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Title: BOD
Comments: Comments on the proposed "Land Management Plan Direction for Old-Growth Forest Conditions Across the National Forest System" from the Inland Empire Task Force and Selkirk Conservation Alliance. These comments are for areas within the Inland Temperate Rainforest of Washington, Idaho, and Montana, particularly the Colville, Idaho Panhandle, and Kootenai National Forests.

1. Half Earth Project: Implement E.O. Wilson's Half Earth Project principles to enhance biodiversity and conservation efforts.

2. Recruitment Stands: There is need to designate recruitment stands from both immature and mature forests to ensure the continuous formation of new old growth stands. Because of disturbances to younger stands, it is not a one to one ratio of recruitment to old growth, but more like a successional pyramid where many more square kilometers of recruitment stands must be designated to allow natural succession and disturbance to form a smaller amount of old growth.

3. HRV Limitations: The use of HRV (historic range of variably) is dated and cannot be used to project the amount of old growth in times of abrupt climate chaos. Current logging projects, designed to emulate HRV, fragment recruitment stands with clearcuts (including regeneration cuts) and roads.

4. Logging Impact: Old growth stands are harmed by logging and associated skid trails. Any impact by logging and skid trails is an unnatural disturbance to an old growth stand. There is no reason why there should be any logging in a moist site old-growth stands in the Inland Temperate Rainforest.

5. Do not log in buffers surrounding existing old growth stands: Using "proactive stewardship" which we are assuming would be leaving vigorous trees in commercial

thins next to old growth forests will minimize stem decay, a crucial component of old growth ecosystems.

6. Logging Adjacent to Old Growth Stands Could Exacerbate the Spread of Root Disease into the Old Growth Stands: Bottom Canyon EA, Idaho Panhandle National Forests Example. Due to the prevalence of a root disease complex in the project area the mycologists recommended clearcutting instead of seed trees for skyline units which had leave strips between corridors. This was because logging increases the spread of root disease into the leave strips. This same principle was applied to buffers around old growth stands, as logging in the buffer would increase root diseases and increase their risk of spread into adjacent old growth stands.

7. The IPNF's interpretation of Green et al is flawed. The IPNF feels it is OK to log high volume old growth stands down to the minimum number of large old stems per acre. This is the opposite of what Green et al suggested. They stated that their minimum old stem density number was to be used as the low end screen for selecting old growth stands, not as a density to reduce old growth trees to and still be considered old growth. Green et al 1992 quantified old growth stand

Moist Site, Western Hemlock Dominated, Old

characteristics for Region 1, USFS.

Growth Stand, Bottom Canyon EA, IPNF.

8. Old Growth must be Separated

From Mature Stands: Old growth must be separated from mature stands. On the

Colville NF, they are combined, resulting in a clouded analysis for NEPA projects.

9. Species Composition: Historic species composition must not be used as an excuse to

log existing immature to old stands to achieve HRV standards in Forest Plans. Also see

#3.

10. Indigenous Knowledge: Indigneous knowledge is religion based and should not be

included as "science", as a matter of fact, the Kalispel Tribe of USK supplied the forester

for the Swxuytn/Trail EA on the Colville National Forest where, until the Sanpoil

Decision, they collaborated with the USFS under the Tribal Forest "Protection" Act to

log moist site western redcedar/ western hemlock old growth stands. Unlike what was

stated in the Federal Register, historically, Tribes have had only a minor impact on old

growth communities. Another issue involves the Kootenai Tribe of Idaho supporting

logging of old growth on the Kootenai National Forest for the Black Ram EA. All Tribes

do not have high environmental standards.

A survey of mixed dry and moist old growth forest types adjacent to Bead Lake, Washington,

Colville National Forest. The CNF and Kalispel Tribe propose to log this stand in the

Trail/Swxuytn EA.

11. Proactive Stewardship Clarification: Please define "proactive stewardship", does

that mean logging and roadbuilding? Does the USFS really think they can "create" old

growth forests?

12. Redundancy and Representation: Idaho Panhandle National Forest Example. The

most recent IPNF Forest plan eliminated the recruitment stand designation that was in

the older Forest Plan and the Old Growth Management Unit concept. Although the amount of old growth allocated per OGMU was trivial (10%), the criteria provided for spatial and minimal functional redundancy throughout the Forest. Also see Juel, 2021. Management of Old Growth in the U.S. Northern Rocky Mountains (attached).

13. Expanded Old Growth Definitions: Old growth definitions need to include additional plant communities including graminoids, forbs and shrubs such as sagebrush, juniper and suckering species such as trembling aspen and even old fungus colonies and krumholtz. Is Pando an old growth stand? What about the large Armillaria Genets on the Malheur National Forest including the Humongous Fungus?

14. Old Growth Forests are not Proxys for Measuring Biodiversity. Drs. McMullen and Wiersma propose that the addition of a lichen diversity survey would assist in identifying forests of high conservation value. Biodiversity should be measured directly. Just counting large old stems is inadequate.

It's only found in Old Growth and two other trees in Montana. Coral Lichen, Sphaerophorus tuckermanii located at Ross Creek Cedar Grove, Kootenai National Forest. It occurs from coastal NW to Alaska with rare inland disjuncts to northern Idaho and northwest Montana. Photo from Friends of Scotchman Peak FB page.

https://fieldguide.mt.gov/speciesDetail.aspx?elcode=NLTES43181

"Many old-growth forests have high sustained moisture and a high number of microhabitats suitable for certain species, which can't disperse easily. Having these forests in the landscape provides a refuge for the seeds and spores that helps with the continued preservation of this biodiversity." https://phys.org/news/2019-03-rethinking-old-growth-forests-lichens-indicator.html

15. Age Defines Old Growth. We disagree on a minimum diameter to define an old growth stand, there are trees in the understory that may be as old as larger trees.

Closely growing stems may also be very old even though they may not meet the diameter guidelines of current old growth definitions.

16. Protection of Ancient Stands: Prioritize the protection of ancient or antique stands of trees from fire.

17. Connectivity: The USFS is fragmenting forest habitat everywhere with roadbuilding and regeneration logging (multi-staged clearcutting). This is having negative effects to many species. For example Fisher is an R1 sensitive species that has been extirpated in the Selkirk Mountains of North Idaho and Northeast Washington. Now the USFS is continuing to fragment the extensive mature to old growth (MOG) forest habitats the fisher needs, creating a hostile habitat for the species.

18. Protection of Western White Pines: Please do not log western white pines persisting in mature and old growth stands due to their rarity.

19. Identification and Protection of Threatened Whitebark Pine Old Growth Stands: Although impacts from snowmobiling occur to younger whitebark pines, allowing continual impacts to young trees can compromise their development into old growth. Please keep OSV use out of whitebark pine habitat.

20. Protection of Subalpine Larch Old Growth Stands. Subalpine Larch are slow to regenerate and grow. In the Roman Nose OSV play area on the IPNF, OSV's are running over "younger" subalpine larch (and whitebark pine) in the grove there. This is an additional stressor to a stand of mixed ages with an undocumented age distribution. This will impede development into a climate change resilient stand.

21. Fires and Old Growth: Old growth snag forests contain the longest lasting snags due to their size. Logging, even partial logging of these stands is detrimental to the wildlife that uses them. If planting is desired, they should be interplanted between the snags once the danger of windfall has been reduced (naturally). Or better yet left alone to

allow for natural succession, as planting truncates the forb and shrub stages of natural succession.

22. Overall Opposition to Logging Old Growth: Logging in old growth is ecologically unacceptable, especially in a rapidly changing world.

23. Bioclimatic Envelope Velocity Exceeds the Ability of Old Growth to Form in the Inland Temperate Rainforest. Suitable bioclimatic envelopes for moist site old growth are anticipated to change or shift relatively quickly across a geographical area. In comparison, the process of ecological succession, specifically the development of old-growth forests from early seral stages (early ecological stages after disturbance), and the formation of ancient forests (forests older than 4-500 years) is expected to take a longer time. In essence, the velocity or speed at which the bioclimatic envelope "window" changes is projected to be faster than the time it takes for ecosystems to progress to mature stages or for the development of very old forests. .

Old growth can persist as "holdouts," defined as populations that endure in microclimates for a limited time, particularly in climate and/or fire refugia, cold air drainages, cold air ponding areas, etc. However, the likelihood of old growth forming again in microrefugia is minimal to non existent. Microrefugia are areas where populations persist in microclimates until the climate becomes more favorable. The formation of old growth in new areas is unlikely unless the time for natural succession from existing mature forests is shorter in duration than the rapid temporal movement of the suitable bioclimatic envelope. This emphasizes the importance of refraining from logging mature forests. Additionally, the establishment of old growth is hindered when the bioclimatic envelope shifts elevationally to a new series (e.g., from cedar-hemlock to subalpine fir) because there are no younger cedar-hemlock stands at that elevation to succeed into old growth and subalpine old growth dies out.

Changes in the bioclimatic envelope of ancient forests under RPC 2.5 (top) and one

example for RPC 8.5 below showing a rapid elevational shift to the subalpine fir zone.
Cold pooling areas and cold air drainages where holdouts could occur are not shown.
Source: Implications of Climate Change to Ancient Western Redcedar / Western Hemlock Forests in Three Regions of the Inland Temperate Rainforest, Western North America. American Sentinel Universtiy Dec. 12, 2014. Paul Sieracki MS.

"Because climate projections show that return to present climate is highly unlikely, conservation strategies need to be built around holdouts and stepping stones, rather than low-probability microrefugia." Hanna, L., Flint, L., Syphard, A., Moritz, M., Buckley, L.& McCullough, M. (2014). Fine-grain modeling of species response to climate change: microrefugia, holdouts and stepping stones. Trends in Ecology and Evolution, 29, 390-397.

Moist Site Old Growth under threat by logging, Bead Lake, Washington.
Note the mutistory structure, down woody debris. Fire scars in western red cedar and western white pine indicate that the stand endured a previous low-intensity fire.

24. Avoid Anthropogenic Disturbances in and Around Old Growth Stands. These disturbances include; winter OSV use displacing threatened Canada Lynx, and impacting grizzly bear denning. summer use causing northern goshawks to abandon nesting stands, sound impacts to breeding birds from adjacent activities, and firewood gathering impacting cavity nesting habitat.

25.Exceptions Should not be Granted. Logging old growth forests anywhere is not acceptable ecologically in a rapidly changing world. The IPNF abuses the old growth definition in Green et. al. They are stating that it is ok to log trees down to the minimum number of old stems per acre and still call it old growth. This is an inaccurate

interpretation of Green's et al statements where the minimum stems per acre is to be

used as a screen to determine old growth candidates, just the opposite of what the

IPNF wants to do. Moist site old growth stands in North Idaho need no management.

Respectfully Submitted,

Attachment: OLDGrowthForestPlanAmendment_IETF_SCA.pdf - is the letter text added above.

Attachment: Juel_2021-Old Growth.pdf - Juel. 2021. Management of Old Growth in the U.S. Northern Rocky Mountains Debasing the concept and subverting science to plunder national forests. Frieds of the Clearwater.