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Organization:
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Comments: Thank you for the opportunity to comment on the extensive work you've done on revising the Forest Plan to reflect ecological processes and current ideals. I provide the following input based on my over forty years living, working and recreating on the Nez Perce-Clearwater National Forest, plus working through the transition to the current Plan and implementing it.
I tried to separate the comments between the revised Forest Plan and the revised DEIS, but they obviously cross over between each document.
A real test for this Plan would be to run it through an IDT on various vegetation and other types of projects to see if all the various components can be deciphered.

I.FOREST PLAN REVISION COMMENTS
A.Chapter 2
1.Page 49; table 14, Huc12 Column- Minnesaka is misspelled (Minnesoka).

2.RHCA
a.Standard FW-STD-RMZ-.01- This Standard allows for some harvest in RHCAs as outlined under parts a-e; however, I don't believe the Forest Plan adequately evaluated treatments of the Category 4 drainages and I cite the revised DEIS to make this point. The DEIS says on page 3.2.2.1-13, "As defined in Potyondy and Geier (Potyondy & Geier, 2001), riparian and wetland areas function properly when they: *Have adequate vegetation present to dissipate stream energy associated with high water flow, thereby reducing erosion and improving water quality. *Improve flood-water retention and ground-water recharge. *Provide shade to moderate stream temperatures. *Develop root masses that stabilize streambanks against cutting action. *Supply large woody debris for pool development and sediment entrapment. *Sequester carbon. *Filter pollutants. *Contribute to nutrient cycling" (DEIS p. 3.2.2.1-13).
The DEIS cites the above criteria as justification for RHCAs. Although this is very true for perennial streams, I believe the Forest should evaluate the extent to which they influence intermittent streams. The Forest is placing pretty much the same RHCA buffer requirements on intermittent streams as it is on perennials within the wetter habitats where the average tree height potential is close to 150 feet. The Forest has rolled in the default buffers, but without the priority watershed caveat that PACFISH/INFISH had included for intermittent streams where buffers could be reduced to 50 feet. I'm sure sticking to the default buffers was for political reasons, due to the controversy of water quality, but it is not in the best interest of long term RHCA health and subsequent long-term water quality. Maintaining resilient healthy forests within and surrounding RHCAs will ensure the water quality and habitat we all want and that aquatic dependent species need over time.
Based on my experience working in these intermittent drainages, I believe a sliding scale based on ground slope for buffer retention should be implemented that provides more protection to deeply incised intermittent drainages that occur on steeper slopes over 60% and/or within unstable slopes, where the full site tree, typically 100- 150 feet, buffer should be required. In contrast, elk wallows on flat ground (typically classified under PACFISH/INFISH as wet lands less than 1 acre), less than 35% slope, not associated with slope stability concerns, such as slumps or incised drainages, should receive a minimum buffer of adjacent trees to a maximum of a 50-foot buffer. Slopes between 35% and 60% would require the one site tree buffer to a MAXIMUM of 100 feet.

b.Standard FW-STD-RMZ.01 (b) should be modified to include provisions to specifically harvest trees where extensive mortality has taken place due to natural causes (wildfires, wind throw, insect diseases, etc) in order to expedite site reforestation or to protect the site by the reduction of hazardous fuels other than adjacent to administration sites. I totally support the use of the RHCA buffer areas, but I do not support the inability to manage the RHCA in limited situations to protect it from wildfire due to an excess buildup of down fuel result from

previous fires or insect and disease.
As outlined by PACFISH (Pacfish EA page C10) below;

c.In addition, the standard should be modified to follow the PACFISH/INFISH interim direction which allows for RHCA adjustments where the default widths are not needed to achieve RMOs. This site-specific measure is applicable to situations where terrain features, such as ridges, or existing roads bisect the RHCA. The areas beyond the ridge or road generally do not contribute to meeting the stream RMOs.
I believe the direction below outlines this flexibility (Pacfish EA page C-7):

d.The RMZ Standard should also include wording for Key watersheds as PACFISH /INFISH did, which reduced buffers on intermittent streams that were not in Key watersheds. It seems like the FP revision uses Conservation Network Watersheds to replace PACFISH priority watersheds (FP Revision p.48). Why doesn't the revision incorporate the reduced buffer for non-priority watersheds, which are the Middle Fork Clearwater and portions of the Palouse? What is the rational for not doing it?
The following is cited from the PACFISH EA page C-9;

e.I commend you for incorporating the ability to manage landslide prone areas when warranted to protect the area and to provide for long-term slope stability under FW-GDL-Soil-01, but I think FW-STD-RMZ-01 should be modified to make this exception clear.

f.FW-STD-RMZ-05 says hazard trees can be cut in recreation sites within the RMZ, but can't be harvested. Many recreation sites have an excessive amount of hazard trees and eliminating harvest may make it cost prohibitive to deal with the trees. Moving the trees to other RMZ sites, which is allowed, is expensive and what are the means to pay for it? You should not eliminate a tool from the "toolbox" for political reasons. You should at last allow some form of Stewardship contracting, such as an Integrated Resource Service Contract (IRSC), to help offset the costs.

3.VEGETATION
a.FW-GDL-TBR-04 says, "When harvesting stands, landscapes will trend toward vegetation desired conditions." Does this cover harvesting non-culminated trees to create wildlife forage or for other resource objectives? If not, it should be modified to include it.

4.OLD GROWTH
a.MA3-STD-FOR-01 and MA3-GDL-FOR-02 MA3-DC-FOR-10 says you can't harvest old growth if it changes the stand old growth characteristics. Most of the PVTs fall well within the desired range for the 20" + large timber /old growth component. However, the Cool Moist PVT is currently at 9% with a desired range of 5-10%. This may also be true for other PVTs since the tables do not show the current condition for each separate PVT. We know that all large tree stands do not necessarily meet old growth requirements, but since the revision is set to cover 50 years, it is highly possible that the large tree range (20"+) could be exceeded towards the end of that time period. If by chance, all these stands qualified as old growth, could the excess amount of included old

growth stands, be converted to an early successional stage?

II.DEIS COMMENTS:

1.ALTERNATIVES-
a.Vegetation Management; I feel the best forest vegetation management alternative is one that maintains a consistent sustained yield of forest products over time to provide community and USFS stability. The best alternative should mesh with the maturing stands that were cut in the 1960 and 1970s. Alts W and X are more of a "boom and bust" scenario, which leaves a 20-year gap before the sufficient replacement volume is available. Alt Z would lead to an excessive build-up of hazardous fuels and never be able to catch up with the size class distribution and species mix management objectives. Alt. Y comes closest to meshing with the existing maturing timber stands, but would still require a significant increase in IDT specialists and leaders in order to accomplish.
b.All alt outputs should be adjusted to reflect the actual available timber management acreage/outputs if the RHCA Class 4 buffers are implemented as described in the revised Forest Plan. Unless the reduction of Class 4 RHCA acreage is fully accounted for, I believe the available acreage/output volume is overestimated by 25-35%.
c.The real stumbling block in achieving a higher volume output than what is currently being achieved is the clumsy NEPA process. Contracting has not been the answer due to lack of trust in IDT specialist unfamiliar with the ground, which makes results in a poor defense in court. An IDT has a limited capacity to produce quality projects defendable in court; maybe three large projects of EIS complexity a year. The Forest has to be prepared to hire some new complete IDTs, including IDT leaders.
d.Administrative mechanized tool use in wilderness; I think any NEW wilderness should allow administrative mechanized tool use. Use of chainsaws has proven to be the most efficient and cost-effective way of keep the trails open for public enjoyment.
e.Mountain bikes should be allowed in certain cross-country trails within NEW wilderness orroadless designations, such as the Clear Creek, Weitas Creek, Cook Mt, Fourth of July, St.Joe Divide, Collins Creek, Pollack Ridge, Fish Lake, Pot Mt, and Trail Creek Trails. These trails allow a very limited opportunity for remote mountain bike access, which is lacking in Idaho.
f.Motorcycle access should be allowed in certain traditionally used trails within NEW wilderness or roadless designations, such as the Weitas Creek, Cook Mt, Fourth of July, St.Joe Divide, Collins Creek, Pollack Ridge, Fish Lake, and Pot Mt, Trail Creek Trails. These trails allow a very limited opportunity for remote motorcycle access, which is lacking in Idaho
g.ATV access should be allowed on certain traditionally used trails within any NEW wilderness or roadless designation, such as the suitable portions of Weitas Creek, Cook Mt and Fish Lake. These trails allow a very limited opportunity for remote ATV access, which is lacking in Idaho

2.RMZ- The DEIS says that "Portions of the Nez Perce-Clearwater have not been fully mapped so these acres are a conservative estimate. Although riparian ecosystems only cover two percent of the Nez Perce-Clearwater,..." (DEIS p. 3.2.2.1-13).
Based on my 20 plus years of actually implementing the interim PACFISH/INFISH buffers, the Forest has experienced a reduction of 25-35% of the acreage within the roaded front available for harvest. I believe the extent of the default intermittent RHCA is very extensive and to lead people to believe that implementation of default RHCA buffers is only going to affect 2% of the area is arbitrary and cupreous and thus a violation of full disclosure under NEPA. Without knowing what the actual available harvest acreage is, it is impossible to project what an ecological sustained timber volume yield would be.

3.VEGETATION
a.Chapter 3 Vegetation section, page 3.2.1.1.7. Starting with table 3, the DEIS talks to western Hemlock being a cold vegetation type. Shouldn't this be Mountain Hemlock? There is a very limited amount of Western Hemlock

on the Forest, primarily on the Palouse and scattered within the coastal disjunct areas along the lower North Fork Clearwater River, and it is typically associated with the cedar type. Western hemlock continues to show up throughout the vegetation writeup in places that I would relate to mountain hemlock. These two tree species are drastically different in wood quality and habitat. Table 3 page 3.2.1.7 shows Western Hemlock as 28% of MA2. This sounds more like Mountain Hemlock

4.VEGETATION/FIRE
a.DEIS Appendix B Reburn discussion: Page 64 gives a description of fire severity in terms of reburning. Based on my experience with large fires on the NezClr NF, I believe the moderate and high severity discussions should contain wording that large unconsumed fuels continue to contribute significantly to onsite fuel loadings for 15-20 years, until they break down to non-volatile fibers. I've seen dead cedar trees contributing to excess fuel loadings for up to 50 years. I have observed these conditions for over 40 years on the Forest and they contribute to the rational to salvage harvest some areas following wildfires. History has shown us that many of the harsh fires on the NezClr NF in the 1920s and 1930s that caused the significate amount of river blocking landslides on the Lochsa, Selway and N.F.Clearwater Rivers and mass soil loss on Pot Mt and in the Pete King drainage were a result of reburns from the 1910 fires.
Unmanaged insect and disease infestation mortality fuel loadings, such as that which occurred within the Middle Fork Clearwater and Selway drainages in the early 2000s and resulted in the 2014 and 2015 fires within those drainages, result in the same scenario as the fire reburn. The result in the Middle Fork and Selway was a large number of major land slides in 2017. The Forest Plan revision needs to recognize what has happened and is currently happening on our Forest and develop the plan to respond according to protect all our resources and set the stage for timber harvest to be the tool to use were appropriate to achieve this. The Forest should reference the NezClr tree mortality guides, a result of on Forest monitoring, and the Region 6 Scott Fire mortality guides, which outline how tree mortality continues 3-5 years after wildfire root and bole scorching has occurred.

b.The DEIS states "In addition to natural ecosystem processes, human interventions change vegetation. Two broad categories of vegetation treatment are evaluated: timber harvest and prescribed fire." (DEIS p.3.2.1.1 30). I believe past fire suppression should also be added to this discussion and displayed in table 11. It has had the most dramatic effect on the vegetation across all MAs. Fire suppression prevented the natural fire process to take place in a large part of the Forest, which allowed the trees to become over stocked with shade tolerant species, which in turn lead to tree stress and susceptibility to insects and disease.

5.OLD GROWTH: Page 3.2.1.1-58 says old growth can be cut, but it should go on to elaborate the criteria and how actually limited any harvest would be as the guideline MA3-GDL-FOR-02 outlines.

6.PATCH SIZE; Page 3.2.1.1-52- The patch size discussion should describe what a historic patch looked like; they typically were not devoid of vertical structure, dead or alive. Based on my photo review of wildfires on the Forest beginning with the Forest's 1920s historic aerial photos, the fires rarely consumed all the trees within its perimeter. The only places where total consumption commonly occurred was where the area reburned after the initial fire; typically, 15-20 years after the original fire, such as the Pete King burn area. Describing what the end result would look like helps to ease readers and IDT members minds that the intent is to mimic the natural fire pattern and not to create a "slicked-off/moonscape" landscape. I've attached below a write-up describing ways the Forest has used to achieve this natural pattern on the Central Zone; see Attachment 1 below.

ATTACHMENT 1
T.White; Forester 9/30/2018
Updated T.White/K.Smith; Fish Bio. 4/18/2019

NEZ PERCE- CLEARWATER NF TARGET STAND TALKING POINTS

The target stand concept was initially promoted through an IDT approach by the Nez-Clw NF Lochsa RD during the restructuring of the North Lochsa Face treatment areas and by the North Fork RD with the Middle Black project. It was further refined in 2005 by the Central Zone IDT with the Yakus sale and in 2010 with the Preacher Dewey sale. The target stand objective was to provide integrated resource input into harvest treatment area implementation during the NEPA process by developing a vegetation retention and development template to expedite the NEPA process and address litigation pitfalls.

The target stand template applies to all phases of timber stand development, but is most critical for stands planned for regeneration. Numerous NEPA projects had been stalled due to disagreements between resource specialists on what the post treatment regeneration stand should look like and what it should contain in residual trees. In 2011, the Central Zone IDT compiled information from each resource area on what forest structure was required to meet Forest Plan and current research objectives. Two target stand templates were developed. One for wetter stands (Grand fir) and one for dryer (lodgepole) stands. The following points outline the rational for implementing the Target Stand and the resource implications.

Discussion Points:

1.NEPA efficiency: IDT resource specialist have a basic qualitative and quantitative picture of what the regeneration treatments would look like following treatments. This allows the IDT to provide specific design criteria at the beginning of the NEPA process to address any conflicts with the target stand description, instead of at the end or randomly in between.

2.Litigation: Many of our NEPA commenting and litigant public do not like clearcuts void of tree structure. This has not changed since the lawsuits of the late 1960s and early 1970s, which peaked with the Izaak Walton League v. Butz lawsuit on the Monongahela NF. These lawsuits help set the stage for the creation of the National Forest Management Act. For more information on this, go to:
https://sites.google.com/site/forestryencyclopedia/Home/The%20Monongahela%20Controversy

3.Fuels:

a. Excess fuel loading are a big concern for fuel managers. The Target Stand is based on Russ Grahams (Graham et al 1994 INT-RP-477) long term course woody debris (CWD) objectives, which fall below the threshold of excessive fuel loadings that create hazardous post treatment situations. At first glance, the tons per

acre may seem high to some, but the loading is made up of 100 to 1,000-hour fuels, which typically do not pose the threat as the finer fuels do.

b. Reducing the excess fuel loadings that typically result from a natural stand-replacing wildfire is an objective of the target stand. Fuel loadings of 150-300 tons per acre are common within high mortality areas of the grand fir/ Douglas-fir/cedar mixed species habitats. A stand-replacing wildfire usually kills close to 100% of the trees in the center of the burn and has reduced mortality towards the fire perimeter, which constitutes most of the fire acreage. Based on observations within the North Fork Clearwater River basin of wildfires from the mid-1990s within mixed species habitats, about 33% of the total trees within the stand replacing fire perimeter were killed (T.White, Middle-Black Project 1998). This mortality percentage may be going up as lower fire-resistant trees are making up more of the mixed species stands. It takes most of the trees 10-20 years to fall down after dying which than creates an excessive fuel bed that is ideal for a lightning ignition. The re-burns from the 1910 fires that occurred in the late 1920s and early 1930s are a good representation of what will happen within large untreated stand replacing fires from the 2015 and 2017 wildfires.

c. Clumping of retention trees allows for a better treatment of activity fuel or the accomplishment of site preparation with broadcast burning, without the loss of all the retention trees. The outer trees in the clump take the bulk of the heat and provide some protection to the interior trees if the clump doesn't have an excess of ground fuel or ladder fuels.

d. Leave tree survival needs to be outlined in the NEPA document, so adequate fuel treatment costs can be reflected in the economic analysis and to allow for alternative treatment methods, such as excavator scarification on slopes over 35%, to be analyzed in the NEPA document. If all the leave trees have to survive to meet a resource requirement, the harvest treatment may not end up being feasible, due to high costs or practicality.

e. Cedar trees, except for shorter broken off snags, are a poor choice to retain for leave trees because of their inherent heart rot and extremely high hazard to catch on fire during prescribed burning, which presents an unacceptable safety risk to fire and tree planting personnel. If legacy cedar trees are to be left, they need to be contained in a large enough clump to reduce the chance of them burning out and falling on someone.

4.Soils:

a. Soil nutrient cycling had the greatest influence on the target stand tree retention, because of Russ Graham's research on long term large course woody debris, which outlined a minimum and maximum tons per acre of post treatment wood to be left on site. The research had already addressed key resource objectives of snag retention and fuel hazards.

b. CWD ton/acre requirements should be based on the existing timber stands CWD and future CWD needs. For instance, if a stand already meets the CWD objectives, the standing tree retention would be at the lower end to allow for CWD recruitment in the future as the existing CWD deteriorates. Most mature previously unlogged timber stands on the Central Zone were found to have adequate existing CWD and were thus designed to retain the lower end of tree retention for future CWD. Many previously harvested stands, including salvages and commercial thins, had low existing CWD and therefore would require retention at the higher end of the range.

5.Silviculture:

a. The target stand range of tree retention covers the typical regeneration silvicultural systems of clearcut with reserves, seed tree and shelterwood and all modified treatments in between. It is best described as Variable Tree Retention and includes many concepts of Franklin's research (Franklin et al 1997). Adequate openings for reforestation of shade intolerant species has been successfully achieved by clumping trees throughout the treatment area. Some openings up to a couple acres in size may be needed to address safety concerns related to root rot or other insect and disease issues and would be outlined in the project NEPA design criteria and

treatment description. Based on a wet site target stand of 14-28 trees per acre (TPA), a clump would range in size from 1/10 of an acre to 2/10s of an acre and equate to a post-harvest retained tree canopy density of 10% to 18%, based on a pre-harvest stand consisting of 100 to 150 trees per acre.

b. The target stand is not a silvicultural prescription. It sets the resource parameters to be incorporated into the prescription along with a solid rational to support all the resource needs.

6.Visuals: Visual pictures of clearcuts void of trees was and still is a major concern of many of our NEPA commenters and collaborators. Establishing target stand criteria insures that Visual Quality Objectives of Partial Retention to Modification would be met on harvested acres (the target stand would need adjustments for areas needing to meet more restrictive requirements). On the ground post- harvest reviews by the IDT on the Polar Ice sale found that clumps of trees ranging in size from 9 to 18+, depending on tree size, was needed to make the clumps not appear as individual trees and to break up the visual appearance of an open area. A mix of large and small trees provided the best visual structure.

7.Water Quality: Riparian Habitat Conservation Areas (RHCAs) typically take up the highest amount of tree retention within a treatment area. The Central Zone usually plans for a minimum of 25% of the adjusted gross NEPA treatment area (units with the major drainages removed from the unit GIS layer) to be contained within RHCAs. If the major drainages are not removed, a minimum of 35% of the gross acreage can be expected to be contained in RHCAs. Lidar hillshade, in combination with some ground truthing, is an extremely effective tool to be used in identifying RHCAs.

8.Wildlife: Target stand tree retention not only covers Forest Plan and Regional snag retention objectives, but by retaining clumps of trees, it provides "micro" wildlife habitat in the short term and structural diversity in the long-term development of the stand. It can also be used to provide visual diversity to improve habitat security.

9.Presale efficiency: The marking guidelines can be quickly developed following coordination with the silviculturist on defining the target stand characteristics, such as establishing the species preference and outlining insect and disease issues, and incorporating the design criteria.

10.Retention Trees per acre Calculations:
a.Tree retention numbers are based on Graham's CWD recommendations by taking the CWD tons per acre figures and converting them into tree weights using an average tree for that habitat. For the Central Zone, a 14" dbh by 90 foot tall grand fir tree was found to be the average tree within the wetter habitat type (T.White; personal cruising observations). Graham's CWD for the wetter sites is 17 to 33 tons per acre. The tree bole (3" and larger) of a 14" grand fir tree weighs about 2,470 pounds or 1.2 tons per tree (38 ft3 cubic foot volume x 65#/bd.ft. ; volumes from R1 volume tables and pounds/ft3 from R1 weight tables). Dividing the tree weight into the desired CWD tons per acre results in a tree density of 14 to 28 trees per acre (tpa), based on the 14" DBH Grand fir.

b.If only larger trees are being left instead of a mix, such as a 20" dbh x 110' tall Grand fir, which weighs about 3.1 tons per tree, a range of 5 to 11 trees would be needed to achieve the CWD objectives. However, based on the IDT's other resource objectives, this density of 5 to 11 trees was found to be on the low end of meeting the other objectives. But these lower densities may meet the other objectives when required leave areas, such as RHCAs, are incorporated into the unit configuration. The overall density of 14-28 trees is achieved by weighting in the RHCA trees, but only to the minimum level to meet the CWD requirements in the non-RHCA areas. For

example, 125 trees per acre are left in an intermittent stream RHCA that bisects a 30-acre harvest unit (1250' x 200' = 5.7 acres) totaling 5.7 acres. About 712 trees are contained in the RHCA. If the unit has a moderate existing CWD level, a leave tree density of 21 TPA is desired (ave. 14-28 tpa), which would total 630 trees for the 30-acre unit. The RHCA already exceeds the desired tree retention for the unit. In situations like this, which is a very common occurrence, as long as the other resource objectives are being met a lower trees per acre to meet CWD could be left based on the actual larger tree size, but it should be at a level of greater than 9 TPA in a clump to allow for visual diversity within the actual cut area.

11.Clump Size Recommendation:

a. Clump size is based on the visual appearance and the resource sensitivity in the treatment area. From the visual perspective, the IDT found that clumps containing 9 to 18 trees greater than 16" DBH broke up the visual continuity of a regeneration unit. The larger the clump and more irregular it was, the more natural it looked. Clumps left for resource protection of sensitive soils, wildlife or water areas would follow the area to be protected and be as large as needed to provide the specified protection as outlined in the design criteria.

b.Clumping of trees best mimics the natural mosaic left after a stand replacing fire.

12.Clump Placement:

a. The priority of clump placement is; 1) Sensitive resource areas, for example visuals, soils, water (RHCAs), wildlife or heritage protection area, 2) Legacy tree patches, 3) Difficult logging breaks, 4) Low cut volume areas.

b. Legacy Trees: Legacy trees are trees that have endured from a stand replacing event, such as wildfire or timber harvest. They generally are larger than the existing stand and usually exhibit signs of decadence. The decadence should not be necessarily construed to mean the trees have bad genetics, because they have disease issues. On the contrary, these large diameter trees may have better genetics than the original stand which enabled them to persevere while the others perished; having diseases and growth/poor form issues is typically inherent with growing old. These larger diameter trees are a key component to the target stand makeup, because of the important part they play in providing cavity nesting for dependent species and the long time, 75 plus years, it takes to replace this structural component. Retaining these trees will supply the cavity habitat until the new stand can grow up to replace them in 75-100 years.

13.Harvest Volume Implications: Leaving trees in harvest units generally reduces the amount of cut volume per acre. The relationship is one MBF equals about 5 tons (one CCF equals about 2.9 tons). Therefore, 17 to 33 tons of trees left on size for CWD would equal 3.4 mbf to 6.6 mbf of timber left. Harvest volumes of mature timber on the Central Zone range from 25 to 50 mbf per acre of gross volume (includes sawlog and pulp), with an average of about 35 mbf/acre. Based on past implementation of the Target Stand concept on the Central Zone, I have found that at least 1/3 of the leave trees marked for retention within regeneration units consist of legacy trees or other decadent trees not suit able for saw timber production, such as pulp trees (T.White observations). The legacy trees over roughly 21 DBH are in low demand by the local sawmills due to mill size limits of 24" or smaller large end diameter. The pulp trees typically do not support paying their way out of the woods and have to be subsidized by the sawlog value to get them removed. In addition, the retaining of trees within a regeneration unit has resulted in post-harvest units that are more visually appealing to our publics that are critical of timber harvesting in general. Based on my experience with the public and Tribal members at NEPA meetings, the visually appealing nature of the Target Stand harvest units has had a major influence on the acceptance of treating more acres on the Central Zone (T.White observations). The tree retention is not just to meet wildlife or soils requirements, but there is a desire to leave "people" trees just for viewers sense of place. All these factors need to be considered when evaluating the true impact to actual harvest volumes.

14.Future tree growth implication: The leave trees will take up some space within the stand that could be

growing the new tree crop. As mentioned in item 6 (a) above, a canopy retention of 10% to 18% is expected with the 14-28 trees left on site following harvest. Based on field experience, the canopy cover would only affect the planted less shade tolerant trees such as white pine, larch and ponderosa pine (T.White observation). The clumping nature of the target stand leave trees is well suited to providing adequate openings for these shade intolerant trees to grow. The natural grand fir and cedar regeneration should be expected to thrive under the partial leave tree canopy, just like what happens in the natural regeneration of our mixed severity wildfires. Between the planted stock and natural regeneration, site stocking objectives should be achievable.