

# OREGON WILD

Formerly Oregon Natural Resources Council (ONRC)

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31 January 2012

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**Subject: Oregon Wild protest of the Wagon Road Pilot Project Timber Sale**

Dear BLM:

Pursuant to 43 CFR 500.3, Oregon Wild hereby protests the decision to approve the Wagon Road Pilot Project Timber Sale (OR120-12-35, DOI-BLM-OR-C040-2011-0008-EA, Decision Documentation dated January 18, 2012, <http://www.blm.gov/or/districts/coosbay/plans/files/WgnRdDec.pdf>). Oregon Wild represents about 7,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. Our goal is to protect areas that remain intact while striving to restore areas that have been degraded.

The decision documentation describes the project as:

- 114 acres of variable retention harvest (aka clearcutting) in matrix
- 4 acres of commercial logging in riparian reserves
- 9 acres alder conversion/density management
- 46 acres (32%) of aggregates (outside of acres listed above)
- ~20% retention in matrix, plus ~10% in riparian reserves
- 0.8 miles road construction
- 2.8 miles road renovation
- 1.4 miles road improvement
- 1.2 miles road decommissioning

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## Introduction

When this Pilot Process started we were told it was about collaboration and restoration but we eventually came to understand the real purpose was to increase logging. This is perplexing because in the 15 years since the Northwest Forest Plan was adopted there are more reasons to conserve forests, and fewer reasons for clearcutting or regeneration.

We were lured into the process with promises of collaborative engagement about how to restore the damage done to the forest after decades of irresponsible clearcutting, but then we were told the Pilots would test newfangled clearcutting methods that do not match the current needs of the land.

The proposed variable retention clearcutting might be improvement compared to the short-rotation clearcutting on *private* timberlands, but if applied to mature forests on *public* lands, it is not ecological restoration. Mature forests are in short supply and still need to be conserved and expanded to fulfill the purposes of the Northwest Forest Plan. Converting rare and valuable mature forests into young forests will result in net degradation of ecological conditions.

A new program of variable retention clearcutting will threaten the recovery of the Northern spotted owl by intensifying adverse competitive interactions between barred owls and spotted owls. It will also transfer thousands of tons of CO<sub>2</sub> from the forest to the atmosphere and exacerbate climate change.

Many people share a vision for meaningful restoration in the form of variable thinning of dense young stands, rescaling the road system, removing weeds, rebuilding carbon stores, and reintroducing natural processes like fire. Unfortunately, BLM refused to consider such alternatives even though they would likely meet their objectives as well or better than their clearcutting plan.

Now it appears that even renewed logging of mature forests is not enough and certain members of Congress are threatening to transfer large amounts of BLM forests into a trust where they would be insulated from the burdens of compliance with federal environmental laws and public involvement. Our initial willingness to engage in the collaborative conversation about ecological restoration has been replaced by a grave concern about the future direction of federal forest management.

To further alienate the public, the Coquille Tribe was promoted to the level of a cooperator, and the tribes have trumpeted this as a step toward tribal control of large areas of public forest lands currently enjoyed by everyone. Meanwhile, the public was demoted to a mere commenter. The public was not meaningfully included in the formulation of restoration plans that meet agreed upon objectives. Reasonable alternatives presented by the public were rejected without reason.

**BLM failed to identify a proper purpose and need, and failed to consider reasonable alternatives mean to meet objectives.**

BLM's stated purpose and need for this project is to demonstrate the principles of Drs. Johnson and Franklin in a variable retention clearcutting project in mature forest. When stated this way, there are no alternatives. When the purpose and need is stated so narrowly that there are no real alternatives, BLM runs afoul of NEPA's purpose to take a *hard look* at the effects of its proposal by examining and comparing the effects of alternative ways of achieving objectives.

“The stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives and an agency cannot define its objectives in unreasonably narrow terms.” *Id.* at 1155 (citing *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 192 (D.C. Cir. 1991)). “Project alternatives derive from an [EIS’s] ‘Purpose and Need’ section.” *Id.* Thus, a court begins by determining whether or not the Purpose and Need Statement was reasonable. *Id.*; see also *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1066-67 (9th Cir. 1998).

*Westlands Water Dist. v. Interior*, (9<sup>th</sup> Circuit July 2004).

[http://www.ca9.uscourts.gov/ca9/newopinions.nsf/02D5B997B004D17388256ECF00825DA9/\\$file/0315194.pdf?openelement](http://www.ca9.uscourts.gov/ca9/newopinions.nsf/02D5B997B004D17388256ECF00825DA9/$file/0315194.pdf?openelement)

To cure this problem, BLM need to look at the two-fold purpose of this project that underlie the “demonstration of principles” — that is - to produce timber and create early seral habitat. There are alternative ways of producing timber (such as thinning in young stands), and alternative ways of creating early seral habitat (such as including structure-rich “gaps” when thinning young stands, or changing the way BLM manages before, during, and after wildfire fire). Oregon Wild’s scoping comments (esp. pp 5-10) and EA comments provided BLM with a range of suggested alternatives to consider. BLM fell short in its legal obligation to compare the environmental effects of the Johnson/Franklin principles, relative to these quite reasonable alternatives.

A proper environmental analysis of reasonable alternatives would likely show that BLM can produce adequate timber and create early seral habitat with much less adverse environmental effects on mature forest habitat, carbon storage, and watershed and aquatic functions. One of the most important purposes of NEPA is to ensure that the decision-maker is aware of and considers the differing effects of different alternatives. BLM failed to do this.

The EA says that the Congressional delegation wishes to restart regeneration (clearcut) harvest on federal land. This may be the case, but the wishes of a few members of Congress, expressed outside of legislation, does not over-ride the mandate of Congress, expressed through a vote of the whole body and signed into law by the President, i.e. NEPA. BLM still must openly consider a full range of reasonable alternatives to what the Congressional delegation is asking them to consider. In fact, not just BLM, and the public, but members of Congress might be enlightened by the information contained in the required comparative analysis.

If BLM felt that they could disregard reasonable alternatives suggested by the public because this is just an EA, rather than a full EIS, then that is all the more reason to prepare an EIS, so that the decision-maker and the public are made more fully aware of the effects of alternatives before approving a potentially precedent-setting pilot project. However, BLM must also recognize that the requirement to develop and consider alternatives applies equally to both EISs and EAs.

The Wagon Road Pilot looked at only one action alternative, plus the no action alternative. It is not enough to consider just one action alternative. The CEQ regulations

specifically require that Environmental Assessments shall follow the alternatives language in NEPA for EISs.

40 CFR § 1508.9

"Environmental Assessment":

...

(b) Shall include brief discussions of the need for the proposal, of **alternatives as required by sec. 102(2)(E)**, of the environmental impacts of the proposed action and alternatives ...”

The “alternatives provision” of 42 U.S.C. § 4332(2)(E) applies whether an agency is preparing an EIS or an EA and requires the agency to give full and meaningful consideration to all reasonable alternatives. *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1245 (9th Cir. 2005); *see Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988) (The alternatives requirement is triggered where unresolved conflicts as to the proper use of resources exist, whether or not an EIS is required). *Te-Moak Tribe v. Interior*, 608 F.3d 592, 601-602 (9th Cir. 2010) (“Agencies are required to consider alternatives in both EISs and EAs and must give full and meaningful consideration to all reasonable alternatives.”)

**BLM cannot tier to the 1994 Northwest Forest Plan SEIS until they consider significant new information bearing on the outdated decision to leave older forests in the matrix open for logging.**

The Wagon Road EA says that the purpose of this project is to break through the gridlock involving regeneration harvest in the Matrix. BLM fails to recognize that there may be good reasons that regen harvest is currently disfavored, including legal requirements and the fact that several things have changed since the matrix was allocated for logging. These reasons might be illuminated by taking a hard look at the cumulative effect of regen logging of mature forests in light of this new information (and by careful consideration of alternatives to regeneration harvest). Such an analysis will show that the cumulative effects of regen logging in mature forests has unacceptable ill effects, especially for threatened species and the climate. Furthermore, the analysis will show that there are ways of meeting the underlying objectives of timber production and early seral habitat without resorting to regen harvest of mature forests, and these alternatives will have much reduced impact on wildlife and the climate.

As is typical, regeneration logging in the Wagon Road Pilot Project is being applied to mature forests that provide significant value for wildlife, including recovery of legally protected species such as the spotted owl and marbled murrelet. Mature forests also represent important carbon stores, which helps keep greenhouse gases out of the atmosphere thus reducing the severity of global climate change. Regeneration harvest unfortunately requires removal of a significant portion of the large trees from a site. This has significant effects on both the habitat qualities of the forest and the amount of carbon stored in the forest.

When the Northwest Forest Plan was adopted in 1994 decision-makers attempted to maximize the amount of forest available for logging, in order to minimize the effects on the timber industry and rural communities, while still meeting legal requirements under the Clean Water Act, Endangered Species Act, Federal Land Policy & Management Act, Migratory Bird Treaty Act, and National Forest Management Act. For instance,

"The design of the preferred alternative [option 9] ... is intended to allow as high a level of sustainable timber supply as possible without risking further curtailments in the timber supply in the future due to the requirements of a myriad of other laws under which the BLM must operate."

1995 Medford RMP. Across the three-state range of the spotted owl, the Secretaries of Agriculture and Interior allocated almost one million acres of mature and old growth forest to the matrix where it could be logged, including with regeneration logging methods. The decision to allow regeneration logging of mature forest was made assuming certain things about the effects of such logging, including that such logging would not have serious adverse effects on spotted owls or earth's climate. Those assumptions are now in serious question. Therefore, BLM must carefully consider this significant new information before proceeding.

Since the Northwest Forest Plan was adopted in 1994, more than 15 years ago, several significant new developments have occurred which indicate a need to increase conservation and restoration of mature & old-growth forests, and the need to reduce regeneration logging in mature forests to meet Matrix objectives. Unfortunately, BLM has not taken steps to account for new information and adjust Matrix objectives accordingly.

Among the most important new information since 1994 include:

(a) **Barred owls** — The threatened northern spotted owl faces a significant new threat in the form of the barred owl which has recently invaded virtually the entire the range of the spotted owl, uses many of the same food sources, and uses similar habitat. The 1994 SEIS assumed that suitable owl habitat would be available to spotted owls for important life functions like nesting, roosting, foraging, and dispersal. New information shows that that hundreds of thousands of acres of suitable owl habitat are now occupied and defended by barred owls to the exclusion of spotted owls. There is an urgent need to protect additional suitable owl habitat in order to increase the likelihood that newly invading barred owls can coexist with instead of competitively exclude threatened northern spotted owls. FWS has recommended protection of a subset of high quality owl habitat, but whether this subset of habitat is adequate to mitigate for the habitat newly occupied by the barred owl has never been tested and validated. The habitat modeling done as part of the spotted owl recovery planning process shows that the barred owl invasion has significantly reduced the chances of spotted owl recovery relative to expectations in 1994, and that modeling assumes that the barred owl population would remain constant, but it is more realistic to expect that the barred owl population will continue to increase for some time. We are a long way from an effective rangewide barred owl control program, and if the program ever gets fully implemented, failure to maintain the program in perpetuity will likely lead

to an resurgent population of barred owls. That's a lot of preconditions that undercut FWS' modeling assumptions.

(b) **Carbon storage** — Global climate change is a new and significant threat not only to imperiled species, but also whole forest ecosystems and human communities. To reduce the severity of and mitigate for global climate change requires, among other things, that the global carbon cycle be managed to store more carbon, especially carbon-rich ecosystems like mature & old-growth forests of the Oregon Coast Range.

Commercial logging in stands over 80 years old likely comes with significant costs in terms of forgone carbon storage. This project will result in a net emissions of about 5 thousand metric tons (megagrams (MG)) of CO<sub>2</sub>. A program of such timber sales will result in orders of magnitude more emissions. Given the significance of the threat posed by climate change, it is difficult to imagine anything to justify logging mature & old-growth forests. Conservation of older forests not only helps mitigate climate change but also provides a variety of other benefits, including clean water, habitat imperiled species, as well as sport fish & game, and quality of life that helps diversify the economy and stabilize communities.

The O&C Act mandates that BLM manage for permanent forest production, watershed protection, and community stability, all of which are threatened by climate change. BLM therefore has a duty to make meaningful efforts to mitigate climate change by optimizing carbon storage in long-lived mature & old-growth forests.

(c) **Climate change** — A warmer world with more seasonal extremes of wet and dry also creates uncertainty about our ability to sustain older forests, and about whether we can create functional old forests starting from young, planted stands. If climate change brings increasing frequency and severity of drought and natural disturbance, it may be harder to sustain existing older forests and harder to establish new forests and sustain them through long periods of forest succession required to reach habitat goals for imperiled species like spotted owls, marbled murrelet, and salmon. This means that “a bird in the hand is worth two in the bush” so we should retain all the older forests that we currently have (and carefully nurture likely recruitment forests).

(d) **Dead wood standards** — Large accumulations of dead wood are essential for meeting objectives for fish & wildlife habitat, water quality, and carbon storage. Past and ongoing forest management has greatly reduced the prevalence of large snags and dead wood. Northwest Forest Plan standards for dead wood are based on an outdated “potential population” methodology which greatly underestimates the number of snags needed to meet the needs of a variety of species associated with dead wood. Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) [http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GI\\_Sdata/docs/chapter24.pdf](http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GI_Sdata/docs/chapter24.pdf) If more dead trees are needed, that means many more live

trees need to be retained for long-term recruitment. Before conducting activities like commercial logging that will result in long-term reduction in recruitment of snags and dead wood, the agencies should follow NEPA procedures to amend their plans, consider alternatives, and adopt new standards that assure objectives are met over time and across the landscape.

(e) **Wood Products depression** - Another aspect of new information is the market for wood products which is quite depressed as a result of the inter-related financial, housing, and wood bubbles. As a result, there is little justification for sacrificing public forests to produce wood products. The housing and home finance bubbles have burst. The markets for housing and wood have been fundamentally readjusted. The timber industry needs to rescale to meet a smaller overall demand. Future growth in demand will likely be slower because policy-makers can be expected to take steps to avoid another bubble. Withholding federal timber from the market may actually help improve rural community stability by helping to support log prices for owners of non-federal timber who rely on selling some trees for income. As recently stated by a federal forest manager in Montana:

"Some of you may be wondering why timber is not being sold as it was in previous decades when the Bitterroot routinely produced 20 million board feet or more. One of the main reasons is that no one is buying the wood. For example, the Bitterroot National Forest recently offered two different timber sales on land that is easy to access near paved roads, and neither sale received any offers. These were not isolated incidents. In 2011, the forest brought four timber sales to the public that did not receive one bid from an interested buyer. Why is this happening? Much like the housing crisis, the answers can be found in the market. Many of the problems occurring in the timber market today are not due to a lack of supply, but rather a lack of demand. Logs that were selling for \$80 a ton during the housing boom, are worth less than \$45 a ton today. This loss of demand has had a significant local impact on acres harvested. Poor market conditions have also forced us to use scarce taxpayer dollars to pay to remove timber to meet our forest fuel reduction goals in areas adjacent to private property."

Timber harvests just one piece of forest management. Guest column by JULIE KING | Posted: Friday, December 16, 2011

[http://missoulian.com/news/opinion/columnists/timber-harvests-just-one-piece-of-forest-management/article\\_04e78d00-27f9-11e1-8fb2-001871e3ce6c.html](http://missoulian.com/news/opinion/columnists/timber-harvests-just-one-piece-of-forest-management/article_04e78d00-27f9-11e1-8fb2-001871e3ce6c.html) [emphasis added].

When we bring all these lines of evidence together one realizes that things have changed since the NWFP and the matrix land allocation was adopted. There are now many more reasons to protect mature forests and fewer reasons to log them. This needs to be considered in a new EIS. Since these significant new issues were not properly considered in the Northwest Forest Plan FEIS, the agency needs to address them in project level NEPA analyses.

The many reasons to protect and restore mature forests instead of degrade them through logging were presented in our scoping comments, especially at page 10-15, and in this

white paper previously provided to BLM. Heiken, Doug. 2009. The Case for Protecting Both Old Growth and Mature Forests, Version 1.8. Oregon Wild.  
<http://dl.dropbox.com/u/47741/Mature%20Forests%2C%20Heiken%2C%20v%201.8.pdf>

## **BLM failed to accurately disclose and consider the effects of logging**

NEPA requires BLM to take a *hard look* at the environmental effects of its proposal and document its consideration of relevant environmental factors.

### **Riparian Reserves**

The Wagon Road Pilot Project will remove large logs from riparian reserves leaving only a 35 foot no cut buffer. This means that logging will occur within the area expected to recruit wood to the stream. This violates the Aquatic Conservation Strategy mandates to *maintain, improve, and not retard* attainment of aquatic objectives.

Large quantities of down logs are an important component of many streams. Coarse woody debris influences the form and structure of a channel by affecting the profile of a stream, pool formation, and channel pattern and position. The rate at which sediment and organic matter are transported downstream is controlled in part by storage of this material behind coarse woody debris. Coarse woody debris also affects the formation and distribution of habitat, provides cover and complexity, and acts as a substrate for biological activity. Coarse woody debris in streams comes directly from the adjacent riparian area, from tributaries that may not be inhabited by fish, and from hillslopes.

1994 FSEIS page 3&4-61.

Current amounts of large woody debris in coastal streams of Oregon and Washington are a fraction of historical levels (Bilby and Ward 1991, Bisson et al. 1987, NRC 1992). ... Stream surveys by private timber companies and federal land management agencies in the Northwest reveal an overall loss of stream habitat quality (FEMAT 1993, Kaczynski and Palmisano 1993, Wissmar et al. 1994) that is strongly related to changes in riparian vegetation, especially harvest of merchantable riparian timber.

Everest, Fred H.; Reeves, Gordon H. 2006. Riparian and aquatic habitats of the Pacific Northwest and southeast Alaska: ecology, management history, and potential management strategies. Gen. Tech. Rep. PNW-GTR-692. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 130 p.  
[http://www.fs.fed.us/pnw/pubs/pnw\\_gtr692.pdf](http://www.fs.fed.us/pnw/pubs/pnw_gtr692.pdf)

The FEMAT Report explained that logging in reserves must be well-planned and clearly documented:

Prescriptions to be used for each stand should be well thought out and documented. They will be designed to produce stand structure and component associated with late-successional conditions. These components include large trees, snags, logs, and dense, multi-storied canopies. Prescriptions should show the treatments to be applied and the anticipated

effects on the stand over time. They should also include a discussion of the actions, coordination efforts, and oversight that will be necessary for successful implementation. This discussion should draw on previous efforts made to implement similar prescriptions. Finally, the prescriptions should identify key stand attributes or accomplishments that should be monitored. For example, if snags are to be created, or regeneration established, the accomplishment of these actions and their results should be monitored.

1993 FEMAT Report at page III-34; 1994 FSEIS Vol II, page B-73. This means that the agencies cannot rely on analysis-free assertions that logging will enhance or accelerate late successional conditions or riparian conditions in some general way. The NEPA analysis must be much more explicit in terms of objectives, rationale, and the logical connection between intentions, actions and outcomes.

The EA (p 65) makes a serious error when it asserts that “number of trees left per acre within the treated portion of the units would maintain the short-term supply of in-stream wood” and “[t]he density management thinning would lead to an improved source of large wood recruitment at the site scale in the long-term.” This is not mathematically possible. Maintain means “not diminish.” Logging will remove wood from the riparian reserves that would otherwise be recruited to the stream. By definition, logging results in *subtraction* of ecologically important wood. Mathematically:  $X - n < X$ . When something is subtracted from the existing condition, the existing condition has not been maintained. The truth of this statement is shown over and over when the effects of thinning on dead wood are modeled. See many examples here: Heiken, D. 2010. Dead Wood Response to Thinning: Some Examples from Modeling Work. [http://dl.dropbox.com/u/47741/dead\\_wood\\_slides\\_2.pdf](http://dl.dropbox.com/u/47741/dead_wood_slides_2.pdf)

The Wagon Road EA is very misleading in discussion of logging in riparian reserves. The EA says that the RMP *directs* BLM to control stocking on riparian reserves. This is grossly misleading. The RMP actually directs BLM *not to conduct any timber harvest* (not even firewood cutting) in riparian reserves. There is an exception when silvicultural intervention is “needed” to attain ACS objectives (and even then it must comply with the requirements to maintain, improve, and not retard attainment of objectives). BLM failed to state the general rule that logging is prohibited and tried to turn a *qualified exception* into an *unqualified mandate*. NEPA does not allow BLM to mislead the public and decision-maker in this way.

BLM is required to follow the RMP which includes the Aquatic Conservation Strategy and the requirement that “As a general rule, management actions/direction for Riparian Reserves prohibit or regulate activities that retard or prevent attainment of Aquatic Conservation Strategy objectives.” (RMP p 13). Commercial logging within the riparian reserves violates this standard because it will remove trees that are needed to meet objectives related to dead wood (which is important both instream as well as in upland portions of the riparian reserves).

The amount of dead wood in natural forests tends to follow a u-shaped curve with a low point in the mature stage of forest development. Under natural conditions, as the mature

stage progresses into older forest, dead wood accumulates as trees grow and die providing important attributes of older forests and aquatic systems. Logging mature forests, will prolong the low point in the u-shaped dead-wood curve and delay the accumulation of desired levels of dead wood needed to meet ACS objectives. This violates the requirements to “maintain” and “not retard” attainment of objectives related to dead wood.

The Wagon Road Pilot EA (p 65) is misleading in its discussion of suppression mortality. The EA admits that suppression mortality will be reduced by logging in the riparian reserves but the EA attempts to minimize the effect by saying that suppression mortality tends to affect smaller trees and the EA implies that such small trees provide little if any aquatic value. This is misleading. The value of wood is relative to the size of the stream. If the stream is small then, smaller trees can serve important ecological functions. The EA failed to account for the value of small wood in small streams.

### **Significant, Potentially Precedent Setting, Effects Require an EIS.**

The FONSI for the Wagon Road Pilot Project is erroneous when it says “this project would not establish a new precedent.” The FONSI actually admits that this project “would be used to inform decisions about future planning efforts in western Oregon.” This sounds potentially precedent setting. If the principles applied in this project would potentially shift BLM from its current focus on thinning young stands toward more variable retention clearcutting of mature forests, then it would certainly have potentially significant precedent-setting effects.

The FONSI goes on to say that “[f]uture large-scale planning efforts would include analysis at that time for significant impacts.” The fact that scaling up this project would be analyzed in it’s own NEPA analysis (as required by law) does not make this project any less precedent setting.

The Wagon Road Pilot is also precedent setting because the Coquille Tribes have been embraced as collaborators and they have presented this as a step toward transferring the entire 60,000 acre Coos Bay Wagon Road lands from BLM to the tribes. This could significantly change the way these lands are managed, the way environmental laws are implemented, and the way the public is involved in the decision-making process (or whether non-tribal members of the public are allowed to visit these lands at all). This would have potentially precedent-setting and significant environmental effects.

The FONSI (p 3) also errs when it finds a lack of cumulative effects on wildlife (including spotted owls) and carbon storage/climate change. As explained above, the purpose of this project is a potentially precedent setting effort to restart clearcutting of mature forests which may have significant cumulative effects on spotted owls and climate change.

A renewed program of clearcutting of mature forests on BLM lands will transfer large amounts of greenhouse gases from the forest to the atmosphere which will exacerbate climate change and ocean acidification resulting in significant environmental effects.

This project will result in a net emissions of about 5 thousand metric tons (megagrams (MG)) of CO<sub>2</sub>. A program of similar timber sales will result in orders of magnitude more emissions of greenhouse gases that threat the stability of our climate. This is significant.

A renewed program of clearcutting of mature forests on BLM lands will reduce the amount of suitable habitat shared by spotted owls and barred owls thus increasing the competitive pressures and increasing the likelihood of competitive exclusion or extirpation of the threatened spotted owl. This is a significant environmental effect.

The FONSI errs in its finding that this project will not cause significant cumulative effects on threatened spotted owls. To support this finding the FONSI relies on the project level Biological Opinion that this project will not jeopardize the continued existence of the spotted owl. This reliance is improper for two reasons. First, the project level BO does not address the cumulative effects of a renewed program of regen harvest in mature forests. For this, BLM would need to rely on a programmatic BO, but such an analysis has not been done for many years, and since a programmatic BO was last done, there have been significant changes in the status of the spotted owl, including the invasion of the barred owl which has rendered tens of thousands of acres of suitable owl habitat unavailable to the spotted owl. Second, the standard for NEPA significance is not the same as the standard for ESA jeopardy. It may be that this project will result in significant effects on spotted owls even though it does not reach the level of jeopardizing the species. BLM failed to evaluate this, especially in light of cumulative impacts and the barred owl.

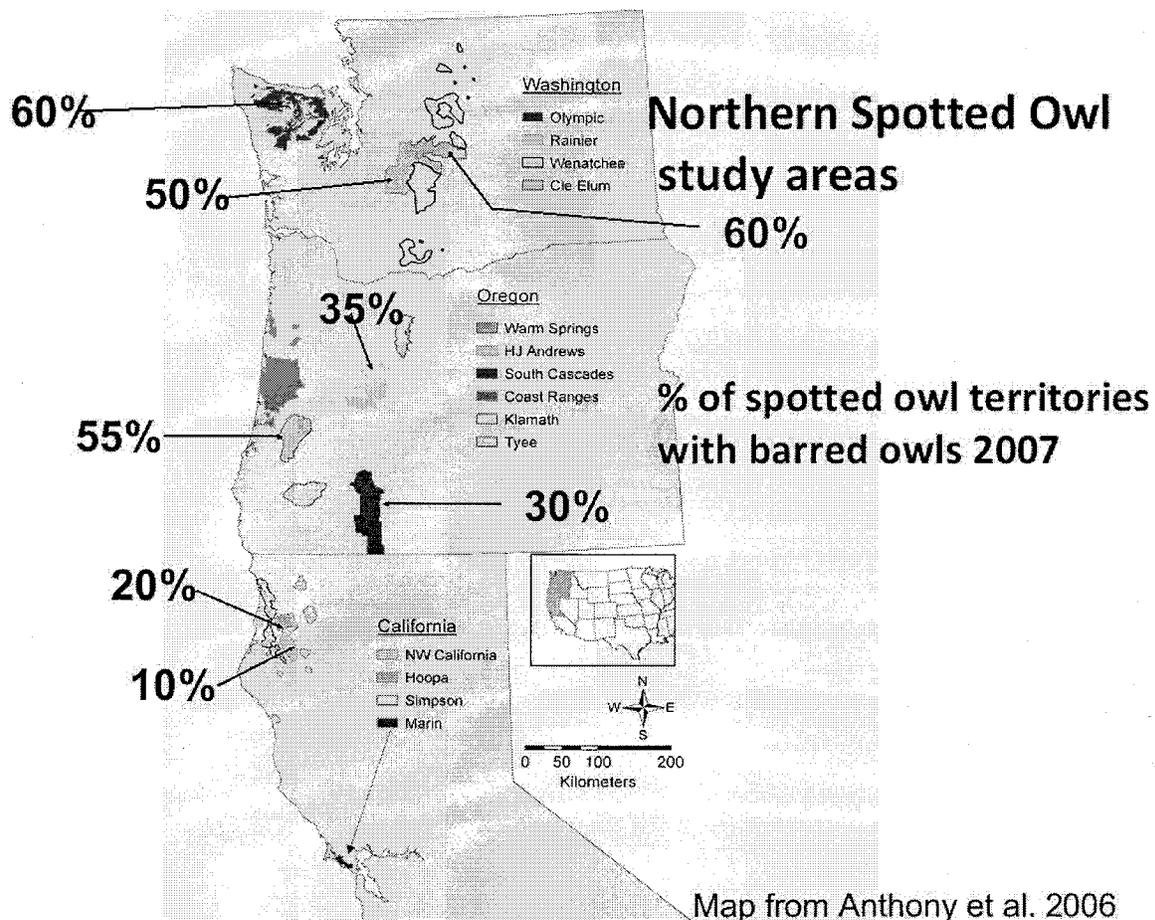
Barred owl competition and displacement are significant concerns emerging in the status review for the northern spotted owl. There are at least four new reports and presentations raising the concern that barred owls could displace spotted owls and adversely affect their survival. The 2004 status review panel unanimously identified barred owls as a future threat to the spotted owl. <http://www.sei.org/owl/meetings/Presentations/June/Gutierrez-Threats.pdf>

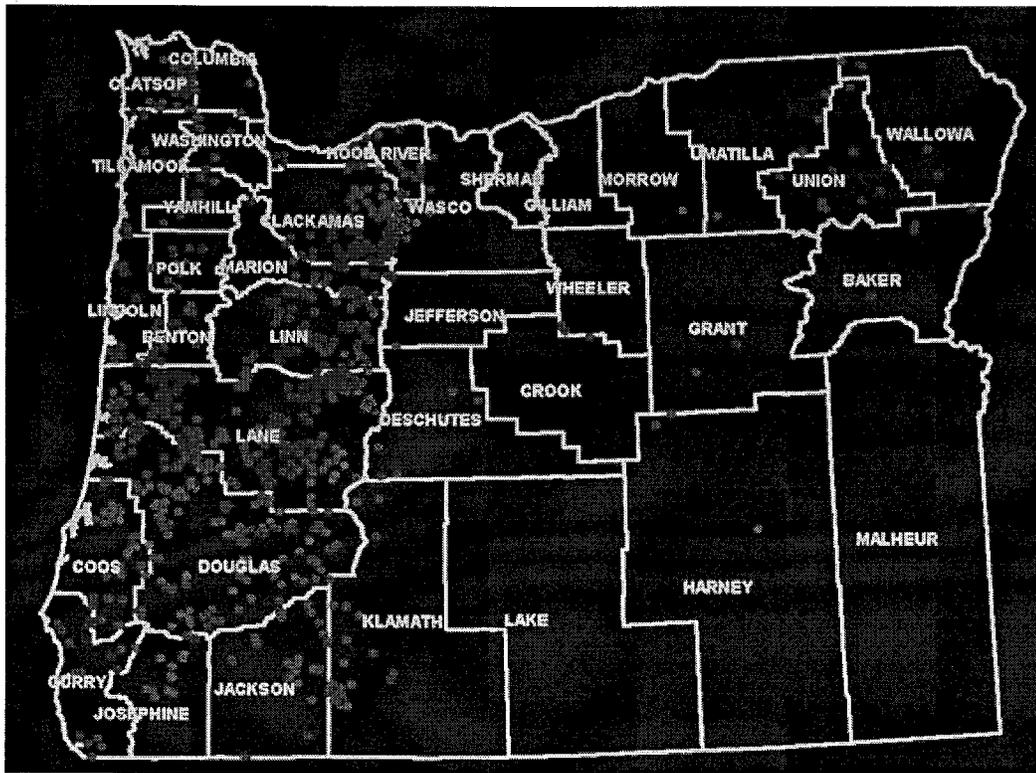
We used single-species, multi-season occupancy models and covariates quantifying Barred Owl detections and habitat characteristics to model extinction and colonization rates of Spotted Owl pairs in southern Oregon, USA. We observed a strong, negative association between Barred Owl detections and colonization rates and a strong positive effect of Barred Owl detections on extinction rates of Spotted Owls. We observed increased extinction rates in response to decreased amounts of old forest at the territory core and higher colonization rates when old-forest habitat was less fragmented. Annual site occupancy for pairs reflected the strong effects of Barred Owls on occupancy dynamics with much lower occupancy rates predicted for territories where Barred Owls were detected. The strong Barred Owl and habitat effects on occupancy dynamics of Spotted Owls provided evidence of interference competition between the species. These effects increase the importance of conserving large amounts of contiguous, old-forest habitat to maintain Northern Spotted Owls in the landscape.

Katie M. Dugger, Robert G. Anthony, And Lawrence S. Andrews 2011. Transient dynamics of invasive competition: Barred Owls, Spotted Owls, habitat, and the demons of competition present. *Ecological Applications*, 21(7), 2011, pp. 2459–2468.

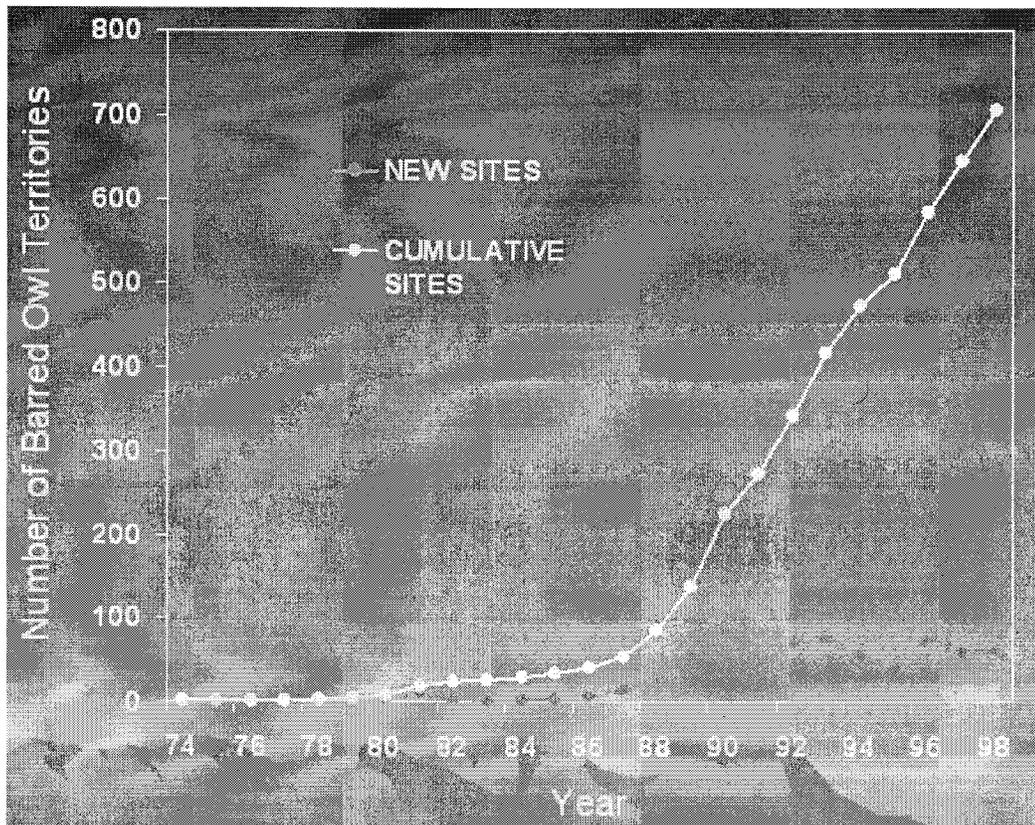
The agencies they have no NEPA analysis to tier to that addresses (on a range-wide scale) how to mitigate the adverse competitive interactions between spotted owls and barred owls. Before the agencies degrade any more suitable owl habitat they must consider a range of NEPA alternative that protects more than just the "structurally complex older forest" in order to increase the chances that spotted owls and barred owls can co-exist instead of competitively exclude each other.

Barred owls now occupy a large number of spotted owl sites and the agencies need to protect additional habitat to mitigate for this loss of available habitat.





[Map of barred owl locations documented from 1974-1998]



[Increase in barred owl territories on the Coast Range Study Area in Oregon]

The final Recovery Plan for the Northern Spotted Owl has partially addressed the barred owl issue by adopting Recovery Action 32 which urges the FS and BLM to “Maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands outside of MOCAs...” based on the idea that “protecting these forests will not further exacerbate competitive interactions between spotted owls and barred owls as would occur if the amount of shared resources were decreased.” (FRP p 34). In considering this recommendation the agencies must prepare NEPA analysis which considers the full potential of suitable habitat quantity and quality and its mediating influence on the interactions between spotted owls and barred owls. Maintaining a subset of suitable habitat as recommended by the recovery plan is one option, but the agencies must consider the full benefits of protecting all suitable habitat, not just a subset, and providing additional mitigation in matrix areas such as managing the matrix to enhance habitat for owl prey species. The recovery plan is not a NEPA document and FWS was not required to consider all reasonable alternatives. Action agencies like the FS and BLM on the other hand are required to fully consider alternatives. It would be wise to do so at a range-wide level, but until that is done, the agencies should not adversely modify any suitable habitat. The recovery plan purports to offer the agencies an exception to the recommendation in Recovery Action 32 (“Land managers have made significant investments of time and resources in planning projects that may have been developed prior to the approval of this Recovery Plan, thus some forests meeting the described conditions might be harvested...” (FRP p 35)), however, FWS cannot exempt the action agencies from NEPA. Protection of additional suitable habitat in order to reduce competitive interactions between the two owls is now a recognized tool in the toolbox and represents significant new information about *any* proposal to modify suitable habitat regardless of how far the planning process may have proceeded.

A 2010 Draft report “Population Demography of Northern Spotted Owls” corroborates the need to protect more than just the highest quality spotted owl habitat as contemplated in the draft Recovery Action 32.

We also found a negative relationship between recruitment rates and the presence of Barred Owls and a positive relationship between recruitment and the amount of suitable owl habitat in the study areas. Recruitment was higher on federal lands where the amount of suitable owl habitat was generally highest. [p 96] ...

While our observational results do not demonstrate cause-effect relationships, they provide support for the hypothesis that the invasion of the range of the Spotted Owl by Barred Owls is at least partly the cause for the continued decline of Spotted Owls on federal lands. Our results also suggest that Barred Owl encroachment into western forests may make it difficult to insure the continued persistence of Northern Spotted Owls (see also Olson et al. 2004). 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 (Horn and MacArthur 1972, Olson et al. 2004, Carrete et al. 2005). [pp 97-98] ...

Our 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. This recommendation is comparable to one of the recovery goals in the final recovery plan for the Northern Spotted Owl (USDI Fish and Wildlife Service 2008), but **we believe that a more inclusive definition of high quality habitat is needed** than the rather vague definition provided in the 2008 recovery plan. Much of the habitat occupied by Northern Spotted Owls and their prey does not fit the classical definition of “old-growth” as defined by Franklin and Spies (1991), and a narrow definition of habitat based on the Franklin and Spies criteria would exclude many areas currently occupied by Northern Spotted Owls. [p 99] ...

Eric D. Forsman, Robert G. Anthony, Katie M. Dugger, Elizabeth M. Glenn, Alan B. Franklin, Gary C. White, Carl J. Schwarz, Kenneth P. Burnham, David R. Anderson, James D. Nichols, James E. Hines, Joseph B. Lint, Raymond J. Davis, Steven H. Ackers, Lawrence S. Andrews, Brian L. Biswell, Peter C. Carlson, Lowell V. Diller, Scott A. Gremel, Dale R. Herter, J. Mark Higley, Robert B. Horn, Janice A. Reid, Jeremy Rockweit, Jim Schaberl, Thomas J. Snetsinger, and Stan G. Sovern. “Population Demography of Northern Spotted Owls.” DRAFT COPY 17 December 2010. This draft manuscript is in press at the University of California Press with a projected publication date of July 2011. It will be No. 40 in *Studies In Avian Biology*, which is published by the Cooper Ornithological Society.  
[http://www.reo.gov/monitoring/reports/nso/FORSMANetal\\_draft\\_17\\_Dec\\_2010.pdf](http://www.reo.gov/monitoring/reports/nso/FORSMANetal_draft_17_Dec_2010.pdf)

A well-known axiom of the species-area relationship from island biogeography holds that as habitat area increases, the number of cohabiting species also increases. See especially, Part III - Competition in a Spatial World *in* Tilman, D. and P. Kareiva, Eds. 1997. *Spatial Ecology: The Role of Space in Population Dynamics and Interspecific Interactions*. Monographs in Population Biology, Princeton University Press. 368 pp.

“The major causes of population and species extinction worldwide are habitat loss and interactions among species. ... The most robust generalization that we can make about population extinction is that small populations face a particularly high risk of extinction. ... [E]mpirical support for the extinction-proneness of small populations has been found practically wherever this issue has been examined. ... The loss of habitat reduced population size .... Larger habitat patches have larger expected population sizes than smaller patches. Therefore, other things being equal, we could expect large habitat patches to have populations with a lower risk of extinction than populations in small patches. ... More generally, the relationship between patch size and extinction risk provides a key rule of thumb for conservation: other things being equal it is better to conserve a large than a small patch of habitat or to preserve as much of a particular patch as possible. ... [T]here are likely to be many complementary reasons why large patches have populations with low risk of extinction.”

Oscar E. Gaggiotti and Ilkka Hanski. 2004. Chapter 14 - Mechanisms of Population Extinction. *In* *Ecology, Genetics, and Evolution of Metapopulations*. Elsevier. 2004.  
<http://www.eeb.cornell.edu/sdv2/Readings/Gaggiotti&Hanski.pdf>

The effects of habitat availability on competing species was explored by expert wildlife population modelers who found —

The territorial occupancy model developed by Lande (1987), extended here to include two competing species, represents a useful tool for evaluating how equilibrium breeding numbers could be affected by changes in habitat availability, demographic parameters, dispersal behavior and interspecific competition ... Its application shows that **increases in the exclusive suitable habitat of each species is the best option to maintain viable populations of territorial competitors** in a same area, given that it reduces competition for territories. Increases in habitat overlap by reducing the exclusive habitat available for one species strongly affected the outcome of competition, resulting in extinction of the species for which exclusive habitat had been eliminated.

Martina Carrete, Jose' A. Sa'nchez-Zapata, Jose' F. Calvo and Russell Lande.

Demography and habitat availability in territorial occupancy of two competing species.

OIKOS 108: 125-136, 2005

<http://www.ebd.csic.es/carnivoros/personal/carrete/martina/recursos/13.%20carrete%20et%20al%20%282005%29%20oikos%20108-125.pdf>

From these ecological foundations, one can see that the barred owl, by invading, occupying suitable habitat and excluding spotted owls, has reduced the effective size of the reserves that were established in 1994, and thereby reduces the potential population of spotted owls. Extinction risk is increased by this loss of habitat and smaller population. If we provide more suitable habitat, the population potential increases, and the risk of extinction decreases. The most rational way to respond is to protect remaining suitable habitat, expand and restore the reserve system to provide more suitable habitat to increase the likelihood that the two owl species can co-exist.<sup>1</sup>

This view is corroborated by owl biologist David Wiens who was interviewed on the Lehrer NewsHour. He said: "The more habitat you protect, the more you're going to alleviate the competitive pressure between the species. Rather than reducing it and increasing the competitive pressure between these two species, we need to provide as much habitat as possible for them." DAVID WIENS. NewsHour interview. "Biologists Struggle to Save the Spotted Owl." December 18, 2007.

[http://www.pbs.org/newshour/bb/science/july-dec07/owl\\_12-18.html](http://www.pbs.org/newshour/bb/science/july-dec07/owl_12-18.html) Robert Anthony agrees, "If you start cutting habitat for either bird, you just increase competitive pressure." Welch, Craig. 2009. The Spotted Owl's New Nemesis. Smithsonian Magazine. January 2009. <http://www.smithsonianmag.com/science-nature/The-Spotted-Owls-New-Nemesis.html?c=y&page=2> And in the same article Eric Forsman added "You could shoot barred owls until you're blue in the face," he said. "But unless you're willing to do it forever, it's just not going to work."

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<sup>1</sup> Put another way, when threatened with extinction, "the best defense is a strong offense" that is, species are more likely to persist if they have a large, well-distributed population size and if we minimize all manageable threats. Dunham, Jason. 2008. Bull trout habitat requirements and factors most at risk from climate change. [http://www.fs.fed.us/rm/boise/AWAE/projects/bull\\_trout/bt\\_Dunham.html](http://www.fs.fed.us/rm/boise/AWAE/projects/bull_trout/bt_Dunham.html)

The book "Signs of Life: How Complexity Pervades Biology" by Sole and Goodwin has an interesting discussion that immediately brings to mind the barred owl/spotted owl issue. Chapter 7 of the book describes work being done by a Japanese researcher named Kaneko who developed and explored a modeling concept called "coupled map lattices." The lesson from these models is that when habitat is abundant, competing species operate within the "coexistence regime" but when habitat becomes scarce the model switches to a new attractor and operates in the "exclusion regime." This model strongly supports the idea that retaining more habitat increases the likelihood that spotted and barred owls can coexist, and if we eliminate reserves or continue to log suitable habitat in the matrix, then barred owl may competitively exclude and extirpate the spotted owls. Similar results are demonstrated in resource competition models described by Tilman, Lehman, and Thompson. 1997. Plant diversity and ecosystem productivity: theoretical considerations. *Proceedings of the National Academy of Sciences*. 94:1857-1861.  
<http://www.cedar.creek.umn.edu/biblio/fulltext/t1694.pdf> See also, Tilman, D. and P. Kareiva, Eds. 1997. *Spatial Ecology: The Role of Space in Population Dynamics and Interspecific Interactions*. Monographs in Population Biology, Princeton University Press. 368 pp. and Valenti D., Fiasconaro A., Spagnolo B. Pattern formation and spatial correlation induced by the noise in two competing species  
[http://arxiv.org/PS\\_cache/cond-mat/pdf/0401/0401424v1.pdf](http://arxiv.org/PS_cache/cond-mat/pdf/0401/0401424v1.pdf)

It is important to think of the non-equilibrium dynamics of owl populations interacting across time and space. The two owl species are not bound to reach equilibrium like two chemical constituents in a well-mixed beaker. Incomplete mixing of species in a heterogenous environment promotes species coexistence. The effect of the spatial dimension in these models is that space acts to dampen the tendency for competitive exclusion. The more space the two owl species could potentially occupy, the less chance that the barred owl will occupy all of it at once which gives the spotted owl a fighting chance to persist in the interstices that are unoccupied by barreds. If on the other hand the shared habitat becomes smaller due to habitat loss from logging, then there is a greater chance that barred could accomplish the feat of occupying all of the habitat at once, or at least it increases the chance that spotted owls will be relegated to small patches/populations and vulnerable to stochastic variation and extirpation. See Peter Chesson 2000. *General Theory of Competitive Coexistence in Spatially-Varying Environments*. *Theoretical Population Biology* 58, 211-237 (2000).  
[http://eebweb.arizona.edu/Faculty/chesson/Peter/Reprints/2000\\_General\\_Theory.pdf](http://eebweb.arizona.edu/Faculty/chesson/Peter/Reprints/2000_General_Theory.pdf)

The implications of new information about the effects of barred owls on spotted owls was postulated several years ago by the staff of the USFWS at a presentation to the Willamette Province Advisory Committee. Jim Thrailkill discussed the following "implications" of the 5-year status review of the Northern Spotted Owl:

- "Does the new information trigger reinitiation?"
- "What are the management implications to NWFP and agency projects?"
- "Protect more habitat ... that produces benefits?"
- "Do OR and CA populations become more important ... protect them more?"
- "Re-evaluate conservation needs?"

Jim Thrailkill FWS Presentation to the Willamette PAC. December 9, 2004. An EIS is needed to determine whether the effects of further logging of mature and old-growth forests may be significant. These issues need to be considered in a new programmatic B.O as well as range-wide NEPA analysis.

### **The decision to log mature forest violates the Coastal Zone Management Act.**

Oregon's Statewide Land Use Planning Goals serve as the foundation of Oregon's Coastal Zone Management Policy under the CZMA. These statewide goals repeatedly reference the concept of "carrying capacity." Carrying capacity has taken on new significance in recent years as concerns have intensified about global climate change caused by greenhouse gases, and ocean acidification caused by CO<sub>2</sub> emissions that end up dissolved in the ocean.

The carrying capacity of our atmosphere has already been exceeded, and any further net emissions of greenhouse gases, including but not limited to CO<sub>2</sub> transferred from the forest to the atmosphere as a result of logging the Wagon Road Pilot Project and other similar projects will further exceed the carrying capacity of the earth's atmosphere and climate regulation system. In addition, much of the excess CO<sub>2</sub> in the atmosphere eventually ends up dissolved in the oceans where it forms carbonic acid thus lowering the pH to levels. Increased ocean acidity has many ill effects on the environment, for instance making it difficult for many marine organisms to maintain their protective shells. The carrying capacity of our oceans in terms of pH has clearly been exceeded, so any further net emissions of CO<sub>2</sub> to the atmosphere as a result of logging the Wagon Road Pilot project and similar projects will also result in further exceedances of ocean acidification. CO<sub>2</sub> has a very long residence time in the atmosphere before it is dissolved in the ocean, so there is a large degree of "committed acidification" that must be accounted for.

For instance --

- Goal 5 says "Plans providing for open space, scenic and historic areas and natural resources should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources." OAR 660-015-0000(5).
- Goal 6 says "With respect to the air, water and land resources of the applicable air sheds and river basins described or included in state environmental quality statutes, rules, standards and implementation plans, such discharges shall not (1) exceed the carrying capacity of such resources ..." OAR 660-015-0000(6).
- Goal 19 says "all actions by local, state, and federal agencies that are likely to affect the ocean resources and uses of Oregon's territorial sea shall be developed and conducted to conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social values and benefits ..." OAR 660-015-0010(4) [Ocean acidification will not conserve ecological functions associated with shelled-organisms.]

DLCD defines “carrying capacity” as a “Level of use which can be accommodated and continued without irreversible impairment of natural resources productivity, the ecosystem and the quality of air, land, and water resources.” There is a large body of science indicating that we are already beyond the level of CO<sub>2</sub> in our atmosphere that can be described as safe. The changes to our climate and our oceans caused by CO<sub>2</sub> already emitted may be irreversible. Global warming is caused by the cumulative build up of greenhouse gases, especially carbon, in the atmosphere. Each additional increment of carbon, such as that caused by logging the Wagon Road Pilot Project, adds to the harm caused to our climate and our oceans.

This project will result in a net emissions of about 5 thousand metric tons (megagrams (MG)) of CO<sub>2</sub>. A program of such timber sales will result in orders of magnitude more emissions.

The Copenhagen Accord recognizes the need to avoid dangerous climate change and the mitigating role of forests. “...To achieve the ultimate objective of the Convention to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, we shall, recognizing the scientific view that the increase in global temperature should be below 2 degrees Celsius... We recognize the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions”

[http://www.climatewatch.org/file-uploads/Copenhagen\\_Accord.pdf](http://www.climatewatch.org/file-uploads/Copenhagen_Accord.pdf) This likely requires reducing atmospheric CO<sub>2</sub> concentrations below 350 ppm and avoiding activities that would increase atmospheric carbon emissions. Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, III, E. Lambin, T. M. Lenton, M. Scheffer, C. Folke, H. Schellnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley. 2009. Planetary boundaries:exploring the safe operating space for humanity. *Ecology and Society* 14(2): 32. [online] URL: <http://www.ecologyandsociety.org/vol14/iss2/art32/> [http://www.stockholmresilience.org/download/18.1fe8f33123572b59ab800012568/pb\\_lo ngversion\\_170909.pdf](http://www.stockholmresilience.org/download/18.1fe8f33123572b59ab800012568/pb_lo ngversion_170909.pdf) <http://www.ecologyandsociety.org/vol14/iss2/art32/figure6.html> [accessed Dec 16, 2009].

Respected experts say that the atmosphere might be able to safely hold 350 ppm of CO<sub>2</sub>. <http://www.350.org/about/science>. So when we were at pre-industrial levels of about 280 ppm, we had a cushion of about 70 ppm which represents millions of tons of GHG emissions. Well, now that cushion is completely gone. We are already at about 390 ppm CO<sub>2</sub> and rising, so what’s the safe level of additional emissions? It’s not zero; it’s negative. There is no safe level of additional emissions that our earth systems can tolerate. We are beyond the carrying capacity. In fact, we need to be removing carbon, not adding carbon to the atmosphere. How could we do that? In the short-term, by growing forests and restoring a healthy biosphere. Regen logging activities governed by BLM will move us away from our objective while sound forest conservation practices move us toward our objective.

Sincerely,

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

Doug Heiken

**Enclosures:**

Heiken, Doug. 2009. The Case for Protecting Both Old Growth and Mature Forests, Version 1.8. Oregon Wild. <http://dl.dropbox.com/u/47741/Mature%20Forests%2C%20Heiken%2C%20v%201.8.pdf>

Heiken, D. 2010. Dead Wood Response to Thinning: Some Examples from Modeling Work. [http://dl.dropbox.com/u/47741/dead\\_wood\\_slides\\_2.pdf](http://dl.dropbox.com/u/47741/dead_wood_slides_2.pdf)