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Comments on the Coos District 2011 Annual Operation Plans

May 12, 2010

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Please consider these comments in your final decisions for the Coos District 2011 annual operation plans. Some of our concerns detailed in these comments include:

- * logging in structurally complex, mature forests in the long-rotation basins;
- * designating new MMMA's of insufficient size;
- * clearcutting spotted owl habitat while barred owl numbers are increasing
- * releasing greenhouse gasses and increasing global warming.

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1. Long-rotation Watershed Basins

The 1995 Elliott HCP considers long-rotation basins as “reserves” for endangered species. The HCP says that the Elliott HCP “would provide T&E *reserves* through HCAs and long-rotation basins.”¹

This year the ODF is again proposing two thinning sales in mature forests in long-rotation basins, the North and South Goody Goody sales in Basin 4. These sales will log 804 acres of mature forests up to 151 years old. Also relevant are the 2010 sales in the long-rotation basin, the North and South Middle Ridges Thin, in Basins 6 and 7, which are up to 145 years old. These will be auctioned in August 2010 and log 1,297 acres.

Together, the 2010 and 2011 sales propose to log 2,101 acres of mature forests in the long-rotation basins containing some of the oldest and the biggest trees in protected reserves for spotted owl and marbled murrelet nesting habitats. In 2000, two other mature forests were thinned in long-rotation basins. Other sales in recent years have been clearcut in long-rotation basins.

The 1995 Habitat Conservation Plan does not allow these cumulative impacts to these Spotted Owl and Murrelet reserves. For instance, the HCP promises (IV-30):

“Long-rotation basins provide an important basis for mitigation for marbled murrelets and spotted owls. **Little or no harvest is planned in Basins 1-8 and 17 for the first three decades.**”

Three decades means little or no harvest can happen until 2025, yet:

* In just two years, ODF is proposing to thin in over 2,000 acres of the oldest forests², including thinning 38% of the mature forests in Basin 4³, thin 19.2% of the mature forests in Basin 7, and 14% in Basin 6⁴.

* ODF earlier harvested in over 16% in the oldest forests in Basin 17⁵. This included “group selection,” or small clearcuts of nesting, roosting and foraging (NRF) habitat.

* Within the last 5 years, ODF has clearcut, or is about to clearcut, 374 acres⁶ of forests in the long-rotation basin. This includes clearcutting 133 acres⁷ of mature, older forests in long-rotation basins.

* Within Basins 4, 6, 7 and 17, the ODF has thinned, or plans to thin 20% of the mature NRF habitat.

* Over 3,000 acres in long-rotation basins have been logged (thinned or clearcut). We don’t know the exact number because we do not have data for the first 6 years of the HCP.

This level of harvesting far exceeds the “little or no” threshold designated by the HCP. Therefore, the sales proposed this year, the North Goody Goody and South Goody Goody are illegal.

¹ 1995 HCP III-14

² Based on 80+ age column, Table IV-1, HCP page IV-8.

³ North and South Goody Goody

⁴ North and South Middle Ridges

⁵ Lower Skunk and Hidden Valley timber sales.

⁶ Curvy Puckett, Umpcoos Ridge 1 and 2, Double Barrell, Dean Mountain, 4200 Wedges, and Middle Elk.

⁷ Umpcoos Ridge 1 and 2, and the 4200 Wedges sale.

The HCP is clear that there is a good reason for restricting logging in the long-rotation basins:

“The restriction of harvest in the long-rotation basins will allow murrelet nesting habitat to increase over the next 30 years from 25,174 acres to 28,373 acres.”

28,373 acres is almost the total acres of forests over 80 years in long-rotation basins. There is no room to clearcut some, and degrade some with thinning.

The HCP expects that the result of “little or no harvest” will be “a greater consolidation of nesting habitat than currently exists on the Elliott and blocks of potential nesting habitat will increase. Also, superior habitat (stands 156+ years old) will begin to develop in these basins after 30 years, and will dramatically increase with time.”⁸

This can’t occur if the ODF continues to aggressively log long-rotation basins. The basins with the most logging so far, Basins 1 and 4, just so happen to be the basins with the oldest average stand age in 1995, 150 and 161 years old respectively.⁹ After 15 years of clearcutting and thinning old forests, the average age in these basins has likely been severely reduced. This was not the intent of the 1995 HCP, especially when it requires “little or no harvest” in these basins. Therefore, the North and South Goody Goody sales must be dropped from the 2011 sale plan, especially since the ODF is selling the Dean Mountain clearcut in the very same long-rotation basin, just down the road from South Goody Goody.

“Proven Track Record”: Monitoring of Permanent Plots

We recently talked with ODF Silviculturist Norma Kline¹⁰ about the marking prescription for the North and Middle Ridges timber sales, last-year’s long-rotation, mature forest thinning scheduled for auction in August, and just a few miles south of this year’s Goody Goody long-rotation mature sales. Norma informed us that the retained or take trees in the thinning units would not be marked by ODF, but rather would be decided by the logging crew themselves, based on a written prescription given them by ODF. We expressed alarm at the thought of the logging crews deciding how to “develop a more complex stand structure,” concerned that the logging company would have an economic conflict of interest in deciding what trees to take. Norma assured us that the prescription would be clear, the loggers would be trained, and that ODF has a “proven track record” of successful thinning in mature forests.

The “proven track record” Norma referred to is the Lower Skunk and Hidden Valley timber sales in the long-rotation basin #17 logged in 2000 and 2002. Permanent plots were installed and have been remeasured over the past 10 years.

The Hidden Valley thinning sale sold an average Douglas fir DBH of 25”¹¹. That means this forest was already structurally diverse and some trees over 4’ across were taken away on a log truck, instead of kept on-site for existing habitat or snag recruitment. We assume the ODF has the same type of logging in mind for North and South Middle Ridges and Goody

⁸ 1995 HCP IV-31

⁹ 1995 HCP IV-8.

¹⁰ Phone conversation, April 13, 2010

¹¹ Hidden Valley Timber Sale Notice 9/01. ODF.

Goody timber sales.

We were also concerned about the “group selection” part of Hidden Valley, also known as a “gap.” We feel gaps are not needed when logging occurs near recent clearcuts, that gaps are too large, and that gaps are essentially clearcuts, with no structure left in the gaps. (See more on potential structure in gaps on page 10.)



Left: This clearcut is part of the Hidden Valley timber sale. It was a 125 year old forest in the long-rotation reserve that was “thinned” by ODF, to “improve structure”, in 2002.

The “group selection” clearcut seen here is bordered on two sides by recent clearcuts. ODF claims that putting these mature forests on a log truck is good for the spotted owl and marbled murrelet.

About 10 acres of “group selection”¹² (gaps) were logged in Hidden Valley, where the ODF claimed the forest needed to be opened up with mini clearcuts to diversify ages. Not one snag was created within the clearcut. Surrounding the group selection area were recent clearcuts, providing more than enough age diversity. We were told a similar prescription, in the same fragmented landscape is being applied to North and South Middle Ridges and the Goody Goody timber sales.

There were permanent plots installed in Hidden Valley to monitor the impacts of this prescription. But we suspect none of the plots are monitoring the impacts of group selections, like that seen above, on spotted owls and other wildlife.

Concerning **group selection** in long-rotation basins, the 1995 HCP says:

“The testing of the group selection method has just been initiated on Oregon State University’s MacDonald Forest by John Tappeiner, et al. **If** this method is used... it should be done initially on a small trial basis until we gather enough data and experience to decide that it is appropriate to apply the practice operationally”¹³

Pre-operation reports for these sales failed to point to any test or trial, required by the HCP, before group selections (mini clearcuts) can be done in mature forests. As seen in the picture above, the group selection is also not being on a “small” trial basis either, such as an occasional one-acre gap opening.

Currently **permanent plots are being monitored in the Lower Skunk and Hidden Valley** sales. Every AOP summary from 2001 through 2011 tells us:

“Permanent plots are being monitored on both the Lower Skunk Stand Management sale

¹² Hidden Valley Exhibit A map shows group selection at the intersection of roads 9500 and 9520.

¹³ 1995 HCP Page IV-40 and 41.

and the Hidden Valley Stand Management sale.”

Last year we asked for the results of the monitoring, and after receiving nothing, we re-asked this year. On April 23, 2010, Jeff Foreman emailed me two sets of data, one from Lower Skunk and one from Hidden Valley. But, Jeff says in the email:

“The Hidden Valley permanent plot information is incomplete, raw data. We have no published results – formal or informal. We plan to continue to monitor the site on a multi-year basis, but we have no analysis to report at this time. Recent budget cuts have required reassignment of staff – unfortunately, it has resulted in this becoming a lower-priority project for now.”

This is the “proven track record”? It appears that the 2011 AOP statement that “plots are being monitored on both the Lower Skunk Stand Management sale and the Hidden Valley Stand Management sale” is completely untrue. The ODF should correct this gross misstatement. The plots are not being monitored, and haven’t been for a long time. Instead staff has been reassigned and budget cuts have put monitoring on a “lower-priority”.

The little bit of data that was collected 10 years ago for **Lower Skunk**, shows every tree that was tagged for monitoring in 1998 is “gone”, “knocked over”, or “not found” in 2000. Therefore, there is virtually no data recorded in the 2008 column.

On the **Hidden Valley** permanent plot data, there is nothing at all recorded in the 2008 column, only data in the 2000 column. We assume this is because all the trees that were scheduled for monitoring were logged. What then, is being monitored?



This is one of the trees loggers picked to take in the Hidden Valley sale, in order to “improve stand structure”.

The Elliott HCP 5-year review states the Hidden Valley and Lower Skunk permanent plots are to “comply with the HCP monitoring requirements and provide an avenue for adaptive management-based decision making.”

It is inappropriate to tell the public you are doing monitoring, when in reality you have cut the budget and reassigned the staff. ODF cannot use this nonexistent monitoring as an excuse to log 2,138¹⁴ more acres of mature-forests in long-rotation basins.

In addition to removing large trees out of the Hidden Valley sale, 60 healthy, large trees were “topped or girdled” to create snags.¹⁵ Because no real monitoring was done, the ODF has no idea what wildlife, if any, are able to use these snags. Clearly, no more thinning in mature long-rotation forests should be done until the ODF knows if it is indeed beneficial to the purpose of long-rotation basins.

It is especially important to monitor past logging of this type because the ODF’s **5-year review of the HCP said there are some problems** with thinning mature forests. That report

¹⁴ 2010 and 2011 long-rotation thinning sales.

¹⁵ Hidden Valley Timber Sale Notice 9/01. ODF.

said¹⁶:

“Language in the HCP regarding “ecological” and silvicultural thinning in mature stands is not as clear as it needs to be and has caused some confusion. ODF will propose language for the re-opener that will clearly state the criteria for when this type of treatment will be done and what the objectives of the treatment are, as well as the acreage of the this type of treatment, by basin, that will be accomplished each year.”

Did this happen? If so, what is the new language that was offered? Before thinning more NRF habitat in long-rotation watersheds, the ODF needs to explain what was the confusion in Lower Skunk and Hidden Valley, and how were the criteria and objectives restated. We asked for this in last-years comments, but the ODF failed to respond to that request. Please respond to this issue this year.

The Elliott’s 5-year review describes how the plot study was designed (page 24-25):

Lower Skunk Permanent Plot Design and Data Collection: Our main objective for this design was to determine how thinning in mature stands affects the understory, stand development, down logs, and snag retention. The sale administrator then told the loggers for the Lower Skunk Timber Sale that there were various plots within the sale, but that these were inconsequential, and that if encountered, normal thinning practices and techniques should be used. After the sale was completed, we went back to record removed trees, damage to standing trees, and any change in down logs, snags, and under story. We plan to remeasure both treated plots and control plots every 5 years.

Now we find out that they were never remeasured every 5 years because of staff reassignments and budget cuts. No more logging in long-rotation basins can occur until there actually are studies showing that improved wildlife use results from the logging, since wildlife use is the purpose of the long-rotation basins.¹⁷

Other Issues With Thinning 2011 Goody Goody Mature Forests.

The mature forests that ODF wants to thin currently contain a high diversity of tree species, including Sitka spruce, red cedar, western hemlock, Douglas fir, true fir, red alder, myrtlewood, big-leaf maple and more. Their density is currently variable, including skips and gaps in the canopy. These forests currently contain large dead snags and fat branches for both spotted owl and marbled murrelet nesting. South Goody Goody sale has 86 acres that are over 151 years old. These are the oldest forests on the Elliott, and are old enough to function as old growth. The ODF should explain why these very old forests need our help, and the help of a log truck, to be structurally diverse.

In fact, in the South Goody Goody timber sale, areas the ODF claimed needed logging to increase diversity, there were “significant murrelet detections in 2009”.¹⁸ While those areas resulted in two tiny new MMAs carved out of the proposal, the rest of the sale has exactly the same kind of diversity. If endangered species already use these forests, they do not need the help of a log truck to continue to live there.

¹⁶ Five Year Review for the Elliott Habitat Conservation Plan. ODF. 2/18/02. page A-3.

¹⁷ HCP page IV-30

¹⁸ Pre operation report page 7

The ODF failed to explain what the existing condition is that needs increased structural diversity. For example, if more snags are needed, the ODF failed to explain how putting large trees on a log truck will enhance large snag habitat at the site, rather than just creating snags in the unit. The ODF is going to create¹⁹ a half snag per acre, while hauling away dozens of large trees per acre that are future snags.

Thinning the Goody Goody sales will degrade wildlife habitat more than any enhancement benefits. Thinning of big trees will be so heavy, some acres will have fewer than 50 live trees left, and no more than 80 live trees left²⁰. The ODF never explained to the public why they believe this level of logging is enhancing spotted owl use.



North Goody Goody sale

There could be spotted owls nesting in these forests right now.

The Elliott 5-year review, page 17, says the Roberts Creek Owl is “one of the most productive sites” on the Elliott. Roberts Creek Owl site is immediately adjacent to the North Middle Ridges thinning in the long-rotation basin. We know that spotted owls have moved out of their traditional home ranges because the barred owl moved into the Elliott. This includes the Roberts Creek owl site, where a barred owl was discovered in 2003.²¹ The Roberts Creek owl could have even moved into one of the Goody Goody units.

However, the ODF has no plans to survey for owls in these sales, claiming the HCP does not require surveys²². Therefore, the ODF will log in these long-rotation basins not even knowing if a spotted owl nest will be felled.

The ODF claims that since younger stand thinning won’t sell, they will thin in mature stands in long-rotation basins.

“Due to the poor economy, which makes it difficult to sell small diameter thinning sales, there are no young thinning sales planned in the 2011 sale plan. 804 acres of mature stand thinning is planned in Basins 3 and 4.”²³

Logging in long-rotation basins for economic reasons is not allowed by the HCP, which says (page IV-30): “Long-rotation basins provide an important basis for mitigation for marbled murrelets and spotted owls.” The HCP says nothing about market conditions or volume targets driving thinning in mature forests. Instead, ODF must protect biodiversity, including snags and dead wood, and future dead wood that endangered species depend on. The HCP says, page IV -30-31:

“**Little or no harvest** is planned in basins 1-8 and 17 for the first three decades. The restriction of harvest in the long-rotation basins will allow murrelet nesting habitat to increase over the next 30 years from 25,174 acres to 28,373 acres. The result will be a

¹⁹ Pre operation report page 4

²⁰ Annual Operation Plans, Table V.

²¹ 2003 Elliott Spotted Owl Survey report

²² Pre operation report page 7.

²³ Coos 2011 Annual Operation Plan. 2/15/09 draft. Page 9

greater consolidation of nesting habitat than currently exists on the Elliott and blocks of potential nesting habitat will increase. Also, superior habitat (stands 156+ years old) will begin to develop in these basins after 30 years,

ODF Response to Last year's Comments:

Last year, the ODF responded²⁴ to some of our concerns about thinning in mature forests in long-rotation basins. ODF argued that:

“Thinning will target portions of the stands with dense stocking.”

No it doesn't. We've looked at the stand marked for thinning, and it is, for the most part, not dense stocking. If there are areas of dense stocking, this is the diversity central to “complex structure.” Thinning here will homogenize these stands, not diversify them.

The ODF continues:

“The dominant trees are not targeted for harvest in this type of thinning. Thinning these sales will not reduce NRF habitat and are consistent with the 1995 HCP objectives of habitat enhancement within long-rotation basins.”

The ODF has no accountability on this subject. The prescriptions given to the loggers for previous sales²⁵, as an example of how the current sales will be logged, have virtually no wildlife considerations. The prescriptions simply focused on an economic outcome. They severely reduced NRF habitat and were not consistent with the 1995 HCP objectives. Additionally, as stated above, no monitoring is available on how the results of “thinning” enhanced wildlife habitat, as ODF claims. There is no assurance that any percent crown cover will be maintained or that the largest trees will be retained.

Since there will be no trees marked for retention, as it will be sold as a logger-choice sale based on a prescription with no wildlife focus, the public cannot monitor how many big trees are being taken. The ODF can claim the dominant trees are not targeted for harvest, but there is no way for the public to monitor this. Indeed, in the Hidden Valley sale we found lots of very large stumps, where dominant trees were taken. The ODF themselves do not monitor this in any format that the public can track.

Additionally, even if non-dominant, mid-story trees are taken, the ODF has no monitoring to show that future snag recruitment is not impacted.

Appendix I of the HCP

ODF continues with their response to our 2010 AOP comments concerning thinning in long-rotation basins:

“The 1st paragraph on page I-1 of Appendix I of the 1995 HCP... Table I-5 on page I-12 shows that Wildlife Habitat Focus stands on 200 Year Rotations “will be monitored for their health and structural development. Additional partial harvesting may be done to promote stand health and structure” from age 105 – 185.”

²⁴ Page 42 of ODF general response to public comments.

²⁵ Hidden Valley prescription was emailed to me by Jeff Forman, April, 2010. The ODF could not find the prescription for Lower Skunk.

If the ODF is going to insist that Appendix I allows them to log structurally diverse, mature forests in long-rotation basins, then the ODF must be consistent and follow all the Appendix I time-lines. For instance, the timeline in Basin 4 Appendix I does not allow clearcutting until a stand is 160 years old, yet the ODF is clearcutting the Dean Mountain Lookout sale in Basin 4, a 40 year old forest.

The ODF is going to clearcut Deer Headwaters in Basins 2 and 3, a 120-year-old forest, yet Appendix I doesn't allow clearcutting in Basin 2 and 3 until the forest is 240 years old.

ODF clearcut many sales in Basin 1 under 160 years old when Appendix I doesn't allow clearcutting there until they are 160 years old, including:

- * 126-year-old Footlong Ridge sale,
- * the 40-year-old Curvey Puckett sale,
- * the 121-year-old Umpcoos Ridge 1 and 2 sales.



Left: Double Barrel sale cut in 2007. This massive clearcut of a 40-year-old forest was in Basin 1, a long-rotation basin. Appendix I's timeline does not allow clearcutting in Basin 1 until a forest is 160 years old.

Appendix I doesn't allow clearcutting in Basin 17 until stands are 240 years old, yet ODF clearcut the 40 year old Middle Elk sale.

If the ODF is going to interpret Appendix I as allowing thinning in native, structurally diverse forests in long-rotation watersheds, ODF must also interpret Appendix I as restricting when clearcutting is allowed.

Instead, we believe ODF is mis-interpreting Appendix I. Appendix I is talking about managed plantations, as it tracks stands from year 0 to year 200. It is not talking about existing; native stands in the long-rotation basins. Even with this interpretation, the ODF cannot clearcut plantations in long-rotation basins.

Additionally, this is the area of the HCP that the 5-year evaluation²⁶ identified as confusing and unclear (see page 6 of these comments). In any case, the Appendix I the ODF refers to requires "monitoring for health and structural development" before thinning. ODF has failed to monitor. Therefore, the HCP does not allow additional harvest in long-rotation basins.

²⁶ Five-Year Review for the Elliott Habitat Conservation Plan. ODF. 2/18/02. page A-3.

The HCP is clear: mature stands in long-rotations must *first* be monitored for health and structural development. ODF can do partial harvesting only if that monitoring finds (1) that the health and structural development of the forest is lacking and (2) that partial harvesting will fix the health and structural problems. Since there is no monitoring, there can be no thinning.

The ODF continues, talking about the Permanent Plots that were established in the Hidden Valley timber sale after thinning in the long-rotation basin:

“The Permanent plots were established to provide general information on growth response and understory initiation. Measurements are planned to continue in the summer of 2009.”

Again, the ODF is not sharing these results, or the results are “raw and incomplete”, resulting in no public accountability.

Group Selection and Other Prescriptions.

Above we showed the clearcut that was the “group selection” in the Hidden Valley timber sale, using the very same prescription as the Middle Ridges sales, and likely the same as the Goody Goody sales. The Hidden Valley gap, meant to diversify forest ages, was done right next to a huge clearcut in the short-rotation basin across the road. The Middle Ridges and Goody Goody sales also have short-rotation clearcuts across the road from them. The AOPs for these thinning sales never justified this type of logging. Please justify it in response to these comments.

To begin with, gaps are only appropriate for plantations, not for native forests. Then, real gap creation to benefit wildlife will retain plenty of large snags within the gap. Other agencies do legitimate gap-creation, meant to benefit wildlife, so gap size is limited and not every tree within the gap is put on a log truck, as was done in Hidden Valley and Lower Skunk. For instance, the prescription for gap creation in the Umpqua National Forest Upper Cavitt timber sale in the matrix land use allocation, in a young plantation, leaves clumped trees near the center of each 1-acre gap for snag creation.

When thinning throughout the stand, trees joined together at the base are treated as one tree under the Dx D specifications, regardless of diameter or species. All hardwoods, yew, and very large or old trees are left. These prescriptions have real benefits introducing structure in a young stand. Whereas, the prescriptions for Hidden Valley contains nothing about increasing structure. And as far as the Lower Skunk prescription, Jeff Foreman said it was lost. “Finding these historic contracts involves searching through old boxes, which will take significant staff time.”²⁷

There is no basis in science that thinning mature forests enhances endangered species nesting habitat.

The ODF claims the purpose of commercial thinning in old forests in long-rotation reserves is to:

²⁷ 4-21-10 Email

“... maintain and accelerate creation of a more complex stand structure with the further development of an understory of hemlock, red cedar, big leaf maple, and myrtle by managing stand density in accordance with the Balanced Landscape strategy of the Elliott State Forest Management Plan. Thinning will allow for development of a more complex stand structure over time.”²⁸

The ODF provides no basis in scientific research for the claim that thinning mature forests will develop a more complex stand structure, or further the purposes of long-rotation basins, spotted owl and murrelet habitat. Instead, it appears the goal of thinning mature forests in long-rotation basins is for volume²⁹, not to benefit wildlife. These stands are existing spotted owl and murrelet nesting roosting and foraging (NRF) habitat. The ODF failed to explain why these areas need intervention now, instead of naturally developing more complexity through time.

The 1995 HCP says:

“It is generally recognized that enhancement of late successional forests benefits most when management is conducted early in stand development (Tappeiner et al. 1992). Thus, thinning treatments will be restricted to stands 0-80 years old, with an emphasis on stands less than 40 years old.”³⁰

While this statement in the HCP applies to Habitat Conservancy Areas, the scientific reasoning applies to all forests over 80 years old. If it is generally recognized by the HCP that enhancement of late successional forest conditions is best done in forests under 80 years old, this reasoning also applies to the long-rotation basins, where it is also stated that “little or no” harvest is allowed.

There is some suggestion in science that thinning *managed* plantations up to 120 years³¹ old could be beneficial, but not in native forests. Native forests have far greater diversity and complex structures than managed plantations. There is no research that has found thinning native, non-plantation forests, up to 150 years old, provides any ecological benefits.

Last year we also complained that ODF was not basing the logging in long-rotation basins on any science. We stated that if ODF disagrees, then it should cite some science that backs up its prescription for thinning in these NSO reserves. The ODF failed to respond to those comments. This year we ask ODF again to cite evidence that thinning in mature forests has ecological benefits. Otherwise, cancel plans for these sales.

In the Oregon Wild white paper “The Case for Protecting Both Old Growth and Mature Forests”³², author Doug Heiken states:

²⁸ Goody Goody Thin AOPs page 4.

²⁹ The mature forests to be thinned in 2010 and 2011 will produce over 23 mmbf.

³⁰ 1995 HCP page IV-4.

³¹ Restoration of Federal Forests in the Pacific Northwest: Strategies and Management Implications. Johnson and Franklin. 8-15-2009. See pages 22-23

³² The Case for Protecting Both Old Growth and Mature Forests. Oregon Wild <http://dl.dropbox.com/u/47741/Mature%20Forests%2C%20Heiken%2C%20v%201.8.doc> March 23, 2009 Quotes are from pages 32 through 38

Cutting mature forests and trees is generally not needed for ecological reasons. In fact, commercial logging will most often degrade rather than improve mature forest habitat. Foresters can make an argument that thinning helps grow big trees faster, but that's a tree-farmer's argument that is focused on growing a crop of big trees instead growing complex habitat.

Healthy late-successional forests are so much more than just big trees. Managers of public forests must strive to enhance other important aspects of healthy old forests, including large dead trees called snags, down wood, and multiple canopy layers. Of the six main attributes of old-growth forests, two involve dead trees (i.e., large accumulations of snags and dead wood). Looking at forest development once again as a continuum, restoration of complex old forests will require a reliable flow of material from the live-tree pool into the snag and down-wood pool, but logging interrupts that flow....

The Scientific Panel on Ecosystem Based Forest Management explained:

The fact that dead trees and logs are as important to ecosystem function as living trees challenges traditional forestry models that treat such materials as waste, fire hazards, and mechanical impediments. To move away from ecologically simplistic models, new forest management regimes must address questions such as: How much coarse woody debris is needed? and: How many snags in various stages of decay are required? to fulfill important ecological functions.”³³

Unfortunately, the agencies continue to rely on scientifically outdated methods that perpetuate the deficit of large snags and down wood,³⁴ and they continue to remove medium-sized trees that should be allowed to continue to grow and become ecologically valuable snags and dead wood. Heavy thinning of maturing forest has been shown to significantly delay attainment of snag objectives.³⁵ Which means that commercial thinning may be preventing or delaying development of essential features of old forest ecosystems, features that are important to spotted owls, salmon, and the species they depend on.

³³ Franklin, J.F., D.A. Perry, R. Noss, D. Montgomery and C. Frissell. 2000. Simplified Forest Management to Achieve Watershed and Forest Health: A Critique. National Wildlife Federation, Seattle, Washington. <http://www.coastrange.org/documents/forestreport.pdf> (citations omitted).

³⁴ PNW Research Station, “Dead and Dying Trees: Essential for Life in the Forest,” Science Findings, Nov. 1999 (<http://www.fs.fed.us/pnw/science/scifi20.pdf>) (“Management implications: Current direction for providing wildlife habitat on public forest lands does not reflect findings from research since 1979; more snags and dead wood structures are required for foraging, denning, nesting, and roosting than previously thought.”). Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) <http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf>. Steve Zack, T. Luke George, and William F. Laudenslayer, Jr. 2002. Are There Snags in the System? Comparing Cavity Use among Nesting Birds in “Snag-rich” and “Snag-poor” Eastside Pine Forests. USDA Forest Service Gen. Tech. Rep. PSW-GTR-181. http://www.fs.fed.us/psw/publications/documents/gtr-181/017_Zack.pdf.

³⁵ USDA Forest Service. 2007. Curran Junetta Thin Environmental Assessment. Cottage Grove Ranger District, Umpqua National Forest. June 2007. Using data from stand exams modeled through FVS-FFE (West Cascades variant) the Umpqua NF found that the actual effect of heavy thinning is to capture mortality and delay recruitment of desired levels of large snag habitat for 60 years or more.

In moist provinces, mature forests just need time, not logging. Mature forests are already starting to exhibit complex forest characteristics and they will continue to develop and improve without human intervention. As recognized in the Northwest Forest Plan standards and guidelines for Late Successional Reserves, stands over 80 years old in the moist westside provinces are most likely to become old growth in the absence of silvicultural manipulation.³⁶ The transition from mature forest to old growth is a process that takes time and varies depending on factors such as location, species, and disturbance events. In a mature forest, all the ingredients are there to make old growth (e.g., large and growing trees, material for recruitment of snags and logs, mortality processes that create canopy gaps, etc.). These forests don't need logging; they need time to develop.

In moist areas, young forests are most likely to benefit from thinning. The most appropriate use of logging technology is to thin dense young stands that developed following clearcutting. The Northwest Forest Plan prohibits logging of stands 80 years or older in the Late Successional Reserves for several reasons: (a) such stands are beginning to acquire late successional characteristics and provide valuable habitat for spotted owls and other wildlife; (b) there is a lack of evidence to support the hypothesis that logging in stands >80 years old is beneficial to habitat development; and (c) logging will likely do more harm than good.

The 1993 Report of the Scientific Analysis Team (SAT) specifically highlighted the risks associated with logging in suitable owl habitat, saying "intentions to selectively cut forest stands to create conditions favorable for spotted owls, represents increased risks to the viability of the spotted owl."³⁷ The Scientific Analysis Team said there are several factors that support this conclusion and affirm the Interagency Scientific Committee's decision to exclude logging in old growth reserves and rely on natural processes to maintain and restore habitat:

- a. "Lacking experience with selective cutting designed to create spotted owl habitat, such practices must be considered as untested hypotheses requiring testing to determine their likelihood of success. ... Given the uncertainty of achieving such expectations, it is likely that some silvicultural treatments, which have been characterized as largely experimental, may well have an opposite effect from that expected.

Until the ODF can show some scientific basis for their claims that thinning these older, native forests will actually increase structural diversity and benefit wildlife, these thinning sales are illegal under the 1995 HCP. The ODF must drop the North and South Goody Goody thinning sales.

Concerning the last point that SAT made, that these thinning projects are experimental, and may have an opposite effect from the claimed impact, the ODF should examine data collected from past projects that thin old forests in long-rotation basin.

³⁶ USDA/USDI 1994. Northwest Forest Plan ROD, Attachment A, pages B-6, C-11, C-12. April 1994. and Pers. Comm. David Perry (Professor [emeritus], Oregon State University School of Forestry) to David Dreher (Legislative Assistant to U.S. Rep. Peter DeFazio), 15 June 2002.

³⁷ SAT Report p 145.

Clearcutting in Long-Rotation Basins

This year the ODF is proposing to clearcut the **Dean Mountain Lookout sale**, a young plantation in Basin 4, a long-rotation watershed basin. Even though the Dean Mountain Lookout units are surrounded 1990s era clearcuts, the ODF claims the reason for clearcutting is because:

“The desired condition is a young age class stand to provide early successional habitat in accordance with the Balanced Landscape strategy of the Elliott State Forest Management Plan.”³⁸

The ODF is mistaken. Basin 4 was not designated to provide early successional habitat. It is a long-rotation watershed basin. Instead of clearcutting this young plantation, the ODF should be restoratively thinning it to introduce structural diversity so it can mature into a structurally diverse forest to provide future NRF habitat.

Deer Headwaters: Deer Headwaters clearcuts in long-rotation Basins 2 and 3, because, the AOP says, “This area was included in the sale due to blow down concerns.”³⁹ We could not find anyplace in the HCP that allowed clearcutting a 127 year forest in the 240 year long-rotation basin because of blow down concerns. Please point out where the HCP allows this. If the ODF is concerned about blow down, the ODF should buffer the stand in question to protect it. Clearcutting it does not protect it, and violates the terms of the HCP and incidental take permit.

Kelly Slim: In addition to the murrelet problems of Kelly Slim (page 16), the sale is not in a short-rotation basin. It is Basin 14, which has a 135 year rotation age. The requirement in this basin is to have 40% in NRF habitat, or 2,030 acres. After this clearcut, there will be only 2057 acres in NRF habitat, just 27 acres difference. This is a close call. We are concerned that the ODF is counting in-growth as NRF that spotted owls could not be able to use, or potentially mis-classified few acres here or there.

One reason to protect enough NRF habitat in Basin 14 is to protect existing owl activity centers. Portions of the South Kelly Ridge sale were within 320 feet of a spotted owl activity center. We assume this is the hole between the hair-pin turn of road 7650 that was not included in unit boundaries. However, this hole is now included in Kelly Slim. If this is the NSO activity center, how is it ODF can clearcut it now? If not, how close does Kelly Slim come to this activity center? What is the result of the latest surveys on this owl activity center? Is it still a resident single and has the barred owl moved in?

2. Marbled Murrelets

In recent years the ODF has found several murrelets in proposed timber sales, and dropped those sales, as they should have. However, lately those sales are returning with as little as one acre carved out of them for murrelets, with an adjoining tiny Marbled Murrelet Management Area (MMA) of only a few acres. These MMAs do not protect the occupied site because

³⁸ Dean Mountain Lookout 2011 AOP page 2.

³⁹ Deer Headwaters 2011 AOP. Page 1.

they contain virtually no interior habitat, allowing predation of the nest, the number-one cause of murrelet nest failure. These new, tiny, MMAs violate **the State Forests Program Operational Policy** on Marbled Murrelets,⁴⁰ designed to “avoid direct take of marbled murrelets”. They also violate the State Forests Program, Oregon State Forest 2004 **Marbled Murrelet Guidance Document**.⁴¹ Violating these policies by creating MMAs that do not protect murrelets could be considered a “take” of murrelets under the endangered species act.

Five examples from the 2011 Timber Sale Pre-Operation Reports include:

Example 1. **Deer Headwaters** was a 2009 sale of 48 acres. It has reappeared this year as a sale of 38 acres, because, as the Deer Headwaters pre-operation report says: “Due to significant detections observed, Deer Molar Marbled Murrelet Management Area was established and surveys restarted in 2009.” The Deer Molar MMMA, created to protect this occupied site, is a tiny ten acres. Additionally, the edges of the Deer Molar MMMA are highly irregular, meaning most of the 10-acres are impacted by edges, with virtually no interior habitat to protect the murrelet from predation. Neither the State Operation Policy on murrelets, nor the Oregon State MAMU Guidance allows this⁴². The new Deer Molar MMMA is also not attached to the Deer Creek Habitat Conservation Area, separated by only a few acres. Why not? Is the ODF planning to clearcut these few acres that separate the two, or are they already clearcut?

Another information request: Please send us the murrelet survey information showing survey station locations, and occupied areas are so we can track whether the new Deer Molar MMMA is centralized over the occupied area.

It is also interesting to note that the Charlotte Headwaters MMMA borders Deer Headwaters to the north, so that the Deer Headwaters proposed clearcut will fragment the continuous forest between that MMMA and the new Deer Molar MMMA, increasing the threat of predation even more to both MMAs. The HCP does not allow fragmentation. Along with illegally clearcutting in basin 2 (see page 14 of these comments), fragmentation and high landslide hazard location threats to Deer Creek, this sale does a lot of damage to murrelets and should be dropped.

There is a hanging road shown on the Deer Headwaters unit maps, not attached to any existing road, and not on the 2009 Deer Headwaters maps. It is west of 7040 and north of 7062. Is this non-connected road an error? It juts right into the new MMMA, so it is important to consider if it really exists or not, as it could add even more problems to the Deer Molar MMMA.

Example 2. **Kelly Slim** is the part of South Kelley Ridge (2009 sale). The South Kelly Ridge Bid Notice, page 7 says:

⁴⁰ Operational Policy number 1.1.0. Effective Date: January 1, 2005. Revision 1.1.

http://www.oregon.gov/ODF/STATE_FORESTS/docs/management/Wildlife/MaMu_Operational_Policies.pdf

⁴¹ State Forest Program, ODF. Marbled Murrelet Guidance Document. October 2004. page 15.

<http://library.state.or.us/repository/2007/200705071348271/index.pdf>

⁴² The MAMU Guidance requires a buffer sufficient to protect murrelets from predation.

“As a result of subcanopy behaviors observed during surveys acreage was added to an existing Marbled Murrelet Management Area within 0.25 miles of this sale. Portions of the original planned sale area were incorporated into the MMMA and removed from the final sale area.”

However, most of the acres dropped from the South Kelly Ridge sale, plus many more acres east of road 7650, reappear as the Kelly Slim 2011 sale, clearcutting 39 acres. Kelly Slim will clearcut right around, and immediately next to the MMMA created out of the South Kelly Ridge sale. Acres added to the south corner of the existing Fish Knife MMMA appear to be less than 5 additional acres. Five acres for a murrelet, that is clearcut on three sides, is not in compliance with the State Operation Policy on murrelets, nor the Oregon State Forest 2004 MAMU Guidance.

Please send us the murrelet survey information showing the 2007 and 2008 survey station locations for the South Kelly Ridge surveys, and where the occupied area is so we can track if the new addition to the Fish Knife MMMA is centralized over the occupied area.

Example 3. **Millicoma Lookout** sale was proposed in 2009 as a 58-acre clearcut. Murrelets were found, a tiny MMMA created, and now Millicoma Lookout is back in 2011 as a 51-acre clearcut, losing only 7 acres and only 1 mbf to protect the murrelet.

The 2011 Millicoma Lookout pre-operation report says:

“Due to occupied behavior, the Millicoma Strawberry MMMA was created to the north of the West Fork Millicoma River.”

A 7-acre MMMA, surrounded by clearcuts or land that can be clearcut, separated from the near-by Joe Buck MMMA by a 50-acre clearcut, is no protection at all for a marbled murrelet. The ODF does not understand the threat of predation on murrelet nests close to edges.

Please send us the murrelet survey information showing the 2007 and 2008 survey station locations, and where the occupied area is so we can track if the Millicoma Strawberry MMMA is centralized over the occupied area.

Example 4. **The South Goody Goody sale** proposes to log mature forests in the long rotation basin. We have objected to this proposal elsewhere in these comments (page 2), for good reason. Murrelets are already living here. The Operation Plan four South Goody Goody says:

“Significant murrelet detections in 2009 led to the creation of **the North and South Scholfield Marbled Murrelet Management Areas** (MMMA) and a loss of acres from Area 1 of the planned sale.”

The two small MMMA's are placed so they are unconnected to each other or to the Goody Goody units. The ODF should disclose how big these new MMMA's are, and more importantly, how much interior habitat they contain. They appear to have 0 acres of interior habit so they are not capable of protecting anything dependent on older forests. The new North Scholfield MMMA is bordered on three sides by clearcuts, and on the 4th side by mature forests between the MMMA and the South Goody Goody sale.

Why are the new MMMA's not connected to the Goody Goody units? If this is all murrelet habitat, in the long-rotation basin, why were not all the forests dropped from the sale due to the presence of murrelets and added to a MMMA? Does the ODF plan on logging the area between the MMMA's and the current units, in the future?

Please send us the murrelet survey information leading to the formation of the North and South Scholfield MMMA. Include the 2009 survey station locations, and where the occupied areas are so we can track if the North and South Scholfield MMMA are centralized over the occupied area.

An additional problem with this sale impacting murrelets is that Area 2 is adjacent to the Goody Ridge MMMA on the west side, and adjacent to the Dean Mountain Lookout proposed clearcut on its south boundary. Because of this increased edge effects, murrelets don't stand much of a chance in the Goody Ridge MMMA either.

Example 5. Young Marlow: This proposed clearcut is huge, with a gross acres of 124, exceeding the 120 acre limitations of the Oregon Forest Practices Act. This clearcut also adjoins the Marlow Lockhart MMMA, increasing edge effects and predation problems within that MMMA. Young Marlow also contains old growth trees, "individual residual trees that were retained from operations in the early 1990's." These should be fully protected from operational damage, especially since the adjoining MMMA is being degraded with increased edge impacts.

These tiny MMMA's do not comply with the State Forests Program Operational Policy on marbled murrelets,⁴³ designed to "avoid direct take of marbled murrelets, and minimize the risk of any potential take incidental to management practices..." (1.1.1.0).

The State Forests Program murrelet policy requires: "In marbled murrelet occupied sites, *maintain habitat suitable* for successful nesting." Tiny MMMA's, with more acres in edges prone to predation, with virtually no safe interior habitat, is not "habitat suitable for successful nesting."

The small MMMA's also do not comply with section 3.12:

"Design a marbled murrelet management area to maintain habitat suitable for successful nesting around occupied sites prior to operating in the vicinity of such sites..."⁴⁴.

Predation from corvids, due to a lack of interior forests, is the #1 reason for murrelet nest failures. If the ODF insists there is sufficient interior habitat in the new MMMA's, and the existing MMMA's that are being clearcut next to, then the ODF should disclose exactly how many acres of interior habitat are within each MMMA. The ODF has never done this, despite our repeated requests. Please disclose the interior-acre numbers now.

⁴³ Operational Policy number 1.1.0. Effective Date: January 1, 2005. Revision 1.1.

http://www.oregon.gov/ODF/STATE_FORESTS/docs/management/Wildlife/MaMu_Operational_Policies.pdf

⁴⁴ id. Page 3

The small MMMA's the ODF is developing also do not follow the "The Oregon State Forest 2004 MAMU Guidance"⁴⁵, which says:

"The MMMA also should include a buffer to the likely nesting habitat (see 1.1.G1.5.1) where appropriate. The purpose of the buffer is to maintain the integrity of the occupied stand from windthrow or other environmental disturbances, as well as to provide protection from potential predation. Several studies have noted a relationship between the distance from an edge and nest success. Researchers have found that nests located further from stand edges (at least 170 feet or 50 m from the edge) are more successful than those located closer to stand edges, and that **nests 150 m (500 feet) from a stand edge were successful** or failed from reasons other than predation (Raphael et al. 2002)."

500 feet from a stand edge would equate to about 20 acres of late-successional forest needed to protect a nest site. How many acres are these new MMMA's? They appear to be less than 150 meters across. The 2004 MAMU Guidance also says:

"Clearcutting adjacent to nesting habitat patches has the potential to increase predation on nesting murrelets."

Interior habitat should actually be calculated as acres further than 700 feet from a clearcut edge:

"Fundamental changes in the microclimate of a stand have been recorded greater than 700 feet from the forest edge (Chen et al. 1995) and changes in microclimate regimes with forest fragmentation can potentially stress old-growth associated species, including the MAMU. Effects on humidity, in particular, may extend beyond **700 feet from edges**.

Effects of strong wind, as well, may extend beyond that distance (see Chen et al. 1995)"⁴⁶
That should be about 35 acres for a MMMA. How does this compare to the recently designated MMMA's.

The **State Forests Program Operational Policy** requires (3.13) that ODF:

"Document and retain decisions and related materials regarding MMMA designation consistent with this procedure 1.1.P4. The District Forester will approve the MMMA design, and communicate these decisions to the Area and Program Directors."

Please send us this documentation, decisions, and related materials, as well as the approval of the MMMA designs and communications of this to the area and program directors, for all MMMA's designated since 2005.

3. Spotted Owl impacts

It appears that most of the logging in 2011 is in conflict with the HCP, page IV-41, which says:

"Harvest scheduling will defer stands that meet the following criteria as long as suitable substitute areas are available.

- Stands with spotted owl occupancy.
- Stands in the 100 year age class or older that meet medium to high quality habitat

⁴⁵ State Forest Program, ODF. Marbled Murrelet Guidance Document. October 2004. page 15

⁴⁶ LNG DEIS, 2008. Page 4.6-34.

standards for marbled murrelet nesting habitat [this applies even after the murrelet ITP expires]

— Stands closest to high quality marbled murrelet potential nesting habitat, northern spotted owl activity centers, and HCAs.”

Most of the sales are over 100 years old and meet medium to high quality habitat. Most sales are also close to murrelet potential nesting habitat, activity centers, and HCAs. For instance, the Millicoma Meander is NRF habitat that is immediately adjacent to the Joe Buck Habitat Conservation Area. Did the ODF find barred owl occupancy in this HCA in 2003? If so, it is possible the spotted owl has moved into the Millicoma Meander sale area.

Another example is the **Cold Crystal** proposed sale. This sale contains many trees over 5', some over 6', and at least one tree over 8' DBH. Some of these trees are pre-fire old-growth remnants, which the AOP states will not be cut unless they need to be felled for administrative reasons. Therefore, these rare, large, old growth trees on the Elliott are in danger of being cut down, or at the best, being clearcut round, which will either damage them or doom them to blow down or sun scald as a lone tree in the middle of an intensively managed clearcut. Since Cold Crystal is an exceptional forest on the Elliott, the ODF should defer logging here, as required by the HCP.



Cold Crystal sale, Area 1

The Millicoma Lookout and Cold Crystal sale are “Wildlife Habitat Focus” sales. The FMP requires that the logging prescriptions focus “on a high level of creating and maintaining forest structure and wildlife habitat, with a moderate level of wood production. This perspective will favor species that prefer older forests...”⁴⁷ The prescription for these sales do not do this. The proposed management prescription stated in both pre-operation reports clearcut these sales, leaving only two more trees per acre standing. The desired future condition is “to provide early successional habitat”, while the Wildlife Habitat Focus prescription should instead provide for wildlife the prefer older forests, such as spotted owls. These two sale prescriptions must be changed to comply with the Wildlife Habitat Focus prescription described in the FMP.

The ODF is doing an Elliott **forest-wide surveys of spotted owls** this year, 2010. Please send us preliminary survey results when they are available. The ODF should wait for any final decision on the 2011 proposed sales until the results of this survey are known.

The last NSO survey was 2003, eight years before these 2011 proposed sales. Because the survey in 2003 was the first time barred owls were found on the Elliott, and because there were suddenly so many barred owls, even though they were not the subjects of the survey, the ODF should be monitoring this situation. It is quite possible that additional barred owls

⁴⁷ Elliott FMP 1993. V-23 and 2011 AOP page 5.

have moved into the Elliott in the last 8 years, and additional spotted owl territories have been lost, or have moved into proposed sale areas.

Not knowing where the spotted owls are living ensures that the 2011 AOP and 1995 HCP do not accurately predict impacts to spotted owls. For all we know, Habitat Conservation Areas are protecting barred owls, while spotted owls are living in proposed timber sales.

According to the 2003 NSO survey, barred owls were detected at eight spotted owl sites including two sites that appear to have failed likely in part because of barred owls⁴⁸. ODF does not know where the spotted owls, displaced by barred owls, have moved to because the old 1995 HCP does not require surveying for spotted owls before logging their habitat. Clearly, as part of adaptive management on this unexpected turn of events, the ODF should be looking for the displaced owls because the 1995 HCP never seriously considered this displacement. Adaptive Management must be done in a timely way. For years, almost for a decade, the ODF has been claiming the new HCP is their Adaptive Management. But Adaptive Management is useless if ODF waits a decade or more to address any problems, while continuing to log habitat. Now the new HCP is on hold, which means there is no adaptive management at all for the 1995 HCP.

In the 2008 **Spotted Owl Recovery Plan**, the FWS says that barred owls are a major threat to the spotted owl, and that “Based on the best available scientific information, competition from the barred owl (*S. varia*) poses a significant and complex threat to the spotted owl.”⁴⁹ There is no uncertainty associated with the effect of the barred owl on the northern spotted owl.

The threat posed to the spotted owl by barred owl is part of the cumulative impacts that ODF must evaluate when considering the impacts of logging. Recovery Action 32 is one of the most important recommendations for non-federal lands, especially non-federal lands that are coping with barred owls impacting spotted owl reserves.

Recovery Action 32: “Maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands outside of MOCAs....
Encourage maintenance of forests with these conditions on non-Federal Lands.”

The Oregon Department of Forestry’s 2011 AOP does not attempt to follow this recovery action because structurally complex, multi-layered Douglas fir forests are proposed for clearcutting. This violates the spirit and intent of the spotted owl recovery plan, even on an HCP meant to protect some owl sites.

The 1995 HCP is inadequate to protect spotted owls. The 2011 AOP claims to follow the requirements of the Elliott’s 1995 HCP. However, the FWS considers the 1995 HCP inadequate to protect spotted owls, a change in how they felt when they approved it in 1995.

The 8/08 DEIS (Draft Environmental Impact Statement) for the new (now on hold) HCP discloses that the 1995 HCP is inadequate, and that the 1995 HCP EA and ITP were in error.

⁴⁸ Kingfisher Ecological 2003.

⁴⁹ Final Recovery Plan for the Northern Spotted Owl. FWS. May 2008.

Under Alternative 1, the DEIS says under the “no-action” alternative (the current 1995 HCP), only three activity centers would have “sufficient suitable habitat under Alternative 1 to give resident owls a high potential for persistence”⁵⁰. This contrasts sharply with the conclusions of the biological opinion for the HCP issued in 1995, which predicted that 13 activity centers would be maintained for the life of the permit⁵¹. This means that the ODF should reconsult with the FWS on the biological opinion for the original HCP before ODF logs more under the authority of the 1995 HCP.

The 8/08 DEIS table 4.6-2 shows that, of the 13 OWL activity centers (and 4 historic centers), only *three* have a high potential for persistence under the 1995 HCP over the next 50 years-- just three. And one of those is the Alder Creek Owl, found to have a barred owl lurking near it's cite in the 2003 surveys. Thus, one of the best activity centers could now be protecting a barred owl.

What is also alarming is that the two owl pairs that were identified in the 5-year review as the most productive owls in the Elliott, that should receive the most protection, Roberts Creek and Salander Creek owls, BOTH are predicted to have a LOW potential for persistence under the 1995 HCP over the next 50 years, even without taking into account barred owls. This lack of protection in the existing 1995 HCP must be addressed by ODF before logging more.

4. ODF must consider Global Warming and Climate Change in 2011 AOP

The Oregon Department of Forestry failed to consider Global Warming and Climate Change in the 2011 Annual Operation Plans. The ODF should have estimated how many tons of carbon would be lost in 2011 from logging, and what that impact would be on the world's climate.

The ODF is proposing to log 1,353 acres of mature forests in the Elliott, including 549 acres of clearcuts and 804 acres of thinning mature forests up to 150 years old.

This level of logging in mature, carbon-rich Pacific northwest forests, will have a negative impact on the Elliott's ability to store carbon, a negative impact on our climate through the release of carbon pollution into the atmosphere, and a negative impact on potential sources of revenue from carbon storage.

How much carbon will the 2011 AOPs cause to be lost to the atmosphere?

The 2011 AOPs will remove 36.5 mmbf of merchantable lumber. One source for estimating tons of carbon removed comes from the BLM's revision of their Resource Management Plans.⁵² Using BLM's carbon calculation⁵³ for live tree carbon removed, 36.5 mmbf would

⁵⁰ DEIS. 08/08. page 4.6-46.

⁵¹ USFWS, October 2, 1995, Biological Opinion on the incidental take permit for northern spotted owls and marbled murrelets, to Oregon Department of Forestry on the Elliott State Forest.

⁵² FEIS for the Revision of the Resource Management lands of the Western Oregon Bureau of Land Management (aka WOPR). October 2008.

⁵³ Id. Page Appendix 28, Appendix C, Carbon Storage Modeling.

be over **87,000 tonnes**⁵⁴ of carbon removed. The BLM also estimates additional carbon stored in forests other than live trees, including snags, understory, down wood and organic soil. BLM estimates that in forests over 125 years old there is an additional 94.8 tonnes per acre⁵⁵

In the 549 acres of clearcut harvesting prescriptions of the Elliott's 2011 AOP, including soil disturbance, slash disposal and plants lost to herbicide use, this would be **52,045 tonnes** of carbon lost from those forests, and half that, another **25,000 tonnes**, from the tree limbs and understory disturbance of the mature thinning sales.

Considering live tree carbon and other carbon, that would be over **164,000 tonnes** of carbon that could be removed from the Elliott, in just the 2011 AOP sales.

Only about half of the wood removed will be stored for a short time in wood products. The rest will be in pulp wood and sawdust, making short-lived wood products like paper. Even the longer lasting wood products, such as 2x4's, will likely last less than 100 years before their carbon is lost to the atmosphere, whereas these wood products come from forests 150 years old, whose carbon will be captured for centuries if left undisturbed.

The BLM estimates that out of the 87,000 tonnes of carbon in live trees removed, only 16,000 tonnes would be stored in wood products, and much of that in short-lived wood products, with up to 27% of the harvested wood product's carbon being lost to the atmosphere in just 10 years after harvest.

The 164,000 total tonnes of carbon lost in the 2011 AOP timber sales will not begin to be recovered in replanted clearcuts for over 30 years⁵⁶. It will take over 150 years to fully recover the 87,000 tonnes of carbon in the trees, and an unknown amount of time to recover the carbon lost from other forest resources.

In addition to polluting the atmosphere with carbon from logging, the fossil-fuel carbon-costs of logging on the Elliott is also significant. Operating logging equipment, building roads, transporting workers, all add tonnes of carbon to the atmosphere, along with the emissions from the forest itself.

In summary, some of the green house gas (GHG) emissions the ODF should calculate or estimate in each AOP would include:

- a) severe soil disturbance (including below ground vegetative biomass),
- b) loss of understory (including non-tree vegetation),
- c) fossil-fuel based site prep, including herbicides and fertilizers,
- d) burning or decay of leftover slash material, and
- e) emissions associated with the actual cutting, movement and development of wood products (i.e., gray emissions).

⁵⁴ Specific calculation available upon request.

⁵⁵ Id. Page 29

⁵⁶ 12-8-09 SLB Meeting, testimony of Hal Salwasser, Dean Collage of Forestry

To calculate total carbon pollution, ODF should also acknowledge what is foregone. For instance, it is forgone that many of the clearcuts proposed in the 2011 AOP will never again store as much carbon as they do today because even-aged management will never allow the stands to develop age or structure again.

GHG emissions are now, more than ever understood, to be at a tipping point. In addressing the impacts of the greenhouse gas emissions from the Elliott State Forest, it is important to take into account the impacts of ecological tipping points, irreversible changes in the climate expected to occur when atmospheric concentrations of greenhouse gases reach that point.⁵⁷ The issue of tipping points adds to the need for the Elliott's annual sale impacts to disclose and reduce its greenhouse gas emissions. The greenhouse gases emitted from clear-cutting and associated activities are indubitably adding to the overall atmospheric concentration of greenhouse gases at a time that the global climate is potentially approaching critical tipping points.

Even if these emissions are expected to be offset by forest growth over the next 150 years, critical climate tipping points may be reached in the meantime, potentially making the eventual sequestration irrelevant with regard to the ecological and climate impacts of the front end emissions. The multiplicative effect of reaching several tipping points on a similar time scale would drastically increase the costs associated with climate change.

Oregon State requires careful calculations and reduction of GHG.

This loss of 164,000 tons of carbon in the Elliott State Forest, in just the 2011 AOP, contributes to the largest environmental problem of our world. This one-year release is the equivalent of driving your car 1000 miles a month for 2,070 years.⁵⁸

Ignoring the carbon loss on the Elliott is counter to the principles outlined by the State of Oregon in the "Oregon Strategy for Greenhouse Gas Reductions."⁵⁹ That document finds that: "To increase sequestration or reduce emissions for forest and other lands, Oregonians need to maintain and increase good land use practices."⁶⁰ It requires ODF to "Consider greenhouse gas effects in farm and *forest land use decisions*." Yet, in spite of this clear direction by the State of Oregon, the Oregon Department of Forestry failed to mention greenhouse gases in the Annual Operation Plan.

The *Oregon Strategy* found that decades of activities, like "clearing forests" have "released large quantities of greenhouse gases and impaired the land's physical ability to take up and sequester excess gases."⁶¹

In 2007 the Oregon Legislature adopted the *Oregon Strategy* by passing HB 3543. That law

⁵⁷ *There will be tipping points*. Meehl et al. at 775, 2007. Perhaps more worrisome is the linkage between tipping points. An example is the connection between Arctic sea ice and permafrost melt rates; loss of Arctic sea ice, one tipping point, accelerates permafrost thaw, a second tipping point. (Lawrence et al. 2008). As permafrost thaws due to global warming, it releases carbon, often as methane. (Christensen et al. 2004).

⁵⁸ <http://www.carbonify.com/carbon-calculator.htm>

⁵⁹ *Oregon Strategy for Greenhouse Gas Reductions*. Governor's Advisory Group on Global Warming. December 2004. www.oregon.gov/ENERGY/GBLWRM/docs/GWReport-Final.pdf

⁶⁰ *Oregon Strategy for Greenhouse Gas Reductions*. page 71.

⁶¹ *Oregon Strategy for Greenhouse Gas Reductions*. page 11.

determines that:

“Oregon forests play a significant role in sequestering atmospheric carbon, and losing this potential to sequester carbon will have a significant negative effect on the reduction of carbon levels in the atmosphere.”⁶²

Therefore the Oregon Department of Forestry should consider how much of that potential for forests to sequester is lost in the AOP 2011 timber sale proposals.

HB 3543 also designated an Oregon Global Warming Commission that is designated to track and evaluate:

“The carbon sequestration potential of Oregon’s forests, alternative methods of forest management that can increase carbon sequestration and reduce the loss of carbon sequestration to wildfire, changes in the mortality and distribution of tree and other plant species and the extent to which carbon is stored in tree-based building materials”⁶³

The ODF should have addressed in the AOP the carbon sequestration potential of the Elliott State Forest, and what alternative methods of forest management can increase carbon sequestration. Instead, without mentioning global warming, ODF proposes to just clearcut some of the highest carbon stores in the world.

In 2009, the Oregon Global Warming Commission released their first *Report to the Legislature*.⁶⁴ Their document reported:

“Oregon Department of Forestry has become increasingly involved with carbon issues, with respect to risks (larger, more intense forest fires) and mitigation (examining the interaction between Oregon forest health and carbon sequestration).”⁶⁵

If this is true, why is there nothing in the ODF’s 2011 (or 2009 or 2010) AOP about impacts from logging in the highest carbon sinks in the world? Exactly how has ODF “become involved with carbon issues?”

The Global Warming Commissions report also says: “A 2001 law allowed the State Forester to establish programs to market, register, transfer or sell forestry carbon offsets on behalf of the state...”⁶⁶ Since ODF is allowed to consider carbon offsets (for the last 10 years), why isn’t this option included in the 2011 AOP to be considered in the Common School Fund?

The State of Oregon has determined that:

“Global warming is not just another environmental issue. Absent decisive actions across the globe of the sort proposed in this report, the warming already underway is expected to lead to changes in the earth’s physical and biological systems that would be extremely adverse to human beings.... Our failure to return atmospheric accumulations of greenhouse gases (GHG) back to levels that will sustain historic climate patterns may lead to an Earth that is dramatically altered and far less habitable within only a few

⁶² <http://www.oregon.gov/ENERGY/GBLWRM/HB3543.shtml>

⁶³ HB 3543 Section 12 i

⁶⁴ Report to the Legislature. Global Warming Commission. January 2009.

<http://www.keeporegoncool.org/view/ogwc-reports>

⁶⁵ Report to the Legislature. Page 15.

⁶⁶ Id.

generations.”⁶⁷

Therefore, the Oregon Department of Forestry must follow the recommendations of the Oregon State report and “consider greenhouse gas effects” in AOP decisions. Otherwise, “The impacts of such changes on Oregon citizens, businesses and environmental values are likely to be extensive and destructive. Coastal and river flooding, snowpack declines, lower summer river flows, impacts to farm and forest productivity, energy cost increases, public health effects, and increased pressures on many fish and wildlife species are some of the effects anticipated by scientists at Oregon and Washington universities.”⁶⁸

ODF failed to consider carbon storage as a potential revenue source.

The ODF should have considered the potential revenue from carbon offsets. We have been urging the ODF to look at the Elliott’s potential to generate revenue for the Common School Fund through emerging carbon markets. A state and/or federal greenhouse gas emissions cap is likely in the near future which will facilitate the expansion of local, regional, national and international markets for carbon sequestration and storage opportunities in forests.⁶⁹

A report from Simon Fraser University in British Columbia, Canada has determine that protecting old forests, like those on the Elliott, makes the most economic sense when considering the value of endangered species habitat and carbon storage. Forest protection delivered a better economic return than could be obtained through logging and timber revenues. Increased conservation and less logging delivers higher economic returns than current levels of logging and conservation.⁷⁰ As we know, log prices have fallen even since this report was released in September 2008. The study was conservative in valuing carbon, placing it at \$20 - \$150 per tone, while other studies have pegged the future price of carbon as high as \$350 per tone.

Establishing the Elliott as a Carbon Reserve fits right into the social and fiduciary duties of the State Land Board.

“The board shall manage lands under its jurisdiction with the object of obtaining the greatest benefit for the people of this state, consistent with the conservation of this resource under sound techniques of land management.”⁷¹

The latest Board of Forestry minutes document that ODF is aware that forests store significant carbon and are a source of revenue. The minutes describe the recent purchase of the Gilchrist property by ODF in eastern Oregon:

“One potential to generate that funding is the sale of carbon offset credits on the Gilchrist property. Since 2009, the Department has been working closely with The Conservation Fund to explore ways to develop a carbon offset funding source related to the Gilchrist lands that could be generated in addition to other timber harvest revenues. Because no state agency has yet transacted a sale of carbon offset credits, the process is exploratory,

⁶⁷ Id page i

⁶⁸ Id page i

⁶⁹ See letter to State Land Board from Cascadia Wildlands, 12-8-09

⁷⁰ Dr. Duncan Knowler, Associate Professor, School of Resource and Environmental Management, Simon Fraser University. September, 2008. www.davidsuzuki.org/latestnews/dsfnews09030801.asp

⁷¹ Oregon Constitution, Article VIII, Section 5 (2).

involving significant learning, and careful legal and management consideration. The Department intends to continue this exploration, all within the context of active management (consistent with the Eastern Region Long Range Forest Management Plan) and greatest permanent value, and would like Board concurrence on this direction. “⁷²

If ODF can do this in Gilcrest, where most of the land has been recently clearcut, the ODF can do this better in the Elliott, where there is far more potential to store carbon in undisturbed mature forests. The Elliott forests also have more potential to continue “active management” in the thousands of acres of managed plantations on the Elliott because the Gilchrist managed plantations are younger.

The ODF failed to consider this potential revenue in the 2011 AOP, to give a value to the forest remaining uncut.

Studies show the Elliott State Forest is important in regulating our climate.

The science is clear that the forests of the Elliott State Forest contribute a significant impact to our climate, either by stabilizing our climate by remaining uncut, or by polluting the atmosphere with carbon if logged.

An analysis published in 2008⁷³ in the journal *Nature* found that old growth and mature forests, like those on the Elliott, absorb carbon dioxide from the atmosphere and mitigate climate change for centuries. Researchers even suggest that forests like the Elliott could financially benefit from carbon revenues. “Carbon accounting rules for forests should give credit for leaving old growth forest intact,” researchers from Oregon State University concluded in their report. “Much of this carbon, even soil carbon, will move back to the atmosphere if these forests are disturbed.” OSU’s report said that when an older forest is harvested, there is a new input of carbon to the atmosphere for about five to 20 years, before the growing young trees *begin* to absorb and sequester more carbon than they give off. The creation of new forests by humans also causes disturbance to soil and the previous vegetation, resulting in decomposition that exceeds for some period the net primary productivity of re-growth.

Another study out of OSU⁷⁴ in 2009 found that the forests of the Pacific Northwest, especially forests near the coast like the Elliott State Forest, hold significant potential to increase carbon storage and help mitigate greenhouse gas emissions in coming years, **if** they are managed primarily for that purpose through timber harvest reductions and increased rotation ages.

Among the OSU findings of the report:

- About 65 percent of the live and dead biomass in this region is on public lands (including state forests), while private lands often have younger age classes of vegetation and less total biomass;

⁷² Oregon Department of Forestry, Board of Forestry meeting, April 22, 2010. Agenda Item No. F.

⁷³ Old Growth Forests Are Valuable Carbon Sinks. Stauth, Law.

<http://oregonstate.edu/dept/ncs/newsarch/2008/Sep08/oldgrowthcarbon.html>

⁷⁴ <http://www.earth-stream.com/outpage.php?s=18&id=181109>

- Contrary to accepted views on biomass stabilization and decline, biomass is still increasing in stands more than 300 years old in the Coast Range, Sierra Nevada and the West Cascade Range, and in stands more than 600 years old in the Klamath Mountains;
- The entire study region of Oregon and Northern California, as far south as San Francisco, holds a total live biomass of about two billion tons of carbon – about **14 percent of the biomass in the whole nation**;
- If forests in this region were managed over hundreds of years to maximize carbon sequestration, the carbon in live and dead biomass could theoretically double in the Coast Range, west and east Cascade Range and Sierra Nevada; and triple in the Klamath Mountains.

This is an incredible opportunity for ODF to help stabilize the climate of the world, and contribute significantly to solving the biggest environmental calamity of the century.

A study from Antwerp University published *Nature*⁷⁵ determined that 15% of the world's old forests, like the old forests in the Elliott today (and tomorrow if they are not clearcut) provide at least 10% of the global terrestrial carbon sink. Disturbing these forests would release huge amounts of carbon into the atmosphere and seriously contribute to climate change. The study found old forests continue to store carbon over time periods of centuries, mainly in live woody tissues and decomposing leaf litter and soil. Although young forests could take up more carbon each year, they contain less biomass. As a result, the total amount of carbon captured from the atmosphere in these younger forests is lower.

A 2008 study in *Forest Ecology*⁷⁶ found that in the United States, terrestrial carbon sequestration, in private and public forests, offsets approximately 11% of all GHG emissions from all sectors of the economy on an annual basis. Just public forests in the United States, like the Elliott, represent approximately 20% of the U.S. timberland contain 30% of the U.S. timber volume. These forested lands have considerable impact on the U.S. forest carbon balance. The study found that a “no timber harvest” scenario eliminating harvests on public lands would result in an annual increase of 17–29 million metric tones of carbon (MMTC) per year between 2010 and 2050—as much as a 43% increase over current sequestration levels on public timberlands and would offset up to 1.5% of total U.S. GHG emissions. In contrast, moving to a more intense harvesting policy similar to that which prevailed in the 1980s (which ODF wants to do with the new Elliott HCP) may result in annual carbon losses of 27–35 MMTC per year between 2010 and 2050. These losses would represent a significant decline (50–80%) in anticipated carbon sequestration associated with the existing timber harvest policies. If carbon sequestration were valued in the marketplace as part of a GHG offset program, the economic value of sequestered carbon on public lands could be substantial relative to timber harvest revenues.⁷⁷ Which is a good reason for ODF to forestall any mature forest logging to keep future potential revenue options.

A 2008 Australian study found that “untouched natural forests store three times more carbon dioxide than previously estimated and **60 percent more than plantation forests**” and that

⁷⁵ <http://environmentalresearchweb.org/cws/article/research/36084>

⁷⁶ Public land, timber harvests, and climate mitigation: Quantifying carbon sequestration potential on U.S. public timberlands. Brooks M. Depro, Brian C. Murray, Ralph J. Alig, Alyssa Shanks. *Forest Ecology and Management* 255 (2008) 1122–1134

⁷⁷ Elsevier B.V. 2007

first-time logging of native forests, like the logging proposed for the Elliott, “resulted in more than a 40 percent reduction in long-term carbon compared with unlogged forests.”⁷⁸

The Elliott State Forest stores even more carbon because of its location in the Pacific Northwest.

More carbon is stored per acre in the moist “Westside” portions of the Pacific Northwest than any other forests in the world⁷⁹ (including tropical rainforests). Though the forests in Washington, Oregon, and California comprise only 19% of the forested area of the United States⁸⁰, they contain 39% of the United States’ total forest carbon⁸¹, and therefore play a pivotal role in long-term carbon sequestration and climate change mitigation. Carbon storage in western Pacific Northwest forests is higher per acre than other forests in the world because:

- Favorable climate conditions promote growth during all seasons, not just during the normal summer growing season.
- The dominant tree species of the region grow in diameter and height throughout their lives and produce large amounts of decay-resistant litter.
- Infrequent natural disturbances allow trees to grow very old.⁸²
- Forests of the Pacific Northwest are able to retain and continue to increase their carbon stores for centuries, due to their relatively long fire-return intervals.⁸³

The UN Environment Program says that concern for climate change must be “urgently mainstreamed” especially in sectors such as forestry.⁸⁴ As a result of widespread clearcutting and slash burning, like that proposed on the Elliott, the Pacific Northwest has contributed huge quantities of carbon to the atmosphere. “Mass balance calculations indicate that the conversion of 5 x 106 hectares of old growth forests to younger plantations in western Oregon and Washington in the last 100 years has added 1.5 x 109 to 1.8 x 109 megagrams of carbon to the atmosphere.”⁸⁵

ODF must consider climate change to conserve listed species.

Since the Elliott’s 1994 Habitat Conservation Plan failed to calculate the effects of climate change on endangered species, the ODF must consider this new information.

Climate change is a threat to listed species because all the cascading effects of warming: drought, peak flows, low flows, fire, insects, disease, etc. will alter the quality and quantity of

⁷⁸ Green Carbon: The role of natural forests in carbon storage. Brendan G. Mackey, Heather Keith, Sandra L. Berry and David B. Lindenmayer. August, 2008.

http://cos.anu.edu.au/News/2008/GreenCarbonBook_d3.pdf

⁷⁹ Smithwick et al. 2002, Franklin and Waring 1980

⁸⁰ USDA ERS 2002

⁸¹ Birdsey 1992

⁸² Wayburn et al. 2000

⁸³ From The Wilderness Society: “Top-Ten-carbon-forests-analysis”. Top-Ten-carbon-forests-analysis.pdf

⁸⁴ Global Environment Outlook (GEO4) <http://www.unep.org/geo/geo4/media/> Chapter 2 –

Atmosphere http://www.unep.org/geo/geo4/report/02_Atmosphere.pdf

⁸⁵ Harmon, M., Ferrell, W., and J. Franklin. 1990. Effects on Carbon Storage of Conversion of Old-Growth to Young Forests. Science. 9 February 1990. See also Warren B. Cohen, Mark E. Harmon, David O. Wallin, and Maria Fiorella. 1996. Two Decades of Carbon Flux from Forests of the Pacific Northwest - Estimates from a new modeling strategy. BioScience 46(11):836-844.

<http://www.humboldt.edu/~storage/pdfmill/Batch%203/carbonflux.pdf>

habitat, predator/prey interactions, plant/pollinator relations, plant/herbivore interactions, etc. The stress of these cascading impacts is added to the existing stresses that lead each species to be listed. The cumulative impacts could be significant and must be fully disclosed and considered in the AOP since it was not considered in the 1994 HCP.

In the past decades, the regional climate in Oregon has become warmer and wetter with reduced snowpack⁸⁶. Current climate conditions have changed from the climate conditions when the old-growth stands were developing⁸⁷ near the Elliott, and have even changed since the current forest on the Elliott was established in 1864.

Sustainable Ecosystems Institute's 2004 Evaluation Report on the Spotted Owl said:

Finally, we note that if weather affects prey and owl interactions, it is possible that systematic changes in weather, brought on by climate change (both long-term warming and cycling changes in temperature and precipitation characteristic of the Pacific coast), may affect Spotted Owls' survival and reproduction. ...⁸⁸

The Marbled Murrelet Recovery Plan recommends conserving stands over 80 years old because climate change may increase forest disturbance placing habitat at risk and because it may not be possible to replicate suitable habitat for the murrelet under the climate of the future.

3.2.1.2 Protect "recruitment" nesting habitat to buffer and enlarge existing stands, reduce fragmentation, and provide replacement habitat for current suitable nesting habitat lost to disturbance events. Stands (currently 80 years old or older) that will produce suitable habitat within the next few decades are the most immediate source of new habitat and may be the only replacement for existing habitat lost to disturbance (e.g., timber harvest, fires, etc.) over the next century. Such stands are particularly important because of the vulnerability of many existing habitat fragments to fire and wind and the possibility that climate change will increase the effects of the frequency and severity of natural disturbances. Such stands should not be subjected to any silvicultural treatment that diminishes their capacity to provide quality nesting habitat in the future. Within secured areas, these "recruitment" stands should not be harvested or thinned.⁸⁹

A Forest Service publication discusses the impacts of climate change on murrelets:

Climate variability also affects bird distribution and abundance indirectly through trophic level impacts on food availability. Some of the best examples are the population changes in seabirds in relation to ocean productivity ... Conservation response to climate change should address means to ensure adequate habitats are available and mitigating against climate change impact on ecological processes that support birds. ... Our review

⁸⁶ Scientific Consensus Statement 2004

⁸⁷ Franklin et al. 2006.

⁸⁸ S P Courtney, J A Blakesley, R E Bigley, M L Cody, J P Dumbacher, R C Fleischer, A B Franklin, J F Franklin, R J Gutiérrez, J M Marzluff, L Sztukowski. 2004. Scientific evaluation of the status of the Northern Spotted Owl. Sustainable Ecosystems Institute, Portland, Oregon. <http://www.sei.org/owl/finalreport/OwlFinalReport.pdf>

⁸⁹ FWS. Recovery Plan for the Marbled Murrelet. http://ecos.fws.gov/docs/recovery_plans/1997/970924.pdf

indicates that climate change will likely result in increased fluctuations in biological productivity, which will be reflected in the numbers of seabirds ...⁹⁰
The ODF should take these warnings into account in the 2011 AOP.

The Oregon State Forests should be as clear about their carbon emissions as California State Forests. In California, the Attorney General's Office recently stated that:

“Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO₂ and other GHG [green house gas] emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities.”

Carbon stored in forests is carbon that has been removed from the atmosphere. In fact, forests are the most significant terrestrial stores of living carbon, and forest destruction and mismanagement over the last century has contributed significantly to the carbon dioxide (CO₂) pollution that threatens our climate. The ODF must consider how the management of the Elliott State Forest can help mitigate climate change by allowing forests to fulfill their full potential for storing carbon in living systems, as well as making the Elliott more resilient to the anticipated changes brought by climate change.

ODF's past and current logging in the Elliott has contributed to the existing CO₂ enrichment of the atmosphere and the “committed warming” that scientists say is on the way. In order to mitigate for past emissions on the Elliott, and help avoid the global, regional, and local consequences of climate change, ODF must use the full productive capacity of our state public lands for carbon sequestration. Any forgone opportunity to store carbon essentially imposes real economic costs on communities, industries, watersheds, and ecosystems.

5. Fragmentation

Out of the 12 timber sales proposals that clearcut forests, 5 - almost half, fragment mature forests. The Pre-Operation Report for these sales usually state:

“This timber sale bisects contiguous timber that is adjacent to the timber sale on the northern and southern boundaries. This area was chosen because suitable substitutes were not available; alternative choices within this basin would violate FPA green-up or increase fragmentation of interior habitat.”

In reality, many other choices were available if the ODF was not intent on just clearcutting mature forests. For instance, volume could be earned from thinning managed plantations, which would not fragment mature forests.

Sullivan Succotash is an example of the damage fragmentation can do. Sullivan Succotash will log adjacent to, and between, the Sullivan Headwaters MMMA and a HCA, severing the mature forests between these murrelet and spotted owl reserves. The Sullivan Headwaters MMMA is especially at risk, as Area 1 and 2 will dramatically increase the edge impacts to

⁹⁰ Butler and Taylor. 2005. A Review of Climate Change Impacts on Waterbirds. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. 2005.
http://www.fs.fed.us/psw/publications/documents/psw_gtr191/Asilomar/pdfs/1107-1109.pdf

this MMMA. The owl that was in the HCA could also have been moved on by a barred owl. The ODF should survey the Sullivan Succotash units for spotted owls because of this potential problem. The entire sale should be dropped because of the fragmenting.

The 1995 HCP forbids fragmenting mature forests. “Timber harvest will be planned to minimize fragmentation” (HCP IV-36). “Reduce fragmentation within the forest.” (HCP IV-2) “Harvest units will be located to minimize fragmentation of larger blocks of mature forest. As an example, units will be located on the edge of fragmented blocks, rather than in the middle of suitable habitat.” (HCP IV-41).

The Elliott Forest Management Plan warns:

“Other species may require extensive tracts of relatively uniform habitat, or have limited ability to travel or disperse between suitable patches. If patches of suitable habitat become too small and dispersed, then these populations may not remain sustainable. The Elliott State Forest’s landscape is fragmented because of the checkerboard pattern of past clearcut timber harvest areas across the forest.”⁹¹

In spite of this, most of the sales from the last 5 years fragment mature forests. Illegally decimating mature forest habitat is a symptom of cutting more than the Forest Management Plan or HCP allows. Acres clearcut is not the only measurement that should be used.

6. Logging on high landslide hazard locations

Every single one of this year’s 14 timber sales logs on High Landslide Hazard Locations (HLHL). Clearcutting on these slopes doubles the incidences of landslides⁹². The ODF should drop all clearcuts that could produce a debris flow to salmon streams. While the ODF likes to point to a log or two that the debris flow brings to the stream, the ODF ignores the excess sediment load from these landslides that kills fish and fish eggs.

Quotes below are from the sale’s 2011 Pre-Operation Reports. The predicted debris flows either deposit directly into streams that harbor Coho salmon, Cutthroat trout and Steelhead, or deposits upstream from fish habitat.

Deer Headwaters logging on HLHL “delivery of material is likely” to Deer Creek. Flying Fish has a “potential debris flow track” into fish-bearing Knife and Fish Creek. “All tribs in the unit appear likely to deliver a potential debris flow to Type F Knife Creek.”⁹³

Kelly Slim clearcuts on a HLHL location above Kelly Creek. The Pre-operation Report says: “Six potential debris flow track channels are apparent. All appear to have deliverability to Type F Kelly Creek.”

⁹¹ 1995 Elliott Forest Management Plan. Page III-23

⁹² ESF Watershed Analysis. 2003. “Another human-related source of fine and coarse sediment in streams is that derived from landslides within recent clearcuts. Field studies in the Oregon Coast Range indicate that the frequency of shallow landslides on very steep slopes is about 1.5 to 2.0 times greater in recent clearcuts than in mature stands.” Page 11-4.

⁹³ Flying Fish OP page 7.

Marlow Bottom: “It appears that most of the unit meets criteria for classification as high landslide hazard locations.... It is likely that all of the type N channels are capable of delivering a channelized debris flow(s) to Type F Marlow Creek. It is likely that deposition would occur at the confluence of the tributaries with the mainstem.”

Millicoma Lookout: “The adjacent slopes across the tributary in Area 2 appear to meet HLHL criteria. The probability of direct debris flow delivery of material into West Fork Millicoma [WF] is moderate, given the apparent distance from the sale unit boundary to the WF. There is a subtle swale on the SW facing slope above the WF, this may be capable of delivering a debris flow to the WF.”

Millicoma Meander: Next to West Fork Millicoma. “Sale Area 1 – North portion of unit has steep slopes with apparent direct debris flow delivery potential to the WF. South portion of unit has steep slopes with apparent direct debris flow deliver to the Type N tributary.”

South Goody Goody: Area 3 crosses the fish-bearing portion of Scholfield creek, and that part of the sale is considered a HLHL with “Potential Debris Flow Track with deliverability” of sediment into Sholfield Creek. Area 3 contains only a few acres across the creek, which could easily be dropped. There is no road access on that side of the creek, and yarding will have to be done over the creek. It doesn’t make sense for this small number of acres to be included when they have such high potential to degrade aquatic resources. The South Goody timber sale also has the potential to deliver a landslide to Scholfield Creek.

7. Herbicides and Fertilizers

The 2011 AOP summary documents the ODF plans to use the herbicides on 372 acres in 2011, and average out herbicide use to 540 acres annually. Over 50 miles of roadsides will also sprayed.⁹⁴ Typically, ODF aerial sprays Arsenal, Garlon-4, Garlon, Glyphosate and 2,4-D. These chemicals, along with fertilizers containing formaldehyde, have detrimental cumulative impacts on the watersheds, salmon, and on the people applying the chemicals or on down-stream water users.

There is clear evidence that herbicides are detrimental to salmon⁹⁵, wildlife and people. Mixed with the herbicides are surfactants such as diesel and other unpronounceable chemicals.⁹⁶ When these chemicals are aerial sprayed during the wet season, they are sprayed right into the water flowing down small, unseen-from-the-air, headwater streams that flow downstream to fish-bearing streams.

In response to our comments to the 2010 herbicide plans, ODF assured us that label directions would be followed, ignoring our comments that even if label directions are followed, herbicides can kill species such as amphibians and butterflies, degrade habitat for

⁹⁴ New HCP DEIS 8-08. Page 3.1-10

⁹⁵ Diminishing Returns. Salmon Decline and Pesticides. Dr. Richard D. Ewing. February 1999. www.ifrfish.org/salpest.htm

⁹⁶ New HCP DEIS 8-08. Page 3.1-10

upland bird species, such as the olive flycatcher, and harm salmon species. Following the label is not enough to ensure herbicide safety for wildlife. Herbicides can have more insidious effects than previously thought. For instance, studies of farmers and other people exposed to glyphosate herbicides have shown that this exposure is linked with increased risks of the cancer non-Hodgkin's lymphoma, miscarriages, and attention deficit disorder and Parkinson's disease. Glyphosate herbicides caused genetic and immune system damage in fish. In frogs, glyphosate herbicides caused genetic damage and abnormal development.⁹⁷ Herbicides are meant to kill and cause nerve and hormonal damage.

The ODF implies they are dependent on these petroleum-based herbicides to establish plantations. Herbicides are used "where it makes economic sense to help establish new fast-growing stands of trees."⁹⁸ In reality, other ways are as cost-effective. The federal government has not sprayed herbicides on regeneration harvests for several decades. Petroleum-based herbicide use on the Elliott is at a higher level than any other government agency in Oregon uses. The ODF has access to prisoners that earn almost nothing for their manual labor so it would be more cost effective for the ODF to do manual release.

Fertilizers effects must also be considered, including adding nitrogen into the watersheds, possibly causing increased algae growth in creeks and streams. Loon Lake could be affected by excessive nitrogen caused by fertilizers. Fertilizer additives can also be toxic. ODF must consider impacts to *all* kinds of people, including the elderly with compromised immune systems and pregnant women and their developing fetuses.

8. Killing Mountain Beavers

The 2011 AOP says:

"1,250 acres of mountain beaver trapping is planned at a cost \$43,750. Damage by mountain beaver can have significant impacts on stand stocking and growth. Mountain beaver trapping is prescribed on all clearcut harvest units under the 2010 AOP. This is done to reduce the mortality and damage to acceptable levels."

We are glad to read that no mountain beavers will be killed under the 2011 AOP. In 2010, how many Mountain Beavers was \$43,750 able to kill? What method is used to kill them? Poison pellets? If so, has the ODF ever determined what other wildlife eat the pellets, or what wildlife might eat a poisoned mountain beaver and if that poison is passed on?

In the future, the ODF should find alternatives to killing mountain beavers⁹⁹. For instance, studies have determined that mountain beavers are less likely to damage trees when other preferred food sources are available. They do not prefer tree seedlings. They prefer salal, ferns, cat's ear, and salmonberry to conifer seedlings when both were provided in ample

⁹⁷ Journal of Pesticide Reform. Winter 2004 Vol. 24, No. 4. www.pesticide.org/glyphosate.pdf

⁹⁸ Response to our 2010 comments. Page 8.

⁹⁹ ODF 2010 AOP page 13: "Mountain beaver trapping is prescribed on all clearcut harvest units under the 2010 AOP."

quantities¹⁰⁰. If the ODF didn't herbicide spray, stripping the forests of all vegetation except conifer seedlings, ODF wouldn't have to kill the mountain beavers.

Mountain beavers are eaten by bobcats, coyotes, large owls, and occasionally cougars and bears. Killing mountain beavers removes a food source for these larger mammals. Mountain beavers also serve an important function in nature owing to the amount of soil they move and the number of vacant burrows they leave behind for other wildlife. Over time, their old nests, partially filled food pantries and toilets, are buried well below the surface, where the vegetation and droppings become fertilizer.¹⁰¹ These mountain beaver ecological services were unacknowledged by the AOP. The ODF should at least disclose the cumulative impacts of killing mountain beavers for decades. Have you ever monitored their population numbers?

9. Roads

This year, ODF plans to build almost two miles of new roads, and most are on side-hills. This is in addition to almost 4 miles of road per square mile that already exists on the Elliott. The NMFS has identified anything above 2 miles per square mile to be detrimental to watershed functions. This level of roads, especially on the HLHL locations, can dump tons of sediment into salmon streams.

In the Pacific coast conifer forest region, "Substantial increases in sediment yields have been noted on watersheds during and following the construction of forest roads in this region. Erosion rates on roads and landings in southwestern Oregon were 100 times those on undisturbed areas. ... erosion hazard increase rapidly when roads are pushed into steep terrain, cut into erosive soils or unstable slopes, or encroached on stream channels (Stone, 1973). Sedimentation of streams is one of the greatest nonpoint source pollution concerns in the Pacific Northwest (Sidle, 1980)."¹⁰²

ODF puts a non-native grass seed mix on disturbed areas of roads because a mix of native vegetation is too expensive.¹⁰³ If this mix contains invasive seeds, it could severely degrade the native plants and wildlife. The ODF makes plenty of money from these timber sales. Federal agencies can afford native vegetation mixes, why can't ODF. If ODF cannot afford to restore the native vegetation after road building and logging, then ODF should not do the disturbance at all.

But the AOP does not describe this mix. It sounds like it includes non-native grass seed. The ODF should consider the impacts of introducing such a large volume of non-native, potentially invasive plant species into the Elliott.

The impact of road building in the 2011 AOP is more than the reported 2 miles. There are some areas, like unit 4 of Cold Crystal, where the Pre-Operation Report maps claim there are

¹⁰⁰ www.wfpa.org/pdf/fyi/FYIMountainBeaver.pdf.

¹⁰¹ http://wdfw.wa.gov/wlm/living/mtn_beavers.htm

¹⁰² National Level Assessment of Water Quality Impairments Related to Forest Roads and Their Prevention by Best Management Practices. Final Report. GLEC. 12-4-08. Page 40.

¹⁰³ Response to our 2010 AOP comments, page 5.

existing roads, yet the roads are so old, they have virtually self-decommissioned. Opening up these fully recovered, decommissioned roads again will have the same environmental impact as building a new road.

10. Recreation

The Oregon Department of Forestry continues to miss the developing Off Highway Vehicle (OHV) use on the Elliott State Forest. Uncontrolled, this type of recreation can significantly damage aquatic and other resources. We have witnessed modified trucks driving up and down the middle of the West Fork Millicoma River, right through salmon spawning beds. We have seen camping areas on the 8100 road turned into OHV mud bath play areas. We have seen OHV tracks, made during the raining season, go down to the river on the 8000 and 8100 roads and elsewhere, causing silt to enter the waterways and damage to upland soils. If the ODF continues to ignore this type of recreation on the Elliott, more resource damage could result. As an example, the Cold Crystal, the Pre-Operation Report says:

“The most common recreation for this area is hunting and dispersed undeveloped recreation.... No conflict is seen with respect to the undeveloped, dispersed recreation usage of the forest.”

The ODF missed the Off Highway Vehicle use of this area. Road 7740 going into area 3 and 4 had been closed with a berm, which has been breached by OHVs. While some of this is administrative work to establish survey lines, some is by motorized recreation. It's hard to miss this type of recreation, occurring outside of hunting season. The ODF has consistently ignored this growing recreational use, and simply copy and pasted the same old Recreation Report in every Pre-Operation Report for the past decade. In the case of Cold Crystal, it appears a new OHV trail has been blazed over the forest floor in unit 4, during the wet season, by OHV users.

Another example is on the Millicoma Meander sale, OHVs have broken through the barrier on road 9380. Rather, they have made a new road around the barrier. Road 9380 is well used by OHVs. Yet the recreation report in the OP continues to pretend OHVs don't recreate on the Elliott outside of hunting season. Table 18, recreation sites, isn't even filled in.

Additionally, virtually every sale Pre-Operation Report states that roads will remain available to ATVs, yet the ODF has no method, no budget, and no personnel to track ATV use or abuse. Even if the intent is to make OHV access available to ODF personnel, the reality is that OHV access is available to everyone, and not everyone protects important resources.

Finally, the ODF has failed in their promise to develop hiking trails in the Elliott. In one of our best blocks of a mature temperate rainforest, in one of the highest recreation use areas in Oregon, there is not one mile of hiking trail on the Elliott. We suggest, instead of clearcutting the Cold Crystal timber sale, within a mile of the BLM campground and Loon Lake, that ODF create a series of hiking trails through this beautiful forest.

Every Annual Operation Plan for the last decade has the same promise:

“In recent years Coos District has participated with a group of cooperating agencies and landowners named the Coos Regional Trails Partnership. Their purpose is to develop a plan for building trails within the county to attract tourists.” After 15 years, the ODF should be getting to building a trail.

11. Annual Operation Plan target harvest summary

The 2011 AOP Summary claims¹⁰⁴, that for clearcut harvesting from 2000 through 2004, the objective was 459 acres per year, and from 2005 through 2011 the clearcutting objective is 510 acres a year. The ODF plans 549 clearcut acres this year because, they claim, they are “53 acres below the cumulative objective”, so ODF is catching up.

We disagree. 459 acres a year for the first decade is not what the HCP allows. It only allows 439 conifer clearcut acres per year¹⁰⁵. The ODF is trying to play catch-up to an over-harvest of 19 acres of conifer clearcuts per year for the 1st 10 years, resulting in 190 acres more clearcuts than allowed by the HCP. The HCP also allows 20 acres of hardwood clearcutting per year in the first decade¹⁰⁶, but that is not what ODF has done. It appears ODF has combined the hardwood and conifer targets and applied them only to conifer clearcut units. If ODF disagrees, please list the hundreds of acres of hardwood clearcuts.

The ODF is also inconsistent on their Table 2 Cumulative Balance. In our 2010 comments last year, we pointed out a math error in the table. Page 22 of our comments said: “2007 ended with a total of 58 acres under the target. 2008 had an excess of 42 acres. Therefore, 2008 should have had a cumulative loss of only 16 acres, not 26 acres as shown on the table (58-42=16, not 26).” The ODF ignored these comments in their response. We are unsure if the error was fixed. The 2011 AOP has another inconsistency. The ODF claims that in 2007, there were 511 clearcut acres, but in the 2010 AOP summary, ODF claims 2007 had 549 acres of clearcuts. This 38-acre reduction in the 2007 harvest level is 38 more clearcut acres ODF can play catch-up on this year. Please explain this inconsistency.

Also unclear with Table 2 is how far ahead in clearcuts the ODF was from 1995 through 1999, as those figures are not included. Why not?

Also unclear is how the ODF figured the target harvest after 2001, when the murrelet ICP expired. The target listed was allowing incidental take of murrelets. It should be reduced to “no take” after the ITP for murrelet expires.

Page IV-20 of the HCP says that effects on spotted owl habitat, “no more than 520 acres [can be] harvested in any one year”, yet 4 years since 2000, clearcut harvest exceeded 520 acres in one year. HCP IV-20 also says “The total harvest of 80+ forest for six decades is 22,075 acres.” Therefore, over the 60 year term of the HCP, the ODF cannot average more than 368 acres annually. It’s time to slow now to be able to meet that average in another 45 years.

¹⁰⁴ Draft 2011 AOP, page 4, table 2. Cumulative Balance of AOP Acres

¹⁰⁵ FMP Table VI-12, alternative 6

¹⁰⁶ 2011 AOP summary page 8

In Conclusion, please drop all timber sales that clearcut or thin in endangered species habitat. Concentrate timber sales in young plantations outside of reserves.

Sincerely

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