



Shaping the future for birds

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RE: Crystal Clear Timber Sale EA comments

Dear Friends,

Thank you for considering the following comments regarding the Crystal Clear timber sale. American Bird Conservancy (ABC) is dedicated to conserving birds and their habitats throughout the Americas, and has a particular interest in the recovery of the threatened Northern Spotted Owl. Given the rapid decline of the Northern Spotted Owl population, ongoing habitat loss, and Barred Owl competition, we urge the Forest Service to adopt a policy of no take for the Northern Spotted Owl until reasonable recovery thresholds are met.

ABC is concerned about the amount of proposed logging in designated critical habitat for the Northern Spotted Owl and urge that the project be revised to ensure listed species are not harmed, and that the restoration of the late-successional ecosystem under the Northwest Forest Plan which the owl depends upon for recovery is not delayed due to logging of mature forests intended to become old-growth.

ABC asks that the Forest Service explore additional alternatives, specifically, an alternative that would not log in any spotted owl suitable habitat or dispersal habitat.

ABC commends the following detailed analysis and ground-based information provided by Bark, and ask that the Forest Service please give careful consideration to these Northern Spotted Owl related comments pasted below and attached:

Impacts to Spotted Owls

There are approximately 12,725 acres of designated critical habitat proposed for logging, approximately 2,148 acres that provide dispersal-only and 2,551 acres that provide suitable habitat. *EA at 223*. The proposed logging would remove 895 acres of dispersal habitat and downgrade 1,414 acres of suitable habitat to dispersal. *EA at 216*.

Treatment activities and road building that downgrade suitable habitat may affect and are likely to adversely affect spotted owls and will further reduce habitat for owl pairs 4 (32 acres) and 7 (144 acres) below threshold levels within the home range. *EA at 217-8*. It is estimated that the area will not provide quality suitable habitat until 75 to 100 years after treatments, depending on the site conditions. *EA at 215*.

The proposed project would adversely modify this essential owl habitat by reducing the forest canopy closure from 70% to 50% in MMC, and from 65% to 40% in MDC on average. *EA at 96*. It would also remove down wood, shrubs and snags, which provide habitat for important prey species and, by removing many of the trees that would become down wood and snags, retard the creation of these essential habitat elements for many years.

The EA asserts, with little scientific or site-specific references, that “conservation of occupied and high value spotted owl habitat is expected to be accomplished through the implementation of Recovery Actions 10 & 32.” *EA at 209*. However, as discussed below, this project is inconsistent with both these recovery actions:

Recovery Action 10: Conserve spotted owl sites and high value spotted owl habitat to provide additional demographic support to the spotted owl populations.

The Crystal Clear project area includes existing high value suitable habitat: dense, mature forest. Generally, suitable habitat is 80 year or older, canopy exceeds 60%, is multi-storied and has sufficient snags and down wood to provide opportunities for nesting, roosting, and foraging. *EA at 208*. The project proposes to degrade 1,414 acres of existing high quality habitat for up to 100 years, to protect it from the threat of a possible future fire. Much of the existing high-quality habitat is located in moist mixed conifer forest that is within its natural fire regime. Even if fire were a threat, the best available science shows that Northern Spotted owls respond better to natural disturbances such as fire than they do to logging. *Logging existing high-quality suitable habitat, including in LSRs, does NOT comply with Recovery Action 10*.

Recovery Action 32: Because spotted owl recovery requires well distributed, older and more structurally complex multi-layered conifer forests on Federal and non-federal lands across its range, land managers should work with the Service to maintain and restore such habitat while allowing for other threats, such as fire and insects, to be addressed by restoration management actions. These high-quality spotted owl habitat stands are characterized as having large diameter trees, high amounts of canopy cover, and decadence components such as broken-topped live trees, mistletoe, cavities, large snags, and fallen trees.

There are almost 13,000 acres in the proposed project area – many that provide exactly the type of habitat described in Recovery Action 32, and many that do not. In order to comply with this Recovery Action, the Forest Service must only log in areas that have a scientifically supported basis for restoration through logging. This excludes logging in all areas that currently have “large diameter trees, high amounts of canopy cover, and decadence components such as broken-topped live trees, mistletoe, cavities, large snags, and fallen trees.” These include the following units surveyed by Bark: 9, 9L, 104, 375, 447, 470, 471, 472, 473, 474, 475, 478, 479, 504, 505, 507, 508, 509, and 510.

Unit 473 (Fig. 1, below) is a notable example of characteristics within the proposed units which, if removed, would put this project in direct conflict with Recovery Action 32. Located within suitable habitat, this unit is 266 years old, displaying a current canopy cover of 80%, with 15 snags and downed logs per acre larger than 12 inches at diameter at breast height (DBH), and 4 snags per acre greater than 18 inches DBH! Bark volunteers measured Douglas firs in this unit up to 68 inches DBH, Ponderosa pines up to 49 inches DBH, Western hemlocks up to 36 inches DBH, and grand fir up to 24 inches DBH. With stand conditions such as this, and with more examples scattered all over the project area, Bark simply cannot understand the ecological justification for logging in any of the units currently exhibiting high quality habitat with old-growth characteristics.



Crystal Clear Unit 473, displaying suitable habitat for Northern spotted owls

In addition, the 4 miles of proposed new temporary roads would remove 7.3 acres of suitable habitat. *EA at 218*. The removal of this habitat is not in accord with the Spotted Owl recovery plan, nor does the EA sufficiently describe the impact of roads on spotted owl behavior.

The EA suggests that the proposed temporary roads and road closures are all located further than 65 yards from a nest patch and therefore activities associated temporary road construction and road closures are not likely to adversely affect spotted owl. *EA at 215*.

However, in Bark's scoping comments, we cite a peer-reviewed scientific article which concluded that Northern spotted owls create an avoidance buffer of an average of 1,312 feet (437 yards) from forest roads.¹ This was not addressed or discussed in the EA, nor was there scientific support provided for the proposition that owls only need a 65-yard buffer from roads. Please directly address the discrepancy between the two buffers and explain why the best

¹ Wasser, S.K., K. Bevis, G. King, and E. Hanson. 1997. Noninvasive physiological measures of disturbance in the northern spotted owl. *Conservation Biology* 11(4): 1019–1022.

available science supports a buffer much smaller than 437 yards, and whether the “not likely to adversely affect” determination is accurate given the conflicting scientific information.

In scoping comments, Bark raised the issue that the Crystal Clear project area provides an important north-south link for northern spotted owls. Also, The White River Watershed Analysis also recognized that nesting habitat would likely decline over the long-term in the eastern portion of the watershed, and that habitat must be rebuilt in the “Transition and Crest Zones” to the west. To this end the Watershed Analysis recommended maintaining existing NSO suitable and dispersal habitat in the Eastside Zone until increases in such habitat have been achieved in the Transition and Crest Zones.² The draft EA did not address the impact of the removal of habitat on either the north-south travel of the owl, or consistency with the White River Watershed Analysis recommendations.

Competition from Barred Owls is Understated in the EA

Removing existing high-quality spotted owl habitat to address a hypothetical fire risk is not appropriate, particularly given the fact that spotted owls are competing with barred owls and require all the suitable, closed canopy forest they can get in order to decrease the chances of competitive exclusion. This is especially important because, Barred owls are already present in the planning area. Logging activities may expand the range of barred owls. *EA 218-219.*

As noted in the comprehensive work, Population Demography of Northern Spotted Owls,³ the fact that Barred Owls are increasing and becoming an escalating threat to the persistence of Spotted Owls does not diminish the importance of habitat conservation for Spotted Owls and their prey. In fact, the 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 Population Demography found, “[o]ur results and those of others referenced above consistently identify loss of habitat and Barred Owls as important stressors on populations of Northern spotted Owls. In view of the continued decline of Spotted Owls in most study areas, it would be wise to **preserve as much high quality habitat in late-successional forests for Spotted Owls as possible**, distributed over as large an area as possible.”⁴

The threat of Barred Owl incursion should not be underestimated; even if the critical habitat is functioning again in 75 years, it is almost certain that during the time lapse when NSO has not been able to use the habitat, Barred Owls will have moved in. Once NSO are displaced, and Barred Owls are established, it is highly unlikely the area will once again support eight pairs of NSO. This could be a permanent loss of suitable habitat, and must be addressed as such.

² Bark scoping comments at 6.

³ Forsman, et.al, 2011, published for Cooper Ornithological Society.

⁴ Forsman, et.al, 2011, published for Cooper Ornithological Society.

The Crystal Clear Timber Sale, as planned, would affect 12,725 acres of Critical Habitat and adversely modify 2,309 acres of Critical Habitat.

Section 7(a)(2) of the Endangered Species Act requires the Forest Service, in consultation with and with the assistance of the Secretaries of the Interior and Commerce, to insure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. (16 U.S.C. 1536(a)(2)). The U.S. Fish & Wildlife Service recently updated the definition of destruction or adverse modification of critical habitat to mean: a direct or indirect alteration that *appreciably diminishes the value of critical habitat for the conservation of a listed species*.

In addition to the ESA's prohibition on destruction or adverse modification of Critical Habitat, the rule that designated this section of the forest as Critical Habitat determined that **all** of the unoccupied and likely occupied areas in this subunit are **essential** for the conservation of the species to meet the recovery criterion that calls for the continued maintenance and recruitment of northern spotted owl habitat. *EA at 208*. The increase and enhancement of northern spotted owl habitat is necessary to provide for viable populations of northern spotted owls over the long term by providing for population growth, successful dispersal, and buffering from competition with the barred owl.

In its Designation of Revised Critical Habitat for the Northern Spotted Owl, the USFWS provided the following suggestions regarding active forest management for consideration by land managers within critical habitat as consistent with the recommendations of the Revised Recovery Plan for the Northern Spotted Owl:

1. Focus active management in younger forest, lower quality owl habitat, or where ecological conditions are most departed from the natural or desired range of variability.
2. In moist forests on Federal lands, follow NWFP guidelines as informed by the Revised Recovery Plan and focus on areas outside of LSRs. In dry forests, follow NWFP guidelines and focus on lands in or outside of reserves that are most at-risk of experiencing uncharacteristic disturbance and where the landscape management goal is to restore more natural or resilient forest ecosystems
3. Avoid or minimize activities in active northern spotted owl territories (or the high-quality habitat within these territories).
4. Ensure transparency of process so the public can see what is being done, where it is done, what the goal of the action is, and how well the action leads to the desired goal.
5. Practice active adaptive forest management by incorporating new information and learning into future actions to make them more effective, focusing on how these actions affect northern spotted owls and their prey.

-USFWS, Designation of Revised Critical Habitat for the Northern Spotted Owl, 2012, at 32.

In general, the FWS anticipates that management actions that are consistent with the overall purpose for which a critical habitat unit was designated would not likely destroy or adversely modify critical habitat as those terms are used in the context of section 7(a)(2) of the Act. Such actions **include activities whose intent is to restore ecological processes or long-term forest health to forested landscapes** that contain northern spotted owl habitat, such as those actions described in the Revised Recovery Plan for the Northern Spotted Owl. *CHU at 270-71.*

Unfortunately, FWS's assumption that management actions will be consistent with the overall purposes of the CHU does not hold true in the Crystal Clear Sale. As discussed throughout, the Forest Service has proposed to log in thousands of acres that currently provide suitable habitat and dispersal habitat, in areas that are within their natural range of variability, and degrade the existing habitat functions with little to no ongoing benefits to the spotted owls.

East Cascades Critical Habitat Unit

This zone includes the Eastern Cascades North and Eastern Cascades South Regions. It is characterized by a continental climate (cold, snowy winters and dry summers) and a high frequency of natural disturbances due to fires and outbreaks of forest insects and pathogens.

Relative to other portions of the subspecies' range, nesting and roosting habitat in this zone includes relatively younger and smaller trees, likely reflecting the common usage of dwarf mistletoe brooms (dense growths) as nesting platforms (especially in the north). Forest composition that includes high proportions of Douglas-fir is also associated with this nesting structure. Additional foraging habitat in this zone generally resembles nesting and roosting habitat, with reduced canopy cover and tree size, and reduced canopy layering. High prey diversity suggests relatively diverse foraging habitats are used. Topographic position was an important variable, particularly in the north, possibly reflecting competition from barred owls. Barred owls, which have been present for over 30 years in northern portions of this zone, preferentially occupy valley-bottom habitats, possibly compelling northern spotted owls to establish territories on less productive, mid-slope locations.⁵

Despite the clear direction of the ESA, the Critical Habitat rule, and the Spotted Owl Recovery Plan to protect and enhance NSO Critical Habitat, this is the fourth (and by far the largest) timber sale the Forest Service has proposed in this specific Critical Habitat sub-unit in the past five years.

Bark is concerned that the overstated threat of wildfire in the EA is causing equivocation in determining what really will threaten the NSO. On one hand, the No Action Alternative contends that "the potential impacts to habitat from wildfire, insects or disease are greater under the No Action Alternative. If a fire were to move through the area without reducing fuels, it would likely be more severe without treatments." *EA at 213.* However, the action alternative contends that opening the canopy, increasing the snag deficit, building roads, and causing adverse impacts for almost a century to the NSO and its prey is justifiable in order to avoid the *threat* of insects or fire. **The Forest Service is proposing to remove and degrade the NSO habitat long before a natural disturbance may.** Moreover, this "treatment" would

⁵ Critical Habitat designation, at 119-120.

only be effective at altering fire behavior for 10-20 years, though spotted owl habitat would be removed for 75-100 years. *Compare EA at 121, 215.*

As quoted above, the 2011 Recovery Plan for the Northern Spotted Owl, the blueprint for management of this species on federal lands in the region contains the proviso that long-term benefits to spotted owls of forest thinning treatments must **clearly outweigh** adverse impacts from commercial logging for fuels reduction.

In Bark's scoping comments, we detailed the findings of a recent study, Effects of Fire and Commercial Thinning on Future Habitat of the Northern Spotted Owl, that concluded the long-term benefits of commercial thinning do not clearly outweigh adverse impacts, *even if* much more fire occurs in the future.⁶ The report concludes: "Clearly, the strategy of trying to maintain more dense, late-successional forest habitat by reducing fire does not work if the method for reducing fire adversely affects far more of this forest habitat than would high-severity fire, and the high-severity fire might occur anyway because it is largely controlled by climate and weather." The draft EA did not acknowledge this report nor comment on its conclusion that the combination of thinning and maintenance reduced *6.7 times* more late-successional forest than it increased.

In scoping comments, Bark also brought up the fact that adverse impact to owls from fire, even high-severity fire, are much less than the known loss of habitat to commercial logging, because burned areas still provide habitat and forage opportunities for Northern Spotted Owls.⁷ The beneficial impacts of fire, compared to the adverse impacts of logging, were not discussed in the EA.

In addition to reducing the canopy, commercial thinning also decreases the amount of large dead standing and down wood in the present and future, decreasing important habitat for prey species such as the northern flying squirrel, along with the majority of other forest vertebrates. The northern flying squirrel is a major prey of the northern spotted owl. The EA acknowledges that flying squirrel densities are reduced by thinning, and suggests that the squirrels shift their distribution into "adjacent un-thinned areas without decline in overall density." *EA at 216.* However, this assumes the existence of "adjacent un-thinned areas", which are few and far between in the CCTS sale, given that most of the project area is plotted as contiguous logging units, and in areas that are not CCTS units, many have been recently logged as part of the Bear Springs sale.

There is a serious trade-off in several aspects of thinning to promote spotted owl habitat: the reduction in snags and down wood and the increased spacing of trees can reduce the productivity of the site for the northern flying squirrel for 20-40 years.⁸

There simply isn't any ecological justification to log in high-functioning NSO critical habitat. The adverse impacts of logging and rod building in critical habitat are much greater than the

⁶ Odion, D., Hanson, C., DellaSala, D., Baker, W., & Bond, M., 2014, The Open Ecology Journal, 7, 37-51.

⁷ Bark scoping comments at 5-6, citing NRO Recovery Plan.

⁸ Wilson, T. 2010. Limiting factors For Northern Flying Squirrels in the Pacific Northwest: A Spatio-Temporal Analysis. Union Institute & University, Cincinnati, Ohio.

future benefits of possibly reducing the severity of a potential fire, and thus this project does not comply with the ESA, the NSO Recovery Plan, of the Mt. Hood LRMP.

Lack of meaningful analysis for cumulative impacts to NSO & Critical Habitat

CHU 7, sub-unit 7, is 139,983 acres, mostly in Hood River and Wasco Counties. In the contiguous northern section of the sub-unit, the recent Dalles II project resulted in a total degradation/loss of 785 acres of NSO dispersal and 575 degradation/loss of NSO suitable habitat, for a total of 1,360 acres of habitat degraded for up to 50 years. *Dalles II PA at 3-99*. An additional 365 acres of owl habitat were degraded by the Government Flats fire and the subsequent logging of the North Fork Mill Creek Timber sale. *NFMC EA at 3-28*. An additional 1,174 acres of owl critical habitat could be degraded by the proposed Polallie Cooper Timber Sale. *Polallie Cooper EA at 242*. None of these were discussed in the extremely vague and brief Cumulative Impacts Analysis.

The cumulative impacts section does little more than provide a vague reference to some (but not all) of the projects in the area, with no accounting for size of project, proximity to the proposed action, intensity of environmental impact, etc. Aside from the Bear Springs Timber Sale, no other projects are mentioned by name, even though many have been recently logged, or are currently in planning, including the Dalles II thinning project, North Fork Mill Creek timber sale, and Polallie Cooper timber sale. The Warm Springs tribe has also been considering a large-scale logging project adjacent to CCTS, and this should be included in any cumulative impacts analysis. These omissions renders the cumulative impacts analysis for NSO inadequate, as does the unhelpfully vague conclusion that cumulative actions “have reduced the amount of suitable habitat on the landscape and will continue to do so into the future.” *EA at 219*.

Given the sparse information in the EA, there is no way to assess the significance of the cumulative impacts of the incremental critical habitat loss on threatened owls. Cumulative impact results when the “incremental impact of the action [is] added to other past, present, and reasonably foreseeable future actions” undertaken by any person or agency. *Id.* § 1508.7. Also, this mere listing of projects, with no additional information, is not sufficient analysis. A proper consideration of the cumulative impacts of a project requires “some quantified or detailed information . . . general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.” *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1379-80 (9th Cir. 1998). The analysis “must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects.” *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 993 (9th Cir. Or. 2004) (“*KS Wild*”).

This is not the time to be gambling with the future of Spotted Owls.

With no action, quality of existing suitable and dispersal habitat would improve, and non-habitat stands would become dispersal and eventually suitable or nesting habitat in 60-150 years. *EA at 213*. Conversely, the Proposed Action “may affect, is likely to adversely affect, northern spotted owls” as well as their critical habitat because suitable and dispersal habitat would be negatively impacted through commercial logging activities for 75-100 years.

American Bird Conservancy Spotted Owl Conservation Recommendations

In addition, American Bird Conservancy has developed recommendations for owl conservation that were shared with Forest Service national and regional leaders, as well as the U.S. Fish and Wildlife Service. These recommendations are attached, and key points are pasted below.

The threatened Northern Spotted Owl, proposed for uplisting, is in steep decline, undergoing range contraction, and is at risk of extinction across its range. The California Spotted Owl is also in decline and is being considered for Endangered Species Act protection. ABC recommends that the Northern Spotted Owl be uplisted to Endangered and that the California Spotted Owl also be listed as Endangered.

We are encouraged by and support a moratorium on owl take and ask that it continue until the owl population reaches a reasonable recovery threshold. Additional conservation recommendations are found below following discussion of key issues and recent information.

Late-successional Forest Restoration and the Northwest Forest Plan

The 20-year monitoring reports of the Northwest Forest Plan indicate that the late-successional forests are re-growing as anticipated, and that the reserve system is reestablishing large blocks of suitable habitat. This 100-year restoration plan now in year 21 can be expected to provide a significant increase in Northern Spotted Owl habitat in another 30 years, and a modest increase of Marbled Murrelet habitat in another 80 years. Water quality is improving across the region due to regrowth and watershed restoration activities, and the region's forests have gone from being a source of carbon emissions to a nationally significant carbon sink.

One rationale for changing the Northwest Forest Plan is predicated on the need for additional timber harvest from federal lands. Analysis indicates that doing so would likely delay forest recovery, degrade water quality, and place additional risk on listed species. Given the evidence the Plan is working, any proposed changes should have a high degree of scientific consensus and certainty of success.

[Scientists Endorse Northwest Forest Plan](#)

The Northwest Forest Plan is considered a global model for ecosystem management and biodiversity conservation on 24.5 million acres of federal lands from California to Washington (mainly west of the crest of the Cascade Mountains). Since the plan's inception in 1993, forest ecosystems have been recovering from unsustainable logging, streams are improving, and atmospheric carbon is being stored in forests as they mature. A science synthesis is being conducted by the Forest Service as an initial step towards plan revisions. Scientists have called on the Forest Service to expand protections afforded to forest ecosystems and imperiled species as a means of preparing for unprecedented climate impacts and ongoing land-use disturbances mainly on nonfederal lands.

ABC recommendation: Stay the course with the Northwest Forest Plan, complete the science synthesis, and then conduct bioregional assessments addressing regional and endangered species issues.

ESA-listed Species Management vs. Ecosystem Management

The 2012 Northern Spotted Owl critical habitat rule weakened protections for the Northern Spotted Owl and Marbled Murrelet by favoring a generic ecosystem management approach that fails to recognize or address the severe shortage of late-successional habitat in the region. The original concept of ecosystem management under the Northwest Forest Plan was to restore the forest to more historic conditions and recover the missing large patches of old-growth. This was revised in the 2012 rule so that managers could treat all age classes of forest more equally, even if this sets back restoration of historic norms or causes short-term harm to listed species.

This policy ignores the historic role the federal government played in the reduction of late-successional forests and decline of Northern Spotted Owl and Marbled Murrelet. According to federal judges, federal agencies deliberately failed to abide by laws protecting wildlife, and did not moderate old-growth logging when its' unsustainable nature and the loss of species became apparent by 1983. In addition, the Critical Habitat rule reduced species specific protections by changing the definition and analysis of adverse modification that potentially allows logging of mature forests that the Northwest Forest Plan intended to be protected. Protections for the Marbled Murrelet were also reduced by the owl critical habitat rule, and the 2016 Marbled Murrelet critical habitat rule allows for increased fragmentation of murrelet habitat, increasing the risk of predation which researchers conclude is a key limiting factor to murrelet recovery.

The recent 20-year demography analysis and the continuing decline of Northern Spotted Owl populations indicate that the agency should protect all suitable owl habitat, not just high-quality owl habitat. The definition of high quality owl habitat needs to be made more inclusive to ensure sufficient habitat will be conserved to allow for recovery.

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

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

This uncertainty was one of the reasons that the Northwest Forest Plan included recommendations to restrict thinning in naturally regenerated stands over 80 years old in western Oregon and Washington. Another concern is the continued use of the rule's adverse modification standard to justify owl take and the elimination of mature forests eight years and older that are used by Northern Spotted Owls and prey. Please note the court ruling on the White Castle Secretarial Pilot Project that proposed to log in mature forests utilized by owls. The ruling found this was a controversial practice likely to impact owls and therefore in need of a complete environmental analysis.

Northern Spotted Owl Critical Habitat Rule

The Northern Spotted Owl Critical Habitat Rule continue to raise concern because of active management in owl critical habitat that is not supported by the best available science. Three major scientific societies advised the Obama administration to conduct more research on the effects of active management on owl populations before treatments were to be applied more broadly. We agreed with the scientists' call for caution.

These provisions to protect only high quality owl habitat, creation of early-seral habitats, and a weaker adverse modification standard could allow for an increase in timber harvest in the region by lengthening of the time it will take to restore late-successional conditions. This language, which was included in the BLM's Western Oregon Plan Revision, has the potential to allow excessive logging to the detriment of Northern Spotted Owl and Marbled Murrelet populations and may foreclose owl recovery by not providing adequate late-successional forest necessary to ensure high quality owl habitat in the future.

The Critical Habitat rule relied heavily on the Final Northern Spotted Owl Recovery Plan and cites it as if it were a peer reviewed document. However, the Final Owl Recovery Plan was never peer reviewed. In addition, peer reviewers identified many faults in the Draft Recovery Plan, particularly concerning active management and the need for maintaining owl reserves that were never addressed in the Final. For example, the summary of The Wildlife Society (TWS) review states:

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

The TWS review also noted that in at least a dozen instances, important studies with bearing on these issues, and that often contradicted the intended management direction were excluded from the analysis. It can be concluded that the agency had focused on studies supporting one view while not fully considering opposing studies. The Society concluded that:

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

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

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

The group of scientists urged the Service to recommend retention of all existing late-successional reserves, additional new reserves to create greater connectedness across the landscape, and greater protections from logging, especially post-disturbance logging within late-successional reserves. The 1993 Report of the Scientific Analysis Team (SAT) ironically, already thoroughly reviewed the risks associated with logging in suitable owl habitat, and concluded *"intentions to selectively cut forest stands to create conditions favorable for spotted owls, represents increased risks to the viability of the spotted owl (SAT p. 145)."*

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

The Scientific Analysis Team report said:

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

"The combined risks associated with treatment of spotted owl habitat or stands expected to develop into suitable habitat for spotted owls, as discussed above, will likely result in

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

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

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

ABC Recommendation: To not allow for adverse modification of Northern Spotted Owl Habitat by active management or ecoforestry in stands greater than 80 years and to maintain and augment species specific protections for the Northern Spotted Owl and Marbled Murrelet. The concept of ecosystem management should be used to support protection and restoration of mature forest.

Fire Management and the Spotted Owl

Fire risk reduction is being touted as a necessary strategy to conserve the Spotted Owl for dry forests, but, in some cases, it has been misapplied to wet, Westside forests. In the Northern Spotted Owl recovery plan and critical habitat rule, it was postulated that the owl needed to be protected from loss of habitat from wildland fire. It was accepted that there would be short-term losses of owls and habitat in exchange for the long-term benefit of reduced habitat loss from fire.

A similar argument was made in support of managing for all age classes more equally. However, best science does not indicate that the owls are threatened by habitat loss from fire, and given the owls' precipitous decline, short-term losses are not acceptable in exchange for unproven long-term benefits. Moreover, growing number of peer-reviewed studies indicate that owls are adapted to fire

and preferentially utilize burned forests for foraging, and that fuels treatments are causing significant harm to owls and loss of mature forests needed for owl recovery.

Fire management is an issue only at the fringes of the Northern Spotted Owl's eastern and southern range, but is much more relevant for the Sierra Nevada and the California Spotted Owl. This is a particularly challenging problem in California due to the large amount of urban wildlands interface inhabited by owls. The Forest Service is developing a new conservation strategy for the California Spotted Owl that seeks to balance the need for fire risk reduction with maintaining the remaining owl habitat.

One argument for active management in Spotted Owl habitat in the BLM's Western Oregon Plan Revision is the need to protect owls from fire. But the FEIS does not predict significant losses of reserve land use allocation to high and moderate severity fires. Table 3-277 and Table 3-278 indicate predicted losses average only 5,600 acres per decade. In addition, there is evidence owls will continue to nest in moderate severity burn areas, and forage in high severity areas.

Recent studies show that Spotted Owls are adapted to fire, and that post-fire logging, and mechanical thinning in owl habitat pose more significant threats and are contributing to population declines. A key piece of new information, the 20-year monitoring reports of the Northwest Forest Plan, which indicates that the plan is working as intended, creating additional habitat for listed species, improving water quality, guiding needed restoration, and providing a stable supply of timber.

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

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

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

The petitioner's conclude on page 92 that: "the only area in the Sierra Nevada in which California spotted owl populations are known to be stable or slightly increasing is an area with an active mixed-severity fire regime and no mechanical thinning or post-fire logging (Sequoia/Kings-Canyon National Park), while all study areas on national forests and private lands (characterized by aggressive reduction of fire due to fire suppression, landscape-level mechanical thinning, and common post-fire

logging) have declining populations (Conner et al. 2013, Tempel and Gutiérrez 2013, Tempel 2014, Tempel et al. 2014a). These findings indicate that mixed-severity fire (which includes a high-severity fire component) is, on its own, not a significant threat to California spotted owls. Instead, management activities that follow mixed-severity fire (post-fire “salvage” logging), or are conducted ostensibly to “save” owls from higher-severity fire (mechanical thinning), are primary threats to the owl.”

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

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

A 2012 Forest Service study (Lee et al) examining 11 years of CSO breeding season survey data from burned and unburned forests found no significant effects of fire on probabilities of local extinction and colonization. Roberts (2008) and Robert et al. 2011 found many Spotted Owl sites continued to be occupied and reproduced successfully after fire burned portions of their home ranges and core area, and Roberts (2008) also found a higher reproduction rate in mixed-severity burn areas over unburned areas. Williams et al (2011) found that owl home ranges in burned areas are similar to unburned areas. Jenness et al (2004) found that numbers of successfully reproducing Mexican Spotted Owls territories did not statistically differ between burned and unburned forests.

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

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

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

Current policy also promotes landscape level mechanical thinning in spotted owl habitat, even allowing such activities in PACs and HRCAs. As noted above, the 2004 plan also promotes post-fire

logging of owl habitat, assuming that it no longer habitat, and mechanical thinning, despite evidence this is causing severe harm to California Spotted Owls. As the petitioners note on page 95:

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

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

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

There is concern that the Forest Service is ignoring the available scientific literature to continue this management direction which is harmful to CSO. The 2013 forest plan for the Lake Tahoe Basin Management Unit continues to claim still occupied habitat has been “lost” to fire, reduced canopy cover protection for owls, and allows clearcutting of owl habitat and cutting of large trees over 30-inches. Similarly the scoping document for the three early adapter forests in California promotes mechanical thinning and does not provide any significant protections for CSOs.

Negative Impact of Fire Risk Reduction Needs Further Analysis

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

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

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

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

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

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

ABC Recommendations: Recent studies indicate that forest management activities are driving down California owl populations, and intensive mechanical thinning and post-fire logging in the Sierra Nevada National Forests are reasons that that subspecies should now be listed. We urge that this research be considered for the Northern Spotted Owl as well. The conservation planning process should support protecting the remaining owl habitat and buffer areas to regrow the deficient large-tree component in the Sierra Nevada and a moratorium on owl take. Fuels treatments should be focused on adjacent areas of younger forest. Given the large acreage of potential treatment areas, California Spotted Owl habitat does not need to be prioritized as is currently the case.

Barred Owl Control and Spotted Owl Recovery

The U.S. Fish and Wildlife Service has identified the Barred Owl as a significant threat to the Northern Spotted Owl, and now also the California Spotted Owl due to territorial competition which appears to be reducing Spotted Owl breeding success. The Service is now conducting control experiments which indicate that suppressing Barred Owl populations can boost Spotted Owl populations in the short-term. The agency is now proposing a 5-8 year moratorium on Spotted Owl take, until the federal agencies adopt a Barred Owl control strategy. This can come only after the Barred Owl experimental EIS is completed to approve this management prescription for broader application.

ABC is supportive of the moratorium on owl take, but is recommending that it be based on the owl meeting recovery thresholds, rather than on existence of Barred Owl control. In addition, based on anticipated habitat conditions, we are recommending the moratorium be extended for up to 30 years when a large amount of Spotted Owl habitat will become available. At that time we should know if coexistence is possible if sufficient habitat is provided and the continuance of Barred Owl control can be evaluated.

It is unclear how effective Barred Owl control will prove to be. On page 961 of the DEIS for Western Oregon, BLM predicts that with Barred Owl control, Spotted Owl declines can be reduced from 53 percent to 28 percent in the Oregon Western Cascades Physiographic Province. While significant, this does not reverse the Spotted Owl's decline, and should not be viewed as a greenlight for additional habitat loss in the PRMP.

The owl take moratorium is proposed for five years, with a possible extension to eight years until ESA consultation would have to be reinitiated if the removal program had not been initiated by that time as anticipated. A more prudent take moratorium would continue until owl decline has been halted, and significant amounts of new suitable owl nesting habitat has developed which will be in approximately 30 years. On page 966, BLM notes that there is a 50% extinction risk in the Coast Range-portion of the planning area within 20 years and a 95% risk if extinction within 50 years. Therefore, BLM is in error by limiting a no take policy to 5-8 years and only until Barred Owl control begins; a longer no-take moratorium is definitely warranted.

ABC recommendation: Continue to monitor the effectiveness of Barred Owl removal and support extending the owl take moratorium and base it on achieving recovery thresholds.

Citations

[Scientific Societies Request](#) for Environmental Impact Statement of Proposed Active Forest Management in Spotted Owl Critical Habitat

[Open Letter to President Barack Obama](#) from 229 Scientists in Support of Northwest Forest Plan

[The Wildlife Society Peer Review](#) of the 2010 Draft Revised Recovery Plan for the Northern Spotted Owl

Additional Resources

Conservation in the Sierra Nevada: Issues and Recommendations. Sierra Forest Legacy. 2012.

http://www.sierraforestlegacy.org/FC_ConservationStrategy/FC_ConservationStrategy2.php

Conservation Planning: Strategies for Fisher and California Spotted Owl Now In Development, The Sierra Forest Voice, Vol. 7, No. 4, December 9, 2014,

http://www.sierraforestlegacy.org/NR_SFVoiceNewsletter/SFVN_NewsletterCurrent.php

"Biologist, others in way of logging plans," Scott Sonner, Associated Press, August, 2004,

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Forest Brochure Misrepresents Science to Promote Logging Initiative, Union of Concerned Scientists,

http://www.ucsusa.org/center-for-science-and-democracy/scientific_integrity/abuses_of_science/a-to-z/forest-brochure.html#.VNPWHNLF9Fg

Managing Sierra Nevada Forests, Forest Service Technical Report (PSW-GTR-237)

http://www.fs.fed.us/psw/publications/documents/psw_gtr237/psw_gtr237.pdf

An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests (PSW-GTR-220). A Forest Service report from Pacific Southwest Research Station (with addendum, February, 2010),

http://www.fs.fed.us/r5/sequoia/gsnm/north_paper.pdf

[New evidence that forest fires do not threaten spotted owls](#)

Phys.Org-Jun 24, 2016

New research on the California spotted owl has found that severely burned forests that have not been post-fire salvage logged are used by the threatened raptor when foraging for their small mammal prey. Stand-replacing fires, also called crown fires or high-intensity fires, do not harm spotted owl foraging habitat.

[Roosting Habitat Use and Selection By Northern Spotted Owls During Natal Dispersal](#)

A quartet of Forest Service owl experts have published a detailed research article showing that the 50-11-40 dispersal standard of the Northwest Forest Plan is inadequate for young spotted owls. Those owls continued (and continue) to die at high rates, even with the Northwest Forest Plan in place. The study's authors were quite clear in spelling out the implications of the research:

“Based on our study,” they wrote, “we recommend that managers should pursue a strategy that exceeds the canopy cover guidelines (of the 50-11-40 rule) when managing dispersal habitat for spotted owls.” Instead of a minimum of 40 percent canopy closure, the researchers recommended managers maintain forests with at least 80 percent canopy closure.

Stan G. Sovern, Department Of Fisheries And Wildlife, Oregon State University; Eric D. Forsman, USDA Forest Service, Corvallis Forestry Sciences Laboratory; Katie M. Dugger, U.S. Geological Survey, Oregon Cooperative Fish And Wildlife Research Unit, Department Of Fisheries And Wildlife, Oregon State University; Margaret Taylor, Department Of Fisheries And Wildlife, Oregon State University, Corvallis

ABSTRACT We studied habitat selection by northern spotted owls (*Strix occidentalis caurina*) during natal dispersal in Washington State, USA, at both the roost site and landscape scales. We used logistic regression to obtain parameters for an exponential resource selection function based on vegetation attributes in roost and random plots in 76 forest stands that were used for roosting. We used a similar analysis to evaluate selection of landscape habitat attributes based on 301 radio-telemetry relocations and random points within our study area. We found no evidence of within-stand selection for any of the variables examined, but 78% of roosts were in stands with at least some large (>50 cm dbh) trees. At the landscape scale, owls selected for stands with high canopy cover (>70%). Dispersing owls selected vegetation types that were more similar to habitat selected by adult owls than habitat that would result from following guidelines previously proposed to maintain dispersal habitat. Our analysis indicates that juvenile owls select stands for roosting that have greater canopy cover than is recommended in current agency guidelines. Published 2014. This article is a U.S. Government work and is in the public domain in the USA.

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Thank you for considering these recommendations. I can be contacted at 202 888 7490 or sholmer@abcbirds.org if the Forest Service has any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Holmer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Steve Holmer
Vice President of Policy
American Bird Conservancy