



United States Department of the Interior



FISH AND WILDLIFE SERVICE

911 NE 11th Avenue
Portland, Oregon 97232-4181

IN REPLY REFER TO:
FWS\R1\AES\051530

Paul Beier, Ph.D.
President
Society for Conservation Biology
1017 O Street NW
Washington, DC 20001-4229

MAY 30 2012

Dear Dr. Beier:

Thank you for your April 2, 2012, letter regarding the recent publication of a Proposed Revised Critical Habitat Rule for the northern spotted owl. By copy of this letter, I am also responding to the other signatories of your letter. The Department of the Interior appreciates your concerns and offers the following comments for your consideration.

The overall recovery strategy in the 2011 Revised Recovery Plan for the northern spotted owl is derived from the stated purpose of the Endangered Species Act: "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." The strategy contains three basic goals: (1) address the negative impacts of the competing barred owl; (2) protect the remaining older forest habitat from timber harvest and other threats; and (3) use science-based ecological forestry principles to maintain and restore healthy forest ecosystems. This draft critical habitat proposal and the 2011 Revised Recovery Plan upon which it is based represent a significant increase in protections and conservation for the spotted owl compared to previous critical habitat designations and plans, including the Northwest Forest Plan.

Climate Change, Forest Health, and Spotted Owl Recovery

Forest ecosystems in the Pacific Northwest are likely undergoing significant changes due to climate change and past management activities. Impacts from wildfire, insect outbreaks, and forest disease appear to be increasing. Although some researchers disagree on the magnitude of these threats (e.g., Hanson et al. 2009, Baker 2012), our review of the recent scientific literature found that many researchers believe that large changes in fire frequency, severity, and total burned area are indeed underway in the Pacific Northwest and that certain types of active management responses should be considered (e.g., Hessburg et al. 2007; Healy et al. 2008; Heyerdahl et al. 2008; Kennedy and Wimberly 2009; Latta et al. 2010; Littell et al. 2009, 2010; Spies et al. 2010; Syphard et al. 2011, Marlon et al. 2012; Miller et al. 2009, 2012; Perry et al. 2011; Waring et al. 2011; Messier et al. 2012; Jenkins et al. 2012).

The issue of forest health and fire risk (severity, frequency, and scale) in the Pacific Northwest is complex, and there is a wide variety of legitimate scientific viewpoints on forest management in the face of uncertainty. Although some scientists do not believe management intervention is

appropriate and advocate a passive (i.e., hands-off) approach to forest ecosystem management, many others believe science-based intervention is necessary to restore and maintain important ecological processes and the species native to these systems, including the spotted owl. This scientific debate of when to apply the precautionary principle in forest management has been ongoing for several decades: What are the consequences of taking action vs. the consequences of not taking action? Ten years ago, eminent fire ecologist James Agee (2002) described these tradeoffs in his essay, "The Fallacy of Passive Management," and he made a cogent scientific argument for targeting fuels and vegetation treatments toward broader ecosystem conservation goals. This recommendation is not new; it was originally made as part of the Northwest Forest Plan in 1994 (Record of Decision, pg. C-12) and remains relevant today (Thomas et al. 2006). A large body of scientific research has since emerged that supports consideration of active forest management for ecosystem conservation, with some it specific to the conservation of spotted owls and other wildlife species (e.g., Lee and Irwin 2005, Lehmkuhl et al. 2007, Lindenmayer et al. 2009, Mitchell et al. 2009, Gaines et al. 2010, Huago et al. 2010, Mealy and Roloff 2010, Halofsky et al. 2011, Roberts et al. 2011, Stephens and Alexander 2011, Syphard et al. 2011, Van de Water and North 2011, Ager et al. 2012, Chandler et al. 2012, Fule et al. 2012, Larson and Churchill 2012, Littell et al. 2012, Messier et al. 2012, Safford et al. 2012).

Your letter, however, is correct that much uncertainty remains, both regarding the variance in many predictions and the potential short term impacts of ecosystem management on local spotted owls. The short term question we face is how best to manage for both the conservation of spotted owls and forest ecosystems in the face of these changes and uncertainty. We share these concerns, and the proposed critical habitat rule addresses this issue in a scientifically reasonable and precautionary manner. We recommend maintaining or restoring more natural fire regimes and forest patterns and managing for landscapes that are resilient to fire and other disturbances, including those projected to occur with climate change (Noss et al. 2006, Hessburg et al. 2007, Schoennagel and Nelson 2011). We recommend that management prescriptions apply the principles of ecological forestry and attempt to manage within the parameters of natural disturbance patterns and ecological processes (e.g., Seymour and Hunter 1999, Franklin et al. 2002, Drever et al. 2006, Long 2009, North and Keeton 2008, Donato et al. 2012). We make a series of recommendations to minimize impacts to spotted owls that may occur, as a result of applying management as described above, there are potential impacts on local spotted owl conservation. Thinning, prescribed fire, let-burn policies, and other tools are part of the overall active management portfolio for land managers to consider for maintaining forest health.

Your letter is also correct in stating that there is not much direct research documenting the specific response of spotted owls to various types of vegetation management. The state of this science to date is described in detail in the 2011 Revised Recovery Plan, which also calls for more research on this important topic (e.g., Recovery Action 11; pages III-11 to III-49). In addition, both the Plan and the revised critical habitat proposal emphasize that conservation of existing spotted owl sites and high quality owl habitat is of primary importance, and we recommend a variety of measures to avoid or minimize any short term impacts to owls such as avoiding core areas and working first in low quality and Matrix forests.

National Environmental Policy Act

In addition to the concerns expressed in your letter regarding active management, you also request that an Environmental Impact Statement (EIS) be prepared under National Environmental Policy Act (NEPA), specifically addressing the active management issue. I can assure you the draft critical habitat proposal is fully compliant with NEPA. Our draft proposal presents an overview of the state of the science on active management and provides only general guidance at the broadest landscape level. More specific plans and decisions concerning active forest management are appropriately made at the land management unit level (e.g., National Forest or Bureau of Land Management (BLM) District). Actions proposed on federal lands must be consistent with the requirements of the Northwest Forest Plan and associated plans, and these plans have already undergone NEPA compliance. Step-down implementation of specific actions such as thinning projects on Forest Service or BLM lands also require NEPA compliance on a case by case basis and usually include an EIS or Environmental Assessment.

Likewise, implementing any actions that modify, amend, or deviate from these plans will also require NEPA compliance. For example, the Oregon State Office of the BLM recently announced on March 9, 2012, their intent to prepare an EIS on proposed changes to their existing Resource Management Plans. The Service is cooperating with this EIS, and it will likely include detailed consideration of various forest management strategies for BLM lands within the range of the owl. A similar process of NEPA compliance is underway for various National Forests as they update or amend their land use plans to apply the latest science to their management decisions.

Using the Best Science for Spotted Owl Conservation

Your letter suggests that the recommendations in our spotted owl recovery strategy may be inconsistent with the Department's policy on scientific integrity, without further clarification. I can assure you this is not the case. The recommendations in the revised recovery plan and the proposed critical habitat revision are based on the best available science, some of which is cited above. In addition, the current critical habitat proposal is a draft, and we have solicited scientific peer review of the proposal from over 40 recognized scientific experts in the fields of wildlife biology, fire ecology, forest ecology, and habitat modeling. This represents an unprecedented call for scientific peer review of critical habitat, but one that we felt was appropriate given the complexity of the issues involved. We have explicitly requested the scientists' perspective on the issues of fire risk and the tradeoffs inherent in decisions involving taking action versus no action, and we will take these comments into consideration prior to finalizing the critical habitat designation. I can provide you with a list of these scientists and their professional affiliation for your consideration. If you have scientists from whom you wish to solicit review on this proposal, please feel free to share the proposal with them and encourage them to provide comment to us during the public comment period.

In conclusion, I want to reiterate that long term forest ecosystem conservation is in the best long term interest of spotted owl recovery, and these two goals must be addressed together. Although there is uncertainty in some of the science on these issues, the Endangered Species Act directs us

to use the best available information to make decisions. Our recovery strategy for the spotted owl represents a reasonable and measured application of this science.

Again, thank you for taking the time to express your concerns.

Sincerely,

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

Regional Director

cc: Paul Krausman, CWB
President
The Wildlife Society

John Faaborg, Ph.D
President
The American Ornithologists' Union

Director, Bureau of Land Management
Director, U.S. Fish and Wildlife Service
Chief, USDA Forest Service
Chair, Council on Environmental Quality
Director, Office of Science and Technology Policy

Literature Cited

- Agee, J.K. 2002. The fallacy of passive management: managing for firesafe forest reserves. *Conservation Biology in Practice* 3:18–25.
- Ager, A.A., N.M. Vaillant, M.A. Finney, and H.K. Preisler. 2012. Analyzing wildfire exposure and source-sink relationships on a fire prone forest landscape. *Forest Ecology and Management* 267: 271-283.
- Baker, W.L. 2012. Implications of spatially extensive historical data from surveys for restoring dry forests of Oregon's eastern Cascades. *Ecosphere* 3(3): 1-39.
- Donato, D.C., J.L. Campbell, and J.F. Franklin. 2012. Multiple successional pathways and precocity in forest development: can some forests be born complex? *Journal of Vegetation Science* 23:576-584.
- Drever, C.R., G. Peterson, C. Messier, Y. Bergeron and M. Flannigan. 2006. Can forest management based on natural disturbances maintain ecological resilience? *Canadian Journal of Forest Research* 36:2285–2299.
- Franklin, J.F., T.A. Spies, R. Van Pelt, A.B. Carey, D.A. Thornburgh, D.R. Berg, D.B. Lindenmayer, M.E. Harmon, W.S. Keeton, D.C. Shaw, K. Bible and J. Chen. 2002. Disturbances and structural development of natural forest ecosystems with silvicultural implications, using Douglas-fir forests as an example. *Forest Ecology and Management* 155:399–423.
- Fule, P.Z., J.E. Crouse, J.P. Roccaforte, E.L. Kalies. 2012. Do thinning and/or burning treatments in western USA ponderosa or Jeffrey pine-dominated forests help restore natural fire behavior? *Forest Ecology and Management* 269: 68-81.
- Gaines, W.L., R.J. Harrod, J. Dickinson, A.L. Lyons and K. Halupka. 2010. Integration of Northern spotted owl habitat and fuels treatments in the eastern Cascades, Washington, USA. *Forest Ecology and Management* 260:2045–2052.
- Halofsky, J.E. et al. 2011. Mixed-severity fire regimes: lessons and hypotheses from the Klamath-Siskiyou Ecoregion. *Ecosphere* 2(4): 1-19.
- Hanson, C.T., D.C. Odion, D.A. DellaSala and W.L. Baker. 2009. Overestimation of fire risk in the Northern Spotted Owl Recovery Plan. *Conservation Biology* 23:1314-1319.
- Healey, S.P., W.B. Cohen, T.A. Spies, M. Moeur, D. Pflugmacher, M.G. Whitley and M. Lefsky. 2008. The relative impact of harvest and fire upon landscape level dynamics of older forests: lessons from the Northwest Forest Plan. *Ecosystems* 11: 1106-1119.
- Hessburg, P.F., R.B. Salter and K.M. James. 2007. Re-examining fire severity relations in pre-management era mixed conifer forests: inferences from landscape patterns of forest structure. *Landscape Ecology* 22:5–24.
- Heyerdahl, E.K., D. McKenzie, L.D. Daniels, A.E. Hessler, J.S. Littell and N.J. Mantua. 2008. Climate drivers of regionally synchronous fires in the inland Northwest (1651-1900). *International Journal of Wildland Fire* 17:40-49.
- Huago, R.D., S.A. Hall, E.M. Gray, P. Gonzalez, J.D. Bakker. 2010. Influence of climate, fire, grazing, and logging on woody species composition along an elevation gradient in the eastern Cascades, Washington. *Forest Ecology and Management* 260:2204-2213.
- Kennedy, R.S.H., and M.C. Wimberly. 2009. Historical fire and vegetation dynamics in dry forests of the interior Pacific Northwest, USA, and relationships to northern spotted owl (*Strix occidentalis caurina*) habitat conservation. *Forest Ecology and Management* 258:554–566.

- Jenkins, M.J., W.G. Page, E.G. Hebertson, and M.E. Alexander. Fuels and fire behavior dynamics in bark beetle-attacked forests in Western North America and implications for fire management. *Forest Ecology and Management* 275:23-34.
- Latta, G., H. Temesgen, D. Adams and T. Barrett. 2010. Analysis of potential impacts of climate change on forests of the United States Pacific Northwest. *Forest Ecology and Management* 259: 720–729.
- Larson, A.J., and D. Churchill. 2012. Tree spatial patterns in fire-frequent forests of western North America, including mechanisms of pattern formation and implications for designing fuel reduction and restoration treatments. *Forest Ecology and Management* 267:74-92.
- Lee, D.C., and L.L. Irwin. 2005. Assessing risks to spotted owls from forest thinning in fire-adapted forests of the western United States. *Forest Ecology and Management* 211:191-209.
- Lehmkuhl, J.F., M. Kennedy, E.D. Ford, P.H. Singleton, W.L. Gaines and R.L. Lind. 2007. Seeing the forest for the fuel: Integrating ecological values and fuels management. *Forest Ecology and Management* 246:73–80.
- Lindenmayer, D.B., M.L. Hunter, P.J. Burton, and P. Gibbons. 2009. Effects of logging on fire regimes in moist forests. *Conservation Letters* 2:271-277.
- Littell, J.S., D. McKenzie, D.L. Peterson and A.L. Westerling. 2009. Climate and wildfire area burned in western U.S. ecoprovinces, 1916-2003. *Ecological Applications* 19:1003–1021.
- Littell, J.S., E.E. Oneil, D. McKenzie, J.A. Hicke, J.A. Lutz, R.A. Norheim and M.M. Elsner. 2010. Forest ecosystems, disturbance, and climate change in Washington State, USA. *Climate Change* 102: 129-158.
- Littell, J.S., D.L. Peterson, C. I. Millar, K.A. O'Halloran. 2012. U.S. National Forests adapt to climate change through science-management partnerships. *Climate Change* 110:269-296.
- Long, J.N. 2009. Emulating natural disturbance regimes as a basis for forest management: A North American view. *Forest Ecology and Management* 257:1868–1873.
- Marlon, J.R. et al. 2012. Long-term perspectives on wildfires in the western USA. *Proceedings of the National Academy of Sciences*. Pnas.1112839109.
- Mealy, S.P and G.J. Roloff. 2010. A comparative ecological risk assessment on northern spotted owls and fire. Pgs. 52-59 in *Transactions of the 75th North American Wildlife and Natural Resources Conference*. Wildlife Management Institute, Washington, DC.
- Messier, M.S., J.P.A. Shatford, and D.E. Hibbs. 2012. Fire exclusion effects on riparian forest dynamics in southwestern Oregon. *Forest Ecology and Management* 264:60-71.
- Miller, J.D., H.D. Stafford, M. Crimmins, and A.E. Thode. 2009. Quantitative evidence for increasing forest fire severity in the Sierra Nevada and southern Cascade Mountains, California and Nevada, USA. *Ecosystems* 12:16-32.
- Miller, J.D., C.D. Skinner, H.D. Stafford, E.E. Knapp, and C.M. Ramirez. 2012. Trends and causes of severity, size, and number of fires in northwestern California, USA. *Ecol. Applications* 22:184-203.
- Mitchell, S.R., M.E. Harmon and K.E.B. O'Connell. 2009. Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems. *Ecological Applications* 19:643–655.

- North, M.P., and W.S. Keeton. 2008. Emulating natural disturbance regimes: an emerging approach for sustainable forest management. Pgs. 341-372 in Laforzezza, R, et al. eds. *Patterns and Processes in Forest Landscapes*. Springer Science+Business Media.
- Noss, R.F., J.F. Franklin, W.L. Baker, T. Schoennagel, and P.B. Moyle. 2006. Managing fire-prone forests in the western United States. *Front. Ecol. Environ.* 4(9):481-487.
- Perry, D.A., P.F. Hessburg, C.N. Skinner, T.A. Spies, S.L. Stephens, A.H. Taylor, J.F. Franklin, B. McComb and G. Riegel. 2011. The ecology of mixed severity fire regimes in Washington, Oregon, and Northern California. *Forest Ecology and Management*, Volume 262, Issue 5, 1 September 2011, Pages 703-717.
- Roberts, S.L., J.W. van Wagendonk, A.K. Miles, and D.A. Kelt. 2011. Effects of fire on spotted owl occupancy in a late-successional forest. *Biological Conservation* 144:610-619.
- Safford, H.D., J.T. Stevens, K. Merriam, M.D. Meyer, and A.M. Latimer. 2012. Fuel treatment effectiveness in California yellow pine and mixed conifer forests. *Forest Ecology and Management* 274:17-28.
- Schoennagel, T. and C.R. Nelson. 2011. Restoration relevance of recent National Fire Plan treatments in forests of the western United States. *Front. Ecol. Environ.* 9:271-277.
- Seymour, R., and M. Hunter. 1999. Principles of ecological forestry. Pages 22-61 in M. Hunter (editor), *Managing Biodiversity in Forested Ecosystems*. Cambridge University Press, Cambridge, United Kingdom.
- Spies, T.A., J.D. Miller, J.B. Buchanan, J.F. Lehmkuhl, J.F. Franklin, S.P. Healey, P.F. Hessburg, H.D. Safford, W.B. Cohen, R.S.H. Kennedy, E.E. Knapp, J.K. Agee and M. Moeur. 2010. Underestimating risks to the northern spotted owl in fire-prone forests: response to Hanson *et al.* *Conservation Biology* 24:330-333.
- Stephens, J.L., and J.D. Alexander. 2011. Effects of fuel reduction on bird density and reproductive success in riparian areas of mixed-conifer forest in southwest Oregon. *Forest Ecology and Management* 261:43-49.
- Syphard, A.D. et al. 2011. Simulating landscape-scale effects of fuels treatments in the Sierra Nevada, California, USA. *Inter. J. Wildland. Fire* 20:364-383.
- Thomas, J.W., J.F. Franklin, J. Gordon, and K.N. Johnson. 2006. The Northwest Forest Plan: Origins, components, implementation, experience, and suggestions for change. *Conservation Biology* 20:277-287.
- Van de Water, K., and M. North. 2011. Stand structure, fuel loads, and fire behavior in riparian and upland forests, Sierra Nevada Mountains, USA: a comparison of current and reconstructed conditions. *Forest Ecology and Management* 262:215-228.
- Waring R.H., N.C. Coops, and S.W. Running. 2011. Predicting satellite-derived patterns of large-scale disturbance in forests of the Pacific Northwest Region in response to recent climate variations. *Remote Sensing of Environment* (2011), doi:10.1016/j.rse.2011.08.017.