

NORTHERN SPOTTED OWL FACT SHEET
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What is the current status of the Northern Spotted Owl?

The Northern Spotted Owl is a medium sized owl that inhabits conifer forests from southwest British Columbia (where its numbers have been reduced to just 3 pairs) to northern California. In the Pacific Northwest, the owl was listed as a federally threatened species in 1990 due to: (1) logging of old-growth forests throughout the owl's range (generally western Cascades of Oregon and Washington and northern California Klamath and Coast Range provinces); and (2) inadequacy of regulatory mechanisms to prevent the species from going extinct. More recently, the decline of spotted owls has been linked to the expansion of the Barred Owl, a larger, more aggressive owl that recently has been occupying spotted owl territories. It is not known whether the two species compete directly for common resources; however, occupancy of spotted owl territories and detectability of spotted owls declines when Barred Owls are present¹.

What is the draft spotted owl recovery plan, why is it needed, and is it based on best available science?

Draft recovery plan and need - the Endangered Species Act requires that the Fish & Wildlife Service complete recovery plans for listed species that are based on “*measurable, objective criteria*” that when implemented can be used to eventually de-list the species. In order for this to happen, recovery plans need to be based on the “*best available science*” to ensure that protections under the ESA will not be prematurely removed.

In 1992, the Fish & Wildlife Service completed but did not approve a draft spotted owl recovery plan. This was because administrations were changing hands (Bush to Clinton) and it was assumed by the incoming administration that the NWFP would serve as a *de facto* recovery plan. A lawsuit won by Seattle Audubon in 2003 required the Fish & Wildlife Service to produce an updated owl recovery plan.

In April 2006, the Fish & Wildlife Service assembled a 12 person multi-stakeholder recovery team consisting of representatives from the Forest Service, BLM, timber industry, and conservation groups. The team was unusual in its make-up because it did not include any of the highly recognized owl scientists from the federal government or universities. Nevertheless, the team was tasked with developing a draft recovery plan for submission to the D.C. office of Fish & Wildlife Service by September 29, 2006. The recovery team for this period operated under a charter document that emphasized: “*recommendations for recovery actions from the Team will be made in a collaborative manner, striving for the highest level of consensus possible.*”

¹ Kelly, E.G., et al. 2003. Are barred owls displacing spotted owls? *The Condor* 105:45-53. Olson, G.S. and several others. 2005. Modeling of site occupancy dynamics for Northern Spotted Owls, with emphasis on the effects of Barred Owls. *J. Wildlife Management* 69:918-932.

Political Interference in the Recovery Plan - on September 29, the recovery team reached consensus on anchoring the recovery plan in the network of LSRs (renamed under Option 1 as Managed Owl Conservation Areas – MOCAs) established under the NWFP but could not agree on how much habitat to protect, particularly in the southern range. The plan was forwarded to the D.C. for approval with the request that it undergo peer review prior to publication in the Federal Register. Shortly after, the recovery team learned of a “Washington oversight committee,” consisting of high ranking officials from the departments of Interior and Agriculture². The officials rejected the draft plan and requested that the recovery team redo the first option – Option 1 – by downplaying habitat protection and emphasizing fire and Barred Owls as increasing threats. They also recommended that the team develop a second option – Option 2 – that is not based on fixed reserves but instead allows the Forest Service and BLM to decide where to place large habitat blocks following a “rule set” depicted in the draft recovery plan. According to a model simulation performed by the recovery team (but not published in the draft document) this option could result in the elimination of ~823,000 acres of suitable owl habitat (mainly old growth) and another 1.6 million acres of forests that overtime are capable of becoming suitable habitat as they age.

What are the habitat requirements of the Northern Spotted Owl?

The Northern Spotted Owl relies on structurally complex forests for nesting, roosting, and foraging. Nest sites tend to be in old-growth forests in the branches or cavities of large dead or live trees. Nesting habitat generally consists of large trees (>30 inches diameter), multi-layered tree canopies, high forest canopy closure (60-90%), and presence of large dead standing (snag) and down logs³. In the southern portion of the range, however, owls use a mixture of forest age classes, including younger forests for foraging (see below).

Does new science demonstrate owls no longer rely on old-growth forests?

A recent status review of the Northern Spotted Owl⁴ and extensive publication synthesis⁵ confirm that owls are associated with older forests throughout most of their range. In the southern portion of the range, however, owls nest in younger redwoods⁶ and forage in younger forest age classes and other habitat types⁷. This may be due to several unique

² See congressional testimony by Dominick DellaSala to the House Natural Resources Committee regarding the May 9, 2007 hearing: Endangered Species Act implementation: science or politics. www.nccsp.org

³ Anthony, R.G. et.al. 2006. Status and trends in demography of Northern Spotted Owls, 1985-2003. *Wildlife Monographs* 163.

⁴ Courtney, S.P. et al. (eds). 2004. Scientific evaluation of the status of the Northern Spotted Owl. Sustainable Ecosystems Institute, Portland, OR.

⁵ Anthony, R.G. et. al. (ibid).

⁶ Diller, L., and D.M. Thome. 1999. Population density of northern spotted owls in managed young-growth forests in coastal northern California. *J. Raptor Research* 33:275-286.

⁷ Franklin, A.B et al. 2000. Climate, habitat quality, and fitness in Northern Spotted Owl populations in northwestern California. *Ecological Monographs* 70:539-590; Olson, G.S et al. 2004. Modeling demographic performance of Northern Spotted Owls relative to forest habitat in Oregon. *J. Wildlife Management* 68:1039-1063.

factors, including (1) rapid development of structurally complex forests; (2) presence of hardwood and shrub understories characteristic of mixed evergreen forests of the region that provide good habitat for prey; and (3) high density of wood rats, a primary prey item of owls⁸. However, researchers have cautioned against extrapolating these findings to logging practices as logged sites do not resemble the mosaic of habitats produced by natural disturbances (e.g., fire) of the region.

“Current logging practices probably do not generate the type of mosaic that we observed in high-fitness territories; clear-cut logging leaves large, regularly shaped patches with clean edges. Fire disturbance, on the other hand, tends to leave smaller, irregularly shaped patches having convoluted edges.” In addition, fire disturbance leaves a variety of seral stages based on the frequency of low, moderate, and severe burns over time⁹.”

Moreover, a third study in a nearby location in northern Jackson County, Oregon (Cascades and northern Siskiyous) by some of the same researchers¹⁰ could not confirm the previous findings. They concluded that owl survival and reproduction were both positively associated with older forests, not younger ones. All researchers cautioned against extrapolating findings to management of owl habitat at least until other studies are initiated. For instance, researchers¹¹ in the Roseburg study area of southern Oregon expressed this caution:

....”we do not recommend that forest managers use our modeling results as a prescription for managing habitat either within the Oregon Coast Range or elsewhere until other similar studies have been conducted.”

In sum, there is no reason to reject the well documented association between spotted owls and older forests, particularly in the wetter forests and northern portions of the owls range. The recent studies in the southern range indicate that owls may hedge their bets by selecting habitat at landscape scales that optimizes both survival (old-growth forests) and reproduction (younger forests and other habitat types). This makes perfect sense where fire is the primary disturbance agent as fire produces a mosaic of forest and non-forest types associated with abundant prey. Older forests that escape fire provide nesting habitat. Contemporary forestry practices do not mimic this landscape mosaic as they: (1) produce straight line edges having maximum contrast between logged and unlogged areas instead of convoluted edges produced by fire; (2) do not resemble the periodicity or spatial arrangement of habitats produced by fire; (3) remove most of the structural

⁸ Forsman, E.D., et al. 2004. Diets and foraging behavior of Northern Spotted Owls in Oregon. *J. Raptor Res.* 38:214-230.

⁹ Franklin, A.B et al. 2000:580 (ibid).

¹⁰ Dugger, K.M., F. Wagner, R.G. Anthony, and G.S. Olson. 2005. The relationship between habitat characteristics and demographic performance of Northern Spotted Owls in Southern Oregon. *The Condor* 107:863-878.

¹¹ Olson, G.S et al. 2004. (ibid) page 1052.

elements (e.g., large trees, dead trees) that otherwise are present in even severely burned landscapes; (4) replace biologically complex forest and landscape structures with overly simplistic ones (e.g., structurally homogenous plantations); and (5) burned areas are most often logged after fire and on private lands may be followed with burning of slash piles and treatment with insecticides and herbicides. In sum, intensively managed forests do not resemble the structurally complex and prey-rich habitats typically present in fire mosaics under which the owl evolved (southern range).

How much spotted owl habitat has been lost and from what causes?

Logging - Prior to the Northwest Forest Plan (NWFP 1994 – see below), annual logging rates averaged 1.5% (64,000 acres) on National Forests in Oregon and Washington, 0.60% (4,700 acres) on National Forests in northern California, and 3.0% (22,000 acres) on BLM lands in Oregon¹². At this rate, all but the most remote areas and national parks and wilderness areas would have had their old-growth forests logged within a few decades¹³. The NWFP lowered annual logging rates to 0.21 (10,341 acres) on national forests in Oregon and Washington, 0.14% (1,653 acres) on national forests in California, and 0.52% (4,911 acres) on BLM lands in Oregon¹⁴. Thus, it seems that the NWFP, in general, helped address the regulatory deficiencies on federal lands contributing to the owls decline¹⁵. Notably, annual rates of logging on non-federal lands have averaged 4-6 times greater than federal lands over this same time period¹⁶ and the latest analysis of spotted owl demography¹⁷ indicates that owls are doing better (reproduction and survival) on federal lands than private lands.

Fire - the rate of spotted owl habitat loss due to fire is difficult to quantify as limited research has been conducted on owl use of burned landscapes and this research demonstrates effects vary widely. Radio telemetry studies in southern Oregon and northern California report spotted owls using recently burned landscapes where fire severity was low to moderate¹⁸. Others report reductions in territory centers in severely burned fire complexes in eastern Washington¹⁹. In the 10-year period during which the NWFP has been operational, the rate of habitat loss from fire has averaged 2.3% (0.23% annual),²⁰ although no fire severity was provided in this estimate. Thus, it would appear that fire represents a regionally specific event (mainly dry provinces) and the rate of habitat loss due to severe fires rivals (or may be less than) annual logging rates on federal forests under the NWFP over the past decade and is far less than range-wide logging on

¹² 2007 Draft recovery plan for the Northern Spotted Owl (*Strix occidentalis caurina*) merged options 1 and 2. Region 1 U.S. Fish & Wildlife Service, Portland.

¹³ Strittholt, J.R., et al. 2006. Status of mature and old-growth forests in the Pacific Northwest. *Conservation Biology* 20:263-374.

¹⁴ 2007 Draft recovery plan for the Northern Spotted Owl (ibid). Page 131.

¹⁵ Courtney, S.P. et al. (ibid).

¹⁶ 2007 Draft recovery plan for the Northern Spotted Owl (ibid). Page 128.

¹⁷ Anthony, R.G. and several others. 2004. Status and trends in demography of northern spotted owls, 1985-2003. Final report to the Regional Interagency Executive Committee, Portland, Oregon.

¹⁸ Draft recovery plan. Page 113 (ibid).

¹⁹ Draft recovery plan. Page 113 (ibid).

²⁰ Courtney, S.P. et al. (ibid).

non-federal lands. Notably, scientists²¹ report an increase in the severity of fires in dry regions of the West in recent decades due to climate change and thus negative effects of fire may increase if more landscapes burn uncharacteristically severe (as expected). Thinning of understory trees and fire ladders and prescribed fire may improve resiliency of owl habitat in fire-prone regions, however, effects on prey and habitat structure require careful examination to ensure the treatments are not worse than losses from severe fire.

Has the Barred Owl overtaken habitat loss as the main driver of spotted owl declines?

As noted above, occupancy of spotted owl territories declines when Barred Owls move into the area. This effect was not previously accounted for in the design of the reserve network for spotted owls under the NWFP because it is a recent development. The conservation strategy for the spotted owl and other old-growth associated species under the NWFP was based on placing large blocks of habitat in reserves and spacing those reserves at a distance no greater than 12 miles apart to allow for dispersal of juvenile owls from natal territories²². Population modeling in the 1990s was used to determine the size of habitat blocks needed in the reserve design based on the number of owl pairs required to maintain viable owl populations. At the time, population models predicted a leveling off in the likelihood that spotted owls would persist over a 100-year period and this occurred as the size of owl population clusters reached 20 nesting pairs dispersed in multiple habitat blocks across the region²³. These models, however, did not take into account the influence of Barred Owls and thus they likely underestimated the number of nesting spotted owl pairs required within clusters, and correspondingly the size of habitat blocks needed. Thus, it can be argued on scientific grounds that the increasing threat of the Barred Owl now requires that more (not less) habitat be protected in large blocks to provide the spotted owl with a greater chance of withstanding Barred Owl invasions. Any strategy that departs from habitat protection increases the odds that the spotted owl will eventually succumb to multiple threats, including the current Barred Owl invasion.

Does the Northwest Forest Plan “promise” a certain amount of timber production?

The NWFP applies to ~24 million acres of federal forests within the range of the Northern Spotted Owl in northern California, Oregon, and Washington. In 1994, President Clinton gave direction to the Forest Service and BLM to construct a forest plan based on the following²⁴:

- *“our efforts must be, insofar as we are wise enough to know it, scientifically sound, ecologically credible, and legally responsible.”*

²¹ Westerling, A.L., et al. 2006. Warming and earlier spring increases western U.S. Forest wildfire activity. *Scienceexpress* 6 July 2006 10.1126/science.1128834

²² Thomas, J.W., et al. 2006. The Northwest Forest Plan: origins, components, implementation experience, and suggestions for change. *Conservation Biology* 20:277-286.

²³ Lamberson, R.H. et al. 1994. Reserve design for territorial species: the effects of patch size and spacing on the viability of the Northern Spotted Owl. *Conservation Biology* 8:185-195.

²⁴ USDA Forest Service and USDI BLM. 1994. Record of decision for management of habitat for late-successional and old-growth forest within the range of the Northern Spotted Owl. Volume 1. Portland, OR.

- *The Plan was constructed to protect the long-term health of “our forests, our wildlife, and our waterways,” and to “produce a predictable and sustainable level of timber sales and nontimber resources that will not degrade or destroy the environment.”*

The Northwest Forest Plan (1994) placed ~7.4 million acres of forests into late-successional reserves (LSRs), 60% of which included mature and old-growth forest with the rest of the LSRs in younger age classes that would be managed to develop older forest characteristics in time. Other land use categories include: Congressional Reserved Areas (7.4 million acres), Managed LSRs (103,440 acres), Adaptive Management Areas (1.495 million acres), Administratively Withdrawn Areas (1.495 million acres), Riparian Reserves (2.66 million acres), and the Matrix (4.02 million acres²⁵). The Matrix is where the bulk of logging occurs on federal lands, however, post-fire logging has occurred in some of the reserves resulting in adverse effects on forest structure and natural processes²⁶.

The NWFP shifted the management paradigm on federal lands from timber dominance to biodiversity conservation and endangered species management²⁷. In order for the NWFP to meet a predictable and sustainable level of timber, however, it needed to ensure that logging would not “*degrade or destroy the environment*” by complying first with environmental laws. Timber projections in the plan therefore were based on a “*probable sale quantity*” (PSQ), a rough approximation of how much timber volume can be produced providing the environmental provisions of the plan were met first. According to the NWFP Record of Decision²⁸, PSQ levels were presented as an effect, not a goal, of the standards and guidelines in the plan.

“...PSQ levels shown are estimates. They represent neither minimum levels that must be met nor maximum levels that cannot be exceeded. They are rough approximations because of the difficulty associated with predicting actual timber sale levels over the next decade, given...the complex nature of many of the standards and guidelines. They represent our best assessment of the average amount of timber likely to be awarded annually in the planning area over the next decade...”

The NWFP contains two key conservation elements tied to standards and guidelines under which the plan must operate before PSQs can be realized: (1) “*survey and manage*” of rare species generally found in older forests and requiring protective buffers when

²⁵ 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.

²⁶ Donato, D.C., et al. 2006. Post-wildfire logging hinders regeneration and increases fire risk. *Science* January 20, Vol. 311:352; Lindenmayer, D.B., and R.F. Noss. 2006. Salvage logging, ecosystem processes, and biodiversity conservation. *Conservation Biology* 20:949-9958.

²⁷ DellaSala, D.A., and J. Williams. 2006. Special section- the Northwest Forest Plan: a global model of forest management in contentious times. *Conservation Biology* 20:274-276.

²⁸ USDA Forest Service and USDI BLM. 1994. Record of Decision – standards and guidelines for the management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. Page 66. USDA and USDI, Portland, OR.

located; and (2) the “*Aquatic Conservation Strategy*” that safeguards watersheds from extensive logging. In particular, according to the NWFP standards and guidelines²⁹, it was recognized that the Aquatic Conservation Strategy objectives and the requirement to do watershed analysis before management activities can take place “*implies a higher level of uncertainty and a potential for future change with respect to future levels of sale offerings within Key Watersheds.*” In addition to the understanding that PSQ was a “rough approximation”³⁰, the 1994 Final SEIS indicated survey and manage standards and guidelines “add to the uncertainty of PSQ calculations.”³¹ Further, a GAO report published in 1999 noted that the decline in harvest volumes was itself anticipated:

“The drop in probable sale quantity bears out the plan’s observation that changes could occur. For example, the plan noted that timber sale levels could be affected by requirements for conducting additional environmental analysis or setting aside additional lands to protect threatened or endangered species or by a change in the acreage allocated to riparian reserves following an analysis and inventory of intermittent streams. Officials told us that the probable sale quantity will likely change yet again.” GAO/RCED-99-64 Ecosystem Planning.

The major shift facilitated by the NWFP and the litigation that led up to it is that federal environmental laws compel the Forest Service and BLM to meet various legal obligations before realizing the PSQ. Only after the agencies had complied with the various legal requirements of the plan could the PSQ be realized. In the decade since the NWFP has been in effect, the agencies revised the PSQ downward when it became clear that the initial estimate was too high given the various requirements.

How have timber industry lawsuits influenced administrative rollbacks in old-growth protections under the NWFP and owl recovery plan?

Beginning in late 2001, the timber industry mounted an aggressive timber industry campaign to increase the amount of timber cut from Northwest federal forests by weakening protections for salmon, clean water, and old-growth forests. In December 2001, Jim Connaughton, Director of the Council on Environmental Quality, Mark Rey, Undersecretary of Agriculture, Ann Klee, Counselor to Secretary Gale Norton, and other government officials flew to Oregon to meet with timber industry lobbyists (based on documents obtained by Earthjustice and available on request).

The timber industry, led by American Forest Resource Council, demanded that the amount of timber cut from Northwest forests triple to 1.1 billion board feet of timber and identified five environmental safeguards that had to be weakened or eliminated to get to this goal. In the end, the Bush Administration agreed to all of industry’s demands, including: (1) sweeping changes in Northwest forest management in sweetheart settlements of “friendly” industry lawsuits; and (2) weaken salmon and clean water protections in order to undo court rulings that require greater protection. It has since been implementing its promises, allowing politics to trump science at every turn.

²⁹ USDA Forest Service and USDI BLM. 1994. (ibid). Page E-20.

³⁰ USDA and USDI. 1994. Record of Decision. (ibid). Page 19.

³¹ See Survey and Manage Final SEIS p. 3&4-267.

The industry negotiations are revealed in documents released on April 18, 2003 in response to a Freedom of Information Act (“FOIA”) lawsuit brought by Earthjustice on behalf of Conservation Northwest, Oregon Wild, and Biodiversity Northwest, and obtained through discovery in subsequent litigation challenging one of the rollbacks (available upon request from Earthjustice).

Five Specific Timber Industry Demands to Weaken or Eliminate Environmental Safeguards:

1. **Weaken the Aquatic Conservation Strategy** by amending the Northwest Forest Plan (NWFP) to eliminate the requirement that timber sales must protect salmon habitat and change Endangered Species Act consultations to make it easier for logging that harms salmon watersheds to occur.
2. **Eliminate the survey and manage program** by amending the NWFP to discontinue the surveys for rare species, remove protection for them, and “*return management discretion to local managers.*”
3. **Weaken Northern Spotted Owl Endangered Species Act Protections** by completing a status review of the Northern Spotted Owl and re-designating critical habitat based on economic effects analysis and on the new theory that Northern Spotted Owl habitat extends to younger stands, which are more plentiful than old-growth, and “[w]ith more habitat available, less of it can justifiably be considered critical.”
4. **Weaken Marbled Murrelet Endangered Species Act Protections** by completing a status review and re-designating critical habitat based on economic effects analysis.
5. **Weaken Ecosystem and Species Protections on BLM O&C Lands** by amending the NWFP to eliminate old-growth and riparian reserves on O&C lands unless needed to avoid jeopardy to threatened and endangered species and revert to pre-1994 position that timber production is the dominant use of those lands. O&C lands are Oregon and California Railroad lands that reverted in the United States in 1916 when the railroad failed to comply with the terms of its land grant.

What’s Needed?

The draft recovery plan was published in the Federal Register on April 26, 2007 with a public comment period of 60 days (June 25). The plan is flawed and needs to be redrafted as follows:

- Convene a panel of owl experts to redo the recovery plan using the best available science on owl biology to develop a plan that best meets the recovery needs of the owl (both options 1 and 2 of the current draft are flawed, particularly the habitat provisions).
- Redo population modeling (new science) to include the likely effect of the Barred Owl on the spotted owl and the size of reserves needed to ensure spotted owls will persist during Barred Owl invasions.

- Eliminate the “escape clause” in Option 1 that allows federal land managers to make large scale changes to the reserve network (see section on “*Changes in Management Approaches*” in the draft plan – p. 19).
- Strengthen the post-fire logging provisions in the plan by referencing new science on post-fire logging impacts and establish prohibitions against the logging of legacy trees (generally live and dead trees >20 in diameter-at-breast height) within reserves and suitable owl habitat.
- Reject Option 2 as it does not include fixed habitat reserves and is inconsistent with the requirements of the ESA with respect to measurable, objective criteria (e.g., there are no fixed reserve maps – just an illustration of how it might work – and there are no habitat acreages).