Response to Substantive Comments

The proposed action for the Collawash Thinning Timber Sale was made available for public comment, (36 CFR 215, 5/13/03). Letters and e-mails were received during the 30-day comment period, which ended on July 27, 2005.

The responsible official has considered comments received and has developed the Collawash Thinning Environmental Assessment in response to those comments.

This appendix responds to the substantive comments. Four letters were received. Substantive comments are comments that are within the scope of the proposed action, are specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons for the Responsible Official to consider (36 CFR 215.2).

The letters are in the analysis file; the following is a summary. The agency responses are in italics and highlighted. In the responses, section numbers refer to the Collawash Environmental Assessment unless otherwise specified.

ONRC submitted the following comments:

As you know, I feel that thinning plantations offers a lot of opportunities for setting stands on a new trajectory that could transform them into more complex stands, pay for noncommercial restoration, and build trust between stakeholders and agency folks that have been at loggerheads for years.

There are many parts of this EA that look good. Units 1-8 are plantation stands. You have used variable spacing guidelines you developed in Cloak. There is a broad range of alternatives that address some significant issues raised during scoping. Character trees that demonstrate the "elements of decay" as described in DecAid advisor will be selected for retention. There is an honest disclosure about the costs of thinning to soil and migratory birds.

The major concern ONRC has with the proposed action is that there it calls for logging in three natural stands and all three of these natural stands and two others call for new road construction. To this end, I urge the USFS to adopt a modified version of alternative D, which has no new road construction and does not enter natural stands. We support thinning plantation forests in Riparian Reserves if the treatments are designed to avoid impacts to water quality while encouraging the development of more complex forest structure. We agree with the summary of benefits of thinning the dry portions of riparian reserve forests as described on page 15 and encourage you to include the riparian thinning with Alternative D.

It is likely that including the upland portions of riparian reserves will improve the benefit cost ratio of this project and clear that it will significant increase in volume produced over Alternative D.

I can tell you in no uncertain terms that ONRC will appeal this project if it includes logging in natural stands in a CHU. We do not want to play the obstructionist here. WE WANT THE CLACKAMAS DISTRICT TO THIN DENSE PLANTATIONS. We cannot stress this enough. But you cannot expect us to sit idly by on a project that includes downgrading of suitable habitat in a CHU. If you force our hand, we have no choice but to appeal. If you've been following Northern Spotted Owl CHU/New Information litigation at all lately, you'll see we have a good track record on winning cases.

Below are our specific comments related to roads, natural stands and snags.

Roads.
In our comments, in meetings, and out in the field, I tried to be clear that there are more to the impacts of roads that hydrological/sediment issues. You may be right that risk to water from the temporary road construction can be mitigated and is thus relatively low. Not one of the proposed new roads I saw were truly ridgeline roads, however. Several will have cutbanks and fill. Besides, it is irrefutable that temporary roads have impacts other than increasing the risk of sedimentation events.

While we may be willing to accept some short temporary spurs, the reality is that across most tracks of federal forestland in Oregon, road densities are high and out of compliance with guidelines or recommendations designed to reduce harassment of wildlife or protection of water quality. With shrinking budgets, agency resources should be going to obliteration of existing roads to reduce the burden of long-term maintenance costs, rather than to design and facilitate the construction of new roads, no matter how long they will be in use or how well the impacts of the road construction is mitigated. *Temporary roads will not increase long-term open road density and they will not result in any expenditures of the Forest's road maintenance funds (s. 4.5.5).*

Temporary roads may act directly or indirectly on wildlife population viability and/or ecosystem process as follows:

- dispersal bottlenecks for fragmentation sensitive species.
- conduits for the dispersal of invasive species
- impediments to hydrological properties and processes, particularly changes in drainage patterns and stream morphology (e.g., higher peak flows of streams and rivers, more localized flooding events, floodplain alterations -- see Eaglin and Hubert 1993, Roth et al. 1996, Haskins and Mayhood 1997-- also on moist slopes inadequate culvert size, location, or number causes a higher and lower water table upslope and downslope, respectively (Stoeckeler 1965)
- degradation of fish habitat (well documented -- also minimizing road impacts is a major component of salmonid recovery plans in the west and the Northwest Forest Plan)
- mass wasting events and slope instability (particularly road building on steep slopes)
- soil and water pollution, air pollution, particularly a build up of nitrous oxides in soils and streams that has been associated with the spread of exotics

(Schowalter 1988, Tyser and Worley 1992), erosion, sedimentation of streams, edge effects, over collecting of rare plants and animals (e.g., cacti and reptiles), elimination of snags for firewood or road safety, and a number of indirect and cumulative effects (Bennett 1991, Noss and Cooperrider 1994).

- Even following decommissioning, temporary roads are still highly hydrologically conductive, and compared to the pre-road condition, the surface is not hydrologically recovered. Luce, C.H., 1997. Effectiveness of Road Ripping in Restoring Infiltration Capacity of Forest Roads, Restoration Ecology; 5(3):265-270. http://www.fs.fed.us/rm/boise/teams/soils/People/luce.htm

Most units can be logged from existing roads. For other areas the proposal is to build temporary roads that do not cross streams and are located on gently sloping land where the risk of sedimentation is low. The roads would be obliterated and revegetated. The EA makes no claim that obliterated roads would immediately become hydrologically recovered. The collection of cacti and reptiles is not a problem in this area. The effects of temporary roads are disclosed in the EA. (s. 4.2.3, 4.2.10, 4.2.13 & 4.6.2).

The November 2000 National Forest Roadless Area Conservation FEIS p 3-30 says that temporary roads are not designed and constructed to the same standard as classified roads and therefore result in a "higher risk of environmental impacts." The NEPA analysis must account for this increased risk of temporary roads compared to permanent roads.

The Roadless FEIS also says:

> Temporary roads present most of the same risks posed by permanent roads, although some may be of shorter duration. Many of these roads are designed to lower standards than permanent roads, are typically not maintained to the same standards, and are associated with additional ground disturbance during their removal. Also, use of temporary roads in a watershed to support timber harvest or other activities often involves construction of multiple roads over time, providing a more continuous disturbance to the watershed than a single, well-designed, maintained, and use-regulated road. While temporary roads may be used temporarily, for periods ranging up to 10 years before decommissioning, their short- and long-term effects on aquatic species and habitats can be extensive. [The FEIS has similar disclosures citing extensive impacts to terrestrial species and habitats, and rare plant populations.]

Roadless Area Conservation FEIS — Specialist Report for Terrestrial and Aquatic Habitats and Species prepared by Seona Brown and Ron Archuleta, EIS Team Biologists http://roadless.fs.fed.us/documents/feis/specrep/index.shtml. *The area where temporary road construction is proposed is not in a roadless area (s. 4.12). The site-specific analysis of the proposed temporary roads indicates that they would not result in significant effects (DN). The effects described in the nation-wide Roadless FEIS are not site specific but are generalized and speculative.*

To suggest that the impacts to fish and water will be "short-term and undetectable on a watershed scale" (PA page 24) is irrelevant. Impacts must be looked at over multiple temporal and spatial scales. While I agree that the impacts to water from temporary roads can be mitigated, these roads are not without risk to many resources. *Impacts to resources from temporary road construction are disclosed at various scales in the EA (sec. 3.6.2, 3.6.4, 3.6.7, 3.6.10, 3.6.11, 4.1.1, 4.2.3, 4.2.10, 4.2.13, 4.5.3, 4.5.4, 4.5.54.6.2, 4.6.3, 4.7.3, 4.7.4, 4.8, 4.9, 4.11 and 4.13).*

All the proposed new road construction spurs are too long for the amount of forest to which they provide access. The road into 9A is 2000 feet long and only accesses 100 acres. The road into 3 is 1000 feet long but and accesses 40 acres. The proposed short spurs have fewer impacts, but provide access to fewer acres (the new road into unit 4 provides access to only 5 acres.) *The temporary roads as well as all existing system roads, are located on the landscape where they serve the long-term transportation needs of the area.*

Natural stands.
Although I understand the desire to get as much volume out of a pipeline project, it is critical to remember that this is part of a stewardship, collaborative process. We've visited units on this project. We've had extensive discussions in meetings. There is pretty broad agreement on thinning plantation stands. There is no such agreement on natural stands. With ample opportunity in scoping notices, public meeting and field tours, USFS never mentioned that the natural stand logging would downgrade suitable habitat in CHU. *See s. 4.5.1*

While these natural stands are not being considered for stewardship contracting, their inclusion during the NEPA process greatly reduces the effectiveness of collaboration. It places partners in the collaborative process in an awkward position and conservation groups like ONRC are forced to appeal this project and others like it even though we agree with most of the project.

As you note in the PA, "it is most effective to thin stands at an early age to achieve the desired growth and health objectives." (page 21). There is a tremendous amount of science to support thinning young stands for growth and yield, as well as improving complexity and structure. Using resources to plan and implement projects in 90-year-old stands means resources are not spent treating 45-year-old stands. Funding and access problems in the past to enter these stands are lessons we should avoid now. There are other plantations on the same road system as other Collawash units that are not being treated with this project. There were plantation forests with good road access adjacent to Bonanza units that were not thinned. This represents a missed opportunity. *We do not disagree that early thinning is desirable. Natural second-growth stands will respond to thinning by maintaining the growth rates of the retained trees. If not thinned, there would be a gradual decline in growth rates. Thinning would result in healthier trees and a more diverse forest. Thinning is an appropriate treatment to achieve Forest Plan objectives. Harvest in the matrix is appropriate because it enhances health and growth while providing forest products consistent with the Northwest Forest Plan goal of*

maintaining the stability of local and regional economies now and in the future (s. 2.2, 4.3.2). The Forest Plan contains goals for these stands to maintain health and to provide wood fiber (#43 & 44, Forest Plan p. Four-55).

Inclusion of these natural stands does not match up with the way this sale has been represented. Look at the picture on the front of the PA. More than 2/3rds of the new road construction and the vast majority of the snags that could get felled do not come from stands that look like that picture. All of these impacts come from entering the natural stands. *A picture of a natural stand is in the EA section 4.3.2.*

To say that it "is not possible to meet the Forest's Proposed Sale Quantity by thinning only plantations" (PA page 22) and therefore mature stands must be entered misses the boat. The Mt. Hood tried to meet PSQ by clearcutting old growth and partial cutting mature stands. But many of these projects violated the law and were stopped. Has the Mt. Hood ever made PSQ since adopting the Northwest Forest Plan? If the USFS didn't thin these stands so lightly, more volume could be pulled out per acre and get the Mt. Hood closer to the PSQ figure. The USFS states that these thinings are so light that "another thinning would be desirable in 10 to 20 years" (PA, 34).

While it is right that there are many considerations other than age to decide whether or not a stand is suitable for thinning, the USFS has only done 1500 acres of thinning of plantation forests on the Clackamas District out of the nearly 37,000 acres of plantation forests that were cut before 1960. In cursory site visits up the Collawash River, I've seen many plantation forests for which no NEPA is being developed for thinning. The USFS has yet to make a concerted effort to get volume out of plantations. Given that these stands benefit the most at early entries, USFS should make the best use of limited resources and plan projects on which there is broad agreement.

This is your opportunity to seize the chance to produce volume and healthy forests. There has not yet been a programmatic attempt to thin plantation forests. It could start now. *Most of the 37,000 acres are not ready for a commercial thinning (s. 4.4.1). Within the Clackamas River Ranger District there is a wide range of site productivity based on soils, elevation and the environment. While plantations at the lowest elevation and on moist sites may be ready for commercial thinning at 35 to 45 years of age, there are many plantations at higher elevations and on drier sites that may not be ready for a commercial thinning until age 55 to 65. As plantations grow and become ready for thinning, stand exams are conducted and if they are found to need thinning, and are economically viable they are put into the planning program.*

Many more local and regional mills can process young trees than old ones. Continuing to look for volume out of natural stands when so much can be done in plantations will be a failed strategy due to controversy. *The natural second-growth stands would harvest small size trees that could be processed by mills that have retooled to handle small logs (s. 3.2).*

We see no way that a credible scientist or a judge would consider degradation of NRF habitat for Northern Spotted Owls within a CHU to be promoting recovery of owls. Recovery IS THE PURPOSE OF CHU. New information about the Threatened northern spotted owl indicates that there are significant new uncertainties for the owl that have not been fully considered in any NEPA document at the regional or local scale. As recognized by FWS' recent spotted owl status review, all existing suitable habitat may be critical to the survival of the spotted owl. This is especially the case for suitable habitat in designated critical habitat units. *The units that are considered nesting/roosting/foraging habitat for owls would be temporarily downgraded to dispersal but would become nesting/roosting/foraging habitat again within approximately 15 to 20 years when the crown cover reaches 60% (s. 4.5.1). In the Biological Opinion for this project dated March 30, 2005, the US Fish and Wildlife Service (USFWS) has determined that the projects are not likely to jeopardize the continued existence of the spotted owl and are not likely to destroy or adversely modify designated critical habitat for the spotted owl. The No-action Alternative would have serious long-term negative effects to spotted owls (s. 4.5.1).*

In September of 2004, FWS' contractor, Sustainable Ecosystems Institute, completed a 500+ page report on the current status of the spotted owl. The report brings to light a series of new concerns about the continued viability of the spotted owl and the agency must prepare a new NEPA analysis to review and consider all the new information about new threats contained in this report. See Courtney, Blakesley, Bigely, Cody, Dumbacher, Fleischer, Franklin, Franklin, Gutierrez, Marzuluff, Sztukowski. September 2004. Scientific evaluation of the status of the Northern Spotted Owl. Sustainable Ecosystems Institute, Portland, Oregon. http://www.sei.org/owl/finalreport/finalreport.htm The FWS completed its official status review and analysis in November 2004. This official FWS report describes relevant new information about the owl and is available here: http://pacific.fws.gov/ecoservices/endangered/recovery/pdf/NSO_5-yr_Summary.pdf

The new NEPA analysis and new consultation must be conducted within a context of all the new and continuing threats to the spotted owl, including: continuing habitat loss, competition with barred owls, West Nile virus, Sudden Oak Death, and wildfire, the risk of inappropriate logging under the Healthy Forest Initiative, and the elimination of the "survey and manage" program that formerly protected owl habitat and owl prey species such as red tree voles. In addition, northern spotted owls are now declining so rapidly in Washington and Canada that the protection of the remaining owls in Oregon may be far more important to overall survival of the species than previously considered.

The status review shows that habitat loss has been greatest in Oregon. Before "taking" any more spotted owls and before adversely modifying any more suitable habitat, the agencies must prepare a new EIS that considers all the new information and considers whether to increase protection for spotted owl strongholds in Oregon.

In view of heightened concern for the future status of the spotted owl caused by continued habit loss from logging and fires, barred owl competition, West Nile Virus, Sudden Oak Death syndrome, and global climate change, all remaining suitable habitat

should be protected. Jerry Franklin's summarized the "findings" of the Northern Spotted Owl Status Review scientific review panel as follows:

> ... in view of current uncertainties, such as the eventual outcome of the Spotted Owl/Barred Owl competition, West Nile Virus, and Sudden Oak Death, and whatever else comes along -- such as global change and other kinds of introductions -- existing suitable habitat could be important to the persistence of the Northern Spotted Owl. [repeated with emphasis] Existing suitable habitat could be important to the persistence of the Northern Spotted Owl, i.e., risk to Northern Spotted Owl may increase if additional suitable habitat is removed. It is not clear where the Spotted Owl may find the refuge or refuges from new threats within existing suitable habitat. Barred Owl intrusions do not negate the need for structurally complex forest habitat to sustain Northern Spotted Owl based on existing knowledge.

U.S. FISH & WILDLIFE SERVICE SCIENTIFIC REVIEW PANEL FOR THE NORTHERN SPOTTED OWL. . June 22, 2004 PUBLIC HEARING. WASHINGTON STATE UNIVERSITY, VANCOUVER CAMPUS. TRANSCRIPT OF PROCEEDINGS, page 121. http://www.sei.org/owl/meetings/minutes/june-meeting-transcripts.pdf

A recent presentation by the FWS to the Willamette Province Advisory Committee discussed the following "implications" of the 5-year status review:

"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. These are highly relevant management questions acknowledged by the government. An EIS and consultation are needed to determine whether the effects of further logging of mature and old-growth forests may limit options for recovery and/or render spotted owl populations non-viable.

The Collawash thin timber sale occurs in designated critical habitat (CHU OR-12), and will remove 55 acres NRF habitat within this CHU. *37 acres are in the CHU.* This raises several concerns:

1. The agency must physically protect and restore designated critical habitat to achieve "recovery" not just maintain the species in bare survival mode. This is the legal mandate of the ESA as reflected in three circuit court opinions Gifford Pinchot Task Force v. FWS (9th Circ August 6, 2004), Sierra Club v. U.S. Fish and Wildlife Service, No. 00-30117 (5th Cir. Mar. 15, 2001). N.M. Cattle Growers Ass'n v. United States Fish and Wildlife Serv., 248 F.3d 1277, 1283 & n.2 (10th Cir. 2001).

2. Meeting the recovery standard is not only an ESA issue, but also a NEPA issue. The agency is required by law to properly frame its NEPA analysis so that legal mandates are clearly apparent and the consequences of the proposed action are compared to the applicable legal standards. The NEPA document must therefore disclose primary constituent elements of critical habitat, the current condition of the affected CHU, and how this CHU may fit into recovery and conservation efforts for listed species. The NEPA analysis for this project fails to make these disclosures and inappropriately aims to avoid *jeopardy* rather than contribute to *recovery*. NEPA requires that the agency properly frame its legal duties so it can accurately disclose whether it is complying with the law. FSH 1909.15 Chapter 40, 43.21. 40 CFR 15087.27(b)(10). *NW Indian Cemetery Protective Association v. Peterson*, 795 F2d 688 (9th Circ 1986). *SAS v. Mosely*, 798 F.Supp. 1473 (W.D. Wash. May 1992). *ONRC Action v. U.S. Forest Service*, CV. 03-613-KI (October 2003). *Klamath Siskiyou Wildlands Center v. Boody* (#03-3124-CO, May 18, 2004).

In the absence of a recovery plan, the agency must retain all options for species recovery and avoid taking actions that will limit options for recovery.

The agency must follow the recent holding of the 9th Circuit.

> … the ESA was enacted not merely to forestall the extinction of species (i.e., promote a species survival), but to allow a species to recover to the point where it may be delisted. *See* 16 U.S.C. § 1532(3) (defining conservation as all methods that can be employed to "bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary"); *Sierra Club*, 245 F.3d at 438. … Clearly, then, the purpose of establishing "critical habitat" is for the government to carve out territory that is not only necessary for the species' survival but also essential for the species' recovery.

Gifford Pinchot Task Force v. FWS (9th Circ August 6, 2004). **http://tinyurl.com/dxljr**

USFS must drop all the natural stands in this project. You can count on this project being appealed if it includes units and prescriptions that downgrade NRF in CHU.
I have considered the new information that has been recently published about northern spotted owls (documented in Appendix E). The new information would not lead to a change in the effects determination and no additional analysis is needed for this project (DN).

Snags.
As we did in our comments on Cloak, we are always very concerned when we see things that suggest that snags will only be retained "where safety permits." (PA page 13). However, most of our concerns with the impact to snag resources are in the natural stands. There are no significant numbers of large, ecologically significant snags in the plantation forests. If you stay out of the natural stands and make every effort to protect

those few large diameter, remnant snags in the plantations, we take no issue with the impact of this project on snags.

But logging the natural stands without protecting all large diameter snags fails to protect a critical ecological resource protected by law and that recent science has demonstrated has more roles in forest health than existing policies take into account. Any *prospective* benefits to complexity and diversity accomplished by thinning these stands will be negated by the *certain* loss of the most important structural components of older, complex stands.

The USFS must do away with the caveat that they will protect snags except where they create a safety hazard. This is based on a false choice between snags and safety. The USFS can just buffer snags from activities that involve workers, then all ecologically important snags can be protected. Protecting snags except where safety is an issue should no longer be used as a blanket loophole to cut existing snags. It must be noted that OSHA revised the federal Logging Standard (29 CFR 1910.266) in order to clarify its intent that danger trees and snags may be avoided, rather than being felled. The revised rule allows some discretion in determining the hazard area around a danger tree, by allowing work to commence within two tree lengths of a marked danger tree, provided that the employer demonstrates that a shorter distance will not create a hazard for an employee (OSHA Logging Preamble, Section V). *The EA discusses the option of retaining snags by eliminating harvest nearby (s. 3.5.6).*

When we say ecologically important snags, we are not concerned with protecting every 4-16" diameter snag recently created by competition related mortality. Small hard snags can be easily replaced by natural causes or by a variety of snag creation methods. But any large, old snags in any decay class cannot easily be replaced and must be retained. Unthinned patches to create horizontal diversity among stands can also serve double-duty to protect snags. Skyline corridors can be adjusted as well to protect snags.

We are somewhat concerned about the accuracy of the existing snag surveys. In the past on the Clackamas District, we have asked for retention of all large diameter snags. In response, the Clackamas District tells us that it is impossible to buffer all the large snags because "…snags are continually changing. In the 2 to 3 years between planning and logging, live trees may die and become hazardous snags. Snags that are a hazard today may fall and by the time harvest occurs and no longer present a hazard." Cloak EA page 21.

Some of the non-site specific snag surveys cited in this PA are much more dated than 2-3 years. The oldest is from 1986. The latest snag surveys were done in 2002. By the time this project moves toward implementation, the surveys will be four years old. If Mt. Hood National Forest staff can use the ephemeral nature of snags to discount common-sense measures to protect them in thinning operations, the same Mt. Hood National Forest staff cannot rely on outdated data to develop snag retention measures that allow for the destruction of a critical ecological resource. *Snags are ephemeral. Some trees die each year and some old snags fall down each year. A snag survey is a sampling*

technique intended to give information on general conditions. Many of the "legacy" snags that remain in these units are short and do not pose a hazard. They would be retained (s. 3.5.6).

We recognize that the Forest Service has included DecAID analysis in the PA. For management of green forests, this tool can be used to supplement the standards in the Northwest Forest Plan and RMPs for a more inclusive look at how legacy habitat is functioning in stands. USFS has used the DecAID tool in this manner in the PA.

While you have used the DecAID tool as a supplemental standard to the Northwest Forest Plan and RMP standards, you failed to recognize that the authors of DecAID are in fact very critical of basis of these other standards. USFS is required to use the best available science when disclosing the effects of implementing a project to the public. NEPA requires that the federal agencies rely upon "high quality" information and "accurate scientific analysis." 40 C.F.R. § 1500.1(b). The scientific information upon which an agency relies must be of "high quality because accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998) (internal quotations omitted).

Much of the current science is very critical of the use of biological potential model to calculate the bare minimum snags retention. USFS must justify the continued use of this outdated tool that allows for felling of snags for operational concerns. Of particular interest in the DecAID report is the section entitled "Lessons learned over the last 15 years." Note the authors call managing snags by biological potential "flawed". Note that the authors, including a member of FEMAT and other highly respected members of the community of Pacific Northwest forest researchers frequently call out the 1979 Thomas study, which is the basis of the Northwest Forest Plan and RMP snag retention standards, as outdated and inadequate. The authors of this very important paper state that:

> Since the publication of Thomas et al. and Brown, new research has indicated that more snags and large down wood are needed to provide for the needs of fish, wildlife, and other ecosystem functions than was previously recommended by forest management guidelines in Washington and Oregon. For example, the density of cavity trees selected and used by cavity-nesters is higher than provided for in current management guidelines.

> Research results have expanded the number and variety of decaying wood categories over what was previously presented in Thomas and Brown…

> Both snag- and down wood-associated wildlife more or less equally participate in dispersal of seeds and fruits (although the particular species they disperse may differ); however, snag- associated wildlife play a greater role in dispersal of invertebrates and plants, and down wood-associated wildlife play a greater role in dispersal of fungi and lichens. Down wood-associated species might contribute more to improving soil structure and aeration through digging, and to fragmenting

> wood. This is one example of the far greater differentiating power afforded by a well-constructed set of matrixes than was previously available in Thomas and Brown…

Other important research that USFS must use to develop projects is PNW Research Station, "Dead and Dying Trees: Essential for Life in the Forest," Science Findings, Nov. 1999 (http://www.fs.fed.us/pnw/sciencef/scifi20.pdf) ("Management implications: Current direction for providing wildlife habitat on public forest lands does not reflect findings from research since 1979; more snags and dead wood structures are required for foraging, denning, nesting, and roosting than previously thought.") See also: Jennifer M. Weikel and John P. Hayes, HABITAT USE BY SNAG-ASSOCIATED SPECIES: A BIBLIOGRAPHY FOR SPECIES OCCURRING IN OREGON AND WASHINGTON, Research Contribution 33 April 2001, http://www.fsl.orst.edu/cfer/snags/bibliography.pdf.

Recent research covering the Oregon Coast Range (but likely applicable to all conifer forests in Western Oregon) shows, "The majority of the landscape historically contained 500-700 Mg/ha of live wood and 50-200 Mg/ha of dead wood. The current dead wood condition is outside HRV. Stands with very low dead wood are currently dominant but rarely occurred historically." Nonaka, Etsuko, Spies, Thomas, Wimberly, Michael, Ohmann, Janet. 2004. ***Historical range of variability in biomass dynamics and stand disturbance history: A simulation approach***. http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=35104

Obviously, DecAid is best applied at larger scales, as you always point out in your NEPA documents. However, there are no efforts of which I am aware or that you discuss in the PA about a process that would apply DecAid to forest planning on a large scale. USFS cannot fulfill its obligation to following the best available science by passing the buck on protecting snags to a process that doesn't exist.

It is a very positive sign that this PA includes some of the DecAid science, a discussion of tolerance levels, and guidelines that include retention of trees with elements of woody decay. However, logging the natural stands will result in a loss of very important ecological resources that are scarce in the project area, as evidenced by the fact that you have to apply for an exception to the MHFP because the plantation forests are not capable of meeting even the low, scientifically discredited snag retention targets in the LRMP.

Two methodologies are used to describe effects to snags: DecAid and biological potential. Biological potential is the measure used in Forest Plan standards and guidelines. The analysis shows that on the landscape scale, snags are not scarce (s. 4.5.4).

BARK submitted the following comments:

Introduction

We are writing to express our concerns with the Collawash project as outlined in the Preliminary Assessment (PA). The Collawash / Hot Springs Watershed Analysis (CHSWA) describes this watershed as "the most unstable within the Mt. Hood National Forest." Most of the Collawash thinning units are in areas designated as B-8 Earthflow areas, with some B-6 Special Emphasis Watersheds, B-2 Scenic Viewsheds, and others (a small amount of C timber emphasis designation) as well. A GIS layers available from the Mt. Hood Data distribution center also lists most of the harvest acreage as ranging from High Risk to Moderate to High Risk of landslides (Collawash Mass Wasting Risk Map). Soil analyses list soils within the harvest area as being highly erosive and unstable.

In addition to being the most unstable watershed on Mt. Hood National Forest, Collawash overlaps is also a Tier 1 watershed, which means that it is prime anadromous fish habitat. The mitigation measures for many of the anadromous fish species discussed in appendix J2 of the Northwest Forest Plan suggest the removal of Tier 1 watersheds from the timber base. Given this, we feel that any actions taken need to be designed with restoration in mind, first and foremost, involving both clear short and long term benefits. The Northwest Forest Plan is an ecosystem management plan that requires biodiversity to be maintained and *enhanced* in these special emphasis watersheds. The Collawash project should specifically address the specific manner in which the proposed thinning will both maintain and enhance biodiversity, with examples from scientific literature relevant to unstable landscapes. *See section 3.2.4.*

There have been many lessons learned in the aftermath of the Fish Creek watershed fiasco; the lack of actual fish in Fish Creek being the prime indicator of a history of erosion, slides and mass wasting. *Fish Creek is actually one of the most productive fish bearing streams on the Forest.* Mean monthly flows for Collawash River indicate that it is much flashier, and therefore more prone to deliver sediment and degrade fish habitat, than both Fish Creek and the Upper Clackamas River (CHSWA, 3-12). Fan Creek shows clear signs of recent landslide activity and slides, slumps and debris are clearly present in half of the proposed units. Logging in Riparian Reserves under these highly unstable conditions will yield indeterminate outcomes. This is unacceptable under the Northwest Forest Plan provisions for special emphasis watersheds. The Collawash project area is currently home to an array of threatened fish species and has historically harbored a variety of other fish species, including steelhead. *Active landslide areas are not included within the harvest units. A geologist has determined that the areas proposed for thinning are suitable for timber management (s. 4.6.1).*

Instead of conducting commercial logging and road building within the Collawash watershed, which will generate highly controversial consequences, a restoration effort should be undertaken to create conditions that would increase threatened fish populations and bring back steelhead and other fish historically present in this area. Additionally, due

to the complex and possibly severe adverse effects of the Collawash project, we request that a full Environmental Impact Statement (EIS) be issued. We also ask that questions raised in this letter be thoroughly investigated in the EIS.

Purpose & Need

The scoping letter states that, "There are many second-growth stands that are experiencing a slowing of growth due to overcrowding." How do you define over-crowding? The Pacific Northwest Science Update "Restoring Complexity: 2nd Growth Forests & Habitat Diversity" states that "crowded trees are tall but skinny; little vegetation grows on the forest floor" (4). Most of the Collawash units we explored had a rich diversity of life on the forest floor. There was much Oregon grape, vine maple, and rhodendrum. In many respects, this forest does not fit into the description of an impaired plantation stand that might benefit from human intervention. The PA for Collawash maintains that "stand exams indicate that the trees are becoming too crowded and that growth and health would begin to decline if there were no thinning" (PA, page 21). This affirmation is in opposition to our observations, the CHSWA and subsequent sections of the PA. The CHSWA's executive summary insists that the Forest Service should "focus restoration silvicultural projects in Riparian Reserve *early* seral stages" (CHSWA, 1-4). Forests at mid seral stages are not fit for thinning for two reasons. First, they do not respond as positively to thinning as early seral forests because "as stands mature they reach an age at which thinning may not result in the same growth response that would be expected in younger stands" (PA, page 36). Second, their ability to function as dispersal corridors for late seral species is highly ambiguous (CHSWA, 3-31). If mid seral stands can fulfill functions similar to late seral stands, thinning would generate much more ecological trauma than enhancement. The plantations designated for this project are mid seral stands and have already reaped the benefits from thinning at an early age. Thinning projects in these stands should be immediately aborted and instead directed toward early seral growth. *A silvicultural diagnosis has confirmed that the stands are in need of thinning. Recent studies have indicated that stands like these that are not thinned can have low structural diversity that can last for more than 100 years (s. 4.5.1).*

It is clear from the PA that the ultimate goal of this is to speed up tree growth for future harvest, irreguardless of forest health. The entirity of section 4.4.1, which "describes the likely future scenario for thinning" (PA, page 31), is devoted to highlighting the steady amplification of thinning projects in the Clackamas River Ranger District since the 1970's, and projects a more than doubling of current thinning acreage in the near future. It states that thinning at multiple stages throughout a forest's life, especially during the most economically beneficial and ecologically detrimental period of maturity, is standard. One must assume that future harvest for economic benefit will occur. As stated, the position and geology of these units make them extraordinarily inappropriate for commercial harvest, both now and in the future. This intent is not compatible with the goals of a Tier I Watershed, where protection of water quality for the sake of anadromous fish is the overriding objective. In fact, as subsequently discussed, the health of anadromous fish species is not even a secondary goal. According to the PA, the effects

determination for threatened anadromous fish species is "May Affect, Not Likely to Aversely Affect." Instead of enrichment, a possible degradation of fish habitat will occur as a result of this project. This is unacceptable in a Tier 1 Watershed. *The watershed analysis recommends thinning (p. 4-5). The project is expected to have long-term benefits to fish (s. 4.2.5).*

Northern Spotted Owl

The Collawash thinning project, as proposed, will degrade Northern spotted owl Critical Habitat, contributing to the regression, not recovery, of the Threatened Northern spotted owl. Unit 10 and a portion of Units 9A and 9 B, totaling 55 acres, are in land federally designated as Critical Habitat for the Northern spotted owl (Critical Habitat Unit OR-12). *Units 9B and 10 are in the CHU for a total of 37 acres (s. 4.5.1).* One of the FWS' consultation duties is to ensure that other federal agency actions do not result in the destruction or adverse modification of designated critical habitat. 16 U.S.C. § 1536(a)(2). In addition, Forest Service regulations require measures for preventing the destruction or adverse modification of critical habitat. 36 CFR § 219.27 (a)(8). "Critical habitat" is defined in the ESA as "[t]he specific area within the geographic area occupied by a species . . . on which are found those physical and biological features (I) essential to the conservation of the species, and (II) that may require special management considerations or protections." *Id.* § 1532(5)(A)(i). "Destruction or adverse modification" of critical habitat is defined as "direct or indirect alteration that appreciably diminishes the value of critical habitat[,] . . . includ[ing], but . . . not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." 50 C.F.R. § 402.02. "Conservation" is further defined as "to use and the use of all methods and procedures necessary to bring an endangered species to the point at which measures provided pursuant to this Act are no longer necessary." 16 U.S.C. § 1533(3).

These statutes and regulations provide strict requirements for habitat protection that will be violated under the proposed action. According to the initial Biological Opinion of the FWS: "The Biological Opinion anticipated that 68 acres of dispersal habitat would be removed by heavy thinning and 62 acres of Nesting/Roosting/Foraging (NRF) habitat would be downgraded (USDA 2005, page 121). After refinement of the proposed action and field verification, the current assessment of impact is zero acres of dispersal removed and 55 acres of NRF downgraded" (PA, page 39). What were the precise decisions that caused this change in acreage? *The Biological Assessment and the subsequent Biological Opinion were based on estimated acres and treatments. The proposed action and prescriptions that were eventually developed resulted in less effect than what was evaluated in the Biological Assessment and Opinion.* Furthermore, "All of the harvest units are dispersal habitat" (PA, page 38). *The Biological Opinion is referring to acreage that is dispersal only.*

Habitat degradation of this type is causing the Northern spotted owl to become increasingly threatened. The PA argues that this short term decrease in habitat quality is

acceptable because "the area would eventually become NRF habitat again" and "in the long term" the habitat may be more suitable for spotted owls (PA, page 39). For a species listed as threatened, this is a risky and unacceptable conservation strategy. Exactly what does this timeline look like—how long will "eventually" take? As recognized by the spotted owl status review, all existing suitable habitat could be critical to the survival of the spotted owl. Will there still be a local spotted owl population to repopulate the area in the future? Degrading NRF habitat from suitable to unsuitable habitat today will only exacerbate the trend in reduction of suitable NRF habitat quality and quantity which is "resulting in reduced populations of spotted owls" (PA, page 41). Currently, only 49% of the Collawash watershed is suitable NRF habitat, compared to the historic level of 75 % of the watershed (PA, page 41). The PA claims, however, that "there would be no discernable cumulative effect" on spotted owls because although the quality of critical spotted owl habitat will be diminished, no overall change in habitat quantity would occur (PA, page 39). This is simply untrue: a quantity of 55 acres of suitable NRF habitat, which is also defined as Critical Habitat, will be made unsuitable (PA, page 41). *At the landscape or CHU scale the temporary downgrading of this habitat would not result in significant cumulative effects. The area would be NRF again in 15 to 20 years (s. 4.5.1). (DN#2)*

The CHSWA acknowledges the likely decline of spotted owl populations, targeting timber harvest such as the proposed action as one of the main contributors to spotted owl regression. The Analysis insists that spotted owl population declines are directly dependent on location of harvest units and that "a slow decline would pose less risk to the population and would be best achieved by concentrating harvest outside known owl activity centers" (CHSWA, 3-36). *None of the proposed thinning units are near historic owl activity centers.* Because the timber harvest units proposed in the proposed alternative encompass spotted owl Critical Habitat, NRF habitat and dispersal habitat, the recommended alternative may accelerate spotted owl decline. No thinning project claiming to use ecological restoration as a motivation can jeopardize local populations of a threatened species. The Proposed Action fails to adhere to conservation stipulations enacted for the protection of the northern spotted owl and therefore should be withdrawn. *No stipulations are specified here. The project follows the mandatory terms and conditions from the Biological Opinion. The US Fish and Wildlife Service confirmed that the project would not likely adversely affect spotted owls (s. 4.5.1).*

Barred owl territorial expansion as a result of harvesting may further displace spotted owl populations. Reduction in habitat quality post-harvesting could cause an increase in both inter- and intra-species competition. In the case of the threatened Northern spotted owl and its common competitor, the barred owl, this competitive escalation could very easily result in spotted owl displacement and loss of habitat. If this scenario unfolded, the PA would support Alternative B under the erroneous affirmation that "No loss of dispersal habitat would occur" (PA, page 39). Spotted owl critical habitat will, with certainty, experience an even greater reduction in quality as a result of the project, and possibly experience reduction in quantity.

Furthermore, this project very poorly adheres to BMPs concerning spotted owl

protection. *BMPs (Best Management Practices do not concern spotted owls but relate to water quality protection measures (s. 4.2.12).* During the critical nesting period for spotted owls, noise generating activities are allegedly prohibited. However, road use by inescapably loud trucks, log hauling and hazard tree removal are condoned. These activities not only sufficiently pollute the area through their noise production, but also disturb nesting, roosting and foraging activities in other ways. *Given that road use is continual, it is presumed that owls that live near roads are accustomed to this noise and road use would not reduce nesting success.* On top of this, the already minimal noise restriction may be waived if no nesting activity is detected. How can we be assured that the survey protocol employed to determine nesting activity will be thorough, especially given the decreasing levels of staffing in the district? Even minor negligence can result in an inaccurate determination, which may prove critical to the species. *At this time we have no intention to survey to grant a waiver to this seasonal restriction. If surveys are done, they will be completed to protocol, and administered by a wildlife biologist.*

If "in the context of the local and watershed scale, the project would adversely affect the spotted owl and its habitat" (PA, page 40), how does the project contribute to spotted owl recovery? As required by law, the FWS must physically protect and restore designated critical habitat to achieve "recovery" not just maintain the species in bare survival mode. This is the legal mandate of the ESA as reflected in three circuit court opinions Gifford Pinchot Task Force v. FWS (9th Circ August 6, 2004), Sierra Club v. U.S. Fish and Wildlife Service, No. 00-30117 (5th Cir. Mar. 15, 2001). N.M. Cattle Growers Ass'n v. United States Fish and Wildlife Serv., 248 F.3d 1277, 1283 & n.2 (10th Cir. 2001). The agency must follow the recent holding of the 9th Circuit: "… the ESA was enacted not merely to forestall the extinction of species (i.e., promote a species survival), but to allow a species to recover to the point where it may be delisted. See 16 U.S.C. § 1532(3) (defining conservation as all methods that can be employed to "bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary"); Sierra Club, 245 F.3d at 438. In order to ensure that any action taken will lead to the *recovery* of the Northern spotted owl, we request a thorough research and report addressing the Northern spotted owl habitat in the EIS. *The project is expected to have long-term benefits to spotted owls (s. 4.5.1).*

Steep Slopes & High Risk of Landslides

According to the Background Sediment Regime Map of the CHSWA (2-16), units 1-4 of the project are in or adjacent to areas of the Collawash Riverbank categorized as "Ancient landslide (active and dormant), Streambanks, Unstable Drainageways, Rapid Stream Downcutting, Debris Slides and Flows in Major Drainageways, Soil Creep, Slope Undercutting" (2-16). On the map, the thickness of the line indicating this condition denotes its relative sediment production rate. This area of the Collawash Riverbank occupied by units 1-4 consists of one of the thickest lines on the map. Consequently, units 1-4 produce among the highest rates of sediment in the entire Collawash / Hot Springs Watershed area, already one of the most unstable watersheds of the National Forest. Also, there are active landslides near units 9, 9A & B, and 10 that, according to the PA, are associated with previous logging activity. If these sites are harvested, there is

a high probability for increased landslides in the future. Any sediment produced as a result of timber harvesting flows directly into the Collawash River from perennial and intermittent streams. Dutch Creek, for example, which is at the base of the units 9 and 10 drains directly into the Collawash River. Additionally, most of the units fall under an "Ancient Landslide (Dormant)" categorization in the Landform Type Map (CHSWA, 2-20), which has a medium to high relative hazard rating. The relative hazard rating is based on (1) susceptibility of landform type to mass-wasting events and (2) likelihood of sediment from that event reaching a defined channel. This indicates that not only is the sediment production rate abnormally high in the units, but also, there is a high probability that nearby streams will be impacted by this sediment production. The information provided in the CHWA, therefore, directly contradicts the PA's speculation that threatened fish species and overall water quality will not be adversely influenced by the project. *The watershed analysis does not contradict the analysis in the EA. Units 1 – 4 are approximately 1000 feet from the Collawash Riverbank. The EA discloses the sediment and landslide risks. The design criteria would result in little or no sediment reaching streams and areas that may be prone to landslide are outside of units (s. 4.2.3 & s. 4.6.2).*

The Flows Map (CHSWA, 3-41) indicates that units 1-4 are in a "Mass Wasting / Sediment Area" flowing directly into the Collawash River, while units 9 and 10 occupy the same type of area, instead flowing into Fan Creek, which then flows into the Collawash River. While mass wasting and sediment production is a problem under normal conditions, the CHSWA admits to the escalation of this hazard as a result of forest management activities such as Alternative B. "Management activities on these landforms [those with an inherent risk of mass wasting, including the majority of Collawash thinning units]," the CHSWA states, "increase the relative hazard for inducing landslides and mass wasting occurrence" (CHSWA, 2-21). The CHSWA further recommends that roads built on unstable topography be removed in order to "maintain or restore natural flows" (CHWA, 1-7). Yet this project proposes to reopen 0.7 miles and construct 0.8 miles of roads. What will be done to prevent landslides as a consequence of this project, more specifically in relation to the proposed road building? *The earthflow analysis shows that they have recovered from past harvest. Units 9 and 10 are not on earthflow topography. None of the new road construction is in earthflow areas. Areas prone to landslide are not within the unit boundaries or in areas proposed for temporary road construction(s. 4.6.3).*

Steep Units of Concern:
Unit 423 (3)
Unit 5 (420)
Unit 6
Unit 7 (487) Sign of landslide along northern border
Unit 9B (428) B East side is very steep.
Unit 10 (429)

In order to justify logging on highly erosive and unstable terrain, the PA claims to follow Best Management Practices (BMPs). However, the soil types of the logging area

preclude the project's ability to follow certain BMPs. One such BMP incorporates the stipulation that, "during unit and road placement, certain areas were avoided such as sensitive soil types and landforms" (PA, page 33). The PA aims to abide by this BMP through road construction "only where conditions would prevent sediment delivery to streams" (PA, page 16). However, the soils of the proposed units are the most sensitive in the entire watershed area. All of the units' soils falls under one of the following two categories: 'Moderate Deep' to 'Deep' soil, categorized as "very erosive soil types…are usually unstable, associated with large ancients landslides both dormant and active;" or 'Stream Adjacent Soils,' categorized as "very erosive, unstable, lack topsoil and organic horizons…they are always associated with perennial streams and major drainage ways, they are constantly subject to erosional forces despite heavy to modest forest cover" (CHSWA, 2-12). This limitation on road construction does not fulfill BMPs because it completely ignores the fact that the majority of units are wholly located in extremely sensitive soil areas. Unit placement *did not* avoid sensitive soil types as advised by BMPs, and because of this, selective road placement prevents sediment delivery only relative to other highly unstable areas. Is this acceptable in a special emphasis watershed? The PA claims: "Adverse impacts eliminated or substantially reduced by use of BMPs" (PA, page 18). However, as indicated through this example, BMPs are only partially followed, and therefore the adverse impacts *are not* avoided. *The quote from the EA, "During unit and road placement, certain areas were avoided such as sensitive soil types and landforms," is a true statement. Certain areas were avoided. The statement does not claim that all areas with erosive soils were avoided. Sedimentation in areas with erosive soils is prevented by retaining no-harvest streamside buffers, retaining tree canopy, seasonal restrictions, reusing existing skid trails, and applying grass seed and mulch on bare soils. (s. 4.2.4 & s. 4.6.2).*

Because of the highly unstable nature of the proposed units, clearly and consistently indicated by the CHWA, the project's objective to "manage for conditions contributing to watersheds ability to produce long term high quality water" will not be met. Increased sediment delivery to streams will worsen water quality, irregardless of the alleged forest stand condition improvements. *The assessment of water quality is found in section 4.2.3. The areas proposed for harvest have been found to be suitable for timber management. The watershed analysis recommends thinning even in earthflow areas (CHWA [p. 4-8 & 4-10).*

Roads

The Collawash River is especially prone to sediment production and delivery due to its "flashy" nature; this characteristic is a direct result of the dense road network in the Collawash watershed, and further road building will only exacerbate the problem. As indicated by the Mean Monthly Flow Chart (CHSWA, 3-12), the Collawash River is much flashier than the Upper Clackamas River and Fish Creek, which are highly comparable in other regards. The Mean Daily Stream Discharge Chart (CHSWA, 3-13) indicates a significantly higher winter discharge for Collawash River than for the Clackamas River. Because of this increased winter discharge, summer flow is kept at a minimum. This is critical to "sustaining habitat for riparian flora and fauna, maintaining

cover, forage and travel corridors for other terrestrial wildlife, and providing water for human uses…affecting not only the amount of water available for these beneficial uses, but also the quality of water" (CHSWA, 3-15). Collawash's tendency for flash flooding, elevated sediment production and summer low flows are a direct result of the already extensive road system veining the watershed. The CHSWA claims, "Currently, there is a greater amount of sediment production and delivery sites than what existed under the reference sediment regime. Many upland forested sites that were not sediment sources in the past are now sites of chronic production; most can be directly attributed to roads" (PA, page 3-8). Collawash watershed is a particularly poor area for road construction, especially considering it has the highest road density of the entire National Forest (CHSWA, 3-14). *Not all landscapes within the Collawash watershed have the same risk. The proposed roads would be located on stable areas outside of riparian reserves (s. 4.2.3).*

The Collawash watershed hosts 3.5 miles of roads per square mile; the Fan Creek subwatershed hosts an astounding 6.2 miles of roads per square mile. The impact of the existing roads should be the primary objective addressed in a revised environmental assessment. Considering that there are 6.2 miles of roads per square mile within the Fan Creek subwatershed alone, there should be no additional roads in the Fan Creek subwatershed – temporary or otherwise. Evidence shows that there is no such thing as a "temporary" road in terms of hydrological impacts. *The 6.2 figure was present at the time of the Watershed Analysis (page 3-10) but since then several roads have been decommissioned. The current road density in Fan Creek is approximately 5.25 miles per square mile. The remaining roads are needed to manage the landscape including access to a power line corridor. None of the proposed temporary roads are in the Fan Creek subwatershed (s. 4.1.1.4).* Nor is the Fan Creek subwatershed the only watershed/subwatershed that would be affected by these sales that currently endure excessive roading. To paraphrase the Northwest Forest Plan, if funds do not exist to decommission roads in key watersheds, no new roads may be built. Alternative B builds 0.8 miles of new road and recommissions 0.7 miles of old road, while decommissioning none. It is clear from this and other projects that decommissioned roads always have the oppurtunity of being reopened, reversing the already temporally extensive revegetation process. Not even touched upon in the PA, the impact of the existing roads should be the primary objective addressed in a revised assessment. *Since the Northwest Forest Plan created key watersheds with the standard that there should be no net increase in road mileage (page B-19) – the Forest has decommissioned 66.5 miles of roads in the Collawash key watershed and has built none (s. 4.1.1.2). The project would not "recommission" 0.7 mile of old road; the roads that would be reopened were temporarily closed with earth berms and they would be obliterated and rebermed upon completion of the project.*

Not only does the watershed have an unusually high road density, but the road placement is less than ideal. Throughout the watershed, eighty-five miles of road exist within riparian reserves. There are 665 stream crossings, and thirty-two miles of road exist on very unstable slopes and landforms (CHSWA, 3-8). In just the proposed units, two roads (4620, 6322) are labeled "Roadways on unstable or very unstable landforms, high failure

potential" according to the CHSWA. In addition, portions of 6322 are labeled as "High sediment production sites, existing source" (CHSWA 3-9). Building new roads in this area will contribute to mass wasting and sediment production, causing severe damage to riparian reserves. The CHSWA strongly advises against additional road construction, recommending instead, to "reduce the road contribution to flashy streamflows" and "defer activities which may delay hydrologic recovery in certain high risk subwatersheds" (CHSWA, 1-6). While the PA for Collawash maintains that new road construction will have a negligible effect on riparian areas, the CHSWA affirms the opposite result: "Existing management related sediment production and delivery in the watershed comes primarily from the road system; some sites are chronic producers. Pathways for sediment transport and delivery have been expanded by road related drainage" (CHSWA, 1-6). The CHWA continues, "[this causes] potential loss of aquatic habitat, with effects manifested downstream of this watershed" (page 1-6). The CHSWA's objective to "reduce human causes of erosion/sedimentation, related to timber harvest and roads" cannot be met with the addition of skid trails, roads and bare soil inevitable from Alternative B of the Collawash thinning project (CHSWA, 1-6). Even if decommissioned at the project's end, the added roads will continue to contribute negatively to riparian areas and will likely be reconstructed for future thinning projects prior to their rehabilitation, which will take decades**.** Roads are not easily obliterated due to soil compaction, and invasive species often seed first. Not only will riparian areas and the threatened fish species inhabiting them suffer from sediment deposition and low summer flow, but the reopening and building of roads will further contribute to the fragmentation of habitat, negatively impacting all varieties of wildlife. *Not all roads are on landforms with equal risk. While it is true that some existing roads cross streams and cross unstable landforms, the proposed road construction does not cross streams or unstable landforms (s. 4.2.3).*

The PA states that stream sedimentation will not occur: "The chance that measurable amounts of fine sediment would enter any stream as a direct result of logging activity is negligible. This is because the proposed roads are located on stable landforms, do not cross streams and would be decommissioned" (PA, page 19). Yet there already exist roads on unstable landforms. Two roads in the unit (4620, 6322) are labeled "Roadways on unstable or very unstable landforms, high failure potential" according to the CHSWA. In addition, portions of 6322 are labeled as "High sediment production sites, existing source" (CHSWA, 3-9). In fact, the road system 4620 is highly unstable. On the same south facing slope as new units are proposed for 10 and 9B west, there is a very large wash out in an old plantation (west of intersection bet 4620 and 6322). We feel it is irresponsible to propose logging on this same unstable terrain. 6322-170 has been washed out in one spot and at its intersection with Fan Creek the culvert has blown-out. The "road" is not a functioning road. Fixing this road will be a significant expense hardly worth the cost of extracting trees, and the road will very likely just wash out again. And at what environmental cost? Additionally, during a previous visit in April of 2002, Road 6321 was cracked and beginning to come apart soon before unit 424. Old roads entering unit 4 crumbled shortly after leaving that road into landslides. Although the 6321 appears to be repaired, the area clearly has a high potential for landslides. Not only are roads historically unlikely to be built on landforms with sufficient stability (because even the

relatively stable land in this highly unstable area is unfit for road-building), but also numerous seeps, intermittent streams and perennial streams have not been marked on the map. Road 4620-330 has three streams crossing it, one perennial and two intermittent. Thus how can we be assured that the proposed roads will not cross any streams? How can we further be promised that road decommissioning will mitigate sedimentation when road decommissioning will occur only if there exist "earthflows or … detrimental forest conditions [that] exceed Forest Plan standards" (PA, page16). In sum, the affirmation that logging activities will not contribute to stream sedimentation is supported only by three partially erroneous or highly uncertain assumptions: proposed roads (1) are located on stable landforms, (2) do not cross streams and (3) would be decommissioned. *Not all roads are on landforms with equal risk. While it is true that some existing roads cross streams and cross unstable landforms, the proposed road construction does not cross streams or unstable landforms and they would be obliterated (s. 4.2.3).*

Deer and Elk Winter Range

Disturbing deer and elk during winter months when food supplies and nutrient reserves are low may have critical results. Human and mechanical encounters elevate stress levels causing increased metabolic rates and lessen the already limited foraging areas. The Forest Service plans to deal with this by prohibiting harvest operations from December 1 – March 31 (PA, page 13). However, this prohibition is waived when snow accumulation is less than 12 inches or if elk are determined not to be present in the area. There are a number of problems with this conditional protection of deer and elk during critical winter months. First, weather conditions on Mt. Hood are such in this era of global climate change that there is great variation of snow levels. Snow will accumulate only to suddenly melt during a warm spell, which will then be followed by severe winter conditions lasting well into spring. Warm interludes during long winter months allow for a brief period of lipid buildup necessary for deer and elk survival. Under the proposed waiver, a restriction would be raised during a warm spell, allowing for the harassment of deer and elk in the vicinity and the lipid depletion that results. Fat reserves that should receive a boost during that time, will instead suffer the opposite, decreasing deer and elk viability during long winters. Second, the waiver falsely assumes that disturbance will only occur if snow levels are high. If the snow melts, the animals present will still likely use the area, and not go to another area. Lipid depletion will result both when snowfall is over and under the decided 12". This waiver is clearly designed to favor logging at the expense of deer and elk. The Forest Service seems to be selectively advocating the protection of deer and elk only when such protection strategies do not conflict with timber harvest opportunities. *This seasonal restriction with the waiver criteria has been incorporated into a memorandum of understanding with the Oregon Department of Fish and Wildlife. When snow levels are below 12 inches it is presumed that animals are free to move if they choose to be in a quieter place. There would be no noise within the crucial winter range area and no noise in the high value winter range area if the snow is deeper than 12 inches (s. 3.6).*

Value of Native Stands in Heavily Managed Area

The 55 acres of thinning units (9a, 9b and 10) that are natural second growth are of primary concern. These stands are some of the last intact forests in the area, particularly along road 4620, which is very fragmented from past management. These few intact stands need to stay undisturbed. Most of the surrounding area is in form of young plantations or recent clearcuts. *56% of the Critical Habitat Unit is mature forest (s. 4.5.1).* Not only do they contain nesting/roosting/foraging and dispersal habitat for the threatened northern spotted owl, but also provide valuable habitat for other wildlife as well. According to the PA, these acres currently "function as optimal cover for deer and elk", but after thinning would function only as thermal cover (PA, page 50). At least seven migratory bird species (Vaux's swift, brown creeper, red crossbill, pileated woodpecker, varied thrush, hermit warbler, Hammond's flycatcher, Wilson's warbler, and winter wren) using the 55 acres of late-seral stands would be forced to relocate in an already fragmented habitat (PA, page 54). Currently healthy soil in these 55 acres would be brought to unhealthy conditions (PA, page 58-59). *Post harvest detrimental soil conditions in these stands would be at approximately 9%. Appendix E page E-33, EA s. 4.6.2).* The natural second-growth stands provide good potential habitat for the pine marten and pileated woodpecker, but thinning would cause significant habitat deterioration, primarily due to the removal of snags. (PA, page 52) *The effects to spotted owls, deer and elk, migratory birds, pine marten and pileated woodpecker are addressed in the EA and found to be non significant (DN).*

Snags provide essential habitat for wildlife, and the natural second-growth stands are abundant with them. The PA states that "unmanaged stands similar to the Collawash natural second-growth units have approximately 5 medium snags per acre and approximately 2.9 large snags per acre." However, "Managed stands similar to the Collawash plantations have approximately 0.1 medium and 0.1 large snags per acres" (PA, page 43). These numbers demonstrate the significant detrimental impact thinning has on snag habitat. *The snag numbers in plantations have nothing to do with thinning, they are a result of past management that involved clearcutting and felling all snags. Recent thinning in natural second-growth stands has resulted in many snags being retained (Guard unit 3 for example).* According to the CHWA, a key objective is to "Restore and retain habitat for late seral associated species in Late Successional Reserves, Riparian Reserves and key connectivity areas important to flows across the landscape" (CHSWA, 1-3). These areas include Riparian Reserves that need to be managed for this objective. Steps to restore and retain this habitat include the creation and maintenance of snags and down logs. These habitat features are relatively abundant in the Collawash native second growth stands, and snag density will be significantly reduced as a result of logging. *Units 9a, 9b and 10 contain no riparian reserves.*

While we have concerns about any logging proposed in naturally regrown stands, Unit 9 A (428 A), is a particularly poor choice. This stand is a healthy, intact native forest with very large Doug firs scattered throughout the unit. These trees are well beyond the age that could benefit from any "release." *There is not intention to "release" the large legacy trees. The intent of the thinning is to release the second-growth trees that are present.*

There was a large downded woody debris on ground and several large snags present throughout unit. The planned new road appears (orange flagging?) to be punched through some large downed woody debris and right next to (or possibly including) several very large remnant trees. Such a road would adversely affect adjacent trees by compacting roots and demolishing downed woody debris which is in very short supply in the project area. *The temporary road construction would not result in the cutting of any of the large legacy trees. Large down logs would be moved to the side and left.* Downed wood is a critical feature of a healthy habitat and any remnant logs must be protected in both native and plantation stands (such as unit 8) where they are present. Logging in native stands would jeopardize this important characteristic.

Wildlife

The CHSWA characterizes the watershed as vital to a large number of species that are "declining or at moderate risk for viability" (CHSWA, 1-4). "The high density of special habitats," the analysis claims, "makes this watershed a significant resource for rare and sensitive species" (CHSWA, 1-4). On our field visit, we saw a lot of signs of wildlife. The stands were full of birds. Tracks in the snow revealed the presence of snowshoe hare, deer, elk, weasel, rodents, and bobcat. Deer scat and coyote scat were prevalent throughout the area. Pacific salamander and a newt were also sited. Clearly this is an area that is serving as habitat for a range of species.

The CHSWA suggested goal is to "limit disturbance near special habitats"(CHSWA, 1-4). How is logging on highly erosive soil types and in Riparian Reserves achieving this goal? Many wildlife species within the watershed depend directly on Riparian Reserve health for their continued viability. Logging within Riparian Reserves will disrupt wildlife populations and possibly alter forest conditions to the detriment of the population. Bat populations within the Collawash watershed depend heavily on riparian areas for their future success. According to the CHSWA, "Most bats also rely heavily on lakes, ponds, wetlands and meadows…Several of the bat species that are predicted to have a low probability of achieving a well distributed viable population are highly associated with wetlands and riparian areas for foraging" (CHSWA, 3-30). It further states that "experts consulted for the FSEIS felt that the lack of buffer protection provided to small wetlands under the interim riparian reserve boundaries could compromise viability for several bat species" (CHSWA, 3-22). The PA analyzes management effects on only one bat species, claiming for that species, "no impact." What developments have occurred since the CHSWA was written that enable logging in Riparian Reserves without impacting dependent bat species? How will other bat species be affected by management activities?

Amphibians also largely depend on the condition of Riparian Reserves. The CHSWA states that "amphibian occurrence is expected in most of these habitats" and that "dispersal between suitable habitats is likely the most significant issue facing amphibian populations" (CHSWA, 3-30). How will logging in Riparian Reserves affect amphibian dispersal habitat? According to the CHSWA, "Few surveys have been conducted and

there is little local knowledge of the distribution of aquatic amphibians relative to stream gradient, temperature, shade and sediment" (CHSWA, 3-22). What studies have been completed since the Watershed Analysis's publication that have led the Forest Service to assure "no impact" on many amphibian species?

Evidence of beaver in the form of downed trees and several nesting sites was detected adjacent to unit 1. The CHSWA claims that despite the ability of the watershed to support a relatively high density of beaver, few to no beaver are now occupying these sites. How will logging activities affect beaver habitat meters away? In addition to providing beaver with prime habitat, the pond adjacent to unit one may support waterfowl, wading bird and bat populations. How will logging activities in such close proximity to this crucial riparian habitat affect its inhabitants?

Known sensitive plant species occurring in wet areas within the watershed include: *Sisyrichium sarmentosum*, found in wet meadows; and *Ophioglossum vulgatum*, which is found on the edges of ponds and wet meadows. There are several other plant species of concern that have potential to be found in wetland and riparian areas within the watershed. The CHSWA admits that information on survey and manage species within this watershed is "lacking," but "the watershed does contain potential habitat for many of them" (CHSWA, 3-30). How have you improved on survey and manage knowledge in order to accurately evaluate management effects on sensitive plant and animal species? *Riparian reserve standards and guidelines are being met and stands are being thinned to enhance and restore riparian values (s. 2.2 & 4.2.11).*

Riparian Logging

We are concerned about the large amount of Riparian Reserve logging included in this project under Alternative B. Not only is the Collawash watershed very susceptible to landslides, but the Riparian Reserves in these units are recovering quite well. All the streams we have seen were covered in healthy riparian plant species, and most units had a vibrant understory – including western red cedar – growing up. The Collawash units appear to be a perfect example of an area that is capable of recovering on its own. This observation is supported by the CHSWA, which affirms that "along many of these affected streams [those affected by past management], deciduous vegetation has reestablished and now provides sufficient shading" (CHSWA, 3-20). The proposed logging will have a detrimental impact on the riparian areas. One obvious example is unit 6, which straddles Fan Creek. The steepness of the Western edge of the thin, the steepness of several areas directly bordering the creek make it particularly sensitive to riparian degradation and to sedimentation. *Thinning in riparian reserves would result in long-term enhancement of riparian resources. Stand exams indicate that growth and health of riparian trees can be enhanced by thinning (s. 2.2 & 4.2.5).*

The small seeps, streams, and intermittent streams that are supposedly too small or numerous to mark on the maps (PA, 21-22) should be marked for clarity, and to ensure that riparian serving critical wildlife needs are not inappropriately logged and are afforded adequate protection. There are some areas that even if not logged would be

impacted by the edge effect of nearby logging. Unit 8, for instance, had two creeks running through it that were significant enough to have culverts built for them on road 6320, but these are not marked on the map. The east side of unit 1 is also wet with cedars present and should not be logged. Unit 5 is in or adjacent to "Shrub Wetland" and "Moist or Wet Meadow," as seen in the Wet Areas Map of CHSWA (3-29). This is not acknowledged in the Preliminary Assessment. What measures are being taken to protect this area from possible adverse effects? *Wet areas and seeps would not be thinned. If they are encountered, leave trees would be marked around them and they would be protected during logging by the provisions of the timber sale contract. Many culverts are ditch cross drains and do not indicate the presence of a stream.*

The PA claims that 88 acres of riparian reserves will be enhanced under alternative B and that no acreage will be enhanced under the other alternatives. It is unacceptable to make this statement without any acknowledgement of the vast amount of controversy over this issue. While canopy coverage *may* thicken over the long run as a result of management activities, sediment production and instability in an already hazardous are highly likely to increase and this should be acknowledged in the discussion of effects. *See above responses.*

Hardwoods

There are hardwoods present in some of the units that would be threatened by the proposed logging. Any and all hardwood needs to be protected. Unit 6 in particular has mature alders lining the streams. We also noticed a transect line across one of the streams. Was this for surveys or is there an intention of placing a skyline logging corridor across the stream? We hope not. The northwestern part of the unit was very wet and soggy. The soil throughout was loose, wet, and sliding. Logging in this area would not have a restorative effect. *No logging is proposed in hardwood stands. Alder and other hardwoods scattered through the units would not be designated for cutting.*

Blowdown

What is the scientific basis for the blowdown concern outlined in the scoping letter and PA? The PA identitifies one of the project's purposes is to "enhance growth resulting in larger wind firm trees" (PA, page 4). What kind of science do you have that shows that thinning will reduce wind-damage? The impacts to the Eagle Creek Sales that were logged illustrated the link between logging and blow-down of adjacent trees, and we've seen inumerable instances of thinning projects affecting the blow-down potential of valuable habitat adjacent to the units. If trees blowdown due to short-term increased wind-damage susceptibility, they will be unable to garner the assumed long-term benefits. Moreover, natural blow down taking place is already creating variable density with natural openings that allow more light to reach some trees. *Wind damage susceptibility is related to tree spacing. A stand that is appropriately spaced at age 20 and has little wind damage risk, may be considered overstocked at age 40 and would eventually develop into a stand that has blowdown problems. Thinning trees to enhance growth and health results in stronger windfirm trees (s. 4.3).*

The PA states that as a result of precommercial thinning the plantations proposed for thinning in the project "have strong stems and root systems at this time" (PA, page 35) and the CHWA confirms that windthrow is not a problem in the area (CHSWA, page 2-10). It is not acceptable to manage for blowdown resistance in already substantially resistant stands at the expense of water quality, snag and down log density and Northern spotted owl and other threatened or sensitive wildlife habitat. On top of all this, how can we be assured that the smallest trees will be removed and the larger wind firm trees will be left? *(section 3.2)*

Soil

Soil is not a renewable resource. All road building and logging, especially adjacent to riparian areas increases erosion. Sedimentation of streams is a concern for all watersheds but of particular concern within a Tier 1 Watershed. Soil compaction caused by road building (in this case there is no difference between temporary and open roads since the soil compaction is the same) and soil compaction due to heavy machinery such as tractors significantly reduce an area's growth and re-growth (See Barstool EA). We are particularly concerned about the impacts to soil in the Collawash sale.

The project area contains two types of soils that are labeled as sensitive. The first is "Moderately Deep to Deep Soils," which are defined as "Very erosive soil types…are usually unstable, associated with large ancient landslides both dormant and active (earthflows)." The second is "Stream Adjacent Soils," which are "often very erosive, unstable...they are constantly subject to erosional forces" (CHSWA, 2-13). What measures will be taken to prevent soil erosion, landslides, and sedimentation given the sensitive nature of the soils in the project area? *See response above under Roads and Steep Slopes & High Risk of Landslides.*

According to the PA's soil analysis (page 57), in all but one of the units, detrimental soil conditions will worsen after the implementation of Alternative B. This is unacceptable for soil that is already highly erosive and unstable (see Steep Slopes and High Risk of Landslide section). The CHSWA indicates that two thirds of the watershed's soil is sensitive and "particularly susceptible to detrimental impacts from management activities" (CHSWA, 2-14). The placement of project units for Collawash thinning was ill-conceived and should be reevaluated in light of the CHSWA recommendation for the termination of management activities on highly sensitive soils. *The watershed analysis did not recommend that. It recommended thinning with appropriate precautions on sensitive soils.*

Invasive Weeds

Invasive weeds are an increasing problem throughout the previously logged areas of the Clackamas River Ranger District. Of particular concern are the large concentrations of Scot's Broom (*Cytisus scoparius*) found on many of the existing logging roads. A casual

examination of the area around the Collawash thinning units provides ample examples of this increasing problem (Scot's broom and exotic blackberry were present on road 6321); fields of Scot's Broom result from their seeds having been transported deep within the subwatershed on logging trucks. *It is not known how the weeds arrived in the watershed but it is likely that seeds came in on uncleaned equipment or in erosion seed or mulch that was not certified free of weeds.* The problems posed by the introduction of non-native invasive weeds are well documented, which is why a comprehensive plan to address noxious weeds is being prepared for Mt. Hood National Forest. How is it possible that this project will not further spread noxious weeds throughout the planning area? *Weeds are addressed in sections 3.6 & 4.9. Equipment would be cleaned before moving to another area.*

Threatened Anadromous Fish

The Collawash watershed is a Tier 1 Watershed, indicating it is prime anadromous fish habitat. Many threatened anadromous species depend on the quality of this watershed for survival. Increases in sediment production over recent years have likely already lowered fish productivity, and contributed to the decline of fish species at risk (CHSWA, 3-27). Additionally, "turbidity levels in the Collawash River are consistently higher and persist longer when compared to any other streams in the Clackamas subbasin" (CHSWA, 3-19). This means that any sediment produced during management activities will adversely impact fish habitat longer in this area than it would in otherwise comparable areas. "The watershed is designated Tier I, Key Watershed under the Northwest Forest Plan because it contains crucial refugia for at-risk fish species" (PA, page 23), including Lower Columbia River steelhead, Upper Willamette River chinook salmon and Lower Columbia River coho salmon that are as little as 0.14 mile downstream from the project. Increase in sediment production over recent years has likely already lowered fish productivity, according to the CHSWA (CHSWA, 3-27). Your impact analysis for threatened fish does not comply with this reality. Please explain the discrepancy. *Project design and best management practices combine to protect fish habitat (s. 4.2).*

Winter Steelhead represent "the strongest stock of wild anadromous fish in the watershed" (CHSWA, 3-24). Surveys show that 50% of the run present in the subbasin above Two Rivers used the Collawash watershed as a spawning area. This species is considered a "stock at risk" and any alteration of their habitat (which reaches as close as 0.14 mile downstream of unit tributaries) will greatly impact the viability of the species (CHSWA, 3-24). Late Run Coho, also a "stock at risk," are found in the watershed. In fact, this population is "probably the last wild population of coho found in the entire Columbia River Basin. Late Run Coho is on the Region 6 Sensitive Species List and "one of the three classes of this stock is very weak and has a high potential for extinction" (CHSWA, 3-24). The effects determination for this species and the other above listed threatened species are "May Affect, Not Likely to Aversely Affect." The PA admits that "thinning within riparian reserves is a ground disturbing activity that has the potential to cause a temporary reduction in water quality by allowing sediment to enter the stream channel from surface erosion or run off" (PA, page 25). This information

combined with the fact that turbidity levels in Collawash are higher and persist longer than those of surrounding streams complicates the effects determination. If management activities "may affect" threatened fish populations, what will be the possible effects? Are there no possible adverse effects to anadromous fish populations, as the effect determination leads us to believe, or could there be negative effects as the CHSWA suggests? *See the paragraph in the EA after the sentence quoted (s. 4.2.3).*

During the process of logging, before revegetation, what preventative measures will be taken to ensure that sediment does not infiltrate the streams? Also, will the use of grass seed (and mulch in steeper areas) be sufficient to prevent erosion and subsequent stream sedimentation? At what density will the native plants be placed in order to prevent erosion/sedimentation? Furthermore, the Preliminary Assessment states that fertilizer will be placed on "bare soils" in order to accelerate plant growth and thereby reduce erosion (PA, page 14). This logic is ridiculous. Placing fertilizer on specifically "severely erosive soils" (PA, page 58) will lead not to erosion prevention, but to the quick and easy transportation of the fertilizer to nearby streams, causing unpredictable damage. Nowhere does the Preliminary Assessment account for this likelihood. *Fertilizer would be utilized by plants (s. 3.6.7). Riparian no-harvest buffers would prevent runoff from entering streams (s. 3.6.8).*

Snags and Down Logs

The CHSWA acknowledges a "low to moderate" level of snags and down logs present in mid and early seral stands (CHSWA, 3-31). Logging activities in the proposed unit will necessarily decrease snag and down log densities. Employing BMPs, the Preliminary Assessment aims at the retention of snags "where safety permits" (PA, page13). *BMPs are practices that protect water quality and have no connection with snags.* In most logging activity, safety does not permit the retention of snags, unless the snags are buffered through intentional marking of save trees surrounding them. *There are many examples of similar stands where existing snags have been retained because they were not hazardous. Visit Guard unit 3*. Instead, live trees must be altered to promote their decay and eventual snag status. *This practice is not part of the Collawash EA.* Whether this method of snag creation actually works is still under scrutiny. The stipulation of snag retention only where safety permits is unacceptable, considering the already low levels of snag density.

Logging activities will also disrupt the vital decomposition processes occurring in down logs. The PA's plan to approve skid trail and skyline locations in areas that would avoid disturbing key concentrations of down logs is commendable, but how realistic? Further, the creation of new wood debris cannot replace large decaying downed logs because the wood debris generated will not have the volume or decomposition process to support the wildlife that depends upon large decaying down wood. *Large decaying down wood will be left.*

Management activities in these units will reduce already dwindling numbers of snags and down logs. The PA states that "unmanaged stands similar to the Collawash natural

second-growth units have approximately 5 medium snags per acre and approximately 2.9 large snags per acre" (PA, page 43). However, "Managed stands similar to the Collawash plantations have approximately 0.1 medium and 0.1 large snags per acres" (PA, page 43). These numbers demonstrate the significant detrimental impact thinning has on snag habitat. *The snag numbers in plantations have nothing to do with thinning, they are a result of past management that involved clearcutting and felling all snags. Recent thinning in natural second-growth stands has resulted in many snags being retained (Guard unit 3 for example).* According to the CHSWA, "Many species in the Pacific /Northwest evolved to use the large snags and logs that were historically abundant in the landscape. As referred to earlier, twenty-seven neotropical migratory bird species occurring within the watershed have significantly declined over the last two decades, based on Breeding Bird Survey data (Sharp, 1992). Of these 27 species, half are snag dependents and insectivorous or birds of prey feeding on forest birds." (CHSWA, 3-3) Average snag density in unmanaged stands ranges from 1-7 snags per acre; it ranges from nearly 0-1.75 snags per acre in managed stands (CHSWA, 3-3). Management processes clearly have a severe impact on snag density, despite attempted preventative measures. According to the PA, "pine marten and pileated woodpecker habitat has declined over time" (PA, page 53). Both these species depend on snags for survival and any management-inflicted degradation of an already declining habitat is unacceptable. Also, amphibians require a great deal of connectivity in the form of large down logs in varying decay classes (CHSWA, 3-31). Management activities would destroy this connectivity. *The effects to snag dependent species are documented in the EA (s. 4.5.4) and have been found to be not significant (DN).*

Forest Health Alternative & Restoration Opportunities

Many of the forests we visited were on their way toward healing themselves from past management activities. Many have very diverse, healthy understory. Many were not overly dense. Unit 8 had areas where trees were ten feet apart. Blow down is also happening naturally in many units. *The down trees are actually a result of root disease: they would fall with or without wind.* (See unit 1 (421), which is enabling them to thin themselves. Unit 5 (420) has places where spacing is 15 feet between trees. *This spacing is too close to allow trees to continue healthy growth. When trees are 10 feet apart the stands have approximately 400 trees per acre. When trees are 15 feet apart the stands have approximately 200 trees per acre. These densities, in stands of this age, indicate that these stands are overstocked and many trees have growth rates that are declining. Old growth stands generally have between 30 and 70 trees per acre.*

We would like you to reevaluate your plan for the Collawash sale and create instead a restoration alternative. This could involve some thinning any unnaturally dense stands, leaving the trunks for down woody debris, and chipping the limbs for soil fertilization. In a native forest, when a tree falls to the ground it acts as a physical barrier to the movement of soil down a slope. Over a short period of time the collected soil on the uphill side of a fallen tree sports a variety of young developing plants that further capture soil being transported down a hill. Some of the steeper units could benefit from thinning

with trees left in place on the ground to act to mitigate the soil losses and provide thermal cover. *This alternative was considered (s. 3.5.3).*

There are also many nearby areas that could benefit from pre-commercial thinning, for example, the area north of 9B West/10 and the area east of 9B. The part of Unit 2 (422) on the west side of the road is very young (15-30 yr old) Douglas-fir and Western hemlock with lots of rhododendrons, and is somewhat impenetrable. This area in particular, given the age class of the stand and the fact that it is so steep, is more suited for pre-commercial thinning than a commercial thin. *Precommercial thinning is considered in plantations that are young and is covered by a Categorical Exclusion. Precommercial thinning is not part of the proposed action.*

Road obliteration is desperately needed and would also be part of this alternative, as would invasive plant removal. Such a project could truly address the forest health issues, without the damage caused by an intensive commercial harvest operation. It could also serve to provide a sustainable source of employment for timber workers. *66.5 miles of roads have been decommissioned in the Collawash watershed. Many of the current roads are used to access the power lines for maintenance and to manage the forest (s. 4.1.1.4).*

The PA immediately rejects a thinning without logging alternative on the sole ground that it does not comply with the NWFP goal of maintaining the stability of local and regional economies now and in the future. First of all, when has not adhering to only one goal of the NWFP stopped the Forest Service from conducting a project? For example, the proposed Alternative B of this project will not meet the desired future condition of "well distributed" snags and down logs or hydrologically and physically balanced earthflows, but is still advocated by the Forest Service. *Snags are retained on the landscape (s. 4.5.4) and earthflows are fully recovered (s. 4.6.3).* And second, please explain how a non-commercial thinning projects that create jobs and the maintenance of truly healthy forests that provide an array of recreational opportunities do not contribute to stable economies now and in the future? *The option would not create jobs because there is no source of funding to pay for these jobs. Thinning and leaving trees on the ground would attract and boost populations of bark beetles that would reach levels sufficient to kill otherwise healthy live trees. There is no indication that commercial thinning would harm recreational opportunities.*

Hardwoods

There are hardwoods present in some of the units that would be threatened by the proposed logging. Any and all hardwood needs to be protected. Unit 6 in particular has mature alders lining the streams. We also noticed a transect line across one of the streams. Was this for surveys or is there an intention of placing a skyline logging corridor across the stream? We hope not. The northwestern part of the unit was very wet and soggy. The soil throughout was loose, wet, and sliding. Logging in this area would not result have a restorative effect.

It is well known that hardwoods (and alders in particular with their nitrogen fixing) play a vital role in forest ecosystem diversity. The USGS Biological Science Report USGS\BRD\BSR – 2002-0006 "**Managing for Biodiversity in Young Douglas-Fir Forests of Western Oregon**" (MB 2002) repeatedly highlights the role played by hardwoods and shrubs in promoting diverse and healthy forest ecosystems. Hardwoods are mentioned over 70 times in this report, each time in conjunction with the important ecosystem role they play within Douglas-fir plantations. The "Project Objectives" section contained the following quote:

> "Do the diversity and abundance of selected forest organisms appear to be related to specific stand features, such as shrubs, **hardwood trees**, remnant old trees, and snags?" (page 11, bold is from original)

Hardwoods were found to play an important role in nearly every ecosystem aspect studied in this overview; specifically, they were found to be important to maintaining healthy populations of epiphytic lichens and bryophytes, moths, and birds. Tall established shrubs were the main factor when examining macrolichens and bryophytes.

Epiphytic lichens and bryophytes play a vital role in forest nutrient cycling. As discussed (MB 2002, page 17), these epiphytes "…are important components of these ecosystems. They serve as nitrogen-fixers (e.g., Lobaria oregano), providing important inputs of plant-available nitrogen to ecosystems; as hydrological buffers, absorbing, storing, and releasing water (e.g., moss mats); as part of food webs (e.g., in the diet of arthropods, flying squirrels, deer, and elk); as nesting material for marbled murrelets, flying squirrels, and other birds and mammals; and as habitat for insects and other arthropods…Communities of lichens and bryophytes develop slowly…Because of their importance in forest ecosystems, and the association of many species with old-growth forests, epiphytic lichens and bryophytes are increasingly being considered in the practice of forest-ecosystem management (FEMAT 1993, USDA and USDI 1994)." With that in mind the results of the study were unequivocal and resulted in the following conclusion and recommendation for management:

- "Hotspots [i.e., hardwoods] supported more rare or unusual macrolichens, and a higher diversity and abundance of cyanolichens, than did other stand types."
- "Retain a legacy of hardwoods and shrubs, and favor the old shrubs on a site. Hardwoods provide important habitat for macrolichens, possibly because macrolichens grow during the wet season, when hardwood leavers are not present. In particular, many nitrogen-fixing species are hardwood-associated, for reasons that are not yet well understood." (page 28)

Similar results were found for the role hardwoods played in moth populations. As noted, "The biodiversity of moths is linked to the ecosystem through their influences on nutrient cycling, plant population dynamics, and food-web dynamics (Miller, 1993)…If the plant species is lost from the forest, then the moth and the function that it provides are lost as

well. Thus, patterns in the biodiversity (i.e., species richness and relative abundance) of moths are related to the biodiversity of host plants in the forests" (MB 2002, page 18). With their importance in mind, the study was once again unequivocal:

> "Hardwoods were responsible for most of the species richness in every stand type. In fact, 46 percent of the species collected across all stand types were associated with hardwoods." (MB, page 34)

The study had a very similar result when they examined the relation of hardwoods to forest birds:

> "Bird species richness was positively associated with hardwood components of stand structure, which indicates the important contribution of hardwoods to stand-level diversity." (MB, page 39)

It is not surprising then that a portion of the project conclusions and "proposed thinning guidelines" were focused on retention of existing hardwoods within Douglas-fir plantations:

- "Hardwoods are important for many species, whether through providing habitat substrate (e.g., for epiphytes), food sources (e.g., for moth larvae), or foraging substrate (e.g., for birds) – other habitat conditions…"
- "Favor hardwood trees across a range of size classes, including large trees that occupy midcanopy and higher positions." (MB 2002, page 41-42)

"Favor hardwood and shrubs" is at the top of the list of general thinning prescriptions for biodiversity enhancement within Douglas-fir plantations (MB 2002, p.46). Similar finding/conclusions/recommendations were documented for shrubs, especially tall shrubs (MB 2002, pages 20, 24-25, 28-32, 38- 42, etc.).

The following scientific studies report that a high density of hardwoods is key in promoting healthy populations of a diverse array of species:

Hagar and McComb, 1993. Bird Communities in Commercially Thinned and Unthinned Douglas-fir Stands of Western Oregon. COPE Report, October 1993, p. 6-9, found that the number of bird species in a stand was positively correlated with hardwoods >12" dbh, conifers >22" dbh and snags >20.5" dbh.

Science Findings, January 2004, issue 60, "Tree squirrels in the Pacific Northwest are part of a keystone complex that includes ectomycorrhizal fungi, Douglas-fir, and spotted owls…" This study had as a "Key Finding" that "the flying and Douglas' squirrels and the Townsend's chipmunk consume truffles as a major part of their diet. They also consume a variety of mushrooms, lichens, maple seeds, poplar catkins, and salal fruit, many of which are more nutritious than truffles. Thus retention of diverse hardwoods is important for biodiversity."

The Forest Ecosystem Study: Background, Rationale, Implementation, Baseline Conditions, and Silvicultural Assessment (Andrew B. Carey, David R. Thysell, and Angus W. Brodie), May 1999, PNW-GTR-457 notes that, "the coniferous overstory species and other ectomycorrhizal understory species are hypothesized to "preserve ectomycorrhizal fungi during periods of rapidly changing above ground community structure and that mycorrhizal links between hardwoods and conifers facilitate conifer establishment by providing a ready source of inoculum, nutrients, and water" (page 68).

The aforementioned scientific findings make it clear that preserving as many hardwoods as possible is key to preserving and enhancing biodiversity. The proposed action would involve the commercial harvest of hardwoods, contributing to an overall reduction of hardwood density. This is unacceptable and does not comply with the project's goal to "enhance and/or restore biological diversity" (PA, page 4). If this projects aims at the enhancement and restoration of biodiversity, all hardwoods standing must remain undisturbed. The preceding studies also indicated that shrubs play a large role in maintaining biodiversity. An understory with a high density and diversity of shrubs may contribute to the Forest Service's desired biodiversity levels.

No logging is proposed in hardwood stands. Alder and other hardwoods scattered through the units would not be designated for cutting.

The following comments are from an e-mail received from David Mildrexler:

If this project truly is a thinning, then no old growth trees should be cut. I have seen pictures of old growth in units 9b. I urge for the dropping of this unit. Many of these old trees have fire scars, and hold information regarding past disturbance events (frequency, intensity). This information is not easily recreated. These old trees also contain important genetic information and should not be removed from the site. Furthermore, they hold a history of climate change in their rings which is very useful, even on a microscale (watershed) level. Ecology has well established the importance of these older trees in stands, and as individuals. I am not trying to say that this is an old growth stand, but certainly there are old growth individuals in the area and they are important habitat for many species. I also personally believe they add a lot of character to the forest, and make all types of recreation more enjoyable, rewarding, and awe inspring. Please put a diameter limit or drop all old growth areas from this thinning. *No old trees would be cut (s. 3.2).*

My other big concern is road building. I do not understand why this project should include road building. If an area does not all ready have roads, chances are it is much better left alone than harvested from. The damage from road building is very real and long lasting. With the excessive amount of roads on our National Forest all ready, and with well over 3,000 miles of road on the Mt. Hood National Forest, I ask you to drop any new road construction, even temporary. Fishing brings in a great deal of money to Oregon's economy, and I think that it is more important for our future economic

sustainability, than timber. What I mean is that if timber harvest is destroying or degrading fisheries, it's not being done correctly. *Most units can be logged from existing roads. For other areas the proposal is to build temporary roads that do not cross streams and are located on gently sloping land where the risk of sedimentation is low. The roads would be obliterated and revegetated. The effects of temporary roads are disclosed in the EA. (s. 4.2.3, 4.2.10, 4.2.13 & 4.6.2). Project design and best management practices combine to protect fish habitat (s. 4.2).*

The following comments are from an e-mail received from members of the Clackamas River Stewardship Partners.

Collawash Potential Stewardship Units Notes

Compiled by Rick Gruen and Chandra LeGue (ONRC)

General Information: All units in the Collawash Sale Area are matrix lands with intermittent Riparian Reserve designations. Units 9A, 9B, and 10 are native stands and NOT considered for stewardship. Plantation units with half or more Riparian Reserves will be treated as if 100% Riparian Reserves. Most (all?) plantation units are designated as B-6, giving the area low priority for future management as high value production timberland.

Unit Notes:

Unit 1 - 30 acres - Recommendation to include as a Stewardship Contract unit with condition to protect (buffer) the creek area. No yarding in and through the creek.

Unit 2 - 25 acres - Recommendation to include as a Stewardship Contract. Unit has marginal timber value due to predominance of small diameter trees and provides for high potential to release trees to LSR. Establish pre-commercial service contract as part of technical proposal.

Unit 3- 57 acres – Concerns about landslide-prone soils and building of new road. Potential to include as Stewardship Contract with conditions: 1)maintain soft edge buffer to adjoining old growth units to prevent any cutting outside of unit (avoid using tailholds in old-growth, avoid potential hazard trees, etc.); 2) increase density of thinning prescription to create longer re-entry interval to 30 years; 3) minimize long road ingress; 4) treat RR area at south end of unit for single-entry.

> ***ONRC has significant reservations about including this unit as stewardship, due to the amount of new ground disturbance/road. We understand the need for this road as the best way to access the unit, but do not feel this unit meets stewardship criteria if the road is built. Ideally, we'd see this unit deferred or the acres decreased to avoid the need for road building. We sincerely hope that road-building can be minimized in future stewardship planning.***

Unit 4 - 27 acres – Concern about rebuilding of road, especially alongside swale area. This unit can provide high economic value as well as high wildlife value. Recommendation to include as a Stewardship Contract with conditions: 1)create buffer (skip gap) in swale area for connectivity to lower drainage area; 2)create road side buffer to protect side slopes; 3)reduce road ingress impact; 4)manage lower portion of unit as riparian reserve.

Unit 5 - 20 acres - Concerns about landslide-prone soils. Good potential to include as Stewardship Contract with conditions: 1)single entry riparian reserve prescription; 2) no road construction - use high lead tractor swing.

Unit 6 - 35 acres - Concerns about landslide-prone soils. Unit offers riparian enhancement project to remove defective culvert in debris flow channel and provide riparian stream bank improvement to restore upper creek function and repair severe bank scouring and undercut. Recommendation to include as Stewardship Contract with conditions: 1) single entry riparian reserve prescription; 2) establish culvert removal and bank restoration as part of technical proposal.

Unit 7 - 27 acres - Concerns about landslide-prone soils. Recommendation to include as Stewardship Contract with landslide area protection buffer.

Unit 8 - 18 acres - Recommendation to include as Stewardship Contract - dense, young stand

Some of these recommendations have been adopted and included in the EA (s. 3.6.14).