

Decision Memo

Slip Thinning

Mt. Hood National Forest Clackamas River Ranger District

The purpose of this initiative is to commercially thin young forest stands to achieve multiple objectives:

- Increase health and vigor and enhance growth that results in larger wind firm trees;
- Enhance and restore within stand biological diversity;
- Provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future.

This action is needed, because second-growth plantations are experiencing a slowing of growth due to overcrowding. If no action is taken, this overstocked condition would result in stands with reduced vigor, increased mortality, reduced diversity, and increased wind damage susceptibility. If no action is taken, these stands would not contribute to the goal of providing forest products, and in these stands, there would be a loss of future forest product productivity. The project is located in section 4, T. 6 S., R. 6 E., WM, Clackamas County, Oregon. The project is covered by the Lower Clackamas Watershed Analysis but the watershed is now called Middle Clackamas. Plantations are 50 to 55 years old and portions have previously been commercially thinned but they have since grown to the point where thinning is needed again.

Proposed Action

The proposed action is to thin and harvest wood fiber from 70 acres of plantations. Trees to be cut are generally smaller than 24 inches in diameter with an average of approximately 18 inches. Variable density thinning prescriptions would be designed to enhance or restore biological diversity. Ground based and skyline logging systems would be used.

- The project is in the B8 – Earthflow and B2 – Scenic Viewshed land allocations.
- The project is not within Riparian Reserves. The site potential tree height in this area is 210 feet.

Variability – Thinning will generally remove the smaller trees, but the objective is to introduce structural and biological diversity through variable spaced thinning. Diversity and variability will be introduced in several ways:

- Leave tree spacing will vary from 80-130 trees per acre, (or in terms of basal area, leave trees will vary from 100-140 square feet per acre, or in terms of relative densities, leave trees will vary from 25%-35%).
- Leave trees will include minor species.
- Small gaps would be created.
- Key patches of vine maple would be protected.

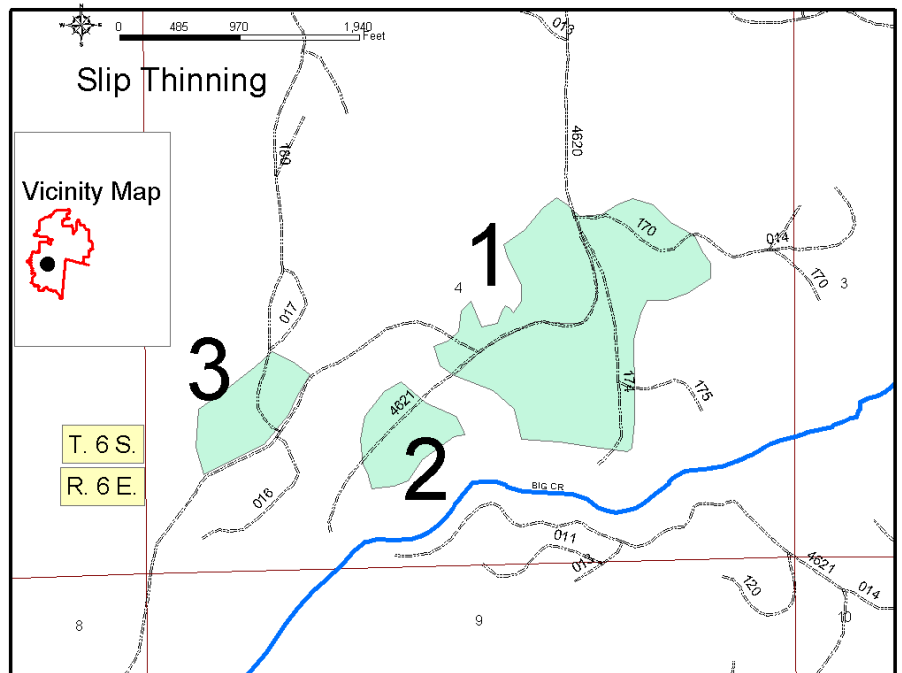
- Leave trees will include some trees with the elements of wood decay.
- Leave trees will include some live trees where their crowns touch certain key snags.
- All non-hazardous snags will be retained.
- All existing down logs will be retained and key concentrations of woody debris in the older decay classes would be protected.
- If post harvest monitoring indicates a shortage of snags or down logs, and if funding becomes available, some new snags or down logs would be created using techniques such as fungus inoculation, topping, girdling or felling.

Roads - No new roads would be constructed. Some existing closed or overgrown roads need to be reopened to access landings. Upon project completion, the roads that were opened would be closed. Existing temporary roads and landings that are reused for this project would be obliterated after project completion.

Project File – Other details of the project can be found in the project file. This includes a list of standard practices such as seasonal restrictions, snag management, erosion prevention measures, and practices to reduce the risk of spread of invasive plants. The file includes biological evaluations, a silvicultural diagnosis, a heritage resource report, letters and emails received and response to comments.

Public Scoping

A notice was sent to a list of interested groups and individuals. Comments were received offering a diversity of public opinion. Some voiced support for the project while others suggested that the project be cancelled or modified or that an EA should be written. I have considered these comments.



Reasons for Categorical Exclusion

I find the proposed action can be categorically excluded from documentation in an EA or EIS because it fits category 31.2-12, described in Forest Service Handbook 1909.15-2004-3, July 6, 2004. This category is for “harvest of live trees not to exceed 70 acres, requiring no more than 1/2 mile of temporary road construction. The proposed action may include incidental removal of trees for landings, skid trails, and road clearing. Examples include but are not limited to: commercial thinning of overstocked stands to achieve the desired stocking level to increase

health and vigor.” This proposal is to thin up to 70 acres of second-growth plantations. No new roads would be constructed.

The proposal also involves the creation of snags and down wood if a post harvest survey indicates the need and if funding is available. I find that this activity can be categorically excluded from documentation in an EA or EIS because it fits category 31.2-6, described in Forest Service Handbook 1909.15-2004-3, July 6, 2004. This category is for “Timber stand and/or wildlife habitat improvement activities which do not include the use of herbicides or do not require more than one mile of low standard road construction.” This proposal to create snags and down wood is a wildlife habitat improvement project. No herbicides would be used and no new roads would be constructed.

I find the proposed action can be categorically excluded because there were no extraordinary circumstances identified by the interdisciplinary team of resource scientists that analyzed this proposal.

- The following resources were considered: threatened, endangered or proposed species or their critical habitat or sensitive species; flood plains, wetlands or municipal watersheds; Congressionally designated areas such as wilderness, wilderness study areas or national recreation areas; inventoried roadless areas; research natural areas; American Indian religious or cultural sites; archaeological sites or historic properties or areas. I find that the degree of potential effect to these resources does not warrant further analysis or documentation in an EA or EIS.
- Biological Evaluations were prepared for sensitive, threatened or endangered wildlife, fish and botanical species.

Formal consultation with U.S. Fish & Wildlife Service concerning the **northern spotted owl** has been completed for this project. The Biological Opinion written by U.S. Fish & Wildlife Service and dated February 27, 2003 concluded that this project is not likely to jeopardize the continued existence of the northern spotted owl or result in the destruction or adverse modification of designated critical habitat. Mandatory Terms and Conditions that implement the Reasonable and Prudent Measures specified in the Biological Opinion include a seasonal restriction within ¼ mile of known activity centers and progress reporting.

- The proposal is not in nesting/roosting/foraging habitat but it is in dispersal habitat, which will be temporarily degraded by thinning. The effects determination for habitat modification would be Not Likely to Adversely Affect. Long-term benefits will outweigh short-term effects. The project is not within ¼ mile of known owl activity centers.
- I have considered the new information that has been recently published about northern spotted owls. The new information would not lead to a change in the effects determination and no additional analysis is needed for this project.

The proposal will have no effect on threatened or endangered **anadromous fish** or Essential Fish Habitat established under the Magnuson-Stevens Fishery Conservation and Management Act. Consultation is not required.

There will be no impacts to **sensitive** species that would cause a trend to federal listing or loss of viability for any proposed or sensitive species.

The project would have no adverse effects on flood plains, wetlands or municipal watersheds; Congressionally designated areas such as wilderness, wilderness study areas or national recreation areas; inventoried roadless areas; research natural areas; American Indian religious or cultural sites; archaeological sites or historic properties or areas.

Findings of Consistency

I have determined that the proposed action is consistent with the Standards and Guidelines of the Mt. Hood National Forest Land and Resource Management Plan as amended by the Northwest Forest Plan (Forest Plan).

- **Aquatic Conservation Strategy** – The project is not in riparian reserves and is therefore consistent with the Forest Plan as amended by the 2004 Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy.
- It is consistent with standards for threatened, endangered and sensitive species; management indicator species, noxious weeds, hydrology, water quality, air quality, heritage resources, scenery and timber management.
- It is consistent with the National Forest Management Act regulations for **vegetative management**. There will be no regulated timber harvest on lands classified as unsuitable for timber production (36 CFR 219.14) and vegetation manipulation is in compliance with 36 CFR 219.27(b).

The Forest Plan describes the process for documenting an exception to “Should” standards and guidelines (p. Four-45). “Action is required; however, case by case exceptions are acceptable if identified during interdisciplinary project planning environmental analyses.” I approve the following exceptions:

- The proposal is consistent with Forest Plan objectives for long-term **soil productivity** and for **earthflow** stability. Ground based yarding will occur on areas where there is existing soil disturbance; only existing skid trails, landings and roads will be used. The analysis shows that the units are at approximately 20% detrimental soil condition. I am approving an exception for Forest Plan standards and guidelines, FW-22, FW-28, FW-30, B8-36 and B8-40. The standard is 15% for soil productivity (FW-22) and 8% for earthflow stability (B8-40). Examination of the sites has found that certain soils have high rock content where compaction risk is not great, or that the use of existing roads,

skid trails and landings with restoration, will result in less impact than would be caused by using skyline logging systems with new skyline corridors and in some cases new roads, and new landings. I considered using helicopters to log these units but found the additional cost to be unwarranted. Existing temporary roads and landings that are used will be obliterated reducing the detrimental condition to approximately 19%. Rehabilitation has been considered for skid trails but the soil scientist does not recommend restoration of skid trails at this time because of the risk of damaging tree roots. If no-action were taken the area would remain at 20% with no opportunity for restoration.

The objective of maintaining long-term site productivity and earthflow stability will still be met because thinning will result in healthy and vigorous stands with strong well-developed roots. Surface erosion and runoff from old skid trails is not occurring. There is no evidence that growth has been impaired by skid trails, roads or landings and the stands are projected to continue to grow well after the proposed thinning. Restoration of old temporary roads and landings would result in an improvement over existing conditions.

- The project is consistent with Forest Plan objectives for **snags and down logs**. The standard and guideline for snags is FW-215 and the standards and guidelines for down logs are FW-219 through FW-229. I am approving an exception for these Forest Plan standards and guidelines.

At the time of the original clear cut, all snags were removed. Some planted trees have died and provide snag habitat. Design criteria have been incorporated to help retain snags (leaving live trees that touch key snags) but it is likely that some snags would have to be felled for safety reasons. Design Criteria result in leaving live trees with the elements of wood decay. When these trees with elements of wood decay die they would provide snags. The proposal will accelerate the growth and size of plantation trees and would eventually provide large snags much sooner than would be expected with no-action. The objective of providing long-term snag habitat will be met as trees grow large. If post harvest monitoring indicates a shortage of snags and if funding becomes available, some new snags would be created using techniques such as fungus inoculation, topping or girdling.

In terms of down logs, the project will retain all existing down logs but they are not necessarily at the desired level for quantity, size or decomposition class. Design criteria result in protecting key concentrations of old down logs, leaving some additional down wood, and the retention of some trees with root disease that would eventually fall. The proposal will accelerate the growth and size of trees and would eventually provide large down logs much sooner than would be expected with the no-action alternative. The objective of providing long-term down log habitat will be met. If post harvest monitoring indicates a shortage of down logs and if funding becomes available, some new down logs would be felled.

Decision and Rationale

It is my decision to proceed with this project because it will enhance and restore within stand biological diversity, provide forest products and result in increased health and growth.

Appeal Rights

This decision is not subject to appeal pursuant to Forest Service regulations at 36 CFR 215.4.

Implementation

Implementation of this decision may occur immediately.

Contact Person

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/S/ Andrei Rykoff

12/22/2004

ANDREI RYKOFF
District Ranger

Date

Slip Thinning

Best Management Practices (BMPs) and Design Criteria

1. **Northern Spotted Owl:** There are no units within 0.25 mile of a known spotted owl nest site or activity center of any known pair, therefore no seasonal restriction is needed. *This is a standard requirement from the Biological Opinion.*
2. **Soils:** No operation of off-road ground-based equipment would be permitted between November 1 and May 31. This restriction applies to the ground-based portions of harvest units. It also applies to ground-based equipment such as harvesters or equipment used for fuels treatment, road reconstruction or landing construction. This restriction may be waived if soils are dry or frozen or if operators switch to skyline or other non-ground based systems. *This is a BMP and it implements Forest Plan standards and guidelines FW-022 and FW-024.*
3. **Deer and Elk Winter Range:** No harvest operations, use of motorized equipment, log haul, snow plowing or blasting would be permitted in crucial deer and elk winter range areas between December 1 and March 31. This applies to all units. *This implements a memorandum of understanding with Oregon Department of Fish and Wildlife.*
4. **Snags and wildlife trees:** Snags would be retained in all units where safety permits. To increase the likelihood that snags would be retained, green trees would be marked as leave trees where their live crowns touch certain key snags. Certain live trees would also be selected as leave trees that have the “elements of wood decay” as described in the DecAid advisor. This may include trees with features such as dead tops, broken tops and heart rot.

Sixteen live trees per acre greater than 10 inches diameter with “elements of wood decay” would be retained. Of these trees, 8 per acre should be greater than 20 inches diameter where available. *This implements Forest Plan standards and guidelines as amended.*

5. **Down Woody Debris:** Down logs currently on the forest floor would be retained. Additional down woody debris would be generated by the timber sale. This would include the retention of cull logs, tree tops, broken logs and any snags that would be felled for safety reasons. Some trees with root disease would be retained that would eventually fall providing another source of down wood.

Where feasible, key concentrations of woody debris in the older decay classes would be protected from disturbance by avoiding moving logs or yarding over them.

Tree tops and limbs would generally be retained in the unit. This restriction may be waived after consideration of potential residual tree damage, soil cover, nutrient cycling,

fuel loading and wildlife habitat. *This implements Forest Plan standards and guidelines as amended.*

6. Other Elements of **Diversity** - *This implements Forest Plan standard and guideline FW-152.*
 - a. Leave trees would include minor species. Conifers and deciduous trees that are present in small numbers in the stand would be retained where feasible.
 - b. Small gaps would be created in stands. The size and position of gaps would vary by unit based on site-specific factors.
 - c. Key patches of vine maple would be protected where feasible by practices such as directional felling and excluding equipment.
7. To reduce **erosion** from timber sale activities, bare soils would be revegetated. Grass seed and fertilizer would be evenly distributed at appropriate rates to ensure successful establishment. Mulch may be used on slopes greater than 20%. Effective ground cover would be installed prior to October 1 of each year. *This is a BMP and it implements Forest Plan standard and guideline FW-025.*

Native plant species would be used to meet erosion control needs and other management objectives such as wildlife habitat enhancement. Appropriate plant and seed transfer guidelines would be observed. Non-native species may be used if native species would not meet site-specific requirements or management objectives. Non-native species would be gradually phased out as cost, availability, and technical knowledge barriers are overcome. Undesirable or invasive plants would not be used. *This implements Forest Plan standard and guideline FW-148.*

Grass seed would preferably be certified by the states of Oregon or Washington or grown under government-supervised contracts to assure noxious weed free status. In certain cases non-certified seed may be used if it is deemed to be free of State of Oregon listed noxious weeds. *This implements Forest Plan standard and guideline FW-148.*

When straw is utilized, it would originate from the state of Oregon or Washington fields which grow state certified seed, or grown under government-supervised contracts to assure noxious weed free status, or originate in annual ryegrass fields in the Willamette Valley. In certain cases, straw or hay from non-certified grass seed fields may be used if it is deemed to be free of State of Oregon listed noxious weeds. *This implements Forest Plan standard and guideline FW-148.*

8. **Logging Systems** – *These are BMPs and implement Forest Plan standard and guideline FW-022.*
 - a. Avoid the use of ground based tractors or skidders on slopes generally greater than 30% and mechanical harvesters on slopes greater than 40% because of the risk of damage to soil and water resources.

- b. Mechanical harvesters and forwarders would be required to work on a layer of residual slash and the operator would place slash in the harvester path prior to advancing the equipment.
- c. In some units, ground-based logging is proposed for areas that have been previously harvested with ground-based systems. Existing temporary roads and landings would be reused and existing skid trails would be reused where they do not alter surface hydrology.
- d. Existing temporary roads and landings that are reused, would be obliterated and revegetated.

9. **Roads** – *These are BMPs.*

- a. During the wet season, log haul would only be permitted on asphalt and rock roads when conditions would prevent sediment delivery to streams.
- b. Landings in riparian reserves would be located on existing roadways that do not require expansion of the road prism or on existing landings that may require only minimum reconstruction (clearing vegetation, sloping for drainage, or surfacing for erosion control purposes) to be made suitable for use. (For this project, no landings are anticipated in riparian reserves.)

10. **Invasive plants** - All off-road equipment is required to be free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds prior to coming onto National Forest lands. Timber sale contracts and service contracts would include provisions to minimize the introduction and spread of invasive plants. Invasive plants are any plant species not native to a particular ecosystem that are likely to cause economic or environmental harm, or harm to human health. These provisions contain specific requirements for the cleaning of off-road equipment. *This implements Executive Order 13112 dated February 3, 1999.*

Prior to the implementation of ground disturbing activities, a noxious weed survey of proposed landing sites, designated hauling routes, and rock/borrow pits needed for road work would be conducted to ensure that no new weed infestations exist at these locations. Manual control (handpulling and/or clipping) of any Oregon State “B” designated weeds would be conducted if the weeds occur in areas of high ground disturbance that may be utilized during the timber sale operations. Surveys have been conducted, but since weeds may spread quickly it is prudent to look again just prior to ground disturbing activities. *This implements Executive Order 13112 dated February 3, 1999.*

11. **Firewood** would be made available to the public at landings where feasible. *This is an opportunity to contribute to Forest Plan - Forest Management Goal #19, and provide forest products consistent with the NFP goal of maintaining the stability of local and regional economies.*

12. **Monitoring:** *This Implements Forest Plan and NFP monitoring requirements.*

Prior to advertisement of a timber sale, a crosswalk table would be prepared to check the provisions of the Timber Sale Contract and other implementation plans with this document to insure that required elements are properly accounted for.

During implementation, Timber Sale Administrators monitor compliance with the Timber Sale Contract which contains provisions for resource protection including but not limited to: seasonal restrictions, snag and coarse woody debris retention, stream protection, erosion prevention, soil protection, road closure and protection of historical sites.

Post harvest reviews would be conducted where needed prior to post harvest activities such as slash treatment and firewood removal. Based on these reviews, post harvest activities would be adjusted where needed to achieve project and resource objectives.

Monitoring of noxious weeds and invasive plants would be conducted where appropriate to track changes in populations over time and corrective action would be prescribed where needed.

Monitoring is also conducted at the Forest level. For example, water quality is monitored for both temperature and turbidity at several locations across the Forest. Monitoring reports can be found on the Forest's web site at <http://www.fs.fed.us/r6/mthood> under Forest Publications.

Slip Response to Comments

Marvin Pemberton

Regarding the slip plantation thinning project. I haven't been out there since I retired from teaching about 4 years ago, but back then the area needed to be thinned. The canopy was closing the diversity was poor and the trees didn't look at all vigorous. It is time for something to be done, both to improve the forest and if possible to get some useful wood from that area. **Response: Objectives of this proposal include enhancing growth, diversity, and providing wood products consistent with the goals of the NW Forest Plan.**

Unless I am mistaken, there was another thinning project that occurred near there. Horse logging, I think. It seemed to have reinvigorated the woods, opened the canopy, allowed some understory to develop, improved diversity and generally improved things. If you can do that on the slip plantation, I'm definitely for it.

David Mildrexler

Without having seen the project area, I support the purpose of this initiative because it aims to thin what is described as a dense, overcrowded, tree plantation. However, the average diameter DBH (18 in) seems very large for thinning and concerns me. While the purpose of the project is to thin young forest stands, 18 inch diameter trees are not that young. Further, taking trees up to 24 inches DBH is not thinning at all. It's cutting large old trees. **Response. None of the trees in this area are old growth. They are all 50 to 55 years of age. The trees in this plantation were thinned previously which helped create larger diameter trees.** This is the one area where I can see this project is weak. It should have a smaller average diameter for trees to be cut and a diameter limit. I ask for you to propose a diameter limit so that the older structures will be maintained and the true benefits to improved habitat can be realized by the wildlife. I strongly urge for a diameter limit for this project (no cutting trees over 20 in dbh). Our National Forests have thousands of acres of dense plantations that could be thinned without harming old growth habitat and dependent wildlife species. I would like to see thinning projects become the norm and the complete halt to old growth timber sales.

In some of the dense, younger stands there is commercial product available. In others, there is no commercial product because of the small size, but nonetheless, these areas are very important to restore through an ecologically based management approach. This action will reduce risk of high intensity fire that we have seen from recent fires burns most intensely in tree plantations that lack large trees. Upon reaching the older forest, the fire behavior can change dramatically, often dropping to the forest floor and burning as a heterogenous understory fire. Also, thinning these areas will increase stand structure heterogeneity, which is an objective of the Slip Project. I strongly support the goal but I would like to see the leaving of the larger trees. **Response: The prescription would generally involve variable density thinning that would be designed to enhance or restore biological diversity. Thinning would generally remove the smaller trees, leaving approximately 80 to 130 variably spaced trees per acre. No mature or old-growth trees are present. In these stands, the larger trees**

are the same age as the smaller trees. A diameter limit would not provide the desired variability. Fire hazard is not a concern for this project because of the west-side moist conditions.

I think the notice for this thinning project should include the types of trees that will be harvested, and the average diameter of each species. That would be very helpful for formulating comments in the future. Response: The letter indicated the size of trees to be cut. The species are primarily Douglas-fir with a mix of western hemlock and western red cedar.

Another concern I have is that this stand will be treated as nothing more than a tree farm in the future. If the objectives of this project are met, and biological diversity restored, then shouldn't we adopt a long-term management approach that will prevent degrading the stand to its current condition again. Response: The management objectives for this area are established in the Mt Hood National Forest Land and Resource Management Plan as amended by the Northwest Forest Plan. This proposal is consistent with the management objectives for this area. I'm asking you to evaluate the results of the project and maintain the older structures for the future stand. I suggest the long-term goal of moving away from the notion of tree plantations on our national forests and moving toward the notion of selective harvest that upholds the ecological integrity of a natural stand. Response: Variable density thinning would result in a diverse stand that would not resemble a "tree farm."

ONRC

On Slip, I haven't been on the ground out there and can't provide any site-specific information. It sounds like a project we wouldn't oppose and could possibly support outright. As with any treatment, the devil is in the details. Variable density thinning means different things to different people. As I've said in the past, variable density thinning should be designed to bring diversity in tree spacing between and among stands. This means that prescriptions should be intentionally designed to have discrete small patch sizes of widely different spacings between retained trees and widely different relative densities.

As with any project in young managed stands, the goal should be to introduce complexity and diversity. You've stated as much in the summary statement that was emailed out. Response: Another goal of this proposal is to provide wood products consistent with the Northwest Forest Plan. While I agree that thinning young stands can and most likely will greatly improve the value of these stands for habitat, these benefits are prospective. Losing any legacy features like large snags, regardless of decay class, is certain. While I know you don't want to say that you can protect all snags, if there are any large diameter snags with cavities, their preservation should be by design. These structures must be maintained. Response: There are no large diameter snags in these plantations.

BARK

In the brief notice provided by the Forest Service for this project, there was no mention of whether or not an environmental assessment would be conducted. Neither was the project given a categorical exclusion designation in that letter. This lack of information at the outset makes it impossible to draft appropriate comments in response. If we will have another opportunity to comment, then our input will inevitably be more generic, recognizing that more detailed

information is to come later. If little additional analysis will be conducted, that is critical for the public to know this at the outset, or it needs to be clarified that the public will be given another opportunity to comment, even if a full environmental analysis won't be completed. It is critical to state at the outset whether or not the scoping letter represents the beginning or the end of the scoping process. Response: In a follow-up discussion with BARK it was clarified the Forest is considering a CE for this proposal.

Since the letter's publication, Bark has learned that this project will most likely be planned using the expanded CE authorities. While Bark is supportive of logging to be relocated from old growth stands to dense, overstocked plantations, we are very concerned about the use of categorical exclusions by the Clackamas District and do not feel it is the best way to have an informed and participatory public process. CEs should be used for their original intended purpose of conducting "no brainer" activities such as repairing and replacing infrastructure, not for circumventing public input and avoiding environmental analysis. The expansion of CE authorities to include green tree timber sales is very controversial. Response: The Forest is not proposing to expand the existing CE authorities. The category that is being considered for this project is in place and has been determined to include actions that do not individually or cumulatively significantly affect the human environment. The purpose of scoping is for interested citizens to bring their concerns about the project proposal to our attention. Changing CE authorities would be beyond the scope of this proposal.

I. An EA should be Conducted for the Slip Project.

It is our opinion that there is too much unknown information about this project, and therefore, an environmental assessment is necessary. There needs to be consideration of the effects of this project on the subwatersheds. Bark did a survey of the site November 27, 2004. Due to the close proximity of Big Creek and other intermittent streams to the project area, and due to wildlife concerns, we feel an assessment of the impact of a thinning project is warranted.

The Slip Project Notice does not provide enough information to determine the extent of indirect, direct, or cumulative environmental impacts associated with the project. Moreover, the brief project notice does not furnish substantive and quantitative evidence showing this project will not cause serious and irreversible damage to soils, snags, downed woody debris, forest productivity, plant diversity, water quality, and wildlife habitat. Response: An interdisciplinary team of resource specialists has examined this proposal and determined that there were no extraordinary circumstances.

II The Slip Project Did Not Allow Sufficient Time for Public Comment.

In addition to the general lack of information on this project, an unusually short comment period was given. This short period does not allow a Bark representative or any other public person an opportunity to visit the site with a USFS staff member. Bark, like the Forest Service, has the best interest of our natural resources at heart, and is interested in working with the USFS in making the right choices for the region. Due to the above, we do not feel like this opportunity has been given. Rushing projects through also does not help build public trust. Response: There is no requirement for a public comment period on a CE. Two weeks were given for comment

considering the size and scope of the proposal. This is similar to comment periods for similar CE projects on the District and several comments were received. Plantation thinning is a practice that has wide support and 70 acres can be walked in ½ day if desired. Field visits could be coordinated on a case-by-case basis if requested.

III. The Slip Projects Ignores Mandates to Protect Wildlife.

The Slip Project Notice fails to mention desired future conditions and priorities in the Northwest Forest Plan (NWFP) and MHLRMP that call for preserving plant and animal diversity as opposed to creating plantation forests. The notice carefully selects only those Desired Future Conditions from the MHLRMP that supports managing the land for plantations. This omission lends to a bias toward timber emphasis at the expense of biodiversity.

The project area is designated as Matrix by the NWFP, which while being the primary area where commodity production *can* (not should or shall) take place, also carries additional obligations regarding habitat protection that is more restrictive. An important goal of a Matrix classification is to “perform an important role in maintaining biodiversity.” To what extent is the Slip Project maintaining biological biodiversity? Opening up the canopy drastically will have adverse short term impacts that need to be analyzed and made public. Response: This proposal is consistent with the Mt. Hood National Forest Land and Resource Management Plan as amended by the NW Forest Plan, including the biodiversity Standards and Guidelines for lands in the Matrix.

One of the stated reasons for logging was to increase biological diversity in the stand. It is impossible to know if that is warranted based on the non-existent information provided in the scoping notice. Based on our field survey, there appears to be a diverse and vibrant plant understory, which as we stated previously, is being used by wildlife. What problems would this project help resolve? Response: The objective of the project is to increase health and vigor and enhance growth that results in larger wind firm trees; enhance and restore within stand biological diversity; and to provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future. The proposal will enhance diversity by variable density thinning.

IV. Proximity to Riparian Reserves.

We are concerned about the proximity of Slip units to riparian reserves. Big Creek borders the Southern boundary of Slip Unit 2. There is also an active stream on the eastern boundary of the same unit. What size riparian buffers does the USFS intend to leave? An environmental assessment should be performed to determine that there would be no harmful effects from the thinning project on the subwatershed. Response: Riparian reserves are one tree height wide on each side of a stream, except on fish bearing streams where they are two tree heights. There are no actions proposed within riparian reserves. A biological evaluation found that there would be no effect to threatened fish species.

V. Management Indicator Species

NFMA requires the Forest Service to provide animal and plant diversity in the national forests. 16 U.S.C. § 1604(g)(3)(B). USFS regulations implementing this requirement direct the Service to manage forests for viable populations of native vertebrate and desired non-native species. 36 C.F.R. § 219.19. The regulations define viable populations as a population that has “the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area.” *Id.*

To ensure that viable populations are maintained, the Forest Service regulations also require that the Service identify management indicator species (MIS) and that “[p]opulation trends of the management indicator species will be monitored and relationships to habitat change determined.” 36 C.F.R. § 219.19(a)(6). This monitoring is “essential to verify and, if necessary, modify the forest plan’s assumptions about the effects of timber harvesting and other management activities on wildlife...In order to meet the monitoring requirement, planners will need to obtain adequate inventories of wildlife populations and distribution.” Charles F. Wilkinson and H. Michael Anderson, *Land and Resource Planning in the National Forests*, 304 (1987).

NFMA’s regulations require inventorying and monitoring on the National Forests under 36 C.F.R. §§ 219.12(d) and (k) as well as 36 C.F.R. §§ 219.19(a)(6), 219.26, and 219.19(a)(2). The regulations state “each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative jurisdiction.” *Id.* § 219.12(d). The regulations further require that “at intervals established in the plan, implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards and guidelines have been applied.” *Id.* § 219.12(k). To ensure biological diversity, the regulations specifically require that “[i]nventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition.” *Id.* § 219.26.

The Mt. Hood National Forest Plan states that management indicator species shall be protected from adverse modification through the curtailment of conflicting activities, or avoiding the area. Some of the management indicator species for the Mt. Hood National Forest include: deer and elk, pileated woodpecker, and pine marten. The Mt. Hood National Forest is required by NFMA to do surveys for these species so that it can monitor the condition of the forest wildlife habitat as a whole. 36 C.F.R. § 219.19(a)(6). The Mt. Hood National Forest has failed to conduct population studies of management indicator species in the planning area, and has not studied the relationship between habitat change and the viability of the MIS as required by NFMA and the MHMP. The failure to study the effects of the project on management indicator species is in violation of NFMA and is arbitrary, capricious, and not in accordance with the law. 5 U.S.C. § 706; 16 U.S.C § 1604(i); 36 C.F.R. § 219.10(e). Since Mt. Hood National Forest has not conducted adequate monitoring of management indicator species, and we don’t have any baseline data, there is no way to know that the Slip project will or not adversely affect the MIS populations. Response: The stands proposed for thinning are not in suitable habitat for pine marten, pileated woodpecker, or spotted owl nesting, roosting, or foraging. Biological evaluations have determined the proposal would not adversely affect the northern spotted owl or listed fish species. The proposal is consistent with Forest Plan Standards and Guidelines for MIS.

1. Deer and Elk:

Regarding deer and elk, the Slip Project Notice gives no attention to the impacts on these species as a result of the project and fails to adequately discuss the impacts to elk and deer, and other wildlife, from the proposed logging. Our survey turned up evidence of current usage of the Slip units and the surrounding areas by deer and elk, including identified sights used for night forage. The thinning of 70 acres with Slip would cause a loss of the existing optimal cover in the range. The Project Notice does not acknowledge that the loss of this cover could alter the distribution of deer and elk use of the area. Finally, the USFS continues to fail to address the cumulative impacts to deer and elk as a result of several timber projects adjacent to the Slip planning area. The Mt. Hood National Forest repeatedly offers timber projects that remove deer and elk habitat, never analyzes the cumulative habitat loss and how it will affect deer and elk, and then proposes clearcuts to create new forage. Until the USFS conducts appropriate analysis, the agency violates NEPA's requirement that the agency assess the cumulative impacts of its actions. 40 C.F.R. § 1508.7. Response: The project would include seasonal restrictions because it is in winter range. The stands proposed for thinning are considered thermal cover and would remain thermal cover after thinning. There is no shortage of thermal cover in the project area.

VI. Effects on Spotted Owl

Given that the spotted owl are understood to rely increasingly on second growth forests for survival, and given the recent results of the status review of the northern spotted owl, a thorough discussion on this threatened species is warranted. None of this information was provided in the letter of intent to log. Response: Recent studies have indicated that if plantations are not thinned, dense, closed-canopy second growth without legacy trees can not only be devoid of exploitable prey populations but also poorly suited for owl roosting, foraging or nesting. This period of low structural diversity can last more than 100 years and can have profound effects on the capacity of the forest to develop biocomplexity in the future. A biological evaluation has determined this project is not likely to adversely affect the northern spotted owl. Courtney, S P, J A Blakesley, R E Bigley, M L Cody, J P Dumbacher, R C Fleischer, AB Franklin, J F Franklin, R J Gutiérrez, J M Marzluff, L Sztukowski. 2004. Scientific evaluation of the status of the Northern Spotted Owl. Sustainable Ecosystems Institute of Portland Oregon. September 2004.

Dave Corkran

On Nov. 23 I visited the smallest of the three proposed cutting units in the Slip thinning proposal. Road 4621 cuts through the site, with about two thirds of the unit lying along the southeast side of the road. I ran a 300 meter transect along an azimuth of 59 degrees (compass declination 20 degrees east) through a portion of the unit. The starting point was a culvert outfall on Rd 4821 about one hundred fifty meters NE of road's end. The transect was measured in twenty meter increments with a station at the end of each increment. I tallied occurrence of coarse woody debris in each increment, measured duff depth at thirteen stations, and measured tree diameters at every other station within a radius of 26 ft. 4. The data acquired is included below.

The limited data suggest a modest variability in density of desired trees. Of the seven stations I sampled, one had twelve trees, three had seven, one had six, one had four and one

had three. If “variable density thinning” is to be the prescription in this area, maximizing variability would seem to require leaving untouched dense patches of trees (such as Corkran station #4) and removing all trees in areas with fewest stems (such as Corkran station #8). This means that trees to be cut are chosen by their location within the forest mosaic, as well as by diameter class, tree health or other criteria. Standard thinning practice calls for uniformity of stem spacing. How will standard practice be modified to achieve variable density thinning? Who will do the tree marking? Who is going to train the tree markers? Who will insure that they do in fact thin to a variable density? Response: The proposal did not claim the project would “maximize variability.” Variability would be introduced while providing for long-term timber productivity. Thinning would generally remove the smaller trees, but the objective of achieving variability would be accomplished by the following: Leave tree spacing would vary from 80-130 trees per acre; Leave trees would include minor species; Leave trees would include some trees with the elements of wood decay; Leave trees would include some live trees where their crowns touch certain key snags; All non-hazardous snags and all existing large down logs will be retained; Small gaps would be created; If and when funding becomes available and if post harvest monitoring indicates a shortage of snags or down logs, some new snags or down logs would be created using techniques such as fungus inoculation, topping, girdling or felling. The thinning prescription will be developed by a certified Forest Service silviculturist to implement the proposed action and design criteria and operations will be inspected by trained Forest Service Timber Sale Administrators.

The impacts of the first commercial thinning are still obvious. Several of the trees at Corkran station #6 had large scars made by machinery or yarded logs. The transect crossed at least three skid trails where ground was noticeably firmer, apparently heavily compacted soil. Virtually no regeneration was evident in these trails. At thirteen stations the duff layer varied in depth from one to five centimeters, averaging out to 2.67 cm., suggesting extensive repeated disturbance and aggressive slash disposal, resulting in lowered soil moisture retention capacity during dry spells. There were no snags noted along the transect.

Trees damaged by previous thinning are logical candidates for removal during thinning, within the constraints imposed by the variable density thinning regime. Response: Some damaged trees would be retained to provide diversity. Before any work is done in this area the amount of soil compacted by previous logging should be ascertained to determine if this third entry will exceed the forest standard of no more than 15% compaction in any management unit. Response: Ground based yarding will occur on areas where there is existing soil disturbance. Only existing skid trails, landings and roads will be used. The analysis shows that the units are at approximately 20% detrimental soil condition. I am approving an exception for Forest Plan standards and guidelines, FW-22, FW-28, FW-30, B8-36 and B8-40. The standard is 15% for soil productivity (FW-22) and 8% for earthflow stability (B8-40). All of the Slip units are in the earthflow land allocation. Examination of the sites has found that certain soils have high rock content where compaction risk is not great, or that the use of existing roads, skid trails and landings with restoration, will result in less impact than would be caused by using skyline logging systems with new skyline corridors and in some cases new roads, and new landings. I considered using helicopters to log these units but found the additional cost to be unwarranted. Existing temporary roads and landings that are used will be obliterated, reducing the detrimental soil condition to approximately 19%. Rehabilitation has been considered for skid trails but the soil scientist does not recommend restoration of skid trails at this time because of the risk of damaging tree roots. If no-action were taken the area would remain at 20% with no opportunity

for restoration. The objective of maintaining long-term site productivity and earthflow stability will still be met because thinning will result in healthy and vigorous stands with strong well-developed roots. Surface erosion and runoff from old skid trails is not occurring. There is no evidence that growth has been impaired by skid trails, roads or landings and the stands are projected to continue to grow well after the proposed thinning. Slash disposal should be of the lop and scatter or leave variety to aid in rebuilding the duff layer. Response: Slash would be left on site. Snags should be created by topping two trees per acre where snags are not already present. Thinning delays the development of snags, so they will have to be artificially provided. In the long run snags will be provided for by leaving dense clumps of trees, where competition will ultimately kill some of the stems. Response: If patches are left unthinned, the trees may die but they would be small snags, which are not in short supply. Thinning will accelerate the development of larger trees that would, in time, become large snags. If and when funding becomes available and if post harvest monitoring indicates a shortage of snags, some new snags would be created using techniques such as fungus inoculation, topping or girdling.

If the Slip Thinning is to move the stand toward a simulated old growth condition using "variable density thinning" the end result should include wide variation in tree density over the stand, soil compaction below 15% of the stand area, slash disposed so that it decays on site to deepen the humus layer and a minimum of two snags per acre. These are as important as growing large diameter trees or creating forage openings. Response: The objective of the proposal is to increase health and vigor and enhance growth that results in larger wind firm trees; enhance and restore within stand biological diversity; and to provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future. The proposal is not designed to simulate old growth conditions.

We would urge that one snag per acre and one new down log per acre in heavily and moderately thinned areas with creation of two new snags and two new down logs in unthinned or lightly thinned areas. We also urge installation of one small nest box and one large nest box for every two acres as a means of jump-starting an increase in the flying squirrel population. Response: Down logs would accrue naturally as snags decay and fall. If and when funding becomes available and if post harvest monitoring indicates a shortage of down logs, some new down logs would be created.

Biological Evaluation for Slip Thin

Proposed, Endangered, Threatened, and Sensitive Fish and Aquatic Species

Mt. Hood National Forest
Clackamas River Ranger District

Introduction

Forest management activities that may alter the aquatic habitat or affect individuals or populations of PETS (Proposed, Endangered, Threatened, and Sensitive) fish species require a Biological Evaluation (BE) to be completed (FSM 2671.44 and FSM 2670.32) as part of the National Environmental Policy Act process to determine their potential effects on sensitive, threatened or endangered species. The Biological Evaluation process (FSM 2672.43) is intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for:

- A. Species listed or proposed to be listed as endangered (E) or threatened (T) by the USDI Fish and Wildlife Service (USFW) or National Marine Fisheries Service (NOAA Fisheries).
- B. Species listed as sensitive (S) by USDA-Forest Service Region 6.

This Biological Evaluation (BE) addresses a proposal to commercially thin and harvest wood fiber from approximately 70 acres of plantations within the Big Creek drainage of the Clackamas River watershed. These plantations are 50 to 55 years old and have previously been commercially thinned but have since grown to the point where thinning is needed again. The purpose of the proposed action is to thin young forest stands to achieve the following multiple objectives:

- Increase health and vigor and enhance growth that results in larger wind firm trees;
- Enhance and restore within stand biological diversity;
- Provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future.

Big Creek is a 3rd order tributary to the Clackamas River that originates on the east slope of Fish Creek Mountain. Fish species that occur within the Big Creek drainage are native winter steelhead, coho salmon, and resident cutthroat trout. Because of numerous partial barriers present in Big Creek, anadromous fish species are only found in the lower mile of the stream. Big Creek is four miles in length and enters the mainstem Clackamas River at river mile (RM) 52.0. The Clackamas River is designated a Tier I, Key Watershed under the Northwest Forest Plan. Tier I watersheds have been identified as crucial refugia for at-risk fish species. The Clackamas River watershed supports populations of spring chinook salmon, winter steelhead, coho salmon, and resident cutthroat and rainbow trout. The project is located in section 4, T. 6 S., R. 6 E., Willamette Meridian, Clackamas County, Oregon. The project area is covered in the Lower Clackamas Watershed Analysis (USDA, 1996).

This document addresses the following Evolutionarily Significant Units (ESUs) for ESA fish species: Lower Columbia River steelhead (*Oncorhynchus mykiss*), Upper Willamette River chinook salmon (*Oncorhynchus tshawytscha*), Lower Columbia River chinook (*Oncorhynchus tshawytscha*), Lower Columbia River coho salmon (*Oncorhynchus kisutch*), and the following USDA Forest Service, Region 6 sensitive species: Redband Trout (*Oncorhynchus mykiss ssp.*) and Columbia Dusky Snail (*Lyogyrus n. sp. 1*)

Proposed Action

The proposed action is to thin and harvest wood fiber from 70 acres of plantations located within the Middle Clackamas River watershed. The project area is located within a B8 earthflow land allocation in the Big Creek subwatershed, a perennial fish-bearing tributary to the Clackamas River. Thinning will generally remove the smaller trees, but the objective is to introduce structural and biological diversity through variable spaced thinning. Variable density thinning prescriptions would be designed to enhance or restore biological diversity. Trees to be cut average approximately 18 to 24 inches dbh. Leave tree spacing will vary from 80-130 trees per acre and will include minor species and some trees with elements of wood decay. All non-hazardous snags and existing large down logs will be retained.

Project elements of the proposed action for the Slip Thin include:

- Harvest of merchantable timber using cable, and ground based yarding systems.
- Re-opening existing level one roads by brushing and blading where needed.
- Log haul
- Decommissioning level one roads following project completion.

There will be no new road construction with the proposed action. Some existing closed or overgrown roads need to be reopened to access landings. Upon project completion, the roads that were opened would be closed. Existing temporary roads and landings that are reused for this project would be obliterated after project completion. No harvest activities will occur within Riparian Reserves.

Harvest will be accomplished by ground based and skyline logging systems. No operation of off-road ground-based equipment would be permitted between November 1 and May 31 to reduce the risk of erosion and surface runoff. This restriction applies to the ground-based portions of harvest units. It also applies to ground-based equipment such as harvesters or equipment used for fuels treatment, road reconstruction or landing construction. This restriction may be waived if soils are dry, frozen, protected by snow, or if operators switch to skyline or other systems. The use of ground based tractors or skidders on slopes greater than 30% will be avoided to reduce the risk of damage to soil and water resources. The use of mechanical harvesters will only take place on slopes averaging less than 40%. Mechanical harvesters will be required to work on a layer of residual slash placed in the harvester path prior to advancing the equipment.

Log haul will be along aggregate and paved surface roads. There are no stream crossings where ESA listed or sensitive species occur along the aggregate surface portion of the log haul.

During the wet season, log haul would only be permitted when conditions would prevent sediment delivery to streams.

Summary of Effects to listed, proposed, candidate, and sensitive species.

<u>ESU Species/Status</u>	Date of Listing	Habitat Present	Species Present	Effects of Action
<i>Threatened</i>				
Lower Columbia River steelhead (<i>Oncorhynchus mykiss</i>)	3/98	Yes	Yes	NE
Middle Columbia River steelhead (<i>Oncorhynchus mykiss</i>)	3/99	No	No	NE
Columbia River Bull trout (<i>Salvelinus confluentus</i>)	5/98	No	No	NE
Upper Willamette River chinook (<i>Oncorhynchus tshawytscha</i>)	3/99	No	No	NE
Lower Columbia River chinook (<i>Oncorhynchus tshawytscha</i>)	3/99	No	No	NE
Columbia River chum salmon (<i>Oncorhynchus keta</i>)	3/99	No	No	NE
<i>Proposed</i>				
Lower Columbia River coho (<i>Oncorhynchus kisutch</i>)	6/04	No	No	NE
<u>Sensitive</u>				
Redband Trout (<i>Oncorhynchus mykiss ssp.</i>)	NA	No	No	NI
Columbia dusky snail <i>Lyogyrus n. sp. 1</i>	NA	No	No	NI

NE – No Effect

NLAA – May affect not likely to adversely affect

LAA – May affect likely to adversely affect

NI – No Impact

MIHH – May Impact Individuals or Habitat but will not likely contribute to a trend towards federal listing
or loss of viability to the population or species.

Listed, Proposed, Candidate, and Sensitive Species

Columbia River Bull Trout

(Salvelinus confluentus)

Threatened (USFWS)

Columbia River bull trout are presently found in the Hood River drainage on the Mount Hood National Forest. Bull trout presence has been documented in Middle Fork Hood River, Clear Branch Creek both above and below Clear Branch dam, Pinnacle Creek, Coe Branch Creek, and Eliot Branch Creek. This bull trout population is the only known population occurring on the Forest. Bull trout populations occurring in the Middle Fork Hood River are found primarily within Laurance Lake Reservoir and adjacent Clear Branch and Pinnacle Creeks. The Clear Branch Dam has altered this subpopulation of bull trout from a fluvial to an adfluvial form. Adult fish reside in the reservoir and move into Clear Branch as early as June and spawn mainly during September, before moving back into the reservoir. It is known that a small number of individuals within the Hood River annually move into the Columbia River with some returning into the Hood River.

Bull trout were once prolific in the Clackamas River system. At present, they are believed to be extinct. There are unconfirmed reports of their presence in the Sandy River basin in the late 1950's. However, recent fish sampling conducted in both the Sandy River and Clackamas River drainages failed to uncover any bull trout presence.

Bull trout reach sexual maturity between four and seven years of age and are known to live as long as 12 years. Bull trout spawn in the fall and require clean gravel and cold-water temperatures for egg incubation. Although adults can stand water temperatures up to 8° C, incubation of eggs is best with temperatures no more than 2° C (36° Fahrenheit). Bull trout fry utilize side channels, stream margins, and other low velocity areas. Fluvial adults require large pools with abundant cover in rivers. Some bull trout remain residents within the area in which they hatch, while others migrate from streams to lakes or the ocean. Presumably, the various forms of bull trout interbreed, which helps to maintain viable populations throughout their range.

Lower Columbia River Steelhead

(Oncorhynchus mykiss)

Threatened (NOAA Fisheries)

Winter steelhead in the Clackamas River basin are included in the Lower Columbia River ESU and are listed as threatened (NMFS 1998a). Lower Columbia River steelhead occur in the Clackamas River, Sandy River, and Hood River basins. They also occur in the West Columbia Gorge tributaries. Adult Clackamas winter steelhead enter the waters of the Mt. Hood National Forest primarily during April through June with peak migration occurring in May. The native winter steelhead in the Clackamas River above North Fork Dam use the majority of the mainstem and tributaries as spawning and rearing habitat. Very little spawning has been documented in tributaries of less than 4th order. Winter steelhead fry emerge between late June and late July and rear in freshwater habitat for one to three years. Juvenile steelhead during their first year, usually are found in riffle habitat but some of the larger juvenile steelhead will be

found in pools and faster runs. The steelhead fry in the Clackamas River smolt and emigrate downstream March through June during spring freshets.

Upper Willamette River Spring Chinook

(Oncorhynchus tshawytscha)

Threatened (NOAA Fisheries)

The Clackamas River spring chinook salmon (Upper Willamette River ESU) consist of both naturally spawning and hatchery produced fish. These spring chinook enter the Clackamas basin from April through September and spawn from mid September through early October with peak spawning occurring the 3rd week in September. These fish primarily spawn and rear in the mainstem Clackamas River and larger tributaries. Adults in the Lower Clackamas drainage spawn in Eagle Creek, below River Mill Dam and between River Mill and Faraday diversion dams. Spawning in the upper Clackamas drainage has been observed in the mainstem Clackamas from the head of North Fork Reservoir upstream to Big Bottom, the Collawash River, Hot Springs Fork of the Collawash River, lower Fish Creek, South Fork Clackamas River and Roaring River.

Lower Columbia River Fall Chinook

(Oncorhynchus tshawytscha)

Threatened (NOAA Fisheries)

Lower Columbia River chinook salmon occur in the Sandy River, Hood River, and Clackamas River basins. They also occur in the West Columbia Gorge tributaries. These stocks are made up of both a spring run and a fall run component. The spring run occurs in the Hood River and Sandy systems, while fall run chinook are present in the Clackamas River and Sandy Rivers. Most spring chinook salmon in the Hood River basin ascend the West Fork Hood River, and based on available information, use appears to be low in the Middle Fork Hood River. Spring chinook in the Sandy River basin utilize the mainstem Sandy River and upper basin tributary streams such as the Salmon River, Zigzag River, Still Creek, and Clear Fork of the Sandy River. They enter these watersheds from April through August and spawn from August through early October. The fall chinook occurring within the Sandy and Clackamas Rivers primarily spawn and rear in the mainstem and larger tributaries downstream from Forest lands.

The fall chinook within the Clackamas Subbasin are thought to originate from "tule" stock which was first released into the subbasin in 1952 and continued until 1981. Since 1981 no fall chinook have been released into the Clackamas River. However some adult fall chinook released as juveniles above Willamette Falls may have strayed into the Clackamas River.

Columbia River Chum Salmon

(Oncorhynchus keta)

Threatened (NOAA Fisheries)

The lower Columbia River fall chum salmon spend most of their life in a marine environment. Adults typically enter spawning streams ripe, promptly spawn and die all within two weeks of arrival. Adults are strong swimmers, but poor jumpers and are restricted to spawning areas

below barriers, including minor barriers that are easily passed by other anadromous species. Peak spawning occurs between late October and early November. Juveniles after emergence migrate to estuaries where they rapidly adapt to the marine environment. This usually occurs between March and June. The brief stay in the estuarine environment appears to be important for smoltification and early feeding and growth. Mature chum spend anywhere from 6 months to 6 years in the ocean environment.

Oregon is near the southern limit of the species distribution in North America. Historically, the species spawned in the Columbia Basin up to Cascade Rapids and in coastal streams south to the Coquille River. Some chum salmon populations have become depressed or even extinct in Oregon subbasins of the lower Columbia River (ODFW, 1995). Conditions on the Oregon side of the Columbia River are poorly suited for natural production of chum. Spawning habitat is poor or inaccessible. According to the 1886 Bulletin of the US Fish Commission chum historically inhabited the lower Clackamas River, but according to ODFW there are no current records to confirm chum presence. According to ODFW (1995) the last area of a historic population of chum within the lower Columbia River on the Oregon side is the Multnomah Channel (near Scappoose).

Lower Columbia River Coho Salmon

(Oncorhynchus kisutch)

Proposed for listing (NOAA Fisheries))

The NOAA Fisheries is currently reviewing all Lower Columbia River coho stocks for possible listing under the Endangered Species Act. The Oregon Department of Fish and Wildlife has listed coho as a state threatened species. Coho are also included on the Forest Service Region 6 sensitive species list. Coho stocks occurring on the Forest are currently found in the Sandy and Clackamas River systems. They are also found in the West Columbia Gorge tributaries. The indigenous run of coho salmon in the Hood River is considered extinct. Very few coho ascend the Hood River at present and those are considered to be hatchery strays.

The Clackamas River contains the last important run of wild late-run winter coho in the Columbia Basin. Coho salmon occupy the Clackamas River and the lower reaches of streams in the Upper Clackamas watershed including the Collawash River. Adult late-run winter coho enter the Clackamas River from November through February. Spawning occurs mid-January to the end of April with the peak in mid-February. Peak smolt migration takes place in April and May.

Redband Trout

(Oncorhynchus mykiss ssp.)

Sensitive (USFS, Region 6)

On the Mt. Hood National Forest, redband trout occur in streams flowing east from the crest of the Cascades. Redband rainbow trout occur in the White River, Mill Creek, Badger-Tygh, and Mile Creeks, watersheds on the Mt. Hood National Forest. Redband trout populations within the White River watershed are genetically distinct from those in the Deschutes River and are unique among other redband trout populations east of the Cascades. White River redband/inland rainbow trout are more closely related to those found in the Fort Rock Basin of central Oregon. Collections made on the Zigzag Ranger District have produced some rainbow trout that are suspected to be similar to the redband trout.

Like other salmonids, redband rainbow trout require adequate water quality and quantity, cover (provided by large and small wood, boulders, brush, substrate, and/or surface turbulence), invertebrate food, and various sizes and distributions of pool and riffle units. Preferred spawning substrate includes well-oxygenated, loose small to medium gravels. Spawning occurs in the spring, usually in riffles or the downstream end of pools. Fry emergence from the gravel normally occurs by the middle of July, but depends on water temperature and exact time of spawning. Rearing habitat is often along stream margins, associated with instream structure provided by boulders, brush and wood. These habitats also provide cover from predation and are used for feeding lanes. Redband rainbow trout prefer water temperatures from 10-14 C, but have been found actively feeding at temperatures up to 25 C in high desert streams of Oregon and have survived in waters up to 28 C.

Columbia Dusky Snail

(Lyogyrus n. sp. 1)

Sensitive (USFS, Region 6)

This species of aquatic mollusks has a very sporadic distribution in the central and eastern Columbia Gorge, WA and OR. Known sites on the Mt. Hood National Forest occur in Clackamas, Multnomah, and Hood River counties. Lyogyrus have been identified in the Upper Clackamas, Lower Clackamas, and Oak Grove Fork watersheds.

This species occurs in cold, well oxygenated springs and spring outflows on soft substrates in shallow, slow-flowing areas where it appears to feed on decaying organic particles. It prefers areas without macrophytes (macroscopic emergent and submerged aquatic plants), but may also occur in areas with watercress and water hemlock. It co-occurs with *Pristinicola hemphilli* and Juga (*Oreobasis*) spp., which are typically found in small, cold, pristine springs.

Effects Determination

The proposed action will not adversely impact listed, proposed, candidate, or sensitive fish species or their habitat in the Clackamas River watershed. This project warrants a “**No Effect**” (NE) determination for Lower Columbia River steelhead, Lower Columbia River chinook, Upper Willamette River chinook, Columbia River bull trout, Columbia River chum and Lower

Columbia River coho salmon. A “**No Impact**” (NI) determination is appropriate for Redband trout.

Potential impacts to aquatic habitat by the harvest activities include an increase in turbidity and sediment from re-opening roads, yarding and transport of logs. Project design features such as no harvest within Riparian Reserves, seasonal restrictions for ground-based operations, and the proximity of the harvest units to habitat where ESA listed species occur, will prevent any adverse direct impacts to any listed or proposed fish species or their habitat. Sediment delivery to streams is not likely to occur as the result of road opening or decommissioning because all of the roads are located on relatively flat ground, and away from any water source. Sediment delivery from timber harvest will not occur because vegetative buffers provided by a full Riparian Reserve will preclude any sediment being transported into stream channels by surface erosion or run-off. Potential sediment delivery to streams during log transport will be minimized by restricting log haul to times when road related run-off is not present. This effects determination is based on the following reasons:

- Project elements of the proposed action would have a neutral effect to all of the environmental indicators of habitat and watershed condition at both the site and 6th field, and 5th field watershed scales. There will be no direct or indirect effects to habitat or individuals of the species by implementing the proposed action.
- The proposed project is located outside of Riparian Reserves. The Riparian Reserve width will be 420 ft along fish bearing streams (Big Creek) and 210 feet along intermittent channels. There will be no harvest or equipment operating within riparian areas. The vegetative buffer of the riparian reserve will act as an effective barrier to any sediment being transported into stream channels and will maintain the stream shade canopy thus, maintaining stream temperatures. Full Riparian Reserve widths will maintain all habitat elements and watershed indicators in their current condition.
- No new road construction will occur thus the existing indicators for road density and drainage network will be maintained. All level one roads to be re-opened are located on relatively flat ground away from any water sources.
- Lower Columbia River chinook and Columbia River chum occur over 20 miles downstream of the project area in the Lower Clackamas River below River Mill Dam.
- Columbia River bull trout are believed to be extinct within the Clackamas River Basin.
- Redband Trout do not occur in the Clackamas Basin.
- Log haul will be restricted to dry weather when road related runoff is not present. Log haul will take place on well rocked or paved roads where road ditches have been maintained and are well vegetated. . The only stream crossings are along paved surface roads. This decreases the potential of any fine sediment entering stream channels during hauling activities, so that no sediment input to stream habitat is expected by hauling logs along the specified routes.

The impact determination for aquatic mollusk species *Lyogyrus n. sp. 1*, is “**No Impact**” (NI). This determination is appropriate because there is no suitable habitat available for these species within the project area. If *Lyogyrus* did occur within the project area, the full riparian buffer width of 420 feet would act as an effective barrier against any potential project impacts to the species or its habitat

Essential Fish Habitat

Essential Fish Habitat (EFH) established under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) includes those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (i.e., properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation). EFH includes all streams, lakes, ponds, wetlands, and other water bodies currently, or historically, accessible to salmon in Washington, Oregon, Idaho, and California. Three salmonid species are identified under the MSA, chinook salmon, coho salmon and Puget Sound pink salmon. Chinook and coho salmon occur on the Mt. Hood National Forest in the Clackamas River, Hood River, and Sandy River basins. Chinook and coho salmon utilize the Clackamas River for rearing and spawning habitat. The proposed project is located approximately 0.7 miles above any habitat that could be utilized by these species. Implementation of the project covered in this CE will have **No Effect** on essential fish habitat for chinook or coho salmon. The proposed project will not have any effect on water or substrate essential to the life history of coho, chinook, or chum salmon that occur within any basin on the Mt. Hood National Forest.

This activity will not jeopardize the existence of any of the species of concern or adversely modify critical habitat and will not adversely affect Essential Fish Habitat as designated under the 1996 Amendment to the Magnuson-Stevens Act.

Based on the **No Effect** determination of this project proposal, consultation with USFW and NOAA Fisheries is not required.

Prepared by Robert Bergamini /S/ Robert Bergamini 12/14/04
Fisheries Biologist, Clackamas River Ranger District

2004 Slip Commercial Thin – Wildlife Biological Evaluation

Clackamas River Ranger District, Mt. Hood National Forest

12/14/04

Location: The project is located within the Lower Clackamas watershed in section 4, T.6 S., R. 6 E.

Proposed Action: The proposed action is to thin and harvest wood fiber from 70 acres of approximately 53 year old plantations. Trees to be cut are generally smaller than 24 inches in diameter with an average of approximately 18 inches. Variable density thinning prescriptions would be designed to enhance or restore biological diversity. Thinning would generally remove the smaller trees, leaving approximately 80 to 130 variable spaced trees per acre. No roads would be constructed. Ground based and skyline logging systems would be used.

ENDANGERED, THREATENED, AND SENSITIVE SPECIES

The Biological Evaluation Summary in Table 1 serves as the documentation to display effects of the 2004 Slip Commercial Thin on endangered, threatened, and sensitive species on the Clackamas River Ranger District. Only species present, or those with habitat within the project area will be addressed in detail below.

Northern Spotted Owl (Threatened): Old-growth coniferous forest is the preferred nesting, roosting and foraging habitat of the spotted owls in Oregon. Old-growth habitat components that are typical for spotted owls are: Multilayered canopies, closed canopies, large-diameter trees, abundance of dead or defective standing trees, and abundance of dead and down woody material.

The project area does not occur within a Late-Successional Reserve, but does occur within Critical Habitat Unit OR-10. The project site is serving as dispersal habitat for the spotted owl. The proposed action would maintain the site as dispersal habitat but would degrade the quality of habitat that is currently being provided. The effects determination for this project is a Not Likely to Adversely Affect.

This project falls within the Programmatic Biological Assessment and resultant Opinion for Projects with the Potential to Modify the Habitats of Northern Spotted Owls and/or Bald Eagles or Modify Critical Habitat of the Northern Spotted Owl for FY 2003-2004. A follow-up letter was received from the U.S. Fish and Wildlife Service with clarification that the Biological Assessment and Biological Opinion remained valid for decisions signed before December 31, 2004. Within this document this project takes the place of several units in CHU OR-10 that were scheduled for the formerly named Oak Grove Timber Sale but were subsequently dropped in the Cloak Environmental Assessment. The Oak Grove Timber Sale consulted on 695 acres in CHU OR-10 but only 618 were analyzed for in the Cloak Environmental Assessment. Most of the 77

acre surplus will be used for the Slip Commercial Thin. No more than 70 acres of dispersal habitat will be degraded by this proposed action.

It was the U. S. Fish and Wildlife Service's biological opinion that the FY 2003-2004 Habitat Modification Projects in the Willamette Province are not likely to jeopardize the continued existence of the northern spotted owl or result in the destruction or adverse modification of designated critical habitat. The Mandatory Terms and Conditions that implement the Reasonable and Prudent Measures specified in the Biological Opinion include a seasonal restriction within ¼ mile of all known owl activity centers. This project is not within ¼ mile of a known owl activity center.

Oregon Slender Salamander (Sensitive): This species is found in moist woods consisting of Douglas-fir, maple, hemlock, and red cedar. It is most common in mature Douglas-fir forests and appears to be dependent on mature and old-growth stands. Individuals are found under rocks, wood, or bark and wood chips at the base of stumps as well as under the bark and moss of logs. They are found in rotting logs, in holes and crevices in the ground, and in termite burrows.

Puget Oregonian (Sensitive): The Puget Oregonian may be found in mature and old-growth forest habitat, typically on or under hardwood logs and leaf litter. These snails are also found on or in the litter under sword ferns growing under hardwood trees and shrubs, especially big leaf maples.

Columbia Oregonian (Sensitive): In the Western Cascades, this species can be found in mature forested habitats outside of riparian areas. Individuals have been found in damp situations under relatively closed canopies in mature western hemlock forests that include some Douglas-fir, cedar, vine maple, and alder.

Evening Fieldslug (Sensitive): Habitat is largely unknown but, based on limited information, includes varied low vegetation, litter and debris. Rocks may also be used.

Approximately 70 acres of 53-year-old plantations are proposed for commercial logging. Although these type of young stands are usually not favorable habitat for the Oregon Slender Salamander, Puget Oregonian, Columbia Oregonian, and Evening Fieldslug, this area appears to have been a productive site that has produced a stand that currently contains a hardwood component, some down wood, some structural complexity, and with trees averaging 18-20" in diameter breast height. For these reasons this stand has potential habitat for the four species mentioned above.

The proposed action would leave 80-130 trees per acre and would retain most of the existing logs intact. It is likely there would be additional down woody debris generated by the timber sale. The microclimate would likely change within the harvest units as a result of the timber harvest, but probably not to the degree that would make the units unsuitable for the species. In effect, the proposed action would degrade but not remove 70 acres of potential Oregon Slender Salamander, Puget Oregonian, Columbia Oregonian, and Evening Fieldslug habitat from the area.

Table 1: BE SUMMARY: 2004 SLIP COMMERCIAL THIN

SPECIES	HABITAT PRESENCE	SPECIES PRESENCE?	EFFECT CALL*
Threatened			
Northern Spotted Owl	Yes	Likely	MA-NLAA
Bald Eagle	No	No	NE
Canada Lynx	No	No	NE
Sensitive			
Oregon Slender Salamander	Yes	Unknown	MIIH
Larch Mountain Salamander	No	No	NI
Cope's Giant Salamander	No	No	NI
Cascade Torrent Salamander	No	No	NI
Oregon Spotted Frog	No	No	NI
Painted Turtle	No	No	NI
Northwestern Pond Turtle	No	No	NI
Horned Grebe	No	No	NI
Bufflehead	No	No	NI
Harlequin Duck	No	No	NI
Peregrine Falcon	No	No	NI
Gray Flycatcher	No	No	NI
Baird's Shrew	No	No	NI
Pacific Fringe-tailed Bat	No	No	NI
California Wolverine	No	No	NI
Pacific Fisher	No	No	NI
Puget Oregonian**	Yes	Unknown	MIIH
Columbia Oregonian**	Yes	Unknown	MIIH
Evening Fieldslug	Yes	Unknown	MIIH
Columbia Dusksnail**	No	No	NI
Dalles Sideband**	No	No	NI
Crater Lake Tightcoil**	No	No	NI

*NE = No effect

*BE = Beneficial effect

*MA-NLAA= May Affect, Not Likely to Adversely Affect

*MA-LAA= May Affect, Likely to Adversely Affect

*NI = No Impact

*MIIH = May Impact Individuals or Habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species

**These species were formerly Survey and Manage Species and are currently classified as a Sensitive species on the Region 6 Regional Forester's Sensitive Species list for the Mt. Hood National Forest.

/S/ Sharon Hernandez
Supervisory Wildlife Biologist
12/14/04

Slip Thinning Project
Clackamas River Ranger District
Mt. Hood National Forest

PROPOSED, ENDANGERED, THREATENED, AND SENSITIVE (PETS) PLANT,
BRYOPHYTE, LICHEN AND FUNGI BIOLOGICAL EVALUATION

Project Location and Description

The project is located in T.06S., R.06E., Section 4 in Clackamas County, Oregon. The proposed action is to harvest wood fiber from 70 acres of matrix land. Trees will be thinned to approximately 80 to 130 variably spaced trees per acre. No roads would be constructed. Ground based and skyline logging systems would be used. Additional project design criteria that are considered when determining effect to PETS include provisions to leave existing concentrations of down wood intact, avoid impacts to concentrations of hardwood species, particularly large vine maple, and restrict equipment to designated roads and skid trails.

At present, the project area consists of a closed-canopy stand of 50 to 60 year old Douglas-fir (*Pseudotsuga menziesii*) with an understory of western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), vine maple (*Acer circinatum*), red alder (*Alnus rubra*) and minor amounts of rhododendron (*Rhododendron macrophyllum*). Major associated species include Oregon grape (*Berberis nervosa*), salal (*Gautheria shallon*), sword fern (*Polystichum munitum*), snowberry (*Symphoricarpos albus*), rose (*Rosa* sp.), red huckleberry (*Vaccinium parviflora*), thimbleberry (*Rubus parviflora*), vanilla-leaf (*Achlys triphylla*), twinflower (*Linnaea borealis*), inside-out flower (*Vancouveria hexandra*), wood strawberry (*Fragraria vesca*), pathfinder (*Adenocaulon bicolor*), wild ginger (*Asarum caudatum*), goldthread (*Coptis laciniata*) and bunchberry (*Cornus canadensis*). Local concentrations of devil's club (*Oplopanax horridum*) and salmonberry (*Rubus spectabilis*) are found in riparian areas. The majority of the project area is in the Western Hemlock/Dwarf Oregongrape and Western Hemlock/Dwarf Oregongrape-Salal Plant Associations (Halverson *et al.* 1986).

The Biological Evaluation Process

The objectives of the Biological Evaluation are as follows:

1. To ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or contribute to animal species or trends toward Federal listing of any species.
2. To comply with the requirements of the Endangered Species Act that actions of Federal agencies not jeopardize or adversely modify critical habitat of Federally listed species.

3. To provide a process and standard by which to ensure that threatened, endangered, proposed, and sensitive species receive full consideration in the decisionmaking process. To achieve these objectives, all Forest Service projects, programs, and activities are to be reviewed for possible effects on Proposed, Endangered, Threatened, and Forest Service Sensitive (PETS) Species and the findings documented in the Decision Notice (FSM 2672.4).

The three steps to complete a biological evaluation are outlined in US Forest Service Manual (2672.42, 2672.43). Step 4 may also be required in certain circumstances. The steps are as follows.

Step 1. Pre-field Review: Each area potentially affected by management actions is investigated for potential PETS plant habitat in the pre-field review. To determine whether potential habitat exists in the proposed project area a number of sources should be used including the Oregon Natural Heritage Database of rare species, MHNH PETS plants database, aerial photos, topographic maps, and knowledge provided by individuals familiar with the area. Each PETS plant species documented or suspected to occur on the Mt. Hood National Forest is considered.

Step 2. Field Reconnaissance: Field reconnaissance is conducted when Step 1 has determined that there is potential for PETS species to occur within or adjacent to the project area. Surveys must be conducted during the time of year when the target species can be identified.

Step 3. Risk Assessment: If a PETS plant is found on or adjoining a site where an action is proposed, a risk assessment of the effects of the proposed action on the species and its habitats must be completed. A risk assessment considers (a) the likelihood of beneficial or adverse effects to the population or individuals from the proposed activities, and (b) the consequences of these effects to determine what the cumulative effects will be to the species as a whole. The risk assessment then makes a determination of No Effect, Beneficial Effect, or May Effect on the species and the process and rationale for the determination is documented in the environmental assessment or the environmental impact statement. Recommendations are offered for removing, avoiding, or mitigating for adverse effects.

Step 4. Botanical Investigation: When a risk assessment determines that information is not sufficient enough to assess the significance of the effects, a Botanical Investigation is required. This procedure involves additional investigation that essentially becomes background information for a conservation strategy. The result is a determination of significance of effects on species conservation and population objectives.

RESULTS

Step 1. Pre-field Review of Existing Information

The Region 6 Regional Forester's Sensitive Species List, as revised July, 2004, was used to determine species or vascular plants, fungi, bryophytes and lichens that are documented from or suspected to occur on the Mt. Hood National Forest. Table 1 documents those species that have potential to occur in forested habitat within the vicinity of the proposed project area.

Biological Evaluation for Vascular Plant, Lichen, Bryophyte and Fungi PETS Species
Slip Thinning Project

A review of the Mt. Hood NF sensitive plant database (K:\bot_db\senplant) and the Inter-agency Species Management System (ISMS) did not find any known locations for PETS species within the project area.

Table 1.

<u>Species Name</u>	Common Name	Habitat	Season	Habitat in Project Area?
Vascular Plants				
<u><i>Agoseris elata</i></u>	tall agoseris	Moist-dry meadow	June-Aug	No
<u><i>Arabis sparsiflora var. atrorubens</i></u>	sicklepod rockcress	Dry meadow, shrub-steppe	May-Aug	No
<u><i>Aster gormanii</i></u>	Gorman's aster	Dry cliffs, talus, rock slopes above 3500'	June-Sept	No
<u><i>Astragalus tyghensis</i></u>	Tygh Valley milkvetch	Shrub-steppe grassland	May-Aug	No
<u><i>Botrychium lanceolatum</i></u>	lance-leaved grape fern	Sub-alpine meadow, glacial till	July-Sept	No
<u><i>Botrychium minganense</i></u>	Mingan moonwort	Forested wetlands	June-Sept	No
<u><i>Botrychium montanum</i></u>	mountain grape-fern	Forested wetlands	June-Sept	No
<u><i>Botrychium pinnatum</i></u>	pinnate grape fern	Forested wetlands	June-Sept	No
<u><i>Calamagrostis breweri</i></u>	Brewer's reedgrass	Subalpine, moist to dry meadows	June-Sept	No
<u><i>Carex livida</i></u>	pale sedge	Wet-dry meadow, fen	June-Sept	No
<u><i>Castilleja thompsonii</i></u>	Thompson's paintbrush	Rock outcrops east of the Cascade Crest	July-Aug	No
<u><i>Cimicifuga elata</i></u>	tall bugbane	Mesic mixed hardwood-conifer forest	June-Sept	Yes
<u><i>Coptis trifolia</i></u>	3-leaflet goldthread	Edge of forested fens	June-July	No
<u><i>Corydalis aquae-gelidae</i></u>	cold water corydalis	Forested seeps and streams	June-Sept	No
<u><i>Diphasiastrum complanatum</i></u>	ground cedar	Open conifer forest	Apr-Nov	No
<u><i>Erigeron howellii</i></u>	Howell's daisy	Moist-dry cliffs, talus, rocky slopes	June-Sept	No
<u><i>Fritillaria camschatcensis</i></u>	Indian rice	Moist-dry meadow	June-Aug	No
<u><i>Howellia aquatilis</i></u>	howellia	Low elevation lakes and ponds	June-Sept	No
<u><i>Lewisia columbiana var. columbiana</i></u>	Columbia lewisia	Dry cliffs, talus, rocky slopes	June-Sept	No

<u>Species Name</u>	Common Name	Habitat	Season	Habitat?
Vascular Plants				

Biological Evaluation for Vascular Plant, Lichen, Bryophyte and Fungi PETS Species
Slip Thinning Project

<i>Lycopodiella inundata</i>	bog club-moss	Wet meadows and bogs	July-Sept	No
<i>Montia howellii</i>	Howell's montia	Moist-dry open lowland forest	April-July	No
<i>Ophioglossum pusillum</i>	adder's tongue	Wet-moist meadow	June-Sept	No
<i>Phlox hendersonii</i>	Henderson's phlox	Subalpine, dry, rocky, Scree	July-Sept	No
<i>Potentilla villosa</i>	villous cinquefoil	Subalpine, dry, rocky, scree	July-Sept	No
<i>Ranunculus reconditus</i>	obscure buttercup	Shrub-steppe grasslands	April-June	No
<i>Romanzoffia thompsonii</i>	mistmaiden	Vernally wet cliffs	April-June	No
<i>Scheuchzeria palustris</i> <i>var. americana</i>	scheuchzeria	Wet meadow, bog, fen	June-Sept	No
<i>Sisyrinchium sarmentosum</i>	pale blue-eyed grass	Moist-dry meadow	June-Aug	No
<i>Suksdorfia violacea</i>	violet suksdorfia	Moist cliffs, talus, rocky slopes	May-July	No
<i>Taushia stricklandii</i>	Strickland's taushia	Moist-dry meadow	June-Sept	No
<i>Wolffia borealis</i>	dotted water-meal	Pond, lake, gently flowing water	May-Sept	No
<i>Wolffia columbiana</i>	water-meal	Pond, lake, gently flowing water	May-Sept	No
Bryophytes				
<i>Rhizomnium nudum</i>	moss	Moist mineral soil in forest habitat, 3000 – 5000 ft.	June - Oct	No
<i>Schistostega pennata</i>	green goblin moss	Moist mineral soil on rootwads	June-Oct	Yes
<i>Scouleria marginata</i>	moss	Rock and boulders in streams	May - Nov	No
<i>Tetraphis geniculata</i>	bent-awn moss	Large down wood in old growth forest	May-Oct	Yes
Lichens				
<i>Chaenotheca subroscida</i>	pin lichen	Boles of live trees and snags in moist forest habitat.	May-Nov	Yes
<i>Dermatocarpon luridum</i>	lichen	Rock submerged in streams	May-Nov	No

<u>Species Name</u>	<u>Common Name</u>	<u>Habitat</u>	<u>Season</u>	<u>Habitat?</u>
Lichens				
<i>Hypogymnia duplicata</i>	lichen	Conifer boles in areas of >90 inches of precipitation.	May - Oct	Yes
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	lichen	Bark of deciduous trees, down rotted logs and moss on	May-Nov	Yes

Biological Evaluation for Vascular Plant, Lichen, Bryophyte and Fungi PETS Species
Slip Thinning Project

		rock.		
<i>Leptogium cyanescens</i>	lichen	Moss and bark of deciduous and less often coniferous trees.	May-Nov	Yes
<i>Lobaria linita</i>	lichen	Lower bole of conifers and less often mossy boulders.	May-Nov	No
<i>Nephroma occultum</i>	lichen	Tree boles and branches in mature forest habitat	May-Nov	No
<i>Pannaria rubiginosa</i>	lichen	Bark of conifer and deciduous trees in moist forest habitat.	May-Nov	Yes
<i>Peltigera neckeri</i>	lichen	Many substrates in moist forest.	May-Nov	Yes
<i>Peltigera pacifica</i>	lichen	On moss in moist forest habitats	May-Nov	Yes
<i>Pilophorus nigricaulis</i>	lichen	Rock on cool, north-facing slopes.	May-Nov	No
<i>Pseudocyphellaria rainierensis</i>	specklebelly	Tree boles of hardwoods and conifers in mature forest habitat.	May-Nov	No
<i>Ramalina pollinaria</i>	lichen	Bark in moist, low-elevation habitats.	May-Nov	Yes
<i>Tholurna dissimilis</i>	lichen	Branches of krummolz at moderate to high elevations.	Jun-Oct	No
<i>Usnea longissima</i>	lichen	Branches of conifers and hardwoods in moist forest habitats.	Apr-Nov	Yes

<i>Species Name</i>	Common Name	Habitat	Season	Habitat?
Fungi				
<i>Bridgeoporus nobilissimus</i>	noble polypore	Large true fir snags	May-Nov	No
<i>Cordyceps capitata</i>	earthtongue	Parasitic on deer truffles (Elaphomyces spp.)	Sept-Oct	Yes
<i>Cortinarius barlowensis</i>	mushroom	Montane coniferous forest to 4000 ft.	Sept-Nov	Yes
<i>Cudonia monticola</i>	earthtongue	Spruce needles and coniferous debris.	Aug-Nov	No

Biological Evaluation for Vascular Plant, Lichen, Bryophyte and Fungi PETS Species
Slip Thinning Project

<i>Gomphus kauffmanii</i>	mushroom	Terrestrial in deep humus under pine and true fir	Sep-Nov	No
<i>Gyromitra californica</i>	mushroom	On or adjacent to well-rotted conifer stumps and logs.	June	Yes
<i>Leucogaster citrinus</i>	truffle	Associated with the roots of conifers up to 6600 feet.	Aug-Nov	Yes
<i>Mycena monticola</i>	mushroom	Terrestrial in conifer forest above 3300 feet.	Aug-Nov	No
<i>Otidea smithii</i>	cup fungi	Terrestrial under cottonwood, Doug.-fir and w. hemlock.	Aug-Dec	Yes
<i>Phaeocollybia attenuata</i>	mushroom	Terrestrial in conifer forest.	Oct-Nov	Yes
<i>Phaeocollybia californica</i>	mushroom	Terrestrial associated with silver fir, Doug.-fir and w. hemlock	May, Oct-Nov	Yes
<i>Phaeocollybia olivacea</i>	mushroom	Terrestrial in low-elevation conifer forest.	Oct-Nov	Yes
<i>Phaeocollybia piceae</i>	mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Oct-Nov	Yes
<i>Phaeocollybia pseudofestiva</i>	mushroom	Terrestrial under mixed conifers and hardwoods.	Oct-Dec	Yes
<i>Phaeocollybia scatesiae</i>	mushroom	Terrestrial, associated with true fir and Vaccinium spp.	May, Oct-Nov	No

<i>Species Name</i>	Common Name	Habitat	Season	Habitat?
Fungi				
<i>Ramaria amyloidea</i>	coral mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Sep-Oct	Yes
<i>Ramaria geltiniantia</i>	coral mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Oct	Yes
<i>Sowerbyella rhenana</i>	cup fungi	Terrestrial in older conifer forest.	Oct-Dec	No

Step 2: Field Reconnaissance

A field survey was conducted within the project area on November 8, November 12 and December 3, 2004. All vascular plant, lichen and bryophyte species with potential habitat within the project area were determined to be “surveyable”. With the exception of the perennial conk, *Bridgeoporus nobilissimus*, it was determined that the survey would not be able to identify the presence of fungi species having potential habitat in the project area.

An “intuitive controlled” survey methodology was used, where all recognized habitats are initially sampled. The survey then focuses on those habitats with potential for one or more PETS species. Habitats surveyed include;

- 1) boles and branches of conifer trees from ground-level to approximately 15 feet,
- 2) boles and braches of hardwood trees and shrubs from ground-level to approximately 15 feet
- 3) snags
- 4) rootwads in high humidity microsities
- 5) large class III, IV and V down wood
- 6) cut ends of felled trees
- 7) perennial and ephemeral stream drainages
- 8) terrestrial habitat

Lichen and bryophyte diversity on conifer boles and branches was not well developed and found to be represented by a few relatively common species including lichens *Allectoria sarmentosa*, *Cladonia transcendens*, *Evernia prunastri*, *Hypogymnia enteromorpha*, *Parmelia pseudosulcata*, *Platismatia glauca*, *P. stenophylla*, *Sphaerophorus globosus*, and the bryophytes *Dicranum scoparium*, *Hypnum circinale* and *Orthotrichum* sp.. Lichen and bryophyte biomass, or abundance, was low in this habitat as well. This was likely due to the young stand age of the trees. A rich diversity of lichen and bryophyte species and greater biomass was found on pockets of mature vine maple (*Acer circinatum*) and to a lesser degree, red alder (*Alnus rubra*), found scattered throughout project area. In addition to the species previously mentioned, lichens in this habitat included *Hypogymnia inactiva*, *Leptogium polycarpum*, *Leptogium “tacomae”*, *Lobaria pulmonaria*, *Nephroma resupinatum*, *Peltigera collina*, and *Pseudocyphellaria anthrapsis*. Bryophytes included *Brachythecium frigidum*, *Frullania nisquallensis*, *Isothecium stoloniferum*, *Neckera douglasii*, *Plagiothecium undulatum*, *Porella navicularis*, and *Scapania bolanderi*. Large amounts of Class III, IV and V down wood as well as the terrestrial habitat have a high diversity and biomass of bryophytes including *Atrichum selwynii*, *Aulacomnium androgynum*, *Bazzania trilobata*, *Cephalozia bicuspidata*, *C. lunifolia*, *Eurhyncium oreganum*, *Hylocomnium splendens*, *Leucolepis menziesii*, *Rhizomnium glabrescens*, *Rhytidiadelphus triquetus*, and the lichens *Peltigera canina* and *P. polydactyla*.

Findings

PETS species detected by surveys: **NONE**

Species Not Surveyed But Assumed Present:

<i>Cordyceps capitata</i>	<i>Phaeocollybia olivacea</i>
<i>Cortinarius barlowensis</i>	<i>Phaeocollybia oregonensis</i>
<i>Gyromitra californica</i>	<i>Phaeocollybia piceae</i>
<i>Leucogaster citrinus</i>	<i>Phaeocollybia pseudofestiva</i>
<i>Otidea smithii</i>	<i>Ramaria amyloidea</i>
<i>Phaeocollybia californica</i>	<i>Ramaria gelatiniaurantia</i>
<i>Phaeocollybia attenuata</i>	<i>Sowerbyella rhenana</i>

Step 3. Risk Assessment

Table 2 displays the effect of the proposed action on species that were determined to have potential habitat within the project area.

Fungi species with potential habitat in the project area that were not surveyed for are discussed below.

Cordyceps capitata is a widespread but locally rare species documented from 38 sites in the western Cascade and Coast Ranges in Washington, Oregon and northern California. Three sites are known from Mt. Hood NF on Zigzag and Clackamas Districts. The species is parasitic on the fruiting body of *Elaphomyces* spp., a genus of underground-fruiting fungi in the truffle group. *Elaphomyces* is associated with the roots of conifers. The project will not remove all host trees for *Elaphomyces*. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Cortinarius barlowensis is widely distributed, known from 16 sites in the western Cascades, Coast Range and Olympic Mountains of Washington and Oregon. There are two known sites from the Mt. Hood NF on the Zigzag District. Habitat is soil under conifers. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Gyromitra californica is distributed from British Columbia to northern California and east to Colorado, Montana and Nevada. It is known in Washington, Oregon and northern California from 35 sites. Three sites are known from the Mt. Hood NF on Clackamas, Zigzag and Hood River Districts. This species is found on well-rotted stumps and logs of conifers or in soil with rotted wood. Project design criteria will retain concentrations of down wood and soil compaction will be limited by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Leucogaster citrinus is endemic to the Pacific Northwest, known from western Washington, western Oregon and northern California and known from 45 sites. There are five sites from the Mt. Hood NF, Zigzag District. This truffle species is associated with the roots of conifers. The project will not remove all host trees for *L. citrinus*. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Otidea smithii is known from 10 scattered sites in the western Washington, Western Oregon and northern California. On the Mt. Hood NF, there is one known location on Clackamas District. This species is found on soil under Douglas-fir, western hemlock and cottonwood. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia attenuata is endemic to the Pacific Northwest from western Washington and western Oregon to northern California where it is known from 131 sites. There is one site known from the Mt. Hood NF on Zigzag District. This species is on soil under conifers. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia californica is endemic to the Pacific Northwest, known from 34 sites in western Washington, western Oregon and northern California. No sites are known to occur on the Mt. Hood NF, however, there is a site on the adjacent Columbia River Gorge National Scenic Area. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. The project will not remove all host trees for *P. californica*. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia olivacea is endemic to the Pacific Northwest, known from 92 sites in western Washington, western Oregon and northern California. There is one known site on the Mt. Hood NF on Zigzag District. This species is terrestrial under conifers. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia oregonensis is endemic to the Pacific Northwest, known from 10 sites in the Oregon Coast Range and western Cascades. On Mt. Hood NF there are two sites from Zigzag District. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. The project will not remove all host trees for *P. oregonensis*. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia piceae is endemic to the Pacific Northwest, known from 49 sites in western Washington, western Oregon and northern California. There are no known sites on the Mt. Hood NF. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. The project will not remove all host trees for *P. piceae*. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Phaeocollybia pseudofestiva is endemic to the Pacific Northwest, known from British Columbia south through western Washington, western Oregon to California. There are 36 known sites in Washington, Oregon and California, four of which are on the Mt. Hood NF, Zigzag District. The species grows on soil under conifers. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

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Ramaria amyloidea is endemic to the Pacific Northwest from western Washington to northern California. It is currently known from 16 sites. No sites are known from the Mt. Hood NF. Habitat for the species is soil in sites associated with true fir, Douglas-fir and western hemlock. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Ramaria gelatiniaurantia is endemic to the Pacific Northwest, known from 24 sites from western Washington to northern California. Two sites are located on the Mt. Hood NF, Clackamas River District. Habitat for the species is soil in sites associated with true fir, Douglas-fir and western hemlock. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Sowerbyella rhenana occurs in Europe, Japan and Northwest North America. In the Pacific Northwest, it is known from 55 sites in western Washington, western Oregon and northern California, including two sites from the Mt. Hood NF on Clackamas River and Zigzag Districts. Habitat for the species is soil under conifers. The project will limit soil compaction by restricting equipment to designated roads and skid trails. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project.

Table 2

Vascular Plants			
<u>Species Name</u>	Common Name	Species Present in Project Area?	Impact of Project
<i>Cimicifuga elata</i>	tall bugbane	No	No Impact
Lichens			
<i>Chaenotheca subroscida</i>	pin lichen	No	No Impact
<i>Hypogymnia duplicata</i>		No	No Impact
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	jellyskin lichen	No	No Impact
<i>Leptogium cyanescens</i>	blue jellyskin lichen	No	No Impact
<i>Lobaria linita</i>	lungwort	No	No Impact
<i>Pannaria rubiginosa</i>	brown-eyed shingle lichen	No	No Impact
<i>Peltigera neckeri</i>	black saddle lichen	No	No Impact
<i>Peltigera pacifica</i>	fringed pelt lichen	No	No Impact
<i>Usnea longissima</i>	Methuselah's beard lichen	No	No Impact
Fungi			
<i>Cordyceps capitata</i>	earthtongue	Yes	No Impact
<i>Cortinarius barlowensis</i>	mushroom	Yes	No Impact
<i>Gyromitra californica</i>	mushroom	Yes	No Impact
<i>Leucogaster citrinus</i>	truffle	Yes	No Impact

Biological Evaluation for Vascular Plant, Lichen, Bryophyte and Fungi PETS Species
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<i>Otidea smithii</i>	cup fungi	Yes	No Impact
<i>Phaeocollybia attenuata</i>	mushroom	Yes	No Impact
<i>Phaeocollybia californica</i>	mushroom	Yes	No Impact
<i>Phaeocollybia olivacea</i>	mushroom	Yes	No Impact
<i>Phaeocollybia piceae</i>	mushroom	Yes	No Impact
<i>Phaeocollybia oregonensis</i>	mushroom	Yes	No Impact
<i>Phaeocollybia pseudofestiva</i>	mushroom	Yes	No Impact
Fungi			
<i>Ramaria amyloidea</i>	coral fungi	Yes	No Impact
<i>Ramaria gelatiniaurantia</i>	coral fungi	Yes	No Impact
<i>Sowerbyella rhenana</i>	cup fungi	Yes	No Impact

The effect of the proposed action on PETS species having habitat in the project are is:

No Impact

May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species.

Will Impact Individuals or habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

Beneficial Impact

The Biological Evaluation is complete.

/s/ Marty Stein
Marty Stein, Botanist

December 21, 2004
Date