

General

Many of Chad Oliver's comments were placed in this category or the next, "Details." There are also some under the specific questions. I hope this is helpful and not confusing.

Reviewer	Comments
Oliver	<p style="text-align: center;">THE PLAN WITHIN A CONTEXT OF A DYNAMIC LANDSCAPE</p> <p>The real strength of the plan is that it sets management in an ecological basis and involved landscape ecology. As such, it is that it sets plan in an ecological basis that is far ahead of most plans.</p> <p>The plan begins by recognizing several forest structures with the goal of maintaining a certain amount of each. Eventually, it may be appropriate to recognize more structures, however, it may be appropriate to begin with three structures.</p> <p>A general problem of the plan is a bias in scientific research toward "old growth" (or "late successional" or "complex") structures. Since the Forest Service has an "old growth" research forest "H.J.Andrews" but not an "early successional" research forest, more scientific papers have been done on late successional characteristics, and it will be challenging not to have this bias in management. This bias shows in your report in several places:</p> <ol style="list-style-type: none"> 1. You have a large area designated to "old growth" in reserves and elsewhere, but a much smaller amount that will be in the "open" structure—and that is not designated as open, but is open because of the rate of harvesting. I suggest you contact Dr. B. McComb, a wildlife biologist who is now in Oregon, who has been doing more work on early successional needs. (Dr. McComb was recently Department Chair at the University of Massachusetts, and could be tracked down from there.) 2. You have an emphasis on leaving snags, down logs, and living retained trees almost everywhere, it seems. In fact, Prof. Fred Brunnell used to emphasize that the retained trees and snags are great for species that live in them—but deleterious to species that are preyed upon by animals living in these trees, snags, etc. (e.g., Dr. John Marzloff of UW had suggestions that downed logs were deleterious to marbled murrelets because they were food (fungi) for rodents that then preyed on MM chicks and eggs; the catbird of course sits in trees and preys on other birds that live in openings. Unfortunately, since so little research has been done focusing on openings, it is not possible to say that these are only isolated cases.). Therefore, I suggest you have some forests of each structure where "retained trees," snags, and downed logs are absent. (A. Leopold "intelligent tinkering": "Save all parts.") 3. You have an emphasis on "stable" streams with CWD, etc. However, you also acknowledge that landslides into streams are "natural." You act as if you want to minimize these disruptions; however, there may be species that depend on them. In the long term, I suggest you move toward a more dynamic management of streams, just as you are doing of uplands.

Early successional issues:

First, I suggest you leave some openings with snags or green trees, and others without. This will help you maintain the diversity.

As you note, Tappiener found some stands took many decades to get beyond the open structure. (I'm not sure it was open for most of the stand's life (Pg. 4-17. (first sentence) I thought it was only about the first 100 years in 5-600 year old stands.

By shortening the period of open stands to 10 years as you suggest, (Pg. 4-27) you'll find that your "open" structures will close up very fast with your management. For example, if the stem exclusion stage disappears, then to keep even 10% on the landscape, then you'll need to manage in an average of 100 year rotations—including reserves.

Pg. 5-9: 2nd para. Finally here you get to specific numbers. These should be a bit more explicit. Giving a latitude among basins is appropriate; however, this means 100 year rotation average outside of reserves.

Also, note that total amount of "open" structure will average 7% if you add in the reserves. Be sure you check to determine if this is enough "open structure.

One important thing, discussed in "corridors," below: The roadsides can act as open structure and also function as corridors for "open" species—ones such as butterflies need such corridors. If you add in roadsides to your open area, you will probably be up to 10% open.

Pg. 4-19: First para. "Stocking will range from..." Here, as in some other places, you are confusing natural processes and management expectations. You need to be explicit about this difference, as I suggest later. Be aware you could—and may want to—regenerate to fewer trees and prune them if you needed to maintain more openings. You could actually go with 40 or 50 trees and plan on them to much fewer. I suggest you leave this option open. I discuss this as well under silvicultural pathways.

Specific comments on the "open" structure at specific places are shown below: Pg. 4-32: first full paragraph, next to last paragraph. Be careful that you do not ignore species that require openings. This sentence implies that newly harvested stands will not be suitable habitat; however, for many species they are the preferred habitat (i.e., "open" species).

Pg. 5-8: Table seems to cater to "complex" forests—but how about other types? 40- to 60 % is in complex structure...

Pg. 5-9: 2nd para. Second sentence: "Regeneration harvest may occur..." This sentence is confusing.

Pg. 5-9: 3rd para. Don't forget about "open" structure.

Pg. 5-10: Again, don't forget about the functionality of openings.

Dense Structure

Twice (pgs. 4-16 and 4-20, pst para , you need to state the following: If the stand is extremely uniform in species, age, and spacing, it can also lead to physical and physiological weakening that results in insect attacks, wind or snow breakage, sometimes followed by fire. (See discussion of silvicultural pathways.)

Pg. 4-20: 1st para. Actually, the limb size doesn't decrease...

Pg. 4-20. 1st para. Might mention that this is the stage with least biodiversity, although there may be some species dependent on this stage.

Pg. 4-20. 1st para. Keep in mind that snags & down logs generated here are very small. (big snags & logs would be those left over from the previous stand).

Pg. 4-20. 2nd para. Actually, with some species, quite significant layering can have occurred. Especially Alder over cedar & hemlock. And, to some extent, D-fir over redcedar. (See discussion of silvicultural pathways.)

Be sure and incorporate a diversity of species here—cedars, hemlocks, D fir, etc., because this diversity creates a diversity of habitat, safety with market fluctuations, and safety in pest infestations.

Riparian Considerations

Pg. 4-39 & 40: Riparian management has the same issue with upland management. Be certain that the absence of some features is considered as part of the diversity of the stream.

Pg. 4-42: I don't know much about riparian zones and streams; however, streams go through a series of phases, from large disturbance to gravel from the disturbance being moved downstream to no gravel left to go downstream. You need to recognize that a stream channel with such a long time since the disturbance that there is no gravel left may not be helpful to some fish (e.g., salmon) even though it has a lot of woody debris, etc., that keeps the water from moving fast. This more dynamic behavior of streams is better described on page 4-47, 2nd & 3rd paragraph—and seems to contrast with Pg. 4-42.

Pg. 4-46: Slope stability, second paragraph. "...risk based rather than purely scientific..." is awkward wording, since I believe risk management, analysis, etc., would be considered a branch of science.

Pg. 4-47: This is very good review about the dynamic nature of streams, and seems to contradict Pg. 4-42.

Pg. 4-48: Excellent work on root strength and amount of overstory by P. Schiess's U.W. Ph.D. student, Mr. Krongstad. Idea of "clearcut" being culprit may not be true...

Pg. 5-7: First and second paragraphs are excellent, if you follow it up.

Pg. 5-12: Riparian management inner zone. Suggest you look at this more closely for the following reasons: Do all streams need shade like this? In addition, shouldn't you allow for some of the "natural landslides," instead of letting them occur more periodically?

GENERAL COMMENTS ON THE REVIEW PROCESS

Review process: A real criticisms of "review" processes of plans is that the writers of the plan can incorporate and reject any elements of the review they choose, claim the plan was "reviewed," and end up with a document that is no more unbiased than when it began. A way to avoid this is to publish all reviews, along with a cover letter and CV of each reviewer—all with the reviewers' permission, of course.

PUTTING ELLIOTT STATE FOREST INTO A BROADER PERSPECTIVE

Elliott State Forest's contribution to "Sustainable Forestry"

Now or within the near future, you will need to consider the ESF plan within a global perspective. I suggest the following:

Pg. 5-6: Suggest use a more robust definition of "sustainable forest management." Look at the July/August 2003 Journal of Forestry article by Oliver. It proposes an equitable "working definition" of sustainable forestry—that each ecosystem provides its "fair share" of values.

For values to manage for, you state most of them; however, a problem has been that new "values" have cropped up to surprise people Pg. 4-9: you state that diversified management will provide many things--correct. If you simply manage for all Sustainable Criteria (using the criteria as "values"), you will be in quite good shape. With the plan, you are most of the way there.

Second, I suggest you examine the "ecosystem" that the ESF is in—terms of amount of "reserves" and its relative/potential contribution to commodities. Suggest you look at the FIA data, the United Nations FAO 2003

State of the Forests, and Bailey’s ecoregions (you can link these on the web with FIA data and put it out in MSEXCEL spreadsheet). Be careful how you express commodity production, however, because an “old growth” forest is essentially growing little commodities so it appears as if the region does not have much to contribute in terms of commodities. If you examine these, I think you will find that the ESF is in an ecoregion that already contains its share of “reserves” but is not contributing its share of commodities. So, I’m not sure that the Reserves are defensible. At the same time, the ecoregion is probably not providing its share of “commodities” (a.k.a., “hoarding”) and so is forcing other areas to overharvest.

In this context (see public schools below), you may want to consider “trading” your reserves to the National Forest system—which contains some non-old growth that is in reserves. Pg. 5-49:

Elliott State Forest as Public School Trust

I do not know how the trust laws are written relative to the ESF; however, I suspect the ODF is vulnerable to lawsuit by a school superintendent if it puts any investment into public recreation. (Pg. 4-7: 90% of the ESF is in Common School Lands.) It could be argued that you are asking the school children of Oregon to pay for the public’s recreation from their school money. (e.g., pg. 5-50, trail system?) One thought, for example, is: Could the trust make money from hunting leases (Pg. 4-10)? Such leases are in the Southeastern U.S. and basically pay for all road upkeep and other maintenance expenses.

As a couple of alternative solutions to this, you may ask the state of Oregon (legislature) to contribute money to the ESF for this recreation from another fund.

A similar issue is with the amount of lands you’re providing in “reserves”—and foregoing money to the children of Oregon to do so. You could argue that you need these reserves to avoid being “shut down” under the endangered species act. On the other hand (see discussion of Sustainable Forestry from a global perspective, above), it could be argued that these reserves may not be necessary—and may be “hoarding” timber.

Also, an interesting question arises of who should pay for biodiversity?—that is an issue that needs to be thought out carefully; I doubt that it could be argued that the children of Oregon should pay for it. As for coordinating your activities with other landowners, this is an excellent idea; however, it would need to be under a system that brings advantage to the trust—for example being more defensible under the ESA.

THE DOCUMENT AS A PLAN

The document, I gather, is a management plan, but not an implementation plan. As a plan, it contains a large amount of background science to justify it—which is good. On the other hand, there needs to be clearer distinction between what is “background science” and what is an action

item interpreted from this background. You might consider in each section a subheading of: “ Background” and then a heading of “Application to Management.”

For example, Pg. 4-19: First para. “Stocking will range from...” Here you are confusing natural processes and management expectations. You need to be explicit about this difference.

Pg. 4-27 through 4-29: These two pages are interesting, and show that you’ve done your homework; however, you need to show how these will be applied to management.