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Attn: Comments on Forest Plan Amendment for the Bitterroot National Forest

Please consider the following comments concerning the Forest Plan Amendment proposal for elk habitat effectiveness (EHE) and thermal cover (scoping 2019) and the additional amendments to old growth, snags, and coarse woody debris (CWD) standards (current scoping letter). I reside near the Bitterroot National Forest (BNF) and enjoy it daily. I find solace in areas with little previous management like riparian areas, roadless areas, Wilderness Study Areas (WSA), and especially Wilderness and Recommended Wilderness. Recently managed areas, are dry, dusty, and weedy and not quite as enjoyable as the cooler, shadier forests that have seen little to no management. I especially relish old growth and large trees. They are irreplaceable in our lifetime and who knows if they can be replaced at all in a warming planet. They should be retained.

I commented on the original EHE and thermal cover scoping in 2019 and have attached those comments (EXHIBIT A). Please pay special attention to Jeff Juel's *Management of Old Growth in the U.S. Northern Rocky Mountains*, David Mattson's *The Promised Land* and Bader and Seiracki's two papers when you consider the references included in this comment. If you are unable to find a copy of any reference, please contact me. I am happy to supply pdfs for you.

I suggested in my comments on EHE and thermal cover that an Environmental Impact Statement (EIS) is required. Now three more standards are to be abolished or changed. A programmatic forest plan suspension and/or change of nearly every standard in the 1987 Forest Plan that protects wildlife is a significant change to the human environment and requires the thorough analysis. Many folks live near and recreate in the forest to enjoy its wildlife. To remove so many standards put in place to protect wildlife and their habitat requires an EIS and full disclosure of direct, indirect, and cumulative effects.

Since scoping, the Helena National Forest Plan Revision eliminated the EHE and thermal cover standards in a similar fashion. The changes are being litigated by local hunters and anglers. I have attached the complaint: *Helena Hunters and Anglers et. Al vs Randy Moore* (EXHIBIT B). How does this change in elk habitat standards affect hunter opportunity on the forest? How will these comply with the Executive Order 13443 to preserve hunter opportunity and wildlife conservation.

The Biological Opinion concerning the BNF Travel Plan (Final Record of Decision May, 2016) recommends road closures to ensure viable wildlife habitat. BNF changed road status during the Travel Planning process, but also promised the United States Fish and Wildlife Service (USFWS) to continue road closures during site specific project planning. How does the relaxation of road density standards comply with these projected road closures to protect listed and proposed listed species? It is difficult for the public to discern, since locations and specifics for future closures are not specified. These should be specified and completed before the Draft Analysis is completed.

It also seems impossible to analyze effects without determining a minimum road system. This should be completed before analysis begins. A proper analysis of the costs of increasing the road system and the increased cost of consistent, necessary maintenance. As we have seen in the past on the Willow Creek Road, lack of maintenance can threaten fisheries and bull trout critical habitat even when the road is not next to the waterway.

As I requested in my original scoping comments an independent scientific review is in order to determine the best science to use in elk habitat effectiveness.

How will all wildlife be protected on the BNF without these standards? The BNF must ensure that wildlife will still be protected including sensitive species, fungi and underground mycorrhizal networks, any species dependent on old growth, Management Indicator Species (MIS), listed and proposed listed species, and all the animals and plants connected to the forest web of life. According to Suzanne Simard all is connected via soil “The big trees were subsidizing the young ones through the fungal networks. Without this helping hand, most of the seedlings wouldn’t make it.” (Suzanne Simard: <http://www.ecology.com/2012/10/08/trees-communicate/>) Please disclose and analyze effects to all living things in the forest and their fragile connections.

The old growth amendment is problematic. Reducing criteria for old growth qualification would be good if qualifying old growth was to be preserved rather than mechanically logged. I fear that the plan is to cut all or most old growth stands to this minimum. Even cutting some to the minimum would reduce functionality and their rich habitat. The chart in Green et al that is often referred to by the BNF as criteria is merely a list of items. It does not explore quality or function. The chart describes the minimum items necessary to allow for functioning old growth. There is no guarantee that it is functioning old growth and after ground disturbing activities reduced CWD and snags, they most certainly will NOT function as old growth. Green speaks a lot about the “uniqueness” of old growth and presses that these characteristics be considered and preserved. “(A)tttributes such as decadence, dead trees, ... are important...” (Green et al., 1992). He goes on to describe this decadence as “decadence in the form of broken or deformed tops or bole and root decay” (Ibid).

Green also encourages forest managers to not rely on just one characteristic, yet the BNF cut an identified old growth stand in the Buckhorn GNA Project because it met all the criteria

except for age (<https://www.fs.usda.gov/project/?project=56927>). The average age of the trees cored was 130 years. Certainly, Green would have preserved this stand and it did qualify as mature forest, but it is lost for a lifetime if not forever. Green et al was revised to add more items to the chart because the authors learned that forest managers were only using the chart and ignoring the rich text describing old growth that was meant to be used to evaluate old growth stands. Even with the amended chart, much of the "uniqueness" and "decadence" described in Green et al is not included.

How do the plan amendments comply with the Old Growth and Mature Forests Executive Order 14072? Not allowing ground disturbance on any old growth or mature forests would comply with the order. But there is a problem with this idea as well. Forests are successional so if you take out any of the steps whether that be the older or the younger trees, you destroy the balance and disrupt the successional stages. Those that reach the old-growth stage continue to undergo gradual directional changes in composition, structure, and function albeit at a slower rate than in the previous stages (Franklin et al 2019) Really all forests should be preserved because each stage is important to the overall structure of the forest ecosystem. Nacify et al 2010 did a survey of the BNF and found that logging not fire suppression had more to do with areas of high stem density. Logging old growth "but retaining old growth criteria" will not save it or preserve it. Some old growth will burn in extreme fire conditions which has happened in the past and will in the future. That is why it is best to preserve all old growth and every stage of the forest to ensure the ecosystem amenities old growth provides and old growth into the future.

Old growth, mature forests and older trees store essential carbon. How will these amendments affect future carbon storage and sequestration on the BNF? Moomaw recommends "pro-forestation" to mitigate climate change, how do the amendments support pro-forestation and carbon stores? Law has shown that logging emissions are 5 times those of fire. Analysis must disclose the effects on future carbon storage, carbon sequestration, and global warming. This analysis must include the carbon emitted during logging operations and road building.

Though the scoping p. 3 states, "a forest-wide stand delineation of old growth will not be provided." Certainly, adequate assessment of effects cannot be completed without a baseline inventory of old growth using each definition. The BNF must include a ground-truthed inventory of old growth using both definitions. How can analysis be meaningful without it? Exact and specific criteria used to assess these areas must be shared and the public should clearly understand why the area qualified or was disqualified using each definition. The BNF is mandated to complete an inventory of old growth AND mature forests within the year. Why would this not be a part of the amendment assessment process? Seriously, how is it even possible to assess the effect of the change in old growth criteria without it?

How will the amendments affect Equivalent Clearcut Areas (ECA) in future projects. Please provide an accounting of ECAs on the forest.

How will the amendments affect soil productivity? Gorzelak et al., 2015:

... found that the behavioural changes in ectomycorrhizal plants depend on environmental cues, the identity of the plant neighbour and the characteristics of the (mycorrhizal network). The hierarchical integration of this phenomenon with other biological networks at broader scales in forest ecosystems, and the consequences we have observed when it is interrupted, indicate that underground “tree talk” is a foundational process in the complex adaptive nature of forest ecosystems.

Bailey et al 2005 shows that trees and shrubs are connected by underground fungal networks. How will increased ground disturbance, and increased road construction allowed by these amendments affect soil and essential fungal networks? Please also consider Suzanne Simard’s life work included in the references

There has been some question as to the accuracy of current soil assessments on the BNF. Recent assessments show an abrupt improvement. Soil is the foundation of the forest. Reducing CWD, snag retention, 100 years of logging, 100 years of ground disturbance, and allowing for more logs to be removed from the forest will affect soil productivity. I would suggest an independent scientific review of soil conditions and current soil monitoring on the forest. Accurate baseline soil conditions are essential to promoting a healthy forest.

CWD is essential to wildlife for food source and cover. Though the BNF has stated that CWD standards are inconsistent, they are not. The 1987 Forest Plan was forward thinking enough to establish larger CWD requirements for old growth. This is not a contradiction just a recognition that different forest stages have different ground cover requirements. Green et al states, “Accumulations of large-size dead standing and fallen trees that are high relative to earlier stages.” Past site-specific amendments of this standard proposed substituting logging slash and small branches instead of larger diameter CWD. This would not provide adequate cover and habitat in any forest stage and certainly not in old growth and mature forests. The BNF fails to see the forest as a whole and part of a dynamic system.

Downed woody debris is also important for drought which is eminent in the future of the BNF. According to Amaranthus 1989, CWD provides a “reservoir” of moisture for drought stressed forests. Analysis must disclose how CWD and snag amendments will affect the forest under drought conditions.

Snags and snag forests are essential to biodiversity. Please provide an inventory and map of mature snag forests on the BNF. Studies are finding that beetle kill snag forests are as rich in biodiversity as seral forests from severe burns. Barry et al 2017 state that “Snags provide essential habitat for numerous organisms and are therefore critical to the long-term

maintenance of forest biodiversity.” How will the suspension of the snag standard affect these forests and the biodiversity they provide? There is often discussion of dead and downed trees being a fire hazard. But the dead and down do not have green needles and do not ignite as easily as green trees. A great example is the Hog Trough Fire that is burning in dead and down. Even under windy conditions, the fire did not dramatically increase in size.

This wide array of amendments to wildlife protections on the forest requires consultation on all endangered species and proposed listed species. Baseline conditions must be ground truthed and supplied to the USFWS for consultation. In the interest of transparency, please provide all correspondence and information supplied in the assessment in a timely fashion and the Biological Opinion must be disclosed to the public before the Draft Record of Decision.

How will the amendments affect migratory birds protected under the Migratory Bird Act? How will they affect eagles?

Please demonstrate that these amendments adhere to the overall Forest Plan and the National Forest Management Act.

These amendments have been used in site-specific situations for many years. Please provide monitoring of these areas for each site-specific amendment. Provide baseline conditions, completed monitoring, and methods used.

Finally, Monitoring has been non-existent or very minimal. The BNF has not complied with the monitoring mandated in the forest plan and in the recent Biennial Review, the BNF proposed minimizing monitoring instead of ensuring the public that they will follow monitoring protocols fully in the future. Under § 219.12 Monitoring (a)(1): “Monitoring information should enable the responsible official to determine if a change in plan components or other plan content that guide management of resources on the plan area may be needed.” Without adequate monitoring over the past 35 years, how can the BNF determine if plan amendments are needed?

Thank you for considering my comments.

Michele Dieterich

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