while the Draft Plan notes that federal lands that contain suitable spotted owl habitat are currently managed under the provisions of the Northwest Forest Plan (“NWFP”), the Draft does not disclose that, in 1994, a federal district court upheld the NWFP against challenges from both the timber industry and conservation groups, finding that it was the bare minimum likely to comply with the nation’s environmental laws. SAS v. Lyons, 871 F. Supp. 1291, 1300 (W.D. Wash. 1994) (addressing claims under the National Forest Management Act and the National Environmental Policy Act). The court noted the federal agencies’ own conclusion that the NWFP had adopted the least restrictive alternative for managing owl habitat likely to be legal: “[t]he Secretaries have noted, however, that the plan ‘will provide the highest sustainable timber levels from Forest Service and BLM lands of all action alternatives that are likely to satisfy the requirements of existing statutes and policies.’ ... In other words, any more logging sales than the plan contemplates would probably violate the laws.” Id. (quoting the NWFP ROD) (citation omitted).

While there was no claim under the ESA in that case, the Secretaries’ conclusion, quoted by the court above, encompasses compliance with the ESA because the district court’s opinion and the statement of the Secretaries at the time indicate that the NWFP provided a minimum or floor for northern spotted owl recovery on federal lands. Indeed, at the time of the adoption of the NWFP, FEMAT, the scientific analysis of the NWFP alternatives, was considered the best available science (FEMAT 1993). The 2004 status review also acknowledged that the NWFP

was still the benchmark for spotted owl and old-growth forest management (Courtney et al. 2004).

Unfortunately, we now know that the NWFP was based on overly optimistic assessments of spotted owl demographic performance. The demographic data available when the NWFP was drafted indicated a 4.5% annual decline, which, if true, was acknowledged to have serious consequences. See USDA and USDI 1994, pg 3&4-233. The discussion in the FSEIS and dissenting scientific opinion (Doak 1994, Harrison et al. 1993) indicates that there was considerable uncertainty regarding the interpretation of the demographic study results available at the time. Notwithstanding that uncertainty, one of the key assumptions of the NWFP was that the owl population would survive the “demographic transition”—a period where the population would continue to decline until there is enough suitable habitat restored to stabilize the population. The demographic transition period—the expected period of continued population declines—was anticipated to last about 50 to 60 years until spotted owl populations were expected to start increasing.

Subsequent demographic studies (Franklin et al. 1999, Anthony et al. 2006) have demonstrated with greater statistical power that the population declines described in the earlier reports were not only real, but that spotted owl populations are decreasing at a much greater rate than was anticipated across their range and particularly in Washington. See Forsman, Eric D. et al., Population Demography of Northern Spotted Owls: 1985-2008 at 102-106 (pre-publication draft 2010). In light of this decline, the authors of this comprehensive population study stressed the importance of retaining high quality owl habitat. Id. at 104 (“[T]he existence of a new and potential competitor like the Barred Owl makes the protection of habitat even more important, since any loss of habitat will likely increase competitive pressure and result in further reductions in Spotted Owl populations.”). The authors concluded that “[i]n view of the continued decline of Spotted Owls in most study areas, it would be wise to preserve as much high quality habitat (i.e., late-successional forests) for Spotted Owls as possible, distributed over as large an area as possible. This recommendation is comparable to one of the recovery goals in the final recovery plan for the Northern Spotted Owl (USDI Fish and Wildlife Service 2008), but we believe that a more inclusive definition of high quality habitat is needed than the narrow definition provided in the recovery plan.” Id. at 105.

The most current understanding of spotted owl demographic data raises at least two issues for the Draft Plan in light of the analysis in the NWFP. First, the data raise questions about how recovery can be accomplished in 30 years when, under the NWFP and its overly optimistic demographic projections, spotted owl populations were expected to decline for another 50-60 years after adoption of the NWFP. Second, the data raise questions about any plan to remove existing habitat protections under the NWFP, which protections were the minimum deemed necessary for spotted owls based on overly optimistic assumptions about demographic

performance. Because spotted owl demographic performance has proven worse, more habitat must be protected, not less.

This new information strongly indicates that an adequate owl recovery plan must go beyond – and perhaps well beyond – what the NWFP provides. FWS faces a tough task to show, based on the best available scientific and commercial data, that the Draft Plan will achieve conservation of the northern spotted owl. The best scientific and commercial data currently available shows that the spotted owl is declining across much of its range at a rate that is greater than that anticipated by the NWFP (Anthony *et al.* 2006). In addition, the owl faces a number of threats not anticipated in the NWFP, including competition from the invading barred owl and the impacts of global warming. For these reasons, the Draft NSO Recovery Plan must address and rationally integrate and account for all of these factors. It must also include a habitat reserve network based on the NWFP reserve system, with the addition of other specific areas where the current modeling efforts shows important conservation benefits, as well as nonfederal lands.

B. The Draft Recovery Plan Fails to Propose Habitat Reserves.

We support recovery actions and recommendations in the 2010 draft that: (1) include protection of occupied and historic owl sites (Recovery Action 10) in addition to high quality owl habitat on all lands “to the maximum extent practical” (p. 25); (2) the continuation of the demography studies that have been providing invaluable data on owl demography; and (3) experimental removal of barred owls to determine whether such suppression efforts benefit spotted owl recovery. We also commend the agency for recognizing that due to competition with the barred owl, additional habitat protection for the spotted owl is needed if both species are going to successfully coexist (p. 25). However, those positive aspects of the Draft do not outweigh our grave concerns about missing habitat protection measures in the Draft Plan.

First, the Draft Plan does not propose habitat reserves, instead deferring the reserve boundaries and management guidelines for habitat reserves (Recovery Action – RA - 4). The plan calls for a modeling effort and for using the LSRs in the interim, but FWS has not committed to a permanent reserve strategy. Recovery Action 4 (p. 42) states “Use the results from this [modeling] effort to inform decisions concerning both the possible development of a habitat conservation network and potential revisions to spotted owl critical habitat.” (Emphasis added.)

The Service seems to be taking a step away from the reserve strategy that has been integral to the LSRs and all previous owl conservation strategies. We believe a recovery plan for northern spotted owls that lacks a definitive reserve strategy is inadequate. FWS should develop specific criteria for habitat reserves that include at least: (a) large blocks of nesting, roosting, foraging, and dispersal habitat, rather than just high quality habitat as currently modeled; (b) restoration priority areas within and among habitat blocks; (c) primary reliance on natural

processes to maintain currently suitable habitat particularly in the southern range where the owl appears to be fire-adapted; (d) a spatial relationship between the habitat blocks to facilitate owl dispersal; and (e) specific owl occupancy targets for each of the reserve areas.

Second, it is not just the boundaries of the reserves that are missing, but also the guidelines for managing those reserves. Recovery Action 5 in the 2008 final recovery plan called for producing the “highest amount and highest quality” owl habitat within reserves. This provision is gone and should be restored in order to provide proper guidance to the action agencies.

Third, the 2008 final recovery plan called for some clear although disputed population targets for reserves (*i.e.*, 80% of the large reserves must have at least 15 spotted owls over a 5-year period). Such population targets are missing from the 2010 draft recovery plan. These are important and must be restored, with a calibration for barred owl interference in spotted owl occupancy targets (*i.e.*, the reserve population goals must be set much higher than in previous recovery or conservation efforts because of the widespread influence of barred owls).

C. Until the New Habitat Suitability Models Are Available, Neither the Public Nor Scientific Peer Reviewers Can Adequately Evaluate the Draft Plan.

FWS’s failure to propose a habitat reserve system in the Draft Plan is compounded by its reliance on a new habitat model that is not publically available. We ask that you provide peer reviewers and the public with sufficient time to evaluate whether the best science was used to address the concerns of the previous reviews that any recovery plan should include a reserve network greater than the LSRs. This is particularly important as the Service has indicated in the 2010 draft recovery plan that the withdrawal of the Mapped Owl Conservation Areas (“MOCA”) strategy, which was heavily criticized in peer review, is contingent on its reevaluation, along with other land management strategies, using the HexSim models that are not available. Nor has the Service disclosed how and if they will use these findings to recommend a reserve network for the owl. We are especially concerned that the Service states in the recovery plan that for now the NWFP is acting as an “interim” strategy until the model results are finalized (p. 41). We are unclear what “interim” means and whether the Service has taken the peer review to heart with respect to building on the LSR network.

According to the Service, the HexSim model will be a key component of the final recovery plan and critical habitat determination. It is unclear, however, whether the Service will build on the LSR network as a foundation for owl recovery along with the multiple benefits these reserves provide to the ecosystem upon which the owl is dependent. We note that peer reviews requested that the Service begin with the LSRs as a recovery strategy, adding to them owl

specific protections.<sup>1</sup> The Service has yet to demonstrate that the 2010 draft recovery plan for the northern spotted owl builds on the NWFP with an expansion of the reserve network as noted by peer reviewers. Until we see the full model results and how the Service intends to use them, this critique from the prior peer reviews has not been addressed in the draft 2010 recovery plan.

D. The Draft Plan Understates the Threat of Logging Relative to Fire.

The 2010 draft recovery plan states that “[e]ighty five percent of the [recent habitat] loss was due to wildfires” (citing Moeur et al.), but this vastly understates the habitat losses caused by non-stand replacing logging that is not visible from remote sensing. The Services’ own 2004 analysis (below) refutes that assertion. For instance, the Service’s “estimated habitat trends,” based on consultation documents, show that Moeur et al.’s estimates based on satellite imagery may be off by an order of magnitude. The status review also failed to document habitat loss on non-federal lands. In fact, the relative threats to habitat are more accurately described in this table; we suggest you include it in the final recovery plan.

<b>Relative measures of spotted owl habitat loss since 1994.</b>		
<b>Acres</b>	<b>Description</b>	<b>Cite</b>
16,900	Acres of “older forest” clear cut on federal lands from 1994 to 2003 and visible from space.	Moeur, M, T. A. Spies, M. Hemstrom, J. Alegria, J. Browning, J. Cissel, W. B. Cohen, T. E. Demeo, S. Healy and R. Warbington. <i>In review</i> . Northwest Forest Plan—The First Ten Years (1994-2000): Status and Trends of Late-Successional and Old-Growth Forests. USDA Forest Service General Technical Report. <a href="http://www.fs.fed.us/pnw/publications/pnw_gtr646/">http://www.fs.fed.us/pnw/publications/pnw_gtr646/</a>

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<sup>1</sup> “... a recovery plan for the northern spotted owl should be based on the NWFP and should strengthen provisions of that plan for spotted owls.” The Wildlife Society, July 31, 2008; “a sufficient conservation strategy would continue to protect all lands currently designated for spotted owl recovery under the NWFP and consider expansion in the size or number of habitat reserves.” SCB/AOU, June 27, 2008.

141,300	Acres of owl habitat “losses” caused by stand replacing fire on both federal and non-federal lands from 1994 to 2004.	Raphael, M.G. (2006). Conservation of listed species: the northern spotted owl and marbled murrelet. Chapter 7 in R.W. Haynes, B.T. Bormann, D.C. Lee, and J.R. Martin (technical editors), Northwest Forest Plan—the first 10 Years (1994–2003): synthesis of monitoring and research results. Gen. Tech. Rep. PNW-GTR. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. <a href="http://www.fs.fed.us/pnw/publications/gtr651/">http://www.fs.fed.us/pnw/publications/gtr651/</a> p 121.
155,999	Acres of suitable owl “removed” by “management” (i.e. logging) on federal lands from 1994 to 2003 (includes partial harvest).	U.S. Department of the Interior, Fish and Wildlife Service. 2004. Estimated Trends in Suitable Habitat for The Northern Spotted Owl ( <i>Strix occidentalis caurina</i> ) on Federal Lands from 1994 to 2003. For Use By: Sustainable Ecosystems Institute for the Northern Spotted Owl 5-year Review. USDI Fish and Wildlife Serv.
583,500	Acres of owl habitat “losses” due to “regeneration harvest” on non-federal forest lands from 1994 to 2004.	Raphael, M.G. (2006). Conservation of listed species: the northern spotted owl and marbled murrelet. Chapter 7 in R.W. Haynes, B.T. Bormann, D.C. Lee, and J.R. Martin (technical editors), Northwest Forest Plan—the first 10 Years (1994–2003): synthesis of monitoring and research results. Gen. Tech. Rep. PNW-GTR. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. <a href="http://www.fs.fed.us/pnw/publications/gtr651/">http://www.fs.fed.us/pnw/publications/gtr651/</a> p 121.

E. FWS Has Failed to Adopt a Precautionary Approach to Active Forest Management.

Simply put, there is far too much reliance on active forest management in the Draft Plan. The 2010 draft recovery plan relies extensively on untested methods of active management that could have long-term adverse effects to the owl. The northern spotted owl was listed in the first place because of active management (logging) with inadequate safeguards (inadequacy of regulatory mechanisms) to prevent owl declines. However, the draft recovery plan assumes (without testing or quantifying) that active management may have “short-term adverse impacts but should be encouraged if their intent is to maintain or improve long term suitability or restore more natural ecological conditions” (p. 52); this includes silvicultural treatments. The 2010 draft

recovery plan encourages thinning even in moist forests up to 120 years old and in dry forests of all ages even though the effects of thinning are admittedly not well-understood (RA 12, p. 54). The Service appears to defer a decision on how to manage dry forests to benefit spotted owls (RA 6, RA 8, RA 9) but encourages logging in the meantime.

Many of the active management recommendations are apparently derived from SEI (2008) among others, but the degree of short-term adverse risks assumed remain untested for spotted owls, prey, and barred owls. While the Service rightfully takes a cautious and experimental approach to barred owl removal, the recovery plan inconsistently recommends large-scale active management treatments without the apriori benefit of studies that quantify risks to owls before widespread application of treatments. If the risks to owls from active management are in fact greater than that of fire, such management could result in high levels of incidental take during implementation.

We note that the Service seems to have no recognition of widely supported concepts such as the precautionary principle (or “no regrets” as in Hanson et al. 2010) in this recovery plan. The precautionary principle states that if an action or policy has a suspected risk of causing harm to the public or to the environment, then in the absence of scientific consensus that the action or policy is harmful, the burden of proof to show that the action is not harmful rests on those taking the action.<sup>2</sup> The Service has done the opposite in putting forth risky active management provisions without scientific consensus, certainty, or an assessment of risk. The Service should recommend that the agencies adopt the precautionary principle with respect to all actions affecting recovery, especially active management.

We recommend that the Service: (1) model active forest management as habitat loss in the HexSim models to assess risks to owls in the dry provinces, moist naturally regenerating forests, and plantation LSRs >80 years before proceeding; and (2) exercise precaution (and restraint) by conducting statistically rigorous active management experiments, including controls, on small spatial scales (paired watersheds in a few areas) in order to quantify risks (see Hanson et al. 2009, 2010, and the peer reviews). Notably, we are greatly concerned that active management treatments may lead to new roads (see p. 45) to access sites, yet there is no

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<sup>2</sup> Science and Environmental Health Network. [The Precautionary Principle: A Common Sense Way to Protect Public Health and the Environment](#). January 2000. Epstein, L.S. (1980); “Decision-making and the temporal resolution of uncertainty.” International Economic Review 21 (2): 269–283; Arrow, K.J. and Fischer, A.C. (1974). “Environmental preservation, uncertainty and irreversibility.” Quarterly Journal of Economics 88 (2): 312–9; Gollier, Christian, Bruno Jullien & Nicolas Treich (2000). “Scientific Progress and Irreversibility: An Economic Interpretation of the ‘Precautionary Principle.’” Journal of Public Economics 75 (2): 229–253.

discussion on the impacts of roads to ecosystem processes upon which the owl depends, including elevating fire ignition risks (see Hanson et al. 2010).

1. *FWS does not have enough evidence to justify active management in dry forests.*

Regarding the dry forest provisions in general, the recovery plan states on page 32, “we support, as did the 2008 plan peer reviewers, this overarching principle for managing dry-forest landscapes.” This statement pertains to the active management provisions of the 2008 recovery plan that were widely criticized, not supported, in peer review as stated in the sentence on page 32 that follows “... however, peer reviewers found the specific management recommendations in the 2008 Plan to be aggressive, untested, and not supported by analysis.”<sup>3</sup>

The 2010 draft also states there were modifications to the active forest management provisions based on peer review; however, the recovery actions regarding active management are still based on flawed and contradictory assumptions that at times treat fire as a threat to owls and at other times state that owls are resilient to fire (e.g., “It appears that, at least in the short term, spotted owls may be resilient to the effects of wildfire—a process with which they have evolved,” p. 94). It appears to us that this contradiction exists because the Service has yet to “purge” the recovery plan of the SEI (2008) sections (particularly but not exclusively Appendix D in the recovery plan) and supporting documents that were criticized in peer review, contradicting more recent statements about owl resiliency to fire. As the Service aptly notes, there are only two studies of fire effects on owls: one on the California spotted owl, showing owls using all burn severities for nesting, roosting, and foraging (Bond et al. 2009), the other on northern spotted owl use of burn severities that showed owl used burned areas except for large high-severity burn patches, although Clark’s (2007) results may have been confounded by post-fire salvage logging in owl territories. While we support the recommendation in the plan to collect occupancy data on owls post-fire, we note that this will need to be carefully designed to control for the effects of post-fire logging that can mask any potential fire effect (Clark 2007).

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<sup>3</sup> Also note on p. 17, the 2010 plan states that the reviews of the 2008 recovery plan provided a “solid conceptual framework for recovery” – the Service should at least accurately portray the peer reviews that unanimously concluded that the previous plan (2008) was not based on best science. “There have been some improvements from the Draft to the Final Plan, but the underlying strategy of the Plan either remains unchanged or has been weakened from the Draft.” The Wildlife Society July 31, 2008. “In some ways, the Final Recovery Plan for the Northern Spotted Owl (Final Plan) is an improvement over the 2007 Draft Recovery Plan (Draft Plan). However, the Final Plan is still inadequate as a conservation strategy.” SCB-AOU June 27, 2008).

In addition, we fail to see the logic for widespread active management when there are only two studies on owl response to fire; owls may in fact be resilient as noted, or they may respond negatively to only certain types of fires depending on how much unlogged suitable habitat is nearby for re-occupancy; and fires may be controlled increasingly by climate rather than fuels (e.g., on page 72 the Service admits that “the amount of wildfire area burned is substantially controlled by climate”), yet the 2010 recovery plan continues to be a fuels-based active management plan.

FWS also appears to have missed some of the key information from members of the dry forest working group regarding the importance of mixed-severity fire regimes (Hessburg *et al.* 2007). For instance, the Service incorrectly assumed that fire severity has increased in the range of the owl and cites Westerling *et al.* (2006) as evidence, downplaying Hanson *et al.* (2009). However, the Westerling study never stated any conclusions about increases in fire severity, and their study area only incompletely overlaps with the range of the owl and therefore may not directly apply. The work of Hessburg *et al.* (2007) for the Eastern Cascades is more relevant and shows that the historic range of variability of fires within the owls’ range has and still includes mixed severity (which includes a portion of high severity). The Service never defines “catastrophic” or “uncharacteristic” or how much high severity is a risk to the owl in the 2010 plan yet states that there is a risk of such fires impacting owl habitat. Again, according to Hessburg *et al.* (2007), mixed-severity fire currently is within historic bounds. Hanson *et al.* (2009) demonstrated that there has been no statistically significant trend in high-severity fire within the dry forest provinces. And finally, the Service will consider monitoring fire severity at the province scale (recovery units), but in fact Hanson *et al.* (2009) demonstrated that this is an inappropriate scale for fire analysis as it leads to uncertainties in assessing fire rotations and risks. Fire severity should be monitored at the scale of entire ecoregions (eastern Cascades, Klamaths, etc), not smaller owl provinces.

2. *The Draft Plan does not acknowledge that the alleged benefits of thinning are uncertain.*

The 2010 plan presents a biased view of thinning that considers this treatment only in terms of fuel reduction benefits. However, Naficy *et al.* (2010) found that historically logged and fire-suppressed ponderosa pine stands in the Rockies were more prone to high severity fire and insect outbreaks than unlogged sites because logging had homogenized stand structure and increased conifer densities. Likewise, the 2010 plan states on page 72—citing Littell *et al.* (2009)—that fuel treatments have contributed to increased magnitude of wildfires. If the same is true for dry forest provinces in the range of the owl, the beneficial effects of thinning may be overstated and its effects on fuel loads may in fact: (1) increase under certain conditions (if slash is not removed); (2) promote higher wind speeds within stands that can lead to ground-to-crown fire spread; and (3) increase understory desiccation and fuels from increased light penetration due to bulk crown density reductions (see DellaSala and Frost 2001 for review).

Further, there is no discussion regarding the very low probability (2.0-7.9%) that fuel treatments will even encounter a fire during the short (20-year) period when fuel reduction benefits may persist in a stand (Rhodes and Baker 2008). Since fire-risk reduction treatments have a limited period of effectiveness (due to forest regrowth), any fire rotation longer than about 20 years will result in many acres of fuel treatments being done “unnecessarily.” That is, the action agencies will log the forest and degrade owl habitat, but the sites are unlikely to experience a fire during the short-time period when fuels are low, so owl habitat will suffer the harm of logging without receiving the benefit of modified fire behavior. This problem is documented in the literature (see Mitchell et al. 2009, in addition to Rhodes and Baker 2008).

The Service also presents data on recruitment rates and fire-related “losses” to late-seral forests from a presentation by Mouer (not generally available to the public but provided by FWS to Geos Institute on request) that has not been subject to peer review and includes estimates of recruitment and loss between time periods that were not based on statistically rigorous designs. (For instance, the estimates have error bars that completely overlap between the time periods evaluated.) These data would likely not even qualify as “gray literature,” yet they are used in the draft recovery plan to justify fire as a risk to owls.

The Service’s stated objectives include “creating a more sustainable, resilient landscape” (p. 46) and producing net benefits to NSO habitat through active management, but the agency also admits that “more research is needed to understand if the costs of such short-term impacts are outweighed by the long-term gains.” Until the trade-offs are better understood, there is no way that the Service can claim that logging owl habitat as a fire risk reduction measure constitutes a net benefit to owls. There must be a credible process for deciding whether short-term negative effects are indeed short term and are off-set by long-term benefits, and to date, such a methodology is lacking (see Heiken 2010). The Service also should not be too eager to trade currently suitable habitat (through thinning) for future habitat (“restored”). Current suitable habitat is still vastly under-represented in protected areas but is essential to an already reduced spotted owl population.

Because the fire and active management sections are not based on best science and ignored much of the peer review, we request that the Service:

- Use the precautionary approach by conducting studies on pre- and post-fire use of habitat by spotted owls to determine effects of fires (under varying fire severities, stand, and landscape conditions) on owl occupancy and recruitment while controlling for the effects of post-fire logging before assuming fire is detrimental. If fire is indeed a quantifiable risk to spotted owls, then proceed with step #2 below.

- Use the precautionary approach and greatly scale-back active forest management treatments by conducting rigorous experimental treatments on paired watersheds (in Matrix and Adaptive Management Areas, as in Recovery Action 12—p. 54) to assess spotted owl response to thinning as well as prey and barred owls and include a broader range of studies on thinning effects as well as the findings of Hessburg *et al.* (2007) regarding the importance of mixed-severity fire for owl habitat maintenance.
- Extend Recovery Action 9, Klamath province recommendations, to the rest of the dry forest provinces to collect much needed data and provide a more complete review of the literature on fire effects, owl occupancy in burned areas, identification of high value areas, and the role of fire.
- Include active management of anthropogenic fire ignitions associated with roads through seasonal road closures and road obliteration (*see* Hanson *et al.* 2010) as roads not only contribute to fire risks but due to their abrupt edges and tendencies to contain invasive species can create hot and dry conditions for fires to spread.
- As recognized by the 2008 final recovery plan (RA 7) and the NWFP, protect high-quality habitat through landscape planning that focuses risk-reduction treatments in surrounding non-suitable habitat, high risk areas (*e.g.*, already degraded forests—*see* Hanson *et al.* 2010), instead of degrading high-quality habitat with large-scale thinning.
- If certain types of fires are a quantifiable risk for owls due to demonstrated reductions in occupancy, habitat use, fecundity, and survival, then provide for additional replacement habitat to allow owls to shift to nearby locations in response to fire effects. This can best be accommodated through a reserve design that is redundant and conceived with owl dispersal requirements in mind. Many of these principles already were built into the LSRs and again FWS should build on these fundamental protections as a baseline for owl recovery.
- Initiate public involvement and science review of the dry forest working group recommendations to better ensure their input in owl recovery implementation is based on best science that addresses the concerns noted herein.
- Incorporate the Federal Wildland Fire Management Policy and relevant agency directives that allow fires to burn in the back country under certain conditions in order to continue to create the fire mosaic that owls appear to be resilient to in portions of their range.

F. Post-Fire/Post-Disturbance Measures Should Be Strengthened and Enforced.

Post-fire logging can be more harmful to owls than the initial fire (see Clark 2007). We recommend that you adopt prohibitions on post-disturbance logging at least as strong as those from the 1992 draft final recovery plan, which recommended prohibitions on post-fire logging for “legacy” (>21 in dbh) trees.

In addition, while an improvement over the 2008 draft, the Service does not accurately portray the severity of post-fire logging impacts to the ecosystems upon which the owl depends (e.g., on page 52 of the 2010 draft recovery plan while McIver and Starr 2000 made qualified statements about benefits of salvage logging, Lindenmayer et al. 2008 never claimed that this type of logging “reduces” erosion—in fact the opposite is true—and large legacy trees—most often removed in salvage operations—are not a fire risk as claimed in the 2010 draft recovery plan but rather small fuels from logging slash are a much higher risk).

G. Barred Owl Suppression Efforts Should Be Linked to Habitat Protections.

Unfortunately, the recovery plan still seems to view the barred owl and habitat as two separate elements of recovery, without recognition that more habitat can help mitigate the barred owl effect on spotted owls (see Forsman et al. 2010 for recent information and comment above regarding K. Dugger’s recent unpublished findings). Because LSRs were delineated before the barred owl was recognized as a serious threat, reliance on the LSR network may no longer be adequate. Barred owls occupy territories covering large amounts of suitable spotted owl habitat within the LSR network. Recovery Action 32 (p. 69) is a step in the right direction, but needs to be broadened to include all suitable owl habitat in order to adequately mitigate for the barred owl threat (especially given that there is uncertainty whether the barred owl population can be or will be adequately controlled). If protecting a subset of high-quality habitat helps reduce competitive interactions between related *Strix* species, then protecting ALL suitable habitat may accomplish that objective even more effectively. Barred owl population suppression is still mainly untested, and habitat protection may turn out to be the most effective means of mitigating the adverse competitive interactions.

Recovery Actions 21, 29, and 32 regarding the barred owl should be better integrated with habitat protection. For instance, adaptive management regarding the barred owl should include additional protection of suitable spotted owl habitat as a “tool in the toolbox.” RA 29 (p. 68) calls for developing tools to better protect the spotted owl, but it does not consider additional habitat protection as one of those tools.

H. The Draft Plan Fails to Consider the Impacts to Habitat From Global Warming.

The Draft Plan fails to consider potential impacts from global warming. There is a general scientific consensus that climate change will impact natural and human systems within the next century, and there are numerous studies estimating the impacts to various natural systems within the Pacific Northwest.

The Draft Plans discussion of climate change impacts must recognize that logging reduces stored-carbon pools more than fire. The 2010 recovery plan seems to imply that active management is necessary to reduce the effects of fire and store more carbon in fire-prone forests. This may not be the case. Except in forests with very frequent fire regimes, efforts to store more carbon by reducing the effects of fire are likely to be counterproductive (Mitchell et al. 2009).

The 2010 draft recovery plan cites Hurteau et al. (2008) for the proposition that thinning may reduce the risk of catastrophic carbon release through fire. Hurteau's analysis is deeply flawed as it makes an unreasonable assumption that every fuel reduction treatment has a 100% chance of interacting with wildfire, which implies that managers know where and when future wildfire will occur (see Rhodes and Baker 2008, Mitchell et al. 2009 for contrary views). The effect of this assumption is to dramatically overestimate the effectiveness of fuel treatments, and dramatically underestimate the adverse impacts of fuel reduction.

Consistent with Secretarial Order No. 3289, the Service should expand RA 32 to cover all suitable habitat for owls and stored carbon pools. This will meet the complementary goals of climate mitigation (by storing more carbon in long-lived forests), and owl recovery (by reducing the competitive threat of the barred owl). Protecting and increasing habitat is the best way to increase the spotted owl's resilience to climate change. Increased habitat provides options for owl populations to increase, and it is axiomatic that larger populations are more resilient than smaller populations to stochastic variations such as those that may be caused by climate change.

IV. THE DRAFT PLAN IS DEFICIENT BECAUSE IT FAILS TO INCLUDE OBJECTIVE, MEASURABLE RECOVERY CRITERIA THAT REFLECT THE BEST AVAILABLE SCIENCE.

The ESA states that the FWS "shall, to the maximum extent practicable," incorporate into the recovery plan "objective, measurable criteria which, when met, would result in a determination ... that the species be removed from the list." 16 U.S.C. § 1533(f)(1)(B)(ii). In the Draft Plan, the Service attempts to meet these requirements with the following four Recovery Criteria:

Recovery Criterion 1 – Stable Population Trend: The overall population trend of spotted owls throughout the range is stable or increasing over 10 years, as measured by a statistically reliable monitoring effort.

Recovery Criterion 2 – Adequate Population Distribution: Spotted owl subpopulations within each province (i.e., recovery unit) (excluding the Willamette Valley Province) achieve viability, as measured by the HexSim population model or some other appropriate quantitative measure.

Recovery Criterion 3 – Continued Maintenance and Recruitment of Spotted Owl Habitat: There is no net loss in nesting/roosting or foraging habitat throughout the range, as measured by effectiveness monitoring efforts or other reliable habitat monitoring programs.

Recovery Criterion 4 – Post-delisting Monitoring: To monitor the continued stability of the recovered spotted owl, a post-delisting monitoring plan has been developed and is ready for implementation within the States of Washington, Oregon and California (ESA 4(g)(1)).

As an initial matter, the Conservation Groups note that Recovery Criterion 4 (Post-delisting monitoring) is not a recovery criterion at all because it is not something that, when implemented, would justify delisting spotted owls. Rather, it is simply something that will happen after the Service delists the species. More importantly, none of the recovery criteria reflect the best available science and two of the three recovery criteria are not objective or measurable, as required.

A. The Recovery Criteria in the Draft Plan Are Not Objective or Measurable, and They Do Not Reflect the Best Available Science.

1. *Recovery Criterion 1 – Stable Population Trend: The overall population trend of spotted owls throughout the range is stable or increasing over 10 years, as measured by a statistically reliable monitoring effort.*

The Conservation Groups agree it is appropriate to include a recovery criterion that assures spotted owls have stable or increasing population trends for the ten years prior to delisting. However, we strongly recommend that the Service revise Recovery Criterion 1 so it is only satisfied if there is an objective, measurable, and very high level of confidence that the overall population trend of spotted owls throughout the range will remain stable or increasing for the next 100 years. As written, Recovery Criterion 1 would allow the Service to delist spotted owls based on past population trends even if the Service is aware that populations are about to crash or that there is a low level of

confidence in long-term persistence. To avoid prematurely delisting the species, the Service should either revise Recovery Criterion 1 or add a new recovery criterion that requires the Service to evaluate the likelihood of long-term spotted owl persistence throughout the range before delisting the species.

If the Service intends that Recovery Criterion 2 will satisfy this objective, then, as described in more detail below, Recovery Criterion 2 should be revised to define “viability” more clearly and to include objective, measurable criteria regarding how much confidence surrounds long-term spotted owl persistence. Because as written the recovery criteria may allow the Service to delist the species at a time when spotted owl abundance is at historical lows after decades of decline, we strongly recommend that the Service revise the recovery criteria, or add a new criterion, that establishes the levels of spotted owl abundance that must be achieved before the species will be deemed eligible for delisting.

2. *Recovery Criterion 2 – Adequate Population Distribution: Spotted owl subpopulations within each province (i.e., recovery unit) (excluding the Willamette Valley Province) achieve viability, as measured by the HexSim population model or some other appropriate quantitative measure.*

Recovery Criterion 2 is inappropriately subjective because it sets a goal of “adequate” population distribution without explaining what would qualify as “adequate.” The criterion does specify that “adequate population distribution” would be accomplished when “spotted owl subpopulations within each province achieve viability,” but there is no explanation of how many populations within a recovery province must achieve viability, nor is there any explanation whatsoever of the term “viability.” The Service’s reference to measuring the adequacy of population distribution using an “appropriate” quantitative measure underscores the subjectivity of this recovery criterion. What is “appropriate” in a given context is subjective, not objective, and it is certainly not measurable.

To be objective and measurable, Recovery Criterion 2 should set numeric goals for the number of subpopulations in each recovery province that need to be viable, and should include numeric descriptions of what constitutes “viable.” For example, the Service could define “viable” subpopulations as those where there is a 95% confidence interval that the subpopulations will persist for 100 years with a stable or increasing population, as, for example, measured by lambda values at or above 1.0 for monitored populations. Additionally, in order to comply with the best available science on metapopulation dynamics and conservation biology, Recovery Criterion 2 must ensure that recovery provinces are not deemed viable when in fact they are only acting as a population sink—because of the influx of owls from neighboring provinces. The Service must define “viable” and that definition must specify that owl populations are only viable if they are self-sustaining and sufficiently close to other self-

sustaining populations so they do not become overly isolated or a genetic bottleneck. As written, Recovery Criterion 2 is legally deficient because adequacy and viability are subjective, not objective, concepts, and because as written those concepts are not measurable.

In addition, Recovery Action 2 (p. 40) calls for monitoring at the province level, but it must also be required range-wide. Without a province-by-province or site-specific evaluation (or population modeling), it is impossible to accurately determine which areas are necessary to provide contributions to recovery. For example, there is no analysis or discussion of the importance of the Western Washington Lowlands province in Washington, which includes a large area in southwest Washington that provides the only link to the isolated population on the Olympic Peninsula. In the recent biological opinion for the Washington Forest Practices HCP, the FWS stated that “[a]lthough there are only a few territorial northern spotted owl sites in the Western Lowlands province, the FWS considers these sites to be increasingly important for the conservation of northern spotted owls in Washington, due to their location between clusters of northern spotted owls on the Olympic Peninsula, the western Cascades, and northwest Oregon.” (USFWS 2006, p. 382) Although previous modeling efforts have suggested that the Olympic population is self-sustaining (Holthausen *et al.* 1995), the assumptions used in those efforts are no longer valid given the sustained poor demographic performance of the spotted owl in Washington (Anthony *et al.* 2006). The Service should include better monitoring actions to ensure the final plan recovers the species.

3. *Recovery Criterion 3 – Continued Maintenance and Recruitment of Spotted Owl Habitat: There is no net loss in nesting/roosting or foraging habitat throughout the range, as measured by effectiveness monitoring efforts or other reliable habitat monitoring programs.*

Similarly, Recovery Criterion 3 also is not objective or measurable because it does not include a baseline from which the Service could measure “no net loss” of habitat. For a no net loss recovery criterion to make any sense at all, the Service must include a baseline that describes the date from which the Service will measure “no net loss,” as well as a description of the habitat levels existing as of that date. Without a baseline—without a starting point and some quantification of the amount of habitat existing as of that date—there is literally no objective way to measure whether there has been a net loss of habitat. As written, Recovery Criterion 3 violates the ESA because it is not objective or measurable.

Additionally, Recovery Criterion 3 fails to reflect the best available science, as required. All previous analyses of spotted owl population dynamics have concluded that the quantity and distribution of suitable habitat is vital for maintaining viable populations of spotted owls. The emergence of new threats to the owl, such as climate change and the invasion of barred owls, increases the importance of not only preserving all remaining suitable habitat but generating or protecting additional habitat quickly as well. Several of the peer review comments on the 2008

Recovery Plan recommend increasing the amount of protected habitat rather than reducing it because of these new threats. Indeed, as noted above, the amount of habitat protected under the NWFP was acknowledged to be the minimum under the relevant legal requirements at that time. While there is some evidence that management under the NWFP has resulted in lower rates of decline for owls on federal land than on non-federal lands (Anthony et al. 2006), overall the spotted owl population has declined more rapidly than even the worst-case scenario under the NWFP.

Consequently, the Draft Plan is insufficient because it sets as the goal only no net loss of habitat. To be consistent with the best available science and the available information on barred owl competition with spotted owls, the Draft Plan must also require the recruitment of more habitat than currently exists. The Service should modify the “no net loss” of habitat in Recovery Criterion 3 (p. 40) to include recruitment of suitable habitat so that barred and spotted owls have more habitat acres in which to co-exist. Recruitment of habitat is necessary because the current level of habitat is not enough to sustain spotted owls with barred owl competition, so “no net loss” is inadequate. Habitat needs to be greatly increased via succession and, where necessary, restoration.

The Draft Plan is also insufficient because it does not set forth any criteria for evaluating the spatial relationship of available habitat. To support recovery, the final recovery plan must require recruitment and maintenance of a functional level of suitable habitat in places that can actually support individual owls and owl populations. The Draft Plan’s habitat criterion must have a spatial element; habitat should be both “well-distributed” and in “large blocks.” The barred owl also needs to be factored into this habitat criterion by providing “extra” habitat to accommodate the co-existence of both *Strix* species and the barred owls’ occupation of otherwise suitable spotted owl habitat.

For northern spotted owls, habitat is needed for nesting, roosting, foraging, as well as dispersal. The Draft Recovery Plan does not provide for any dispersal habitat, and provides no justification or rationale for that position. FEMAT determined that habitat provided by the NWFP in the form of riparian reserves and other matrix land management standards would provide for adequate dispersal habitat, but as the Draft Plan follows the NWFP in the interim only, it presents essentially no strategy for managing owl dispersal habitat.

B. The Recovery Criteria in the Draft Plan Are Insufficient Because They Fail to Address Inadequate Regulatory Mechanisms.

The Service aptly notes that one of the main reasons for listing the owl in 1990 was the “inadequacy of regulatory mechanisms” (p. 61). And the 2010 recovery plan acknowledges the various regulations that pertain to owl conservation on state and private lands. Unfortunately, although spotted owl habitat on non-federal lands is declining approximately 13 times faster than

federal lands (Table B2, p. 101), the recovery criteria, as well as the Service's related conservation recommendations, fail to address the inadequacy of regulatory mechanisms on non-federal forestlands within the range of the northern spotted owl. The Draft Plan recognizes that non-federal lands are important, but provides little actual guidance on how they should be managed.

First, the Conservation Groups are very concerned that the recovery criteria in the Draft Plan fail to ensure that inadequate regulatory mechanisms will be addressed before the Service delists northern spotted owls. As explained above, in designing objective, measurable criteria, the Service must address each of the five statutory delisting factors so the Service can later measure whether the recovery actions have ameliorated identified threats to the species. Fund for Animals, 903 F. Supp. at 111. Here, however, the recovery criteria only address population trends, population distribution, and maintenance of spotted owl habitat, while failing to provide objective, measurable criteria by which to measure whether the recovery actions have ameliorated the threat from inadequate regulatory mechanisms. The Service must add a recovery criterion that addresses regulatory mechanisms across the landscape because that is the only way to ensure that regulatory mechanisms are adequate before the Service delists the species.

Stated differently, the Service cannot simply assume that stable population trends, an adequate distribution of owls, and no net loss of habitat will mean that conservation efforts have ameliorated the threats to spotted owls from inadequate regulatory mechanisms. Recovery Criteria 1-3 could be satisfied through voluntary measures or changed assumptions about what constitutes recovery. But because inadequate regulatory mechanisms have always posed a threat to the species, the Service must include a recovery criterion that ensures that threat is addressed before the Service delists the species. Simply assuming it will be taken care of if owls are persisting is not enough.

Including such a recovery criteria is especially important because the recovery actions in the Draft Plan do not adequately address the threats to owls from the existing, but inadequate, regulatory mechanisms on non-federal lands. The expectation that non-federal lands "working groups" will contribute to recovery is unfounded because in general state and private landowners have been very reluctant since the owl was listed in 1990 to take substantial steps in support of owl recovery. For example, recent studies conducted by state agencies in Washington have found that: 1) Washington's forest practices rules have not worked as intended, 2) substantial amounts of habitat have been logged both inside and outside of the spotted owl special emphasis areas ("SOSEAs"), and 3) all of the areas within the study area (SOSEAs and owl circles outside of SOSEAs) had, on average, less than 40% habitat remaining, which is far less than the FWS recommendations for avoiding take (Buchanan and Swedeen 2005, Pierce et al. 2005). Although directly relevant to the estimation of habitat loss and management on non-federal lands, the Draft Plan does not cite or discuss the Pierce et al. (2005) report. Oregon has no equivalent to the

SOSEAs in Washington, and only recommends maintaining 70 acres of habitat around the nest site.

Even though HCPs encompass millions of acres of land across the three states, there is no indication that the recovery team investigated how HCPs are contributing—or failing to contribute—to recovery. Given that one of the primary listing factors is the ‘inadequacy of existing regulatory mechanisms,’ this oversight is problematic. For example, the Washington Department of Natural Resources (“DNR”) HCP is a multispecies HCP that covers over 1.6 million acres within the range of the owl in Washington. In estimating the future take of owls under the HCP, their analysis assumed that DNR lands would be a population sink, that habitat conditions would decline, and that the population projections at the time were flawed and so the more optimistic end of the confidence interval (0.8% rather than 6.4% rate of decline) was used as their estimate of population change (WADNR 1996, page 4-64). Although the HCP requires about 300,000 acres of nesting, roosting and foraging (“NRF”) and dispersal habitat to be created by the end of the 70-year HCP, the biological opinion estimates that between 165,000 and 329,000 acres of suitable habitat would be made available for harvest in the short term and that the demographic support provided by NRF areas would be limited in the first 30 years. The allowed take over the life of the HCP, based on a 0.8% projected rate of decline, is over 250 owl pairs, with the bulk of the take expected to occur in the short term (0-10 years). (USFWS Concurrence Memorandum and Biological Opinion, January 27, 1997).

These facts demonstrate that regulatory mechanisms on non-federal lands continue to pose a threat to northern spotted owls and that continuing the status quo will not work. But in spite of these facts, the Draft Plan delegates to a “working group” the task of planning and implementing recovery on non-federal lands. This is extremely problematic for at least three reasons. First, it means that the Service has failed to develop recovery actions for non-federal lands. Second, it deprives the public of the right to comment on proposed recovery actions for non-federal lands. Third, it prevents the Service and the public from evaluating whether conservation measures for non-federal lands will be based on the best available science, as required. The Service cannot simply delegate the task of resolving a very serious threat to the species—inadequate regulatory mechanisms on state and private timberlands—to the very states that have been posing that threat. In the final recovery plan, the Service must include recommended recovery actions for saving spotted owls and their habitat on non-federal lands throughout the range of the species.

Specifically, Recovery Action 32 in the 2010 plan is an improvement over the 2008 plan in that it applies protections “to the maximum extent practical” to structurally complex forests on federal and non-federal lands. However, this action is weaker than it could be, for a variety of reasons. First, while we recognize that there has been progress with the action agencies regarding implementation of Recovery Action 32 (as stated on p. 70), we disagree that this is occurring uniformly, and we are greatly concerned about ongoing active management projects on

federal forests in Northern California that are being justified as necessary to protect the spotted owl from fire. See Appendix A. Second, Recovery Action 32 is troublesome because it is contingent on implementation standards developed by working groups populated by the same agencies (action agencies or state agencies) that in turn will later consult with the Service over incidental take. Many of the provisions of this activity have yet to be developed, are based on uncertain policy outcomes (e.g., carbon credits), untested safe-harbor agreements such as in Oregon that are on short time horizons relative to owl habitat needs (e.g., 60 year safe-harbor agreements vs. mature forests >80 years), and depend on landowner participation in evaluating the merits of regulatory, voluntary, and financial incentives (p. 56) to promote approaches that are economically and scientifically valid. This does not create assurances that portions of the owls' range where the only suitable habitat (dispersal and/or demographic support as emphasized) remain is on non-federal lands, such as the Oregon Coast Range and southwest Washington, will in fact see increased protections or adequate regulations for owls.

This is especially but not exclusively problematic in Oregon, where forestry practices are significantly less protective of spotted owls than in Washington and California. It is unrealistic to expect state agencies to provide meaningful evaluation of the merits of regulations, for instance, when in fact these regulations are already inadequate (see Table 2, p. 58, for instance) or for the most part are resisted by state agencies. The same concern holds true for Habitat Conservation Plans (see Appendix B) that while providing some benefits to owls, are resulting in ongoing incidental take that not only does not contribute to recovery but is a major deterrent to it.

Relying on "best management practices," inadequate regulations, non-regulatory or voluntary compliance, and HCPs that are a sink for owls remains a major shortcoming of the 2010 recovery plan that does not adequately address the scientific peer reviews or inadequacy of regulatory mechanisms (Listing Factor D). For these reasons, we emphasize that the Service deal more directly with the alarming amount of incidental take on state and private lands in California, Oregon, and Washington through more effective enforcement of the Endangered Species Act as noted below.

Because the 2010 draft is insufficient with regard to non-federal lands and ignored much of the peer review, we request that the Service:

- Extend Recovery Action 32 to all suitable owl habitat, not just structurally complex habitat, due to increasing competition from barred owls. We note that Forsman et al. (2010) report that K. Dugger et al. (unpubl. data) found evidence that abandonment rates of spotted owl territories were higher on territories with barred owl detections, and this effect was stronger as the amount of habitat decreased. This result suggested an additive effect of decreasing habitat and presence of barred owls on demographic performance of spotted owls and supports our concern that more habitat protection will benefit spotted owls in the long run.

- More closely monitor timber harvest plans and enforce incidental take throughout the range.
- Ensure that the science advisory teams commissioned by the Service for the recovery plan provide guidance to recovery implementation groups on implementation.
- Provide a scientific critique of the efficacy (pros and cons) of non-regulatory, regulatory, and voluntary compliance such as safe-harbor agreements, HCPs, and incidental take enforcement and monitoring before assuming these produce net benefits.
- Extend Recovery Action 17 (p. 62) to all non-federal lands, not just Washington, as Recovery Action 18 is completely inadequate for Oregon, which already lags behind California and Washington in state forest practices and has the highest rates of ongoing habitat loss from logging even on federal lands (p. 100).

V. THE RECOVERY PLAN IS DEFICIENT BECAUSE IT FAILS TO INCLUDE ACCURATE AND SPECIFIC TIME AND COST ESTIMATES.

The Conservation Groups request that the Service revise the Draft Plan's cost and time estimates so that they more accurately reflect the actual time and cost needed to recover the species. The ESA requires recovery plans to incorporate, to the maximum extent practicable, "estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal." 16 U.S.C. § 1533(f)(1)(B)(iii). In the Draft Plan the Service estimates that it can recover northern spotted owls in 30 years at an estimated cost of \$147.1 million. Draft Plan at 80-83. As previously discussed, the Service's new 30-year recovery estimate contradicts the best available science on spotted owl conservation by overestimating the speed of recovery and underestimating the magnitude of threats to the owl. Unfortunately, the Service's arbitrary 30-year recovery estimate also undermines the Service's cost estimate: because recovering spotted owls will take far more than 30 years, the Draft Plan necessarily, and substantially, underestimates the cost of recovering the species. The time and cost estimates are both arbitrary and capricious and should be revised.

The time estimates in the Draft Plan are also contrary to law because the Draft Plan fails to state a time estimate for fully one-half of the thirty-four recovery actions; for seventeen of the recovery actions the Service lists the time for implementation as "continuous," "ongoing," "intermittent," or "TBD." Yet the ESA requires the Service to state, to the maximum extent practicable, estimated times to carry out recovery measures. And here it is quite practicable for the Service to provide more detailed estimates of implementation times.

For example, for Recovery Action 32 (Maintain high-quality habitat across all landscapes), the Service could state the estimated time for identifying areas with high quality habitat; the estimated time for establishing with the owners of those lands a plan for maintaining that habitat; and an estimated time for implementing the plan to maintain the habitat. As another example, for Recovery Action 26 (Implement public outreach strategy), the Service could estimate the time needed to develop the public outreach strategy, interim timelines for revising that strategy, estimated timelines for having meetings or taking other steps to update the public on spotted owl recovery, etc. Similarly, for both Recovery Action 6 (Dry Forest Landscape Work Group) and Recovery Action 9 (Klamath Province Work Group), the Service could easily include time estimates for implementing the work plans that have already been developed (see Draft Plan at 47 and 49). Similar time estimates with interim steps could be established for, at a minimum, Recovery Actions 5, 11, 12, 15, 21, 26, and 34.

By failing to state time estimates for these recovery actions, the Service undermines the purpose of the recovery plan by allowing them to be delayed when, if they are necessary to recovery, they should happen as soon as possible. Recovery Action 5 is a good example. If the Service is correct that managing habitat to accelerate complexity is essential to recovering the species, and if the Service expects recovery to occur in 30 years, then it would seem important to implement Recovery Action 5 relatively soon to allow the needed complexity to develop over time. But by failing to include a timeline for implementing that Recovery Action the Service virtually ensures that it will not happen on time. By failing to include time estimates to the maximum extent practicable, the Service violates the letter and spirit of the ESA.

\* \* \*

While the 2010 draft is a significant improvement over the 2007-08 versions, it unfortunately carries forward many of the same previously-criticized recommendations and assumptions of the prior plans. It is not based on the best science and does not reflect the recent policy shift toward scientific integrity at the U.S. Department of the Interior. It also fails to meet the legal requirements of the Endangered Species Act. For these reasons, the Conservation Groups are very concerned that implementation of the Draft Plan will not result in recovery of northern spotted owls throughout their range.

Accordingly, the Conservation Groups request that the Service make at least the following changes, to ensure that the final plan meets all applicable legal requirements and gives spotted owls the best chance to recover across their range. First, the final recovery plan should include a habitat reserve system that is based on the Northwest Forest Plan, supplemented with habitat identified by the new HexSim model. Additionally, before incorporating the habitat reserve system into the final plan, the Service should provide an opportunity for public comment and a peer review period for the HexSim model, so that the public and scientists can adequately assess the efficacy of the recovery plan and any potential reserve designs in meeting recovery

goals and objectives. The Service must not jettison the Northwest Forest Plan or rely entirely on a brand new, untested set of models, especially if those models are not peer reviewed or available for public comment before the results are included in the final plan.

Second, in the final plan the Service should scale back the proposed and risky active forest management treatments. In particular, the Service must revise its outdated and inaccurate assumptions about fire by dropping the heavily-criticized fire and thinning discussion and recommendations in Appendix D of the Draft Plan. Instead, the Service should strongly recommend that action agencies proceed carefully by employing a rigorous experimental design and precautionary approach in developing management recommendations for spotted owl habitat.

Third, in the final plan the Service must include recovery criteria that are far more objective and measurable and that require abundance levels and future spotted owl population trends to meet established, numeric benchmarks before delisting. Fourth, the Service should supplement recovery efforts by greatly improving enforcement of ESA regulations on non-federal lands, by providing more clearly stated prohibitions on post-disturbance logging, and by stating stronger recommendations for protecting nesting, roosting, foraging, and dispersal habitat. And finally, to ensure that all recovery partners recognize the urgent need for implementing recovery actions, in the final recovery plan the Service must include more specific and more accurate time and cost estimates.

Thank you for the opportunity to comment on the Draft Revised Recovery Plan for the Northern Spotted Owl. Please contact us if you have any questions or concerns about these comments, or if there is anything we or our clients can do to assist you with planning for the recovery of the northern spotted owl.

Sincerely,



Kristen L. Boyles  
Earthjustice  
705 Second Avenue, Suite 203  
Seattle, WA 98104

Paul Kampmeier  
Washington Forest Law Center  
615 Second Avenue, Suite 360  
Seattle, WA 98104-2245

Dominick DellaSala  
Geos Institute  
84 Fourth Street  
Ashland, OR 97520

Doug Heiken  
Oregon Wild  
P.O. Box 11648  
Eugene, OR 97440-3848

Joseph Vaile  
Klamath-Siskiyou Wildlands Center  
P.O. Box 102  
Ashland, OR 97520

Scott Greacen  
Environmental Protection Information Center  
P.O. Box 543  
Redway, CA 95560-0543

Noah Greenwald  
Center for Biological Diversity  
P.O. Box 11374  
Portland, OR 97211-0374

Steve Holmer  
American Bird Conservancy  
1731 Connecticut Avenue, N.W., 3<sup>rd</sup> Floor  
Washington, D.C. 20009

Cindy Haws  
Umpqua Watersheds, Inc.  
P.O. Box 101  
Roseburg, OR 97470

Josh Laughlin  
Cascadia Wildlands  
P.O. Box 10455  
Eugene, OR 97440

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Denise Boggs  
Conservation Congress  
P.O. Box 5  
Lewistown, MT 59457

Kimberly Baker  
Klamath Forest Alliance  
P.O. Box 21  
Orleans, CA 95556

Dave Werntz  
Conservation Northwest  
1208 Bay Street, Suite 201  
Bellingham, WA 98225

Bob Sallinger  
Audubon Society of Portland  
5151 N.W. Cornell Road  
Portland, OR 97210

Shawn Cantrell  
Seattle Audubon Society  
8050 – 35<sup>th</sup> Avenue N.E.  
Seattle, WA 98115

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