

Response to Substantive Comments

The proposed action for the Cloak Thinning Timber Sale was made available for public comment, (36 CFR 215, 5/13/03). Letters and e-mails were received during the 30-day comment period, which ended on August 4, 2004.

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

This appendix responds to the substantive comments. Many of the letters, and e-mails contained similar comments, which will be combined for the purpose of response. Substantive comments are comments that are within the scope of the proposed action, are specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons for the Responsible Official to consider (36 CFR 215.2).

The full text of letters and e-mails are in the analysis file; the following is a summary. The agency responses are in italics and highlighted. In the italicized responses, page numbers refer to the Cloak Environmental Assessment unless otherwise specified.

A letter containing the following comments was received from Bruce Hemenway of the South Fork Water Board.

My recommendation is to insure that best management practices (BMPs) are adhered to. BMPs such as no-harvest buffers along streams and directional felling away from streams are important to insure that water quality is maintained. These measures provide for the protection of water quality. They also provide protection for threatened, endangered and sensitive fish species. *All timber sale preparation work is monitored to ensure that no-harvest buffers, as well as the other design criteria are incorporated into the timber sale contract. A certified sale administrator highly skilled in implementing BMPs would also monitor all timber sale activities to ensure protection of water quality. (p. 27-28).* I also recommend that if fertilizer application areas are found to have soils prone to leaching that application be suspended in these areas. *No soils prone to leaching would be fertilized (p. 28 & 34).* Also, I request that I be able to monitor the logging activities from time to time to insure that the BMPs are being implemented as planned. Further, I request an opportunity to collaborate with the Forest Service during the development and implementation of the water quality monitoring plan for fertilization. *The South Fork water provider and any of the other water providers within the Clackamas River watershed are more than welcome to monitor logging operations and to collaborate with us in the development and implementation of a water quality monitoring plan for fertilization (p. 28).*

A letter containing the following comments was received from Mickey Bellman.

Because these are designated matrix lands, you should target timber production and future harvest. There are many other areas dedicated solely to wildlife, to recreation, and to aesthetics; it is not necessary to manage matrix lands for any purpose other than timber

production. *The Forest Plan contains many Forest-wide standards and guidelines that incorporate protections or enhancements for various resources while also managing for timber production.*

What is the purpose of connectivity? Birds and animals can easily travel throughout the forest. The entire Mt. Hood forest is already a patchwork of different age classes and timber types. Your “sidewalk corridor” of one forest type is not necessary. *A concern about the connectivity of mature habitats, particularly for species that are not highly mobile, was identified in the watershed analysis. The connectivity network is a temporary concept that would likely continue to be valid until plantations in riparian reserves grow to provide this connectivity (p. 9 & 52).*

Natural second-growth stands in matrix should be thinned for optimal timber productivity. A light thin would result in multiple thinning entries with potential to damage soil and residual trees. You should thin to a wider spacing so you only have to do one thin. *Thinning to wide spacing is not always desirable and would not optimize timber production (p. 43).*

Your surveys show that there are between 2 and 13 snags per acre in native second-growth stands. Why are you planning to manage for 18.6? The Mt. Hood forest encompasses nearly one million acres. There already exists hundreds of thousands of snags. It is not necessary for every single acre of the forest to have snags. *The 18.6 trees per acre are not all snags. Many of them are live trees with the elements of wood decay (p. 23 & 58).*

Forest workers are not allowed to work anywhere within a tree length of a snag. You are proposing to deliberately place workers in an unsafe and illegal operation. It would be far better to leave a few unthinned areas (which you already have in the hundreds of thousands of wilderness acres) where snags would remain without endangering any woods workers. *The safety of woods workers is one of the reasons we are leaving stable live trees with the elements of wood decay. Many of the units will use a mechanical harvester that keeps the operator inside a protected cab. In these units, there is a greater likelihood of being able to retain some snags that are not hazardous (p. 23& 25).*

What is a forage enhancement area? Is it a clearcut? Are the 70 acres part of the 545 or in addition to it? *It is not a clearcut but an area where tree stocking is reduced to allow sun to the ground where forage plants can thrive. The 70 acres are part of the 545 acres (p. 9).*

Your conversion from MBF to CCF is not correct. This makes the value of the logs wrong. They are worth \$180-195/CCF not \$300/CCF. *The economic analysis helps show differences among alternatives. Market fluctuations and many other factors influence the value at the time of bidding, but the relative difference between the alternatives would remain approximately the same (p. 77).*

The Forest Service must recognize it is no longer in a unique position regarding timber supply. Federal lands once produced large, high quality, high value timber. All that has changed and the trees you now sell are no different in size or quality than the trees produced on commercial tree farms throughout western Oregon. Indeed, the FS must understand it is much easier and less expensive to log on private lands where restrictions are far fewer and more practical. The large number of contract restrictions lessen the likelihood of these thinning sales even receiving bids. *We understand that restrictions add expense to the project and reflect that when a timber sale is appraised.*

Hundreds of miles of roads were paved to reduce maintenance costs and reduce surface runoff into streams. Now you propose to tear up the pavement and return them to their original gravel surface. Who is to be held responsible for the millions of wasted taxpayer dollars spent to pave the roads? *Paved roads may have been optimal at a time when log truck traffic was high, but now gravel is a more economical road surface for the traffic levels that many roads currently experience.*

A letter containing the following comments was received from Oregon Natural Resources Council (ONRC).

Overall, we believe that the Clackamas District is on the right general direction with this project, although we want to see some improvements. We support variable density thinning in young managed stands, with some sidebars (mostly about impacts to soils, gap sizes and composition, variability in leave tree spacing, and legacy retention). As you move forward with more silvicultural planning, we hope to see projects that propose thinning in young managed stands in matrix, riparian reserve and late-successional reserve land designations.

This entire introduction is to demonstrate to you that we are committed to see projects that call for variable density thinning in young managed stands on our public forests planned and implemented. While we have vociferously opposed many of the logging projects developed by the Clackamas District, we do more than step aside if the Clackamas District transitions to variable density thinning with very limited road construction in young managed stands. We will publicly promote such projects.

While we feel that the planning done so far on Cloak is in the right general direction, there are some serious problems that need to be resolved with this project before we give it any support. Thinning must be done very carefully (and in many cases avoided) in order to avoid, minimize, and mitigate logging's numerous adverse ecological effects including: (1) removal of large trees that are disease and fire resistant (Frost 1999); (2) increased levels of fine fuels and short term fire hazard (Weatherspoon 1996, Huff et al. 1995, Wilson & Dell 1971, Fahnestock 1968); (3) increased mortality of residual trees due to pathogens and mechanical damage to boles and roots (Filip 1994, Hagle & Schmitz 1993); (4) damage to soil integrity through increased erosion, compaction, and loss of litter layer (Harvey et al. 1994, Meurisse & Geist 1994); (5) creation of sediment that may eventually be delivered to streams and harm fish (Grant & Wolff 1991, Beschta

1978); (6) retention of insufficient densities of large trees and woody debris to sustain viable populations of cavity-nesting and woody debris dependent species (DellaSala et al. 1996); and (7) reduced habitat quality for sensitive species associated with cool, moist microsites or closed canopy forests (FEMAT 1993, Thomas et al. 1993). *These documents were not attached to the comment letter. The Cloak project has been planned carefully and these topics are covered throughout the EA.*

No thinning of older, native stands

While thinning young managed stands has clear benefits, a positive response from thinning older native stands is less certain and is undermined by very certain negative effects. We appreciate that the Forest Service has developed an alternative that does not thin older native stands. Thinning stands younger than 50 years old should be a higher priority than thinning stands older than 50 years.

Thinning the harvest units that are less than 50 years old will hopefully have minimal impact on the environment (especially soil, water, and wildlife) and thinning such young stands will likely have long-term ecological benefits in terms of accelerating late successional forest characteristics. However, thinning the harvest units that are over 50 years old is more likely to have significant environmental impacts and the long-term benefits in terms of accelerating development of late-successional characteristics is uncertain at best. Recent science tells us that thinning in older stands is less likely to change the trajectory of the stands. The USFS should refocus its efforts on younger stands where the results are likely to be, on balance, more beneficial. In fact, the PA specifically mentions that “as stands mature they reach an age at which thinning may not result in the same growth response that would be expected in younger stands” (PA 41-42). *We do not disagree that early thinning is desirable. Natural second-growth stands will respond to thinning by maintaining the growth rates of the retained trees. If not thinned, there would be a gradual decline in growth rates. Thinning would result in healthier trees and a more diverse forest. Thinning is an appropriate treatment to achieve Forest Plan objectives. Harvest in the matrix is appropriate because it enhances health and growth while providing forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future (EA p. 4 & 45). The Forest Plan contains goals for these stands to maintain health and to provide wood fiber (#43 & 44, Forest Plan p. Four-55).*

As the table on page 42 of the PA demonstrates, there are approximately 37,000 acres of young managed stands on the Clackamas District that are at least 35 years old. Yet only 1500 acres of young managed stands have been thinned. USFS should focus on the areas where there is the clearest benefit to thin and the least amount of controversy. There should be no shortage of young stands on existing road systems to enter. *Most of the 37,000 acres are not ready for a commercial thinning (p. 48). Within the Clackamas River Ranger District there is a wide range of site productivity based on soils, elevation and the environment. While plantations at the lowest elevation and on moist sites may be ready for commercial thinning at 35 to 45 years of age, there are many plantations at higher elevations and on drier sites that may not be ready for a commercial thinning until*

age 55 to 65. As plantations grow and become ready for thinning, stand exams are conducted and if they are found to need thinning, and are economically viable they are put into the planning program.

The PA should have had a better discussion (in light of recent research results) of the anticipated impacts and benefits of thinning on the different age classes of trees in the different harvest units. That being said, we do recognize that the Forest Service included alternative D, which thins no native forest stands. Given that these stands provide some late-successional forest habitat (including NRF habitat for NSO), and are significantly different from the rest of the project, all native forest stands should be dropped from the project. In terms of NSO habitat, the PA clearly paints a bleak picture of suitable habitat (43). While dispersal habitat is likely not a limiting factor for owls, suitable NRF habitat is. One of the natural stands, 475 is located within ¼ mile of a known activity center. *The EA evaluates the effects and benefits of thinning both plantations and natural second-growth stands (p. 43-48).*

The managed stands will continue to function as dispersal habitat and are more likely to develop into NRF habitat if they are thinned.

While thinning the managed stands would have positive benefits for some species of migratory birds and negative impacts on others, far more migratory birds are negatively impacted by thinning the older, natural stands (PA, 56). *There are vast areas of natural second growth in areas that are not planned for thinning such as in the LSRs and in the Roaring River watershed (p. 65-66).*

The natural stands are characterized by USFS as if there is an urgent need to log (PA, 39). Susceptibility to disturbance regimes such as decay, insects and disease will likely create spatial heterogeneity over time. Although the USFS describes dwarf mistletoe as “causing reduced growth and wood quality, and increased mortality” (PA, 39) later the USFS mentions the value of dwarf mistletoe to create habitat. “Loose bark or brooms caused by mistletoe or rust can also provide important habitat for a number of species” (PA, 50). It appears that USFS is planning on retaining some mistletoe affected trees in order to help meet its snag retention targets at the same time as using this disturbance agent as a reason to log these stands. *Silvicultural prescriptions for mistletoe can help to minimize the effects on stand growth rates, and at the same time be used to maintain or increase diversity within the stand for wildlife. There is no intent to eradicate it (p. 45).*

We believe that you should not thin the native forest stands that have large old trees, large old snags, and a diversity of vegetation in the overstory and the understory. This project has been promoted as a young stand thinning project. Look at the picture on the front of the PA and descriptions in past issues of Sprouts. This could be a golden opportunity to build trust with the public. You should drop the native forest stands you have identified in the PA (466, 468, 475, 494, 495, 501, 507, 566, 578, and 579) as well as an other stand or portions of stands brought to your attention during citizen surveys of this project. *This option is included in Alternative D (p. 19).*

Adjust thinning prescriptions.

If Forest Service wishes to restore complexity and diversity to managed stands, the prescriptions must be truly variable density. *The thinning will be designed to add complexity and diversity (p. 4-10).*

We are concerned that the thinning prescriptions are standard, thin from below commercial thinning. We also are concerned about the about the size of gaps to function as forage for deer and elk. *The thinning prescriptions would not be similar to those found in tree farms dedicated to timber production. The prescriptions would include guidelines needed to create a diverse forest to meet our management objectives. They would be similar to your description of variable density thinning. Forage enhancement areas would range from 1 to 3 acres in size. These areas would also create structural diversity (p. 4-10).*

First, we suggest that you include in the EA in tabular form detailed information about the relative densities in each stand and an idea how variable that relative density is in each stand. While trees per acre data is helpful, relative density gives a better picture of the condition of the stand and a more accurate picture of the potential thinning response. Please provide some detail about the target relative densities post-treatment in each stand and how much relative density variability there will be post-treatment in each stand. *Most readers do not understand relative density and relate better to trees per acre. We have included a table of relative densities for each unit in Appendix E.*

We believe the Forest Service should use variable density thinning prescriptions in all young stand thinning projects regardless of land allocation. The large number of uniform, dense mid seral stands is far higher than midpoint historic range of variability values for this forest type. While thinning can get some of our dense mid seral eggs into different successional baskets, it is critical to recognize that, just like traditional regen harvest and salvage logging, thinning to uniform densities tends to simplify and homogenize forests and disturb soils which lead to invasive species and hard-to-alter successional trajectories. *Thinning will add complexity and diversity. It was not our intent to imply that thinning would be uniform. They would be very similar to your description of variable density thinning. Clarification has been added to the EA (p. 4-10 & 43).*

We encourage the Mt. Hood National Forest to surround small (.25-1 acre) gaps (that have some scattered trees) with moderate and high retention areas, including some small patches of untreated areas with very high relative densities. This should be done across every stand you treat with this project, although a more cautious approach, without gaps, should be used in riparian reserves. In the current design, the only variability comes in this current from scattered forage units, essentially shelterwood cuts (10-30 tpa) of up to 3 acres (alternative B) or up to 5 acres (alternative E) in size across 70 acres. We would support the creation of a number of low residual retention gaps in upland forests (on the order of one gap for every 5 or 10 acres thinned), but the size of these gaps should be much smaller than 3 acres. In Andrew Carey's GTR 457, he recommends applying different residual density prescriptions on a very small scale, approximately 0.5 acre.

While low retention gaps could be as large as one acre, they should be generally smaller. *The EA discusses the consideration of this option (p. 21).*

It is highly unlikely that 3-acre gaps the PA calls for will function effectively as early successional forest forage for deer and elk for very long. The Forest Service clearly states that planting forage in these gaps “may occur in these areas if funding becomes available” (PA, 8). Thus, providing this forage is highly speculative. *The areas will provide forage whether forage species are planted or not because the forage plants are currently present but not productive because of shade. The planting or seeding of grass and other forage species would improve the quality of forage (p. 9 & 63).* It is likely that these areas will be colonized with conifer and will soon lose their function as forage. *The forage areas are not intended to be permanent. They provide forage for several years until the canopy of the trees close. In the long term, additional forage enhancement areas would have to be created elsewhere (p. 46-48).* The PA notes that just in the last eight years since the watershed analysis was completed, significant ingrowth in the young managed stands that have reduced forage (40-41). Besides, the PA suggests the lowest quality of forage is for winter range (53). Any forage recruited with this project will very likely be under snow all winter and will not improve winter range conditions in the project area. A number of smaller gaps should function just as effectively for forage and are more in keeping with the current science suggestions for gap creation for horizontal diversity. *Winter range areas (by definition) are not usually under so much snow that the animals can't get to forage.*

Disturbances that replace mid and late seral forests with early seral forests will happen without logging to create it. *Forage enhancement areas would not be considered early-seral forest; they would continue to be mid-seral stands.* Over the last five years, I have frequently heard from agency staff about the lack of early seral forests. At the same time, we have had a lot of stand replacing fires creating tens of thousands of acres of forage suitable for deer and elk. Right now, there is a fire burning on the Warm Springs reservation relatively close to the Cloak project area. Whether or not this fire increases forage in the project area or not, USFS should consider the fire significant new information regarding population trends of large ungulates. In addition, it is only a matter of time until a fire creates large amounts of early seral forest in the project area that will function far better as deer and elk forage than 3 or 5-acre shelterwood cuts. *Deer and Elk analysis areas are approximately 5,000 acres in size. (Forest Plan p. Four-72). Habitat needs to be provided in these areas. While a fire on the East side of the Forest may benefit animals there, deer and elk herds on the West side would not benefit. The Warm Springs fire was approximately 25 miles away from the Cloak project. All past fires that created forage are included in the vegetation data that went into the deer and elk cumulative effects analysis. There have not been sufficient forest fires in the Cloak area to meet forage needs (p. 47 & 62).*

That being said, we do support the creation of gaps for other reasons than just forage. We just feel these gaps should be smaller and more frequent on the landscape.

Retain all large snags.

Losing large, old snags in any decay class in a landscape deficient in them in order to aid the operational efficiency of thinning removes the most important and most difficult to replace habitat. This is counterproductive to stated objectives for projects designed to promote diversity and complexity to managed stands. Any *prospective* benefits to complexity and diversity accomplished by thinning these stands will be negated by the *certain* loss of the most important structural components of older, complex stands. The Forest Service clearly indicates that many snags will be lost with this project. “It is likely that some snags would need to be cut down during harvest operations due to safety considerations... Due to the creation of corridors involved in skyline logging, this method usually involves a greater loss of snags than in tractor logging.” (PA, 50). In order to protect snags, USFS must make adjustments to yarding and falling operations to simultaneously protect workers and snags. The USFS must do away with the caveat that they will protect snags except where they create a safety hazard. This is based on a false choice between snags and safety. The agency can just buffer snags from activities that involve workers, then all ecologically important snags can be protected. When we say ecologically important snags, we are not concerned with snags in managed stands recently created by competition related mortality. Small hard snags in young managed stands can be easily replaced by natural causes or by a variety of snag creation methods. But any large, old snags in any decay class cannot easily be replaced and must be retained. Unthinned patches to create horizontal diversity among stands can also serve double-duty to protect snags. Skyline corridors can be adjusted as well to protect snags. *The EA discusses the option of retaining snags by eliminating harvest nearby (p. 21).*

In the young managed stands, large old snags are in such small numbers [“few, if any medium or large snags” (PA, 48)] that adjustments to the layout of units should not be cost-prohibitive or constrain operations. The Forest Service should retain receipts from KV funds or other sources for the specific purpose of re-entering the young stands following thinning release to create snags. This should be analyzed, described, and not be susceptible to funding constraints. *The Cloak EA does not prescribe the creation of snags. Snag creation was included in a Forest-wide restoration EA (p. 58-60).* While the Forest Service has included tree selection criteria to retain those trees “that are defective or have the elements of decay as described in the DecAid advisor”, the PA notes that even if these defective trees are counted with snags, the legacy resources in the managed stands “would approximate snag densities at the 30% tolerance level or below” (PA 50-51). Considering that the PA states that these stands have few, if any snags, almost all of these stands will be below the 30% tolerance level. *Snags and live trees with the elements of wood decay are combined for this calculation. Clarification has been added to the EA (p. 23, 55-60).*

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

to thinning operations in the older native stands, no post-thinning snag numbers are disclosed and the USFS simply states that these stands “would have snag and defective tree densities and size guidelines at the 50% tolerance level” (PA, 50). This seems to contradict the data contained in the PA, which states that the “50% tolerance level for these mid-seral stands would be 18.6 snags per acre greater than 10 inches with 8 of these snags per acre greater than 20 inches in diameter” (49) and only “6.8 medium snags per acre and 2.9 large snags per acre in the Upper and Lower Clackamas and 3.1 medium snags per acre and 1.1 large snags per acre in the Oak Grove” (48) were found in the older native stands. Given that the PA clearly states that snags will be lost, it does not follow that these stands will be at the 50% tolerance level after thinning. The PA does state that 19 trees per acre greater than 10 inches in diameter with elements of decay would be retained in these units (20). However, the PA does not disclose if at least 8 large snags will be retained per acre, which is a requirement of meeting the 50% tolerance level. And we note that on page 52 of the PA, all snag analysis areas have far fewer than 8 large snags per acre. *The EA has been clarified to show that snags and live trees with the elements of wood decay are combined in discussions of tolerance levels. There is no way to know the numbers of snags that may remain after logging (p. 23, 55-60).*

While you have used the DecAID tool as a supplemental standard to the Northwest Forest Plan and RMP standards, you failed to recognize that the authors of DecAID are in fact very critical of basis of these other standards. USFS is required to use the best available science when disclosing the effects of implementing a project to the public. Simply providing for the biological potential for snag dependent may not retain sufficient snags. *The DecAID tool was used. The Forest Plan standards and guidelines remain in effect.*

Given the lack of snags in the project area, and the few snags are concentrated in the native stands, we urge the USFS to drop these stands from the thinning project. As you note, in the PA, Alternative D, which drops all the native forest stands from the project, “would have the least negative impact on the snag and down wood resource” (PA, 51). Given the confusing data in the PA, the lack of certainty about the science, and the low numbers of snags in the project area, all the native forest stands should be dropped from thinning. *Alternative D has no harvest in natural second-growth stands and would therefore retain all snags there (p. 19).*

Avoid more damage to soil.

Given the fact that the soil resource is the basis of forest health and that the soil resource in the Cloak project area has been greatly degraded by past logging and associated activities (i.e. yarding and hauling) more care should be taken to avoid soil disturbance. When it comes to thinning, invariably our largest concern is about new road construction and reconstruction. While we feel that temporary road construction is more appropriate than permanent road construction, temporary roads still channelize water, cause erosion, and conduct invasive weeds.

Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity - habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting - are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals. Road-building in National Forests and other public lands threatens the existence of de facto wilderness and the species that depend on wilderness.

Noses, Reed; The Ecological Effects of Roads;

<http://www.wildrockies.org/WildCPR/reports/ECO-EFFECTS-ROADS.html>

ONRC believes it is possible for the USFS to conduct extensive young stand thinning without extensive construction of new roads. *Most areas can be logged from existing roads. For other areas the proposal is to build temporary roads that do not cross streams and are located on gently sloping land where the risk of sedimentation is low. The roads would be obliterated and revegetated. These temporary roads would not result in the effects listed above (p. 10 & 26).*

One of your evaluation criteria should be whether any degradation of soil offset by long-term benefits brought about by the proposed action. Some weed introduction and soil disturbance from logging can be off-set by enhanced understory diversity and increased growth of conifers brought about directly by the canopy reduction. However, extensive road construction or road reconstruction will not be justified by a small restoration thinning effort. And ground-based logging that allows heavy equipment off of roads may cause significant soil disturbance that will not be offset by any intended benefits to the vegetation. Forest Service should do an analysis that illuminates how many acres of thinning are reached by each road segment so that we can distinguish between short segments of spur that allow access to large areas (big benefit, small cost) and long spurs that access small areas (small benefit, big cost). This can help inform the decision-maker's balancing of the costs and benefits of thinning and roading. The PA does disclose the total road construction for the proposed action (1.8 miles) and reconstruction/reopening (4.4 miles) and it appears that the 240 acres of helicopter yarded units in Alternative C are those stands that require roading to use ground based yarding systems. From the maps, it appears that portions of stands 501, 503, 506 and 511 and all of stands 579 and 578 require temporary roading. The acreage in these stands adds up to only 227 acres, and portions of the first four listed stands could be yarded from the existing roads. In the EA, please provide a stand by stand description of the road spur lengths and the acres each spur accesses for thinning. *Roads are located on the landscape where they serve the long-term transportation needs of the area. A more detailed analysis is not necessary to make informed choices between alternatives (p. 80).*

Included with this analysis should be a full accounting of cross drains needed, approximate flow of new ditching, feet of cut bank, and volume of excavation. If ditches are needed, we disagree that new roading will not be hydrologically linked to any water source. Any flow through the new ditches will connect to streams through the ditches on the current system roads. *Temporary roads are outsloped and do not have ditches or culverts. Since the roads are built on relatively flat slopes, there would be very little excavation.*

Even though the Roads Analysis discussed in the PA (68-70) clearly states that a project level roads analysis can include such topics as storm proofing and road closures, the PA does not discuss any work on the existing road system that involve closures, decommissioning, or stormproofing. In fact, the USFS states that if this project does not provide enough funding, a slump on road 4460 will not even be prepared. This project should provide USFS with enough funding to adequately maintain and put to bed roads in the project area. A well-functioning road system with unnecessary roads closed to vehicular access should be one of your top priorities. *The Cloak project does not include a proposal to close roads that are currently open.*

In addition to the impacts from new roads, it is clear that there is extensive degradation to soils inside the managed stands from previous entries. In fact, USFS admits that many of these areas are already out of compliance with Standards and Guidelines for soil impacts. While there may be long term benefits to thinning these stands, including to processes that help to build soil, it is critical to minimize more degradation, and in extreme cases, eliminate yarding that degrades the soil. Which cloak units are referred to on page 58 of the EA? Do these units have snags that may be lost in helicopter logging operations? Is helicopter logging an option? Any further degradation to soils in units that are already out of compliance is not acceptable. *Helicopter logging is very expensive, fuel intensive and hazardous. Most of the thinning units do not have sufficient timber value to pay for helicopter logging. When existing skid trails are present in the unit they will be used again. Units that currently exceed standards for detrimental soil disturbance are listed in the EA in Appendix E. Design criteria #10 was developed to minimize, prevent and restore areas with detrimental soil disturbance.*

Considering the amount of damage to the soil resource in the project area, the unmanaged, natural stands are even more valuable.

USFS mentions that there are “some small seeps, wet areas and rock outcrops that are too small to show on the maps on pages 10-16. These areas would be excluded from harvest” (PA, 57). USFS must disclose the locations of these areas in the EA so the public can verify that sensitive areas are being buffered. *A more detailed analysis is not necessary to make informed choices between alternatives. They are too small to map. They will be identified in the field during sale preparation and excluded from harvest.*

USFS raises a valid point that longer skidding distances may result in multiple passes and soil compaction similar to that of a temporary road (PA, 30). There may be similar effects in terms of soil compaction but temporary roads generally require some

excavation. USFS should develop a comparison of multiple path yarding with temporary road construction for multiple variables. *A more detailed analysis is not necessary to make informed choices between alternatives.*

Temporary roads still cause serious adverse impacts to soil, water and wildlife, and spread weeds. Decommissioning such roads is not entirely successful and the soil compaction effects can last for decades. The USFS should consider avoiding building spurs by treating some areas non-commercially (e.g. thin lightly, create lots of snags, and leave the material on site). *This option is discussed in the EA (p. 21).*

As you note in the PA, roads that “are on steep and unstable slopes are a primary source of human caused sediment in streams in these watersheds” (29). The Upper Clackamas Watershed (UCWA) analysis states “an estimated 11% of the watershed occurs in unstable geologic areas with a high potential to deliver sediment to streams. They principally occur in the Northwest and West Groups. Field investigations are necessary to identify and assess conditions contributing to slope instability (UCWA, 68). The UCWA then (68-70) details a number of types of geologic features that may be unsuitable for timber harvest. Surveys for these types of areas must be conducted and the results of the surveys disclosed to the public. *Proposed harvest units and roads have been examined for slope stability and have been found suitable for timber management (p. 67).*

UCWA identifies one of the top restoration priorities within the Upper Clackamas Watershed is road decommissioning within the northwest portion of the watershed. (72). This project does not include any analysis for decommissioning roads. USFS should reduce the high road density in the project area and analyze it as part of this project. With the profitable cost/benefit ratio in all action alternatives, USFS should have plenty of KV and other funds to conduct road decommissioning. *Road closures are not connected actions and are not part of the Cloak EA. Public comments indicated a desire to separate timber sale projects from restoration projects (EA p. 20). Many miles of system roads have been closed in recent years on the Clackamas River Ranger District including many in the Cloak project area. Several District-wide and Forest-wide restoration EAs have been developed in recent years to close roads. In the future, additional road closures would be addressed in restoration EAs. The Cloak project would not increase open road density.*

Any analysis to determine the position of roads in the riparian reserves must be included in a NEPA document subject to public review. Roading in reserves has an impact with a long lifespan and the public must have a full disclosure as to the impacts. *No roads would be constructed in riparian reserves with the Cloak project (p. 26).*

Protect water quality and aquatic habitat

More safeguarding must be done to protect water quality and aquatic environments. We do feel that thinning in riparian reserves can help to recruit large diameter material into streams, large trees for shade, as well as promote other elements of older forest

structure to improve aquatic and terrestrial habitat. Clearly, the Northwest Forest Plan envisioned entering dense plantation forests in riparian reserves and thinning in a manner that accomplished these objectives. Given that good spawning habitat for listed fish is close by, recruiting large trees that can make their way down into the fish bearing streams from side channels without harming water quality and the aquatic environment is very important.

Our concerns about riparian reserve thinning are not about tree felling—but about yarding and the efficacy of the no-cut buffers. There may be cases when the no cut buffers (50 feet on perennial streams and 30 on intermittent streams) are not adequate to prevent degradation to water quality. Specifically, larger no cut buffers should be used at the ends of skyline corridors. Skyline corridors are bare strips of land with a compacted surface that runs straight downhill toward streams. Do peer reviewed studies exist that demonstrate that these no cut buffers are adequate to protect water quality at the ends of skyline corridors by allowing for full soil infiltration? We are unfamiliar with these studies if they exist. Unless this data is available, USFS should place larger buffers at the end of skyline corridors. The smaller buffers (30 and 50 feet) may be adequate on stable streambanks without skyline corridors. *Skyline corridors, particularly at the very end, do not usually have bare compacted soil. Waterbars are installed where needed to divert water off to the side. Previous experience does not indicate that sediment flows from skyline corridors to streams.*

While USFS mentions a number of safeguards to protect riparian reserves from fertilizer, we remain concerned that the aerially applied fertilizer will get in streams. How can a helicopter pilot identify all the boundaries of the riparian reserve from the air? We believe that the stand will respond from the thinning without fertilization. The added cost to the taxpayer and the risk to streams does not warrant the application. *Pilots are furnished aerial photos of the units to be treated and the photos have the riparian reserves delineated on them. People are also on the ground and are in radio contact with pilots. Monitoring would occur and adjustments made if necessary (p. 28).*

In addition to the concerns raised in the UCWA regarding roads, the Oak Grove Fork Watershed Analysis (OGWA) also cautions against operating on landslide prone areas. “Fifty-eight recent (within the last 50 years) landslides were identified in the land slide inventory (Map 8-1)... Approximately half of the inventoried landslides are associated with land management activities” (97). No mention in the soils section was made about the high risk landslide areas mapped on page 98 of the WA or any subsequent landslide monitoring data. *None of the units are in landslide prone areas (p. 67).*

A letter containing the following comments was received from BARK.

Bark feels the Cloak project in many ways is a step in the right direction. Instead of directly targeting old growth groves, the Cloak Project is directed toward plantations and second growth. We appreciate this new direction that the district is taking. However, we still have significant concerns about the proposed Alternatives, particularly B and E. Our concerns relate to: logging in riparian reserves; impacts to soil quality; effects on snags;

high road densities; and impacts to endangered species, particularly fish populations and the northern spotted owl. We see this project as having significant impact across the landscape and urge the Forest Service to create an Environmental Impact Statement (EIS) that will more fully address the range of impacts. In the absence of a comprehensive EIS, we urge the Forest Service to, in order of preference, to: withdraw the project, consider Alternative A, or Alternative D. Our next preferred choice is Alternative C.

PLANTATIONS, NATIVE STANDS & OLD GROWTH

Due to the fact that the Cloak Project is a thinning project that takes place in plantations and second growth stands, it is critical to clarify definitions. Bark has field checked almost every unit in the Cloak project, and found some discrepancies between units labeled as plantations versus native second growth stands. For example, Units 480 and 481 are stands that according to Bark have the characteristics of second growth, and in the PA are labeled as plantations. These units were highgraded at some point in the past, and also appear to have been burned post logging. However, in no way do they resemble plantations, which consist of a dense monoculture stands. These units are very diverse, with variable density spacing throughout. It appears that they were logged but allowed to regenerate naturally, as they have all of the characteristics of a naturally regenerating post-fire stand. The only indication of past logging are the enormous Douglas fir stumps scattered throughout the units along with evidence of old skid trails. These stands have structural diversity, and a variety of native undergrowth species throughout. Below is a photo of unit 480. Unit 480 is a second growth stand mislabeled as a plantation. Canopy closure of unit 481 shows that it does not resemble a plantation. *We find no errors in the identification of plantations. These plantations are diverse with variable spacing, and they were clearcut and planted. We have stand records for these plantations as well as old aerial photographs that clearly demonstrate that they are indeed plantations.*

Bark has determined that the following additional units, which are being treated as plantations in the PA, should be considered second growth stands and folded into Alternative D: **427**, 465, **466**, 468, **475**, 476 (part native part plantation?), 480, 481, **494**, 500, **501**, **504**, **507**, 518, **566**, 578, and 579. The units in bold face are of particular concern to us, as they are healthy, late successional old growth stands that are providing critical habitat in an area that is devoid of old growth characteristics. *We find no errors in the delineation of plantation vs. natural second growth. Design Criteria #6 lists natural second-growth stands and the table under alternative D shows zero acres for all of the units that are natural second growth. The natural second growth stands are 466, 468, 475, 494, 495, 501, 503, 507, 566, 578 and 579. These stands are under 100 years of age and some of them have had past harvesting by thinning or salvage logging. Units 427, 465, 476, 480, 481, 500, 504 and 518 are plantations (p. 19 & 23).*

The Oak Grove Watershed has only 42% of its forest in late Successional condition, and the Upper Clackamas has only 37%. Historic conditions in the Clackamas watershed as a whole were much higher than this, and there is lack of Late Successional Forest in the watersheds of the planning area. At present, given the diminished supply of late successional forest in Mt. Hood National Forest and across the region, as blatantly

highlighted by the steady decline of the population of the northern spotted owl, the USFS should be doing everything possible to retain all remaining late Successional forest, raising the percentages in the Upper Clackamas and Oak Grove watersheds closer to historic levels. *Some natural second growth stands have scattered large legacy trees that predate the wildfire that established the new stand and therefore may have some of the characteristics of late-successional forest. However they are still considered to be mid-seral stands and as such they were not counted toward the 42 and 37 percent figures quoted above. The units that are considered nesting/roosting/foraging habitat for owls would be temporarily downgraded to dispersal but would become nesting/roosting/foraging habitat again within approximately 15 years when the crown cover reaches 60% (p. 49-52).*

The proposed action will log 307 acres of forest with late-seral characteristics, PA, 56. Additional late Successional forest will likely be affected that is not accounted for in agency analysis. Logging will most certainly increase exposure of old growth forests adjacent to Cloak Units to wind and weather. Bark is in particular concerned about the effects of old growth that borders units 465, 468, 498, and 571. The effects to these forests should be accounted for in agency analysis. At this time, due to lack of boundary markers for the Cloak project, it is impossible to tell what proximity logging will take place to old growth, and we would like clarity on this. *Of the units listed, only 468 is a natural second-growth stand with some late-successional characteristics, the others are plantations. An analysis of wind risk can be found in the EA in the Timber Productivity section (p. 43-45). The old growth edge has been tested by time and remains intact after the original clearcuts and after the original fire (in the case of unit 468) and is not likely to be significantly affected by wind after a thinning.*

RIPARIAN RESERVES

Bark is very concerned about the impacts of the 217 acres of proposed logging in riparian reserves, particularly the heavy thinning regime that is being proposed leaving only around 80 trees per acre. The PA states that the purpose is to accelerate the development of mature and late-successional stands, and we agree with that goal; however we disagree with the suggested method of implementing it. Light mechanical thinning could be carried out in some riparian areas in the Cloak project to beneficial effect, but this activity should not be included in the commercial portion of the project. Restoration should be done in a manner that does not result in adverse impacts that outweigh benefits. This should consist of thinning of very small diameter trees by hand, with the cut trees left on the ground to add to the down woody debris layer—a characteristic that the PA acknowledges is sorely lacking. The PA states that “if no action were taken in riparian reserves, stands would have reduced capability to produce the size and quantity of coarse woody debris sufficient to sustain physical complexity and stability of the riparian reserves and associated streams,” PA, 4, and yet the proposed action involves removing more potential coarse woody debris. *The EA includes a discussion of Alternatives Considered But Not Fully Developed that describes the option of cutting riparian trees and leaving them (p. 21). Coarse woody debris refers to wood that is generally larger than 20 inches diameter. The long-term objective of thinning riparian reserves is to grow*

large trees that could produce this size log when they fall down. The thinning you suggest would produce small down logs.

The riparian reserves serve a critical wildlife function that will be impaired with the proposed logging. They are designed to act as “connectivity corridors” for animals between Late Successional Reserves and Wilderness areas. Given the precarious state of the northern spotted owl, these areas should be kept intact until studies demonstrate that populations have rebounded to a degree that can handle further reduction of habitat. There are likewise a host of sensitive species that will be adversely impacted by riparian area logging; specifically the aquatic mollusk *Lyogyrus*, PA, 34. *The dispersal of terrestrial species is only one of the objectives of riparian reserves. The northern spotted owl does disperse across the landscape but does not require riparian habitats for this dispersal. The EA found sufficient dispersal habitat for owls (p. 50). Lyogyrus is an aquatic species that does not depend on terrestrial vegetation for its dispersal. The EA indicates that there would be no effect to Lyogyrus (p. 39).*

The PA does not accurately describe the beneficial effects from Alternative A in riparian reserves and in fact contradicts itself in relation to long term impacts. It states that “if no action were taken in riparian reserves, there would be negative long-term effects because stands would have a reduced capability to produce the size and quantity of coarse woody debris,” PA, 28. Yet in other sections of the PA, the agency acknowledges that over time, the forest will create similar desired traits of structural diversity through dying trees and disturbance, with dead trees naturally contributing to down woody debris layer. The main difference then becomes not one of effects but one of time frame, with the idea that desired characteristics will happen faster with a helping hand from the agency. *There is no contradiction. Coarse woody debris refers to wood that is generally larger than 20 inches diameter. The long-term objective of thinning riparian reserves is to grow large trees that could produce this size log when they fall down. The natural processes associated with Alternative A would produce small down logs. It would take much longer for Alternative A to produce the desired size logs (p. 57).*

WILDLIFE

Northern Spotted Owl (Threatened)

The Cloak timber sale and adjacent sales are inconsistent with the congressional mandate of the ESA.

Under the ESA, the Forest Service has the responsibility to “insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species.” As described below, the record does not support the finding that the proposed sale would not likely adversely affect the northern spotted owl. The proposed sale, along with others in the vicinity, would exacerbate the degraded habitat conditions for this species that already exists on the Forest. The near absence of any recent information from surveys or monitoring of this listed species makes a reasonable analysis of how this project and others proposed will cumulatively

affect these species impossible. Without an adequate environmental baseline, FWS has no way of evaluating the present status of a listed species, and thus cannot rationally decide whether additional impacts on the species may not jeopardize its continued existence. Lack of assessment of impacts to and protection of Critical Habitat Unit OR-10 and OR-11 precludes implementation of the Cloak timber sale. The Cloak PA does not rely on adequate information regarding the impact on habitat of the northern spotted owl, and threatens to violate species habitat protection requirements if the proposed action is carried out. One of the FWS' consultation duties is to ensure that other federal agency actions do not result in the destruction or adverse modification of designated critical habitat. In addition, Forest Service regulations require measures for preventing the destruction or adverse modification of critical habitat. The proposed alternative of the Cloak project will degrade 1,105 acres of dispersal habitat and degrade 86 acres of Nesting habitat for the northern spotted owl within the Critical Habitat Units OR-10 and OR-11. According to the PA, "the degradation of 86 acres of this habitat could cause detrimental effects to owls that may use the area and would degrade habitat from the landscape that has the potential to be occupied by owls. Therefore, in the context of the local and watershed scale, these alternatives would adversely affect the spotted owl and its habitat," PA, 44. The effects determination issued by the US Fish and Wildlife Service (USFWS) in their province wide biological opinion is flawed. They state that "the projects are not likely to jeopardize the continued existence of the spotted owl and are not likely to destroy or adversely modify designated critical habitat for the spotted owl," PA, 45. By definition, the stands in the Cloak planning area are critical to the survival and recovery of the owl and should not be commercially logged. We question how a loss of habitat from a key connectivity corridor will not "appreciably diminish the value of critical habitat" as it relates to the species' recovery. *In the Biological Opinion for this project dated February 27, 2003, the US Fish and Wildlife Service (USFWS) has determined that the projects are not likely to jeopardize the continued existence of the spotted owl and are not likely to destroy or adversely modify designated critical habitat for the spotted owl (p. 49-52). The No-action Alternative would have serious long-term negative effects to spotted owls (p. 50).*

Several of the units in the proposed action occur within the connectivity design cells of the Roaring River/Upper Clackamas General Area of Concern. The specific units that overlap the connectivity design cells are not delineated in the PA, which claims that the units are young, managed plantations that currently are not serving as mature forest habitat. Given the discrepancy Bark has with the definition of plantation used by the agency, we request a list of the units, so they can be field verified by Bark. If they are indeed young, dense plantations, they would be good candidates for a pre-commercial thin that would not adversely affect owls, snags and downed woody debris. *No errors have been found in the delineation of plantations and natural second growth. The only units listed for special connectivity prescriptions are the natural second-growth stands in the connectivity network listed under Alternative B – Connectivity. They are units 466, 475, 494, 495, 501 and 507. Unit 466 is the only one of these that overlaps the Roaring River/Upper Clackamas General Area of Concern. The special connectivity prescription for unit 466 would be consistent with recommendations in the watershed analyses. Plantations that overlap the connectivity network are 426, 427, 467, 471, 472, 473, 474,*

496, 505, 506, 510, 512, 514, 518, 520, 567, 568, 571 and 577. *Plantation thinning is a recommended treatment for the connectivity network (p. 52).*

The PA also cites the Northwest Forest Plan as being “consistent with maintaining viability for the northern spotted owl across its range,” PA, 45; however, a soon-to-be-released report suggests that the NWFP is inadequate in providing for the northern spotted owl. On April 30, 2004, the Regional Interagency Ecosystem Committee commissioned Northern Spotted Owl Status Review team submitted a draft of their report (Anthony et al., “Status and Trends of Demography of Northern Spotted Owls”) to the Interagency Regional Monitoring Program. In addition, on April 21, 2004 the Haig, Mullins and Forsman’s paper, “Subspecies relationships and genetic structure in the Spotted Owl” was made available. These papers demonstrate that Northern Spotted Owls are a distinct subspecies from the California Spotted Owl and that the Northern Spotted Owl populations continue to decline at an alarming rate. In addition, the FWS has recently recognized the importance of interspecies competition with spotted owl, and the role that barred owls play in northern spotted owl survival. A Range Wide Baseline Summary and Evaluation of Data Collected through Section 7 Consultation for the Northern Spotted Owl and its Critical Habitat: 1994-2001, 11. This document was prepared in response to litigation and dated June 26, 2001, and precedes the Cloak PA. In it, the FWS states that “the barred owls’ increasing expansion into the range of the spotted owl may eventually pose a serious threat” to spotted owl survival. The recently released draft of the Anthony et al. paper further analyzes the impact of barred owl encroachment on northern spotted owl habitat. The authors of this report conclude that the annual changes in population is generally lower than previously reported and identify that increased monitoring is required to fully understand the influences for this decline. No monitoring for owls has been done in the Cloak project area and no long-term, historical population data exist for the project area. There is no indication in the PA that the Forest Service has considered any of this new information about northern spotted owls, which is clearly significant. More information and implication for forest management will become available when the status review is complete later this month. This project impacts designated critical habitat and connectivity design cells in addition to dispersal and nesting, roosting and foraging habitat. Based on this significant new information, NEPA requires the Forest Service to publish a Cloak EIS that examines how barred owls affect spotted owl survival range wide and within the planning area, and how implementation of the Cloak project will contribute to this situation. *The EA contain a discussion of new studies (p. 50 & 53 and Appendix E).*

Moreover, Best Management Practices outlined in the Cloak project for the northern spotted owl are inadequate to address risk factors. This section reflects an overall deficiency in agency logic pertaining to management of northern spotted owl habitat: implying that it is okay to degrade habitat, as long as the owl is not present. The noise restriction, which does not permit any activity above the ambient noise level within .25 miles of a known spotted owl activity center during March 1 to July 1 becomes obsolete if it’s determined that an owl is not present. However, this then allows disturbance that would diminish the likelihood of owl presence during that period. Parallel logic would be that it is okay to blast dynamite incessantly next to someone’s home as long as they are

not home. However, who would want to return home to a site given such a noise nuisance? Another deficiency relates to cumulative effects. There are numerous other timber sales in the planning area that will reduce spotted owl habitat; however, the PA does not discuss the cumulative impact of the present sale in addition to other uncut sales or past sales' effects on the state of the owl. *Seasonal restrictions are intended to reduce noise during the nesting season to improve reproductive success. The cumulative effects of those sales are fully incorporated into the data shown in the owl section (p. 22 & 49).*

Recently, several conservation organizations – including Bark – filed suit in federal court against the Fish and Wildlife Service for violations of the Endangered Species Act. *Gifford Pinchot Task Force et al. vs. United States Fish and Wildlife Service*. The plaintiffs in that action allege that the FWS has failed to comply with the ESA in failing to track the level of incidental take issued since the adoption of the Northwest Forest Plan: without an adequate environmental baseline – which necessarily counts the number of incidental takes issued on each national forest – the FWS cannot legally approve a timber sale and ensure that each successive sale will not contribute to jeopardy of the species. In addition, plaintiffs also allege that clear cutting thousands of acres of critical habitat is degradation and/or adverse modification of critical habitat, in violation of the ESA. The same problems identified in *GPTF et al. v. FWS* are present in the Cloak timber sale. The Forest Service has neither assessed nor adjusted the spotted owl environmental baseline for the Cloak planning area. It has not completed population surveys for the species as required by the ESA, and has no idea how many owls and owl pairs are located in the Cloak planning area. Using a habitat model as a surrogate for population surveys may be acceptable in the context of assessing the impacts of timber sales on management indicator species, but threatened and endangered species demand greater protection pursuant to the ESA. While it is true that *GPTF et al. v. FWS* involves the FWS and not the USFS, the USFS has the same legal obligation to comply with the ESA in preparing timber sales as the FWS does in refraining from approving timber sales that do not protect the owl from jeopardy. This issue is currently before the Ninth Circuit Court of Appeals. While this issue is under litigation, timber sales that have been prepared by the USFS and approved by the FWS may be under injunctive relief. *The Cloak project is not part of the GPTF et al. v. FWS litigation.*

Sensitive Species

The Cloak project would cause non-listed species to trend towards listing, and listed species to trend toward jeopardy. The Oregon slender salamander, Cope's Giant salamander, Cascade Torrent salamander, Oregon spotted frog, harlequin duck, Baird's shrew, Pacific fisher and Pacific fringe-tailed bat are species about which the District lacks adequate information to conclude that the proposed project would not make their populations trend towards listing in violation of the ESA. *Sierra Club v. Martin*, 168 F.3d 1 (11th Cir. 1999). Despite the lack of information on these and other species, the PA erroneously concludes that they will be unaffected by the proposed project. There is no evidence to support the conclusion that removing suitable habitat for wildlife species will not adversely affect them. Indeed, the facts suggest that these species will be adversely affected in the short and long term. *The wildlife biologist had sufficient*

information to make a determination of 'no impact' or 'may impact individuals but would not likely cause a trend toward federal listing or loss of viability' (p. 54).

Management Indicator Species

NFMA requires the Forest Service to provide animal and plant diversity in the national forests. 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.” Although NFMA clearly requires the monitoring of MIS populations, the Forest Service has traditionally relied upon the availability of suitable MIS habitat, rather than population surveys, to meet NFMA’s viable populations requirement. Given this developing reinterpretation of the legal requirements attendant to management indicator species, it is question at best whether the multiple mandates in NFMA and its implementing regulations requiring population monitoring and surveying are being met for the Cloak project. 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. 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. *The analysis of effects to management indicator species is found in the wildlife section. This proposal is consistent with the management direction for MIS species through the Mt. Hood Forest Plan. The Forest contains sufficient habitat to provide for the needs of these species (p. 61-65).*

Deer and Elk

The cumulative effects section on deer and elk is vague and unclear. The PA states that Alternative B would result in approximately 86 acres of optimal cover being downgraded to thermal cover, but that it would be “relatively short term,” PA, 54. What does relatively short term mean to the agency? A clear timeframe should be presented in order to give adequate information about cumulative effects. Likewise the PA states that approximately 1,463 acres of thermal cover would be temporarily downgraded, and that this effect would be short term in nature. What does short term mean to the agency?

The canopy cover would recover to pre thinning levels in approximately ten years (p. 63).

The PA claims that disturbance “would probably only displace animals and would not likely affect their health,” PA, 54. However, disturbance does indeed affect animals’ health, as their health can deteriorate due to loss of body weight in traveling farther distances, and by being agitated, as supported by The Oak Grove Watershed Analysis (OGWA), which says that road closures will play a critical role in reducing the energetic demands upon the resident elk herds and options to reduce open road densities especially in the locations identified as important to elk should be fully explored. The OGWA also points out: “Road densities can have a significant effect on big game habitat effectiveness. Calvin (1995) reported that no elk were observed in any areas on the USFS lands west of Warms Springs boundary where open road densities averaged higher than

2.8 miles per square mile, and most observations were recorded in areas of 2.0 miles per square mile or less...Fielder and O'Conner (1992) also reported that elk within or moving through areas of high open road densities moved longer distances (several miles a day was not common), OGWA, 110. *The quoted section from the EA relates to the disturbance from logging noise and not to open road density. Seasonal restrictions prevent logging disturbance during the critical time periods for deer and elk (p. 22).*

Pine Marten and Pileated Woodpecker

The proposed action will result in a changed micro-climate in approximately 307 acres of older second growth stands, which are used by pine marten and pileated woodpecker. However the agency claims that the activity will "probably" not affect the units to the degree that they are unsuitable for the two species. However, due to the fact that the agency has not monitored these species, it is not in a position to state whether adequate habitat is provided for these species or not. The PA states that the Mt. Hood Forest Plan B5 land allocation was removed because other land allocations would meet the habitat needs for these species; however this misconstrues the intent. The land allocation was removed unless it was determined that it was needed. Since the agency has done no monitoring, it is unknown at this point whether the land allocation is needed. *The need to retain the B5 land allocation was examined during watershed analysis and none were retained in the Cloak area (p. 64).*

Migratory Birds

Close to 30 species of migratory birds occur within the Oak Grove, Upper and Lower Clackamas watersheds, some of which are likely present within the Cloak project area during breeding season. The PA states that some species favor forest with late-seral characteristics while others favor early successional habitat with large trees. The PA, however, does not prioritize the needs of the species. The agency should be asking itself: which species are more threatened? Which have populations that are most at risk? It should then manage habitat to meet the needs of the species which are in the most precarious condition. The claim that there are abundant unthinned second growth stands in adjacent areas does not reflect reality, and it is this same logic which has led to the dramatic decline of the northern spotted owl population. The PA even says as much, stating that with regard to species that require mature habitats, the cumulative effects would be "similar to the discussion for northern spotted owl nesting/roosting/foraging habitat" PA, 56. Indeed: see Bark's section on the northern spotted owl for additional comments. *The thinning units are not mature habitat. Some of the natural second-growth stands contain some legacy trees that would remain in the stand. The Forest contains a mix of both late-successional and second growth to provide for birds that require these habitats (p. 65).*

SNAGS

Snags are a very important part of the Pacific Northwest's ecosystem. In the project area, snags are used by pileated woodpecker, northern flicker, hairy woodpecker, Williamson's sapsucker, red-breasted sapsucker, and the red-breasted nuthatch, among others. Currently there is a severe lack of snags, with significant impact to the landscape. It

affects not only resident species of the Pacific Northwest but migratory birds as well. “Twenty-seven neotropical migratory bird species occurring within the watershed have significantly declined over the last two decades, based on Breeding Survey data (Sharp, 1992). Of these 27 species, half are snag dependents and insectivorous or birds of prey feeding on forest birds,” OGWA, 61. *The snag analysis does not indicate that there is a severe lack of snags. After implementing this and other projects, snag would still be abundant at the landscape scale (p. 59-61).*

The agency acknowledges that the managed plantations are very deficient in snags and downed wood, PA, 49 and that they fall below the 30% tolerance level using the DecAID advisory. The project area currently does not have enough snags (standing dead trees or standing live hollow trees), and yet the proposed action will destroy some of the few remaining snags in the action alternatives. The agency acknowledges that “snags are difficult to retain during logging,” PA, 50, and that “snags that are left standing after the sale would be more prone to wind damage and snow breakage than before the stands were harvested,” PA, 50. Additional impacts involve “the reduction of any natural selection that would occur through the process of stress and mortality. Snags and downed logs that might have formed in the future would be removed through timber harvest,” PA, 50. *In plantations, snags are very small planted trees that have recently died. These snags are small and therefore would decay and fall relatively quickly (p. 58).*

The PA, however, states that using BMPs, leaving “defective” green trees in place and using other design criteria, the snag retention in older second growth stands would have snag and defective tree densities and size guidelines at the 50% tolerance level as determined in the DecAid advisor, in Alternatives B and E, and 30% tolerance level or below in plantations, PA, 51. It is unclear in the PA how the existing level in second growth stands, which is determined to be between 30 and 50% tolerance level, will suddenly surge to 50% given the impacts of logging. Additionally, there is no discussion of how effective those snags will be, how long those snags will actually be in place, or how they will be retained in 10 to 20 years when the stands are reentered for another round of thinning. It is likely that in the future snags will be destroyed just as soon as they are becoming effective habitat. The same applies for plantations. Given plans for future operations, the statement that “These predicted tolerance levels for both snags and down wood are expected to be maintained or slowly increase in the units as they progress over time,” PA, 51, is unrealistic, and Bark has particular concern regarding the effects of logging on snags in Units 437 (effects on old growth adjacent to NE Side of Unit), 468, 494, 495, and 513. *The discussion of existing condition tolerance levels includes only existing snags. However the DecAID advisor emphasizes the value of live trees that contain the “elements of wood decay.” Design criteria #6 contains direction to protect certain key snags and to retain live trees that have broken tops or other elements of decay. These live trees are added to snags when evaluating the post harvest situation (p. 23 & 58).*

The stand analysis in the cumulative effects section states that the snag levels after past, present and foreseeable future harvest would be close to or greater than the 100% biological potential level, PA, 52. However, this should not imply adequate levels of

snags. According to the OGWA, “No agreement exists that this level of snag retention provides an equivalent level of biological potential for other snag users (e.g. bats, arboreal rodents, bluebirds, swallows, and denning carnivores).” Indeed, available evidence suggests that it isn’t even meeting the needs of the cavity nesting species. *The EA contains an analysis of Forest Plan standards and an analysis using the DecAID advisor (p. 58).*

Furthermore, the solution, to simply create “new snags” does not adequately replace the loss of habitat, in the short term or possibly even into the foreseeable future. *The Cloak EA does not prescribe the creation of new snags (p. 59-60).*

The Northwest Forest Plan ROD is clear that “a renewable supply of large down logs is critical for maintaining populations of fungi, arthropods, bryophytes and various other organisms... Models for computing expected numbers and sizes of logs should be developed for groups of plant associations and stand types which can be used as a baseline for managers to develop prescriptions for landscape management.” (C-40) The ROD clearly states that the 240 linear feet of logs per acre greater than or equal to 20 inches in diameter standard is to be used until better, vegetation-type specific standards are developed. Now that this model is currently available (DecAID), it must be applied. *The quoted standard applies to regeneration harvest. The DecAID advisor has been used (p. 55-59).*

Whether USFS is of the opinion that DecAID is best applied at larger scales than a timber sale project area is immaterial to the implementation of updated policies that reflect the current science. In fact, USFS should amend the Northwest Forest Plan to get rid of the biological potential based retention standards. Recently on Mt. Hood National Forest, the DecAID standards were adopted during the Special Management Area Forest Track amendments to the Columbia Gorge National Scenic Area because MHNH staff recognized that the use of biological potential based retention standards were not based on current science. *The EA quotes the DecAID advisor itself when it states that DecAID is best applied at scales of subwatersheds, watersheds, subbasins, physiographic provinces, or large administrative units such as Ranger Districts or National Forests. The amendment of the Forest Plan is outside the scope of this EA. This EA does use the DecAID advisor (p. 56).*

However, with the Cloak sale, the Forest Service has elected to refer to a biological potential based measure. *The EA contains an analysis of biological potential and an analysis using the DecAID advisor (p. 58).*

SOIL & STEEP SLOPES

Logging should not occur in units where soil damage currently exceeds Forest Plan maximum levels of damage: “Several of the Cloak units exceed the Forest Plan Standards and Guidelines FW-022 and B8-40,” PA, 58. Logging should not be approved in units where past logging has already extensively damaged the soil, as the damage may be irrevocable. The analysis also does not adequately take into consideration that logging is

likely planned again in the near future: “In most units another thinning would be desirable in 10 to 20 years; sooner in stands that had closer spacing in the first thinning and later in stands thinned to a wider spacing,” PA, 38. *Impacts to soil productivity from past logging in these units come from skid trails, landings and temporary roads. These features would be reused where appropriate. Old temporary roads would be obliterated. Stand exams show that growth has not slowed in these units (p. 70).*

Additionally, given the fact that some of the plantation stands are in fact second growth stands that have been high graded in the past, the following blanket statement about soil conditions in natural second-growth stands does not apply. The sentence “All of the natural second-growth stands have soils with little or no detrimental impact,” PA, 58, should be revised to say “X% of the second growth stands have soils with little or no detrimental impact.” *No natural second-growth stands were mislabeled as plantations.*

Bark is very concerned about logging on steep slopes in the following units: 426, 467, 471, 476, 495, 496, 500 (NW side of unit), 505, 516 (very steep slopes), 567 (85-90% slope!), 568, 571 (East side), and 577. These areas should be left alone. *Skyline logging is proposed on these units. These units were found to be suitable for timber management (p. 10).*

FORAGE

The Cloak project proposes approximately 70 acres of clearcuts (up to 3 acres in size retaining 10-30 trees per acre) for deer and elk “forage enhancement,” which is a stated purpose of the project. This is a serious misplacement of priorities. The Forest Service expresses concern about potential future reduction in habitat for deer and elk-- neither of which are threatened or endangered--saying that forage is a limiting factor. However within the same project the Forest Service is proposing a significant reduction in the quality of dispersal habitat, and the destruction of nesting roosting foraging habitat for a species that is currently federally listed as threatened. The Forest Plan does not contain any forage standards that the Forest Service has to live up to in this regard, PA, 53; and yet the project prioritizes meeting non-existent standards while simultaneously violating specific set standards in other areas, such as soil health. What studies does the Forest Service have that shows that deer and elk are in trouble on the forest? Or that lack of forage is harming these populations? The watershed analyses spanning the Cloak project show that historic conditions had a much smaller percentage of land in early seral state than our current percentage, and according to the Upper Clackamas Watershed Analysis (UCWA), “there is more early seral vegetation throughout the watershed than in the estimated range of natural variability.” UCWA, 9. To borrow the Forest Service’s oft-used phrase, there is plenty of habitat in adjacent areas that will meet the needs of these species. A more appropriate way to address this problem, should one exist, is to reintroduce fire back into the landscape, which would have the intended effect while also benefiting a host of other species. *Biologists on the Forest and Oregon Department of Fish and Wildlife concur that forage is needed (p. 4 & 8).*

The PA cites the Forest Plan stating that it recommended 8-10% new forage be created for the Oak Grove and 9-11% in the Upper and Lower Clackamas, PA, 41. This objective was established over 14 years ago, without the context of competing needs for this habitat from endangered species that are showing signs of serious decline. Rather than isolating this particular objective, the Forest Service should review such recommendations based on the whole. If the agency is truly concerned about elk and deer populations, it would halt all road building, logging, and other disturbances, and reduce the road density. *Populations of deer and elk require forage to survive (p. 4, 8, 61-62).*

ROADS

The proposed action calls for 3.4 miles of closed, and overgrown roads opened and rebuilt, and road placement within Riparian Reserves as close as 100-150 feet from streams. *No roads would be built as close as 100-150 feet from streams. The quoted figure is a minimum distance in design criteria # 11. No roads would be built in riparian reserves with the Cloak project (p. 26 & 32).* The impacts of roads include increased sediment input, fragmentation of habitat, stream crossings, introduction of exotics, increased peak flow, extension of drainage density, increased interaction between humans and wildlife, and soil productivity loss, to name a few effects. This is acknowledged in the UCWA, but not addressed in the PA: “The effects of roads and hydrology is well documented. Road ditches collect and concentrate the water as well as shorten the transport time from hill slope to stream channel compared to natural processes. The principle effects are to increase the volume and shorten the duration of the amount of overland flow to stream channels.” UCWA, 172. The PA downplays any possible effects from existing or new roads, mainly remaining silent on the subject of potential impacts. *The watershed analysis was referring to roads that cross streams or are built on steep slopes. The temporary roads proposed do not cross streams, have not ditches, are built on gentle slopes and would be obliterated and revegetated upon project completion (p. 32).* Given that the road density in half of the elk management areas exceed the target road density levels, PA, 53, it is unthinkable that the proposed action calls for building more roads, even if “temporary.” *The deer and elk analysis refers to “open” road density. The proposed temporary roads would not remain open (p. 10).*

While the action alternatives would also close roads after use, the Mt. Hood National Forest has a poor record of successfully closing roads and restoring them to a hydrologically stable condition. Despite the current high road density and the certain degradation that existing open, “closed,” and new roads will cause, the USFS failed to adequately discuss this issue in the PA, which is required by law in complete environmental analyses. *Sierra Club v. Morton*, 510 F.2d 813, 824 (5th Cir. 1975) (requiring the agency to “disclose the history of success and failure of similar projects”). Road closure in the past has often been ineffective, and several roads in the Cloak planning area that were supposed to be closed with berms are currently open. As stated above, despite the use of the term, “Temporary” to describe the roads proposed for the Proposed Action, the roads themselves and the effects of these roads are not temporary. These roads contribute to cumulative impacts, and impact the area from the time they are built until they are decommissioned. *The Forest has considerable successful experience*

with obliterating temporary roads. The problems discussed above have come from gates or other types of closure on system roads that had a pattern of public use before closure and were subsequently vandalized. Temporary roads receive no public use and obliteration closes the road in a way that cannot usually be vandalized (p. 80 & Forest-wide Roads Analysis p. 51-52).

Decommissioning roads cannot offset the soil disturbance from the new roads and the logging operation, even if the USFS is completely successful in re-vegetating the area at some point in the distant future. Road density doesn't automatically return to the prior level after a road has been decommissioned. It often can take 20 years to successfully revegetate a road, and in the meantime, environmental impacts of the road are felt. There is also a high chance that these roads will be revived before they even have a chance to fully recover, and therefore, they cannot in all honesty be called temporary. A more accurate term would be "stealth" roads, as these roads exist to facilitate timber sales that otherwise would not be feasible or permitted due to excessive road densities. However, due to semantics, these roads are allowed to go undetected in formal road inventories. All units that require the building of these stealth roads should be removed from the proposed action. *The proposed roads are called temporary roads because it is a contractual term and refers to roads that experience temporary use, only for timber harvesting, and are obliterated by the operator when harvesting is completed. Revegetation refers to grass that is applied as an erosion control method. (p. 23). The obliteration of a temporary road is done to prevent use and to improve infiltration rates. The EA contains no implication that obliterated roads would recover fully to a pre-construction natural state (p. 81).*

The PA does not analyze the cumulative effects of a temporary increase in the current road density on the surrounding area. The PA also does not offer specific open road density information for the entire planning area. This is obviously necessary in order to assess accurate cumulative impacts. *The entire planning area is covered by the analysis areas listed in the deer and elk section. The analysis of open road density is included. Temporary roads are not used by the general public (p. 61-63).* It is also critical, in determining road densities, that figures include roads that are actually being used by motorized vehicles. Bark has released a report on the state of roads in the Clackamas River Ranger District of Mt. Hood. It found that 25% of the roads that were supposed to be closed were not. This needs to be admitted and incorporated into a cumulative effects analysis. Bark's study found that gates are often removed and thus ineffective. In summary, given the consequences of increasing the road density, it does not seem like a sound investment of agency resources, let alone a wise ecological decision, to include new road building in this proposal. *The analysis does discuss vandalized road closures. The analysis does discuss the short-term nature of the disturbance caused by logging and using the temporary roads. The proposed action does not increase open road density (p. 62-63).*

On Page 28, the PA fails to fully address Section-10 of the Forest and Rangeland Renewable Resources Planning Act of 1974 for Alternatives B & E's temporary road construction (Source 8):

(b) Unless the necessity for a permanent road is set forth in the forest development road system plan, any road constructed on land of the National Forest System in connection with a timber contract or other permit or lease shall be designed with the goal of reestablishing vegetative cover on the roadway and areas where the vegetative cover has been disturbed by the construction of the road, within ten years after the termination of the contract, permit, or lease either through artificial or natural means. Such action shall be taken unless it is later determined that the road is needed for use as a part of the National Forest Transportation System.

The PA does not mention the location of the funds to vegetate and monitor the temporary roads for the required 10 years after timber harvesting. If the funds come from the auctioning of this project, the PA needs to mention a second source of funds if the purchasing price does not allocate enough money to monitor these roads for 10 years.

The timber sale purchaser would apply grass seed to temporary roads after obliteration (p. 23).

Finally, the USFS does not indicate how it intends to compensate for the short- and long-term damage to the watershed caused by reconstructing, upgrading, and building roads in watersheds that already have excessive road densities. The project should not go forward until the USFS can ensure compliance with the CWA and LRMP standards designed to protect water quality. *The EA discloses the effects of temporary road construction. The EA found no significant damage to the watershed from the construction of the proposed temporary roads (p. 31-35).* The USFS should demonstrate that it has considered the following resources in making its determination to build new feet of road in the Cloak Project, and if it dismisses the recommendations within these reports, explain why it has excluded these recommendations from its analysis. *These documents were not submitted with the comment letter. The reports do not contain significant new information, in fact some are quite old. Qualified resource specialists analyzed effects of temporary road construction. (p. 31-35). The Cloak project does not include any clearcutting, which is the subject of some of these reports. The EA does consider the impacts of the project on hydrology, peak flows, soils, and sediment (EA p. 22-27 & 31-42).*

1. Robert Coats, et al., *Assessing Cumulative Effects of silvicultural Activities*, (1979) (significant increases in peak flow post-harvest)
2. Robert Harr, et al., *Changes in Storm Hydrographs after Road Building and Clear-Cutting in the Oregon Coast Range*, 11 Water Resour. Res. 436-44 (1975) (same; timber harvest leads to soil compactions and increased floods)
3. ROBERT HARR, ET AL., PACIFIC NORTHWEST RESEARCH STATION, U.S. DEP'T OF AGRICULTURE, CHANGES IN STREAM-FLOW FOLLOWING TIMBER HARVEST IN SOUTHWESTERN OREGON, PNW-249 (1979)
4. ROBERT HARR, ET AL., PACIFIC NORTHWEST RESEARCH STATION, U.S. DEP'T OF AGRICULTURE, EFFECTS OF TIMBER HARVEST ON RAIN-ON-SNOW RUNOFF IN THE TRANSIENT SNOW ZONE OF THE WASHINGTON CASCADES, PNW 88-593 (1989)

5. J. Jones & G. Grant, *Peak Flow Responses to Clear-Cutting and Roads in Small and Large Basins, Western Cascades, Oregon*, 32 Water Resour. Res. 959-74 (1996)
6. K. Lyons & L. Beschta, *Land Use, Floods, and Channel Changes: Upper Middle Fork Willamette River, Oregon (1936-1980)*, 19 Water Resour. Res. 463-71 (1983)
7. M. Reid & T. Dunne, *Sediment Production from Forest Road Surfaces*, 20 Water Resour. Res. 1753-61 (1984)

CUMULATIVE IMPACTS

The PA does not fully analyze the cumulative impacts of this project and other past, current, and foreseeable future projects, including timber sales, roads, herbicide use, mining projects, off-road vehicle use, and other management activities. There are short sections dealing with cumulative effects scattered throughout the PA, but they mainly describe impacts, as opposed to assess cumulative impacts. There is no indication that the agency has *assessed* the nature of the cumulative impacts to species, soil, and aquatic resources within the planning area.

This lack of analysis is also apparent in the discussion of direct and indirect effects. In the section titled Riparian Reserve Stand Structure, the PA neglects to give information about the potential adverse environmental impact from Alternatives B and E, saying, “Alternatives B and E would result in the long-term benefits because thinning would develop increased capability of stands to produce the size and quantity of coarse woody debris sufficient to sustain physical complexity and stability of riparian reserves and associated streams,” PA, 30. The only hint given of potential adverse impacts under these alternatives appears in the discussion of Alternatives C and D, where they are described as less harmful than B and E: “the probability of any sediment reaching a stream course or any decrease in stream shading would be less,” and “There would be slightly less risk of erosion,” PA, 30. The PA doesn’t hesitate to inform us, however, of the adverse impacts of Alternatives C and D, which do not include any road construction, and which use the less destructive helicopter logging instead of ground based logging in some units. *The direct, indirect and cumulative effects of Alternative B and E are included throughout the EA (p. 30, 31-43).*

The lack of an adequate cumulative impact analysis to assess loss of late Successional forest, degradation of water quality, impacts to plant and animal species, and soil health is especially problematic given the admission in the relevant watershed analyses that the area has been highly impacted by past logging and other management activities.

The PA completely disassociates incremental impacts with the collective or long term effects, and states that “Impact to water quality or fisheries resources caused by sedimentation due to road construction would be short-term and undetectable at a watershed scale,” PA, 28. Repeated destruction of habitat over time has caused listings in the first place. Continued repeated destruction over time is what will cause species to go extinct. The PA uses criteria that could never acknowledge any significant impacts on

a project level. It's hard to imagine using this technique that any single project that could be described as having impacts felt across the entire watershed or impacting an entire population. Through such as screen, incremental habitat degradation will continue to take place over time until species become extinct. *Cumulative effects are defined as the "incremental impact of the action when added to other past, present and reasonably foreseeable future actions." After conducting a detailed analysis, no significant cumulative effects were found (p. 31-43).*

The analysis of existing conditions of the creeks and rivers in the planning area is not based on high quality science, fails to adequately describe the current conditions of these aquatic systems *(Detailed information is contained in Appendix E (p. E10-E15).* and does not accurately represent the impacts on these systems from the proposed action. The PA acknowledges that the Proposed Alternatives would adversely impact water quality, PA, 28. However, there is little site-specific analysis of how the project will impact the aquatic systems in the planning area. *This is an inaccurate interpretation of the discussion on PA, page 28. The analysis found that water quality would NOT be adversely impacted (p. 32-33).*

In terms of effects, the PA offers a generalized statement of potential impacts:

“Potential effects to listed, proposed, candidate, or sensitive fish species and their habitat from the proposed project include direct, indirect and cumulative effects. An example of direct effects *may* include increased levels of fine sediment in local streams generated during road building, logging, and hauling. Increased levels of sediment in streams could reduce feeding efficiency during times of increased turbidity... An example of indirect effects *may* include increased amounts of fine sediment downstream in rivers or at the intake of municipal water providers, due to erosion from harvest units and roads.”

PA, 27 (emphasis added). The courts have held that this type of generalized impact assessment regarding potential impacts and possible effects violates NEPA. *Idaho Sporting Congress v. Thomas*, 137 F.3d 146 (9th Cir. 1998). When it comes to specific adverse effects, the PA relies upon the implementation of mitigation methods to automatically assume an optimistic outcome. *The quoted paragraph gives generic examples of the various types of effects so that the reader would have a greater understanding of the terms. This introductory paragraph does not contain any analysis relevant to Cloak (p. 31-32).*

Given the at-risk condition of the waterway and the nature of the ground disturbing activities of the Cloak project, it is likely that there will be adverse watershed effects from the Cloak timber sale, even though the Forest Service fails to admit that this will occur. The Clean Water Act does not permit “short term” degradations of water quality, and any project that proposes such degradations is unlawful. *The Cloak EA did not identify any significant adverse watershed effects or any short-term degradation. Your interpretation of the Clean Water Act is flawed (p. 31-42).*

We note that the USFS also has an obligation to physically survey the reaches of the creeks, streams, and tributaries in the planning area in order to determine the number of pools, riffles, down woody debris, and other features that are present in the water bodies in the planning area. Without key and current information, the Mt. Hood National Forest is precluded from making any determination regarding the significance of the proposed project. When such information is lacking or when there are significant questions regarding the impacts of a project, the USFS has an obligation under NEPA to obtain the missing information. 40 C.F.R. § 1502.22 (duty to obtain missing information or state why it could not be obtained). The Mt. Hood National Forest must obtain the missing information on stream conditions in an EIS, or the Cloak sale must be withdrawn. *The fisheries biologist has the data and information needed to assess the effects of the alternatives (p. 31-42).* Beneficial uses in the watershed (such as public domestic water supply, private domestic water supply, irrigation, salmonid fish rearing (inland trout), salmonid fish spawning (inland trout), resident fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality) have been adversely affected by past management activities on federal and private lands in the vicinity. In all proposed projects, the USFS should fully disclose and discuss the impacts to the environment from the proposed project in an EIS. The failure to follow one of these courses of action will violate NEPA. *The cumulative effects analysis considers past actions (p. 30, 31-42).*

Because there is no indication that the agency has assessed the nature of the cumulative impacts to species, soil, and aquatic resources within the planning area, the analysis is woefully incomplete. Given the scope of the project and range of activities, an environmental impact statement should be completed. Under NEPA, “significance exists if it is reasonable to anticipate cumulatively significant impacts on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.” 40 C.F.R. § 1508.27(b)(7). Furthermore, NEPA requires the agency to evaluate “cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.” *Id.* § 1508.24(a)(2). *Cumulative effects analysis has been conducted considering past, present and reasonably foreseeable actions. No significant cumulative effects were identified (p. 30, 31-42).*

WATER QUALITY AND FISHERIES

Effects to Watersheds

The National Marine Fisheries document titled “Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale” states that a watershed which has riparian reserves that are less than 70% intact is considered to be “not properly functioning,” Page 11. The description of a watershed that is not properly functioning includes: “riparian reserve system is fragmented, poorly connected, or provides inadequate protection of habitats and refugia for sensitive aquatic species (<70% intact)” Page, 11. The Riparian Reserves in the Upper Clackamas watershed, which “are comprised of 48% late seral vegetation,” UCWA, 13, are clearly less than 70% intact and are indicative of the level of degradation across the project area.

There is no direct correlation between late-seral vegetation from the watershed analysis and intact riparian reserves. Given that this project is adjacent to a Tier I watershed and that the condition of the riparian reserves in the sub-watersheds where the project take place are not properly functioning, it is incomprehensible that further degradation would be permissible. The PA also fails to discuss how the proposed project will not contribute to further habitat degradation. *The analysis did not find that riparian reserves would be degraded. The objective is to enhance riparian reserves (p. 4 & 35).*

Fish Stocks and Concerns

The Cloak project proposes to log within the Oak Grove Fork and Clackamas River watersheds, the river corridors of which are designated Tier 1 Key Watershed under the Northwest Forest Plan because they contain crucial refugia for at-risk fish species. The stands proposed for thinning are located within the Oak Grove Fork Clackamas, Upper Clackamas and Middle Clackamas 5th field watersheds. The Clackamas River watershed is one of the few refuges left for wild endangered stocks of fish in the region, and according to the UCWA is one of the few places that “can serve as a cornerstone in recovery efforts for this stock.” UCWA, 63. This fact would seem to determine that future management be geared toward restoration—not further degradation. *The analysis did not find any degradation (p. 31-42).* While the area “contains some of the most productive coho salmon habitat in the subbasin,” UCWA, 63, Coho and Winter Steelhead are declining rapidly, UCWA, 26, Table 3-25. More recent data would likely indicate that the conditions are even worse than shown here. Given this reality, the primary activities in the area should be restoration as opposed to commercial logging in riparian areas. *The objective is to enhance riparian reserves (p. 4 & 35).*

Additionally, Bark has found the PA’s treatment of threatened and endangered fish species to be inadequate and in need of revision. The statement that “there are no fish species listed under the Endangered Species Act (ESA) in the vicinity of thinning units,” PA, 27, is incorrect based on our own investigation. Page 31 of the Preliminary Assessment states the “Lower Columbia River (LCR) Steelhead does not occur in any of the streams within the planning area of the Cloak Project.” According to the Oregon Department of Fish and Wildlife’s (ODFW) web site, LCR winter steelhead spawns and rears in Last Creek adjacent to Units #477 & #478 (Figure-1). The web site also shows LCR winter and summer steelhead spawning and rearing in Pinhead Creek adjacent to Unit #481 (Source 1 & 2). All three of these units slope toward these streams and have a distance ranging 250 feet or less from the stream based on the timber sale maps. Two other units, #426 and #428, rest adjacent to streams that flow within a quarter mile to a steelhead-bearing stream (Source 1 & 2). The agency needs to revise the PA to state, “LCR Steelhead does fall within the project area,” redo its analysis to address the adverse effects to this threatened fish population, and seek consultation with the Fish and Wildlife Service. *A map was provided as described above and is included in the original letter, but is not reproduced here. The Forest has periodically conducted stream surveys to determine fish presence and the map you provided is incorrect in its depiction of winter steelhead habitat (p. 35-38). Refer to the following documents for summaries of stream surveys:*

USDA Forest Service. 1995. Fisheries Partnerships in Action, Clackamas River Subbasin, Oregon. 1994 Accomplishments Report for Clackamas River fisheries Working Group.

USDA Forest Service. 1996. The 1996 Stream Survey. Pinhead Creek. Mt. Hood National Forest. Clackamas River Ranger District.

USDA Forest Service. 2002. Stream Survey Report. West Fork Pinhead Creek. Mt. Hood National Forest. Clackamas River Ranger District.

After mentioning a few areas where LCR steelhead occurs within a mile of the Cloak Project area, the Preliminary Assessment states, “all other units within the Cloak Project area are located greater than one mile above any occurrence of LCR steelhead.” Based on Bark’s measurements, 22 out of the 55 units (40%) rest within a mile vicinity of a LCR steelhead-bearing stream (Source 1, 2, & 4). Table-1 lists these 22 units. Please revise the PA to state, “22 of the units within the Cloak Project area are located less than one mile above any occurrence of LCR steelhead.” *A table was provided showing distances from streams to units and it is included in the original letter, but is not reproduced here. First, the distances used in the EA are stream distance not line of site distance. For example, in your table you show that unit 427 is within a 1/4 mile of Lowe Creek. The land in unit 427 does not drain toward Lowe Creek but in the opposite direction and the actual stream distance is 0.6 mile to the Clackamas River. Since the quoted passage claimed that units were within 0.2 to 0.6 mile of the river, there is no discrepancy. The unit maps show which units are close to the Clackamas River and Oak Grove Fork. Eight units are within 0.6 mile of steelhead habitat. The text has been clarified. The clarification would not result in different effects determination for this species (p. 36). Again the map that you are relying on is not accurate. For example the portion of Pinhead Creek near unit 481 is intermittent and does not provide habitat for anadromous fish.*

Page 33 of the PA states the distances of the streams where Lower Columbia River / Southwest Washington (LCR/SW) Coho Salmon rear and spawn within the vicinity of the Cloak Planning Project area. As shown in Table-1, 18 of the units rest within a mile of streams that provide habitat for LCR/SW Coho Salmon. As seen on the ODFW’s web site, Unit #481 sits adjacent to Pinhead Creek that provides spawning and rearing habitat for this fish (3). Please revise the PA to state, “LCR/SW Coho Salmon does fall within the project area” and list the adverse effects to this candidate fish. In regards to the ODFW fish distribution maps, the red line shows definite spawning and rearing stream locations of threatened and candidate fish (Sources 1, 2, and 3). Other streams not listed by the red line in the distribution maps could provide habitat for these fish, but the ODFW does not have the resources to monitor them. The USFS should not log units that rest adjacent to potential spawning and rearing habitat streams. *See response above for steelhead.*

In addition to the units referenced above, we have particular concern about the impacts to perennial streams in the following units: 428, 467 (below unit), 468, 476, 494, 495, 496, 500, 502, 504, 507, 509, 566, 567, and 568.

Sediment

There is no quantification of the amount of sediment that may be introduced from road reconstruction, closure, decommissioning, landings, road crossings, commercial logging, and culvert replacement in the Cloak project. NEPA requires the agency to quantify and qualify the extent of direct and indirect impacts as a result of its activities. 40 C.F.R. 1508.8. The Ninth Circuit has held that “general statements about ‘possible’ effects and ‘some risk’ do not constitute a ‘hard look’ absent a justification regarding why more definitive information could not be provided.” *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998). Sedimentation is likely to occur from the proposed alternatives; therefore the Forest Service must reveal those aspects of the Cloak sale that will degrade water quality. *40 CFR 1508.8 does not contain a requirement to quantify effects. The likelihood of sediment reaching streams is low. The project has been carefully designed to avoid sedimentation (p. 32-33).*

There is also inadequate information about sediment turbidity levels in the watersheds where the project is planned. Due to the fact that there are no solid environmental baselines, it is impossible to determine whether sedimentation has increased as a result of past logging projects, and therefore difficult to make assumptions about the nature of the impact of future projects on sediment. *Monitoring at the Carter Bridge water monitoring station has found water quality to be very good (p. 33).* The possibility of short term effects are acknowledged, PA, 22, but logging activity is validated due to the implementation of BMPs and anticipated benefits over the long run. There are serious and significant effects associated with this sale, and the Forest Service has no evidence to support the implication that impacts can be adequately “lessened” by implementation of BMPs. This approach—short term impacts with long term benefits pervades Forest Service management strategy. In an ecosystem that was healthy and resilient, such a strategy might make sense. However, given the ecological indicators of crisis on Mt. Hood National Forest (threatened, endangered and extinct species), this is not an appropriate approach, and the agency should put caution above experiment. *BMPs are not experimental; they have been used and refined over many years (p. 41-43 & EA Appendix E p. E16-E30).*

The no cut buffer widths of 50 feet for perennial streams and 30 feet for intermittent streams are simply inadequate to trap sediment given the nature of the heavy thinning being proposed in the Cloak units and the fact that heavy logging equipment would be permitted in such close proximity to streams. These buffers would suffice if pre-commercial thinning were to occur that would not result in any skid trails or ruts from skyline logging, or the introduction of heavy equipment to the area; however, that is not what is being proposed here. Bark is equally troubled by the fact that even the inadequate buffer widths proposed here are not set in stone, as falling trees within the buffer zone would be allowed if it was determined to not increase sediment or decrease stream shading. When is that going to be determined? By whom? These buffers widths should

have been outlined clearly in this PA, not determined on an as-need basis after a decision notice is published for this project. Clarity and transparency with the riparian buffers should be part of a Cloak EIS. *Design criteria #9 indicates the precautions that would be taken in the proximity to streams to protect water quality. It allows flexibility near intermittent streams based on site-specific factors. The no-harvest buffer would be delineated in the field at the time of project layout. Deviations from the 30-foot distance if any, would be validated by a fisheries biologist (p. 24-25).*

Water Temperature

The statement that the proposed project will not affect stream temperatures is unproven. It is in fact very likely that there will be an increase in the volume of heated water as water flowing off of roads and ditches into the riparian reserves will increase. The riparian reserves, which will be heavily logged, will not absorb and cool water due to the lack of canopy cover. It is unclear how this serious regime of logging would maintain water temperatures. The statements that water quality degradation will be “undetectable at watershed scale” and that “Any water temperature increases should abate in 15-20 years,” PA, 28, ignore the immediate and localized needs of local threatened fish populations. *The no-harvest buffers would result in no change to the quantity of sun hitting streams (p. 34).*

Fertilization

The proposed action involves aerial application of 200 pounds of nitrogen per acre to approximately 1081 acres of forest in the project area. Over 100 tons of nitrogen fertilizer is inappropriate in a sub-basin already damaged by an excess of nitrogen in the waterways, and the justification, namely faster growth, does not merit the risks to wildlife. Water quality in this section are described in relation to aquatic life, without addressing the impact to a host of wildlife that could be affected, ranging from salamanders to birds to mollusks. The criteria regarding nitrogen are designed in such a way that impacts to other species are masked. The standards are therefore rarely violated in the Clackamas River due to the fact that the criteria are targeted only toward fish toxicity and human health. Apart from wildlife, existing criteria are not relevant to concentrations that could cause ecological disturbances such as algae. Additionally past research from the USFS regarding urea nitrogen is likely outdated and/or inaccurate due to the collection of stream biota in immediate, toxicity-based responses or used methods insensitive to ongoing ecological processes. Such invalid data could fail to show concentrations of urea contributing to the high algae blooms in the summer that has been creating a public nuisance to drinking water providers off the Clackamas River. Additionally, urea nitrogen should not be applied in Cloak Project units with high concentrations of Red Alders, as this could create an over abundance of nitrogen that could either runoff into streams or leach into the groundwater. *The effects of nitrogen fertilizer, that are relevant to the proposed action and alternatives, are addressed in the EA (p. 28, 34, 43-46, 55 & 69).*

FIRE RISK

The native stands that are fire regenerated are fantastic examples of fire recovery that has taken place without salvage logging. Since these stands have had no "management" (post-fire or otherwise), they are very important living laboratories for studying long-term post-fire recovery in the West Cascades, and should be kept intact without logging. *Many thousands of acres of natural second-growth occur in the Salmon-Huckleberry Wilderness. These areas are available to study post-fire recovery.*

The Forest Service continuously expresses concern about increasing fire risk in the forest; yet the proposed thins will increase the risk of fire. Reducing the canopy will result in drier conditions, and slash will only increase the fine fuel load. Blowdown is also likely given in units with steep slopes. Climate change, which is already increasing the summer drought conditions across the region, is only expected to continue and get more severe, increasing the fire risk further. There is a high concentration of roads in the vicinity, and given that most forest fires are human started on or near roads, it seems unwise to create drier conditions with increased levels of highly flammable fuel loads in the area. Logging in the cooler, wetter, native forests is unwise and irresponsible given the above combination of factors. *The Cloak project is not in an area with high fire hazard. The fine fuels from branches and needles would be compressed by snow in the first few winters and fuels would gradually decline. If climate change increases summer drought conditions then the need for thinning is even more urgent. Drier areas can support fewer trees (p. 6 & 77).*

BEST MANAGEMENT PRACTICES

The PA downplays any potential adverse impacts from harvesting activities: "vegetated buffer strips would act as an effective barrier to any sediment being transported into stream channels by surface erosion or runoff," PA, 28, and "Even if some soil movement occurred, the vegetated buffer strips along every perennial or intermittent channel would act as an effective barrier" PA, 28. The current condition of the riparian reserves in the project area does not support that conclusion. The PA conveniently omits any discussion of the age and health of the riparian reserves. An analysis of the condition of the reserves is necessary before making assumptions about the level of sediment these reserves will be capable of trapping. *The "barrier" would consist of duff, slash and plants on the forest floor that are present in the units (p. 24-25).* The foundation of such generalized and optimistic assessment of impacts is Best Management Practices (BMPs), which are automatically assumed to negate negative impacts. While we support the use of BMPs, they should not facilitate approval of projects that degrade habitat. The aim of BMPs is that they can "control or prevent," adverse impacts. However, the only sure method of preventing adverse impacts is by not conducting activities that cause harm and destruction. BEST measures of control do not provide assurance that valuable habitat will not be degraded. There is no proof of "demonstrated ability" of BMPs to be successful in diminishing harm. *BMPs have been found to be effective (p. 41-43 & EA Appendix E p. 16).*

NOXIOUS WEEDS

The Cloak PA acknowledged that noxious weeds are a problem, and yet proposes no mitigation measures such as washing heavy equipment before it comes into the planning area. The PA does not indicate that any actions will be taken to reduce the risk of noxious weed introduction and establishment, nor does it include a discussion of how the USFS would monitor success of these measures during implementation and in the aftermath of the project. Invasive weeds have reached such epidemic proportions that the Forest Service recently sent out a letter stating: “In recent years invasive plant populations have significantly increased on these forests... Invasive plants continue to expand every year, and have the potential to increase at rates of up to 8 – 12 percent per year” (letter from Gary Larsen, 2.24/04, Attached). Given this situation, the lack of protocols around dealing with noxious weeds in the Cloak PA is startling. *No letter from Gary Larsen was attached. Noxious weeds are included in design criteria 8 and 12 (p. 24, 27 & 75).*

CONCLUSION

The Cloak Thinning Project, while flawed, is a serious step in the right direction for the Clackamas District, and we applaud the agency for steps it is taking to redirect resources away from liquidating legacy stands of old growth on the district. We also applaud the wide range of alternatives, including Alternative D. At the same time, we are greatly concerned about the impact of this project on the northern spotted owl, in addition to impacts on riparian areas, snag loss, and detrimental impacts to fish populations and soil. If the project was turned into a mechanical thinning project directed at monoculture plantations, with trees lopped and scattered on site, we would enthusiastically support it, as we share the view that there are numerous units in the Cloak project that could benefit from some mechanical thinning, namely: 472, 473, 474, 478, 503, 511, 512, 513, 514, 515, 517, 519, 520, 578, 579. However, until the above issues are adequately resolved, Bark cannot support this project. We also feel that this PA is seriously lacking in information on the direct, indirect and cumulative effects of the proposed activities.

A letter containing the following comments was received from Charles Ferranti

In general I have little problem with thinning of young plantation represented by units 478, 474 and many more. As always, the devil lies in the details. The inclusion of the native stands that contain remarkable numbers of old-growth trees (i.e., 501, 466, 468, etc.) is unacceptable as are certain plantation stands that have significant riparian/wetlands (units 502, 504, etc.). The post-fire native stands should remain as fire recovery display areas. As with previous plans, the use of the terms “short-term, long-term” etc. are given no definition either qualitative or quantitative and consequently the consistency of their usage remains suspect. The use of the term “forest health” as a synonym for “timber production” (page 39, last paragraph) should be ended for the sake of clarity. The following is a more specific accounting of issues raised by this plan.

Riparian Thinning

One of the purposes described in the Preliminary Assessment Cloak Thinning [PACT, p. 4] is to enhance the riparian reserve objectives. This is made clear by the introductory statement, “[t]he purpose of this initiative is to... achieve multiple objectives.” The

objective of the enhanced riparian reserve is to be gained by developing mature and late-successional stand conditions but at what cost? At no point in the PACT do I read about the detrimental aspects of a heavy thin in a riparian reserve. All that is presented is the single-point priority with not a mention of how it was reached. While the objective may be laudable and may be correct there is no way to judge that from this document unless we take the “Papa Forest Service knows best” attitude. *The EA describes the positive and negative effects of riparian thinning in the Water Quality and Fisheries section (p. 31-43).*

- There is no specific discussion regarding the decades of degraded connectivity that would result from such a heavy thin. Connectivity corridors are discussed but the results of 40? 50? years of degraded connectivity are not discussed. *The riparian reserves would continue to provide connectivity. In the long term, trees would grow larger and provide connectivity for late-successional dependent species sooner than with no treatment (p. 35, 45, 50 & 52).*
- I do not see anything resembling a realistic attitude or approach to the 30’ no cut buffers. Bonanza unit 24 in theory has a 30’ buffer with Cap Creek. That unit drains down to 6311 at which point any sediment-bearing water only needs to traverse 25’ (not 30’) of roadside (picking up more sediment) before it dumps into Cap Creek. Not only is the no cut buffer to Cap Creek only 25 feet, but that short distance is easily traveled by sediment laden water as it flows out of the unit and along the road-side ditch into Cap Creek. We are told that Best Management Practices (BMPs) will protect the forest-riparian ecosystem but this very recent logging plan demonstrates a different truth. *The Bonanza EA (5/24/93) contains no requirement for a 30’ buffer. The photo of Bonanza thinning that was included as evidence backing up this statement was not clear enough to support the claim. It is on file with the original letter. Bonanza is several miles away from the nearest Cloak unit and is in a different watershed. The roads constructed with the Cloak project would not have ditches and would not cross streams (p. 32).*
- While large coarse woody debris is certainly needed for all fish bearing streams and the larger perennial non-fish bearing streams, how immediately important is it to smaller streams? I see a one-size fits all approach that doesn’t necessarily address the needs of the individual forest stand riparian zones. *Large woody debris is also important in intermediate streams to add diversity to the channel (p. 35).*
- I find no reference to “heavy thins” within 30’-50’ of water sources in pre-commercial thins. *This comment is not relevant to Cloak since it proposes no pre-commercial thinning.* The Slinky EA included pictures of the Gum clearcuts and the Cloak EA has a picture from the Jag sale so there is a precedent of referencing other sales to provide an idea of what an area would look like after logging. Why is it there are no pictures of heavy riparian thins from elsewhere? This concept had to have come from somewhere. *The concept of thinning riparian reserves to the desired spacing comes from numerous cooperative research studies. This concept was reviewed by U.S. Fish and Wildlife Service and NOAA Fisheries. The riparian thinning would have trees retained at*

approximately 23-foot spacing compared to approximately 19-foot spacing outside of riparian reserves. This difference in spacing would not be noticeable in a photo (p. 25).

- It is mentioned [PACT, p. 4] that there “are some small seeps and wet areas that are too small to show on the maps below. These areas would be excluded from the harvest.” While this sounds great, I have significant doubts about its credibility. First, if true then units 504 and 502 would have been dropped from the plan. Secondly, how is what was found at Bonanza III unit 225 (where an intermittent stream bed was used as a skid-trail) make this assertion plausible? *The photo of Bonanza thinning that was include as evidence backing up this statement was not clear enough to support the claim. It did not seem to show a stream channel or a skid trail. It is on file with the original letter. Unit 225 of Bonanza III was yarded with a skyline machine and no ground-based skidding occurred. In Cloak, most streams and associated wet areas are already excluded from the units. However some seeps and wet areas are as small as a few square feet and cannot be shown on maps. During tree marking, the trees around the perimeter of the wet area would be left (p. 9).*
- “Establish a minimum 30 ft. no-harvest buffer along the active channel of all intermittent streams. Smaller buffer widths would be allowed...”[PACT, p. 21]. This clearly states that intermittent streams will not have a no-harvest buffer. There is no way that this is acceptable. *Design criteria #9 is designed to take into consideration the site-specific conditions along an intermittent channel. All intermittent streams have a no-harvest buffer (p. 24-25).*
- “While thinning in the riparian reserve may have short-term effects...”[PACT, p. 22]. If this is an implication of negative effects then it should be stated as such. Where is the honest assessment of the pluses and minuses? *The quote is from Design Criteria #9c (p. 25), and this section does not contain effects analysis. Effects of implementing the project with design criteria are found in the Water Quality and Fisheries section (p. 30-43).*
- On page 22 it is noted that this thinning would have short-term and long-term effects and impacts but does not even attempt to quantify those terms..... *The quote is from Design Criteria #9c (p. 25). The quoted phrases come directly from the Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy, page 9. The terms are not defined by specific time periods because they are used to describe relative time frames. For example, when replacing a culvert that blocks fish passage, the culvert removal itself may produce some localized short-term turbidity but the benefits to fish in the long term would be dramatic. Defining the time periods more specifically would be conjectural and would not provide better picture of the impacts.*
- The assertion that a stream that runs in August (when it isn’t raining) needs a larger no-cut buffer than a stream that runs in December (when it is raining) [PACT, p. 28] isn’t credible. This is the implication of having a smaller no-cut

buffer for intermittent streams and it doesn't make sense. *There is no such assertion on page 28 or anywhere else in the EA. The Northwest Forest Plan recognized in the establishment of riparian reserves that bigger fish bearing streams warranted more protection than smaller streams. The same principle applies here for the development of different no-harvest buffer widths for different streams (p. 24-25). NOAA Fisheries has participated in the development of this concept and has consulted on the project (p. 30).*

- “The soil types in the project area have relatively fine textures and consequently, nitrate leaching to the groundwater is not likely.” On the other hand, this find textured soil is more easily transported by water; therefore, exposed soil is at greater risk for erosion and stream sedimentation. *This assertion is not correct. Fine soil particles bind to each other and are generally less erosive than coarser soils.*

“Desired Future Condition”

As always my main concern is with the selective use of references and citations.

- The very act of thinning means that active snags are likely to be lost (though I appreciate that a new approach to saving as many as possible was outlined in the BMP section). While new snags can be “created” there is no science that indicates that they will be in use by the time the next 15-20 thin comes around (Boleyn, Wold, Byford, “Created Snag Monitoring on the Willamette National Forest,” 2002). *The Cloak EA does not include a proposal to create new snags (p. 59-60).*
- There is no reference to soil health, this appears very convenient when viewed alongside the notations that units that currently exceed the damaged soil objectives are included in this project. It appears that there are few forest health objectives that are ever too difficult to circumvent and rationalize. *Several design criteria address protection for soils. The Forest Plan standards for soils are designed to protect long-term site productivity not to prohibit management on lands that were impacted before the Forest Plan was written (p. 25, 26, 67-71).*
- Every objective contains specific cites except the Landscape Health, I must assume that this was an oversight and will be rectified with the FONSI and final release. *(p. 6).*
- The timber harvest levels section mentions that “[m]inor amounts of timber may also come from Riparian Reserves.” A simple survey of Mt. Hood Monitoring Reports clearly shows that in some years the majority of timber is coming from riparian areas. This appears to violate the “minor” stricture. *Concerns about past monitoring are not specific enough to warrant a response. The quote comes from desired future condition statements, none of which contain “strictures.” The Cloak project is 14% riparian (p. 6).*
- On page 6 it is noted that the riparian reserve thinning will occur on the “dry upland portions.” But, the documents only attempt to define this term is by passively describing the “no cut buffers” of 30’ and 50’. Is this document asserting that a perennial fish-bearing stream’s 360’ riparian reserve buffer is “dry” up to 50’ from the water while a non-fish bearing stream that stops running in August has a buffer that is dry to within 30’ of the water? *The intent is to*

harvest on dry portions of the forest. The area outside the no-harvest buffer is considered “dry” in this context. Also most of the area within the no-harvest buffer is also dry, but they would not be harvested. The term “dry” is used here because there is sometimes confusion with the terms “riparian reserve” and “riparian area.” A riparian area or a riparian ecosystem is usually an area that is directly adjacent to a stream or is quite wet or has wet-site indicator plants. A riparian reserve is a land allocation that includes the dry upland area one to two tree heights away from the stream (p. 5-6).

- Why were all of the “issues” outlined on pages 6 and 7 given a “qualitative” treatment except for the forage issues? Surely quantitative work was done on issues 1-4 and this treatment needs to be included as part of a “qualitative/quantitative” assessment. *Quantitative assessments of effects were analyzed where appropriate (p.30-85).*
- The role of phosphorous and nitrogen fertilizer in degrading the quality of drinking water for those communities that use the Clackamas is not even address. For example, what role does nitrogen fertilizer play in creating the algal blooms that periodically fouls the Clackamas (e.g., KATU news report from 8/14/03). What examination, if any, has the Clackamas River Ranger District done with the USGS study regarding high phosphorus levels in the Clackamas River (Water-Quality and Algal Conditions in the Clackamas River Basin, Oregon, and their Relations to Land and Water Management, WRIR 02-4189). *The effects of fertilization on water quality are on page 34. Higher phosphorus levels in the Upper Clackamas River watershed are related to the soil parent material and geology of the area (p. 28).*
- There will be no fertilization within riparian reserves [PACT, p. 8]. Regardless of this limitation run-off from a variety of non-point sources remains problematic; even if it is inadequately addressed by the plan. *The effects of fertilization on water quality are on page 34.*

Roads

- New roads and re-activated roads all act to increase sediment dump. The problem is the first winter is the period of greatest sediment movement on newly uncovered soil. You have a problem with every foot of newly surfaced open road since the act of resurfacing creates fine sediment that will be washed into the roadside ditch, through a culvert and into the forest waterways. You have a problem with every re-activated and re-surfaced closed road for the same reason. You have a problem with every new road or skyline corridor or skid trail that ends at a system road for exactly the same reason. *Temporary roads for this project do not have ditches or culverts and do not channel water toward streams. The analysis of sediment risk is included in the Water Quality and Fisheries section (p. 32-33).*
- “The re-opening of old temporary roads...”[PACT, p. 22]. Shouldn’t this statement end the use of the term “temporary road?” A re-opened temporary road was never temporary to begin with and this needs to be honestly addressed by the

- Mt. Hood National Forest and by the Clackamas River Ranger District's timber sale teams. *The "temporary" in temporary roads refers to temporary use. Meaning that it will not be open for the public to use after completion of the timber sale. When temporary roads are built they are located in areas that will serve the long-term transportation needs of the area. Temporary roads built to harvest the original clearcut are closed and then reused when the plantation grows and thinning is proposed (p. 80).*
- No road building within riparian reserves [PACT, p.23]. This should be a “no brainer.” I am confused by the assertion [PACT, p.36] that “[r]oad construction would be outside of riparian reserves” which seems to contradict the road building statements from page 23. *There is no contradiction. Design criteria #11 is a standard criteria agreed to by the NOAA Fisheries. Projects designed to meet this criteria would have a minimal effect on fish. Road building is permitted in riparian reserves but the Cloak project has roads that are farther away from streams. The Cloak proposal contains no road construction within riparian reserves (p. 26).*
 - The assertion [PACT, p. 28] that sedimentation would be undetectable at the watershed scale is unworthy. It is the local spawning ground that counts in assessing the impact of this specific logging plan, not every spawning ground in the watershed. *The assessment discusses effects at several scales. The project would not create sediment that would negatively impact local spawning areas (p. 32-33, 39-41).*
 - “The soil types in the project area have relatively fine textures and consequently, nitrate leaching to the groundwater is not likely.” On the other hand, this find textured soil is more easily transported by water; therefore, exposed soil is at greater risk for erosion and stream sedimentation. This important point is worth repeating. *This assertion is not correct. Fine soil particles bind to each other and are generally less erosive than coarser soils.*
 - Roads can act to disrupt the hydrologic flow of an area. For example, Bonanza III unit 8 (now BF Salvage 1) has mosquitoes breeding in the standing road-ditch water. This unit is brand new and will have used many, if not all, of the BMPs that are planned for Cloak. This is not re-assuring. *A photo was included that showed mosquito larvae in a puddle. It is included in the original letter. The road is not new but was built in the 1950s. The area was clearcut 47 years ago. It is not clear what BMP violation is demonstrated by mosquitoes in a ditch and how that relates to the temporary roads that would be constructed by Cloak that would have no ditches.*

Soils

- There should be no harvesting done on any unit where the soil conditions exceed that Forest Plan maximum for detrimental condition. That should be without question. *Many units were logged prior to the development of Forest Plan standards for soils and may have conditions that exceed those standards. In these situations existing temporary roads, skid trails and landings would be used and the temporary roads and landings would be obliterated upon completion (p. 25, 67-71).*

- Tractors and skidders do more damage to the soil than other types of machinery. Why is there no qualitative/quantitative examination of this for Cloak? *Switching to skyline in a unit that has been previously logged with ground-based systems would result in additional impact from skyline corridors and from constructing new roads and new landings to facilitate a skyline system. Skyline logging on gentle slopes may also cause additional disturbance from logs that drag on the ground due to insufficient lift (p. 69 & 70).*

Heavy equipment rips-up soil and leaves it vulnerable to erosion. In this case a roadside ditch is downhill from the exposed soil and the soil will be easily transported into the watershed. *A photo was included that showed a skid trail. It is available in the original letter. Erosion control measures such as waterbars and grass seeding minimize erosion (p. 23-25, 42).*

Firewood

While I normally have no issue with firewood being made available, what I found at Bonanza unit 24 has changed that view. An old-growth Douglas-fir had fallen (outside of the unit) and a small length of the downed tree blocked 6311. The timber sale contractors followed the fallen tree for 100' into the surround forest, cut the trunk from the stump and dragged the 100' of tree-stem out of the forest into the logging site and pre-cut it into chips for firewood. Using the heavy machinery from the logging site to cut and remove that large a fallen tree from that deep in the forest is not acceptable. Coarse woody debris of that size plays an important role in forest ecosystems and the timber sale process shouldn't be used to short-circuit its role. The fallen tree in question is several miles from the nearest Cloak unit and is not relevant. *Timber sale contracts specify how to deal with trees that fall across roads. Coarse woody debris standards relate to timber harvest units and do not address trees falling across roads.*

Snag and Coarse Woody Debris Retention

- The taking of the larger trees from outside the sale area and moving them into the unit to count towards the coarse woody debris retention needs isn't acceptable. I found at Bonanza unit 5 where a tree of significant size was used as a cable tie-off (which killed the tree), afterwards it was felled and brought into the unit. This is problematic both because of the size of tree selected (one of the largest) and that the trees are coming from outside the unit.
- As noted (“[s]nags are difficult to retain during logging”), existing snags are often lost during thinning. The plan's mitigation measure of creating snags is fundamentally flawed. The existing study (Wold et al., 2002) of created snags and their usage clearly points out that there is a need for many years to pass (at a minimum) before the snags get fully used. Yet, this plan clearly states that the thinned units will be re-entered in 15-20 years for another thin. This will again remove the existing snags just as they begin to operate as snags (at least the hope is that they will be operating as snags by then). *The Cloak EA does not include a proposal to create new snags (p. 59-60).*

- Page 52 shows a detailed breakdown of snags per acre. While it is a pretty table it doesn't say anything of value. A created snag that isn't being used is not fulfilling its role in the forest ecosystem in the same way that a fleet of cars that don't run won't get me to work in the morning. Pretty table and pretty meaningless. *The Cloak EA does not include a proposal to create new snags. The table shows snags from a landscape perspective (p. 59-60).*
- Management indicator species [PACT, p. 55] that use snags need them to be fully operational. If the logging eliminates useful snags then specific MIS species populations will be negatively affected. *From a landscape perspective there are sufficient snags to meet the needs of MIS species (p. 59-60).*

Fertilization

“Buffers where no fertilizer would be applied would be two-site potential tree heights along fish bearing streams and one-site potential tree height along intermittent streams and wet areas.” While the buffers are a good idea, the assertion that streams that run in December when it is raining don't need the same buffer as streams that run in July when it isn't raining remains problematic. It is the rain that does the transporting and re-charges the streams and it won't matter that the stream is dry (intermittent) in July. The fully charged stream will need a full-sized no-cut buffer. *Fertilizer would not be applied in December. The Northwest Forest Plan recognized in the establishment of riparian reserves that bigger fish-bearing streams warranted more protection than smaller streams. NOAA Fisheries has consulted on the project (p. 28 & 30).*

Cumulative Effects

- On page 34 there is presented an ARP index for Cabin Creek. It shows a slight degradation due to the logging plan but a general recovery. I have seen this same graph for every timber sale EA that the Clackamas River Ranger District has issued. Since the plan clearly has an impact on Cabin Creek, but the ARP after the plan shows straight recovery does that constitute an assertion that there will be no other projects within the Cabin Creek subwatershed for the next decade? Is this graph also asserting that there have been no projects in the preceding decade? *The graph does show all past projects (p. 30, 39-40). The analysis shows the foreseeable projects listed. If other projects occur in the future that are not foreseen at present, then that project would include an analysis of cumulative effects to hydrology.*
- The natural second growth stands would be re-thinned in 10 years [PACT, p.40]. This would cause a second round of damage to the pre-existing old growth and would disrupt their usage as connectivity corridors while the stands recovered only to have the disruption occur a decade later. *The section on timber productivity on page 45 of the EA describes how trees grow and respond to thinning and does not propose to thin in 10 years. A future thinning, if any, is not made necessary by this project and is not a connected action. If thinning occurs in the future the effects would be analyzed at that time (p. 45).*
- There is a discussion [PACT, p. 45-46] regarding the cumulative impact of logging on the habitat for spotted owls. What is missing is a breakdown of acres

per year that are being lost so that an actual understanding of the cumulative impact is possible. *It is not possible to predict the exact year a unit would be logged and such an analysis would be speculative and not yield any pertinent information. The project would likely be broken into several timber sales that operate over several years (p. 49-53).*

Standards and Provisions of the Timber Sale Contract

“Adherence to the provisions of the timber sale contract is ensured by the continual inspections of trained and certified Sale ...” [PACT, p. 37]. Ground-truthing of previous sales has shown leave trees that have been cut (Bonanza III unit 225, Pardner II unit 77, etc.), intermittent streams used as skid-trails (Bonanza III unit 225), leave-tree snags downed (Guard unit 4), large number of damaged leave-trees (Guard unit 3), etc. Adherence to the provisions of thinning sales in the Clackamas River Ranger District is more problematic than can be glossed-over by that assertion. *These observations are faulty and/or unsubstantiated. Certified sale administrators monitor the purchaser’s implementation of the timber sale contract (p. 42).*

A photo was included that showed a stump of a tree that was used as a tail hold for skyline logging and shows no streambed. The photo is included with the original letter. Not only was this a tree marked to be left but it was one of the larger trees in the vicinity and it was in an intermittent streambed (Bonanza III unit 225). *Sale administrators approve the use of tailhold trees.*

A photo was included that showed trees with chunks of bark knocked off. A significant number of marked “leave trees” were damaged by the logging in Unit 3 of the Guard sale. This sale was logged in 2004 utilizing the same BMPs that the Cloak sale will use. *BMPs address protections to soil and water quality and do not address damage to leave trees. Leave tree damage in Unit 3 of Guard was within an acceptable range.*

Birds

- No logging should occur within NRF habitat that exists in designated Critical Habitat Units. *Alternative D addresses this option.*
- “Therefore, in the context of the local and watershed scale, these alternatives would adversely affect the spotted owl and its habitat.” This means that there are elements of this plan that are inappropriate and should be removed. *The project would not likely jeopardize the continued existence of the spotted owl (p. 51).*
- There is a discussion [PACT, p. 45-46] regarding the cumulative impact of logging on the habitat for spotted owls. What is missing is a breakdown of acres per year that are being lost so that an actual understanding of the cumulative impact is possible. *It is not possible to predict the exact year a unit would be logged and such an analysis would be speculative and not yield any pertinent information. The project would likely be broken into several timber sales that operate over several years.*
- “For species that prefer un-thinned second-growth stands there is abundant habitat in protected lands on the Forest including wilderness areas, riparian reserves and

late-successional reserves.” Technically neither the riparian reserves nor the late-successional reserves are protected. In reality, a large portion of all the timber coming off of the Forest comes from riparian areas. In this plan they will log riparian areas...so why are they listed as protected? *The word protected has been deleted (p. 65 & 66).*

- For birds that prefer early seral there hasn't been enough snags left in the past [PACT, p. 57]. While this logging plan considers this addressed by, at the least, the creation of snags after the thinning the problem with their usage remains. Worse yet, by the time these new created snags would be getting used it would be time to knock them down with a new round of thinning. *The Cloak EA does not include a proposal to create new snags (p. 59-60).*

Financial Analysis

8.3 jobs are created per million board feet of logging [PACT, p.67]. The duration of those jobs is not stated. Permanent? Yearly? Quarterly? Weekly? What is being measure? This statement is meaningless without the duration of the employment in the mix of elements to be considered. *The analysis from the Northwest Forest Plan is an analysis of Proposed Sale Quantity (PSQ). Each million board foot increase in the PSQ would result in a permanent addition of 8.3 jobs (p. 78).*

“Forage Enhancement”

This one slays me. Really, you all oughta do Vegas. You all but complain that since you can clear-cut old-growth your hands have been tied. Heck, I've seen the “forage enhancement area” (also known as old-growth clearcut) adjacent to Slinky unit 9 (funny, but that designation found in earliest of Slinky maps was dropped from the EAs...what, you didn't have the nerve?). Please feel free to look-up “disingenuous” in the dictionary, unlike “gullible” it is actually there. Since you are already pre-commercially thinning tens-of-thousands of acres where is the need here? There is no transition zone argument (i.e., the deer and elk need a safe place to hide between browsing) since these tens-of-thousands of acres of pre-commercial thins have borders with mid- and late-seral stands that provide optical and thermal cover. If there is a significant reason why you can't create these “forage enhancement” zones during the pre-commercial thinning process it should be included following the discussion of how late-seral clearcuts had once provided the foraging areas. In spite of their not being clearcuts, wouldn't the 217 heavily thinned riparian reserve acres count as forage enhancement for a period of many years before the canopy closed (that is the idea after all, to thin it so heavily that you get maximum spacing so that no second thin is needed)? *Wildlife biologists with the Forest Service and Oregon Department of Fish and Wildlife concur that forage is needed in these areas (p.4)*

Approximately 100 post cards and emails were received. Comments received in this manner are not responded to individually because they are similar to the ones already responded to in the above narrative. All of the comments received are included in the analysis file.