October 18, 2023

1228 Ponderosa Drive

Moscow, Idaho 83843

Reviewing Officer

Northern Regional Office,

Attn: Hungry Ridge Restoration Project

26 Fort Missoula Road

Missoula, MT 59804

**Subject: Objection Hungry Ridge Supplemental EIS**

**Objection 1 - Same Old Project**

The Nez Perce Clearwater National Forests have done nothing to respond to my original objections and those of others like the Friends of the Clearwater on this project and they continue to move forward with essentially their same original proposal. Please incorporate all of my previous objections and general comments into your evaluation of this proposal.

**Objection 2 - Harvest and Prescribed burning in existing Old Growth**

In my comments on the Draft Supplemental EIS, I pointed out that:

“The original Hungry Ridge FEIS reported that there were 1,140-acres of old growth that met the Forest Plan Appendix N definition of old growth (FPOG) in the six old growth units that intersect the project area (2020 FEIS – Page 263). The updated old growth analysis in the supplemental EIS has identified 3,775 acres of FPOG in the same 50,814-acre analysis area. This significant change in the analysis calls into question not only the old growth analysis on Hungry Ridge, but a multitude of other past projects such as Clear Creek, End of the World and Green Horse where the agency claims not to be harvesting any old growth or only minimal amounts of old growth.

Originally, the 2020 FEIS claimed that 358-acres of FPOG would be harvested with regeneration harvest and 23-acres would be harvested with intermediate harvest under selected Alternative 2 (2020 FEIS – Table 3-51 – Page 268). The updated old growth analysis (SEIS Chapter 3 -Page 21) for previously selected Alternative 2 suggests that 409-acres (10.8% of the existing FPOG) will be harvested with regeneration harvest and 188-acres (5% of the existing FPOG) will be harvested with intermediate harvest. An additional 902-acres (23.9% of the FPOG) would be impacted by prescribed burning and non-commercial removal of understory trees (SEIS Chapter 3 – Page 28).”

**The Nez Perce Clearwater’s response to all of this was “While mathematically this assertion is correct, the details provide a more thorough picture of treatment and its effect across the landscape. The 409-acres of treatment in Forest Plan old-growth (FPOG) are spread across approximately 50,800 acres and six old-growth analysis areas (OGAAs) and is less than 1% of the FPOG in the project area. Alternative 2 affects approximately 2% of the total FPOG in one OGAA and about 1% of existing FPOG is affected in the other five OGAAs. No harvest treatments are substantial enough to reduce the amount of existing FPOG to less than 5% in any OGAA. In Alternative 2, there are 902 acres of FPOG proposed for prescribed burning. See Final SEIS, Table 1.”**

I continue to object to the Nez Perce Clearwater’s steadfast denial of the impacts of regeneration harvest and other activities in old growth and don’t think the Nez Perce Clearwater’s explanation provides a more thorough picture of treatment and its effect across the landscape. The bottom line is that the Hungry Ridge project is harvesting and disturbing a high percentage of the existing old growth as identified by Forest Plan definitions. No loss of old growth habitat quality is predicted to occur as a result of intermediate harvest, burning, mechanical treatment or road construction. Activities in old growth are significant both in impact and the amount of the 3,776-acres of Forest Plan Old Growth in the six old growth analysis areas will be impacted by the Hungry Ridge Project.

When the Forest Service says that only 2% of the FPOG in one unit and 1% in the other five units what they mean is that regeneration harvest will drop the amount of old growth from 8% to 6% in OG Unit 3050110 (an actual reduction of 25% of the existing old growth in that unit) and from 7% to 6% in OG Unit 3050112 (an actual reduction of 14.3% of the existing old growth in that unit). A third OG Unit that is shared with the End of the World Project (3050116) apparently has no regeneration harvest and remains at 9% according to the Nez Perce Clearwater analysis. The three remaining old growth analysis areas in the 50,800-acre analysis area apparently do not have any regeneration harvest, but there is an extensive amount of commercial thinning, burning, non-commercial mechanical treatment and road construction. The Nez Perce National Forest dismisses these other activities with no real data to support their conclusions.

With only 3,776-acres of existing old growth in the 50,800-acre analysis area being evaluated for old growth condition (7.4% of the analysis area), the Forest Service should be considering avoiding all impacts to FPOG. Regeneration harvest, intermediate treatment, road construction, non-commercial fuel treatments and burning should all be avoided in FPOG. Relying on minimum Forest Plan standards and an analysis of impacts that only occur when existing old growth stands are completely removed is not reflective of the importance of these stands.

**Objection 3 – Lack of a Plan in Regard to Old Growth Replacement Stands**

I made the following comment in response to the Supplemental DEIS:

“The Nez Perce / Clearwater NF also confounds the issue of how much old growth is being harvested by adding old growth replacement stands to their old growth totals. These stands do not meet Appendix N criteria for old growth and there does not appear to be any site-specific plan to retain any of the potential replacement stands into the future. The purpose of MA 20 in the current Forest Plan was to develop a long-term strategy for the retention of old growth and provide assurances that replacement stands would be protected in areas where there was not a sufficient amount of old growth to meet Forest Plan standards. Instead of protecting the existing stands outlined in MA 20 or designating alternative areas for replacement where errors occurred in the original designation of MA 20, the Forest Service merely proposes an amendment that allows timber harvest in MA 20.

It is also very unclear how replacement stands were identified and why they are being included in the old growth analysis. There does not appear to be any long-term plan for the retention of these stands and it makes no sense to cut stands that meet Forest Plan Appendix N requirements and replace those stands with younger alternative stands that lack the characteristics outlined in Appendix N.”

**The Nez Perce Forest responded with:**

**“The Forest is utilizing the FP Plan standards for identification and labeling of old-growth, including replacement old-growth. MA20 also identifies the approximate distribution of stand development stage including old growth and replacement old growth.”**

From this I assumed there is no long-term plan to manage replacement stands or offset losses of replacement stands in MA-20 due to timber harvest.

**Objection 4 = Forest Plan Amendment to Allow Timber Harvest in MA 20**

My comments to the Nez Perce Clearwater NF on the amendment to allow timber harvest in MA-20 were:

“There are also 23-acres of regeneration harvest and 71-acres of intermediate harvest in Management Area 20 under Alternative 2 (SEIS Chapter 3 – Page 37). Of this total 56-acres are considered FPOG. An additional 948-acres of non-old growth will be treated with understory thinning and burning in MA 20 (SEIS Chapter 3 – Page 38). There are also 143-acres of FPOG in MA 20 that will be treated with thinning and burning. Presumably, the FPOG acreage has already been accounted for in the previous discussions. A Forest Plan amendment will be necessary to harvest these stands since timber harvest and pre-commercial thinning is not permitted in this management area.

The Nez Perce NF has a long history of using site specific Forest Plan amendments to permit timber harvest. Amendments to the Forest Plan have generally have been proposed to reduce fish, watershed, wildlife, soils and old growth standards so that more timber harvest can proceed (USDA Forest Service 2015). For example, site specific amendments have been adopted to allow timber harvest in Management Area 20 on at least five other past occasions.

More recently, the Forest Service has approved a site-specific Forest Plan amendment on the Clear Creek project to modify the current Forest Plan definition of old growth (Forest Plan - Appendix L) to meet the old growth screening criteria outlined in the publication Old Growth (Green et al. 1992). This publication was supposed to be used as a screening criterion to identify possible old growth stands for further field review not as a definition of old growth. Presumably, this change is being made to reduce the minimum number of large trees (DBH over 21-inches) in old growth stands from 15-trees per acre as outlined in the Forest Plan to 10-trees per acre in most old growth types as described in the Green et al. 1992 screening criteria.

At some point these site-Specific amendments make the direction in the Forest Plan meaningless. Please drop your latest proposal to harvest timber in Management Area 20 and please maintain the stands in MA-20 to allow them to develop into later successional stages naturally. The Forest Plan direction is to allow this to happen and your misguided attempts to “improve” the stands by logging are unproven and potentially damaging.”

**The Nez Perce Clearwater responded with: “36 CFR 219 provides for amendments to the Forest Plan. The Forest acknowledges there have been 39 amendments to the Forest Plan. The Forest is proposing a Project-Specific Forest Plan Amendment to harvest within MA-20 for the Hungry Ridge Restoration Project. See Appendix D in the Final EIS (2020) and Final SEIS (2023). No amendment is proposed to use Green et al 1992 as the old growth criteria in Appendix N. See Final SEIS, Appendix F, Table F-3. Consideration of literature: Green et al 1992, USDA FS 2015. See ROD. 29-12, 29-31”**

The response from the Nez Perce Clearwater NF appears to miss the point. Every time a Forest Plan standard gets in the way of timber harvest or some other activity desired by the current Forest Service administration, they propose an amendment to negate the standard. Several standards have been modified in this manner and there is never any accommodation to the resource that they are placing at risk.

The standard is either removed or reduced in quality, like the amendment on the Clear Creek project to adopt the Green et al. 1992 old growth screening criteria as the definition of old growth. We see a similar proposal on the recently released Clearwater Forest Travel Plan supplemental EIS where the Forest proposes to drop elk standards from 100% to 90% in proposed wilderness areas and high value fish and wildlife habitat. This drop in Forest Plan standards would allow the Forest to keep several existing trails open to motorized use. If the Forest Service must cut certain stands in MA-20, they should be adding alternate locations to MA-20 to make up for these losses. They should not just be modifying the standard to allow for more questionable timber harvest.

**Objection 5 - Ten-percent Forest wide old growth standard**

Here were my comments on the 10% Forest wide old growth standard: “The Forest Service has not conducted a Forest wide inventory of old growth as required in Appendix N of the Forest Plan. Appendix N states “All stands will be inventoried and prioritized with highest priority for inventory in those drainages where timber sales or other activities that could adversely impact old growth.” Instead, the Nez Perce/Clearwater Forest relies on an analysis of 343 Forest Inventory and Analysis (FIA) plots to determine if they have sufficient old growth to meet the Forest level requirement of 10% old growth.

There are several problems with this approach since these 343 plots are widely spaced across the 2.2 million-acre Forest and they were never designed to inventory old growth. Their primary purpose is to provide an approximate estimate of the amount of timber in the entire United States. The plot locations occur on State. Private and National Forest lands and their exact location is not shared with local Forest managers. The plots are remeasured every ten-years to update changes that have occurred due to forest growth, timber harvest and wildfire.

To my knowledge, the old growth characteristics of the 343 plots have never been evaluated in the field by qualified ecologists or biologists. Instead, the Nez Perce/Clearwater has used the data from the plots to make estimates of the amount old growth strictly by looking at the size of the trees that were measured on the plots and/or if the plot takers recorded presence of more than one canopy layer. They have estimated that approximately 22.6% of the Nez Perce Forest is old growth using tree size and 14.7% when canopy layer information is added (Reyes and Morgan 2022). Old growth amounts presumably decline when canopy layers are added because young single layered stands are eliminated from the analysis.

The analysis does not consider factors outlined in Appendix N of the Forest Plan such as: stand age, the presence of rot or decadence, crown closure (Appendix N recommends overstory closure of at least 10-40% and an understory closure of at least 40%, total crown closure is supposed to exceed 70%), or the presence of snags and downed logs. The Forest Plan suggests there should be at least 0.5 snags per acre exceeding 40-feet in height and 21-inches DBH. Downed log numbers are not listed, but are assumed to be abundant in old growth stands. Green et al. (1992) report the average number of standing dead trees in old growth type four is 14 trees per acre over 9-inches DBH, with a range from 0 to 35.

Under this analysis, many very young stands with a general scarcity of rot and decadence are likely to be included. Fast growing stands in Northern Idaho can reach stocking levels of 15-trees per acre over 21-inches in relatively short time frames (less than 100-years). Such stands would have little resemblance to old growth as described in Appendix N of the Forest Plan.

Green et al (1992) suggest it requires at least 150-years for most forest stands except lodgepole pine (120-years) to reach old growth status. In old growth type 4, which is the most common type in Northern Idaho and the project area, they found old growth stands had an average age of 210-years with a range from 160 to 264-years. These stands supported an average of 27-trees per acre over 21-inches DBH and had a range of 12 to 53 trees per acre over 21-inches. Note, that the minimum criteria of 10-trees per acre set in the Green et al. (1992) screening criteria is slightly below the range found in stands examined by the authors. This assures that all or most potential stands to be evaluated in the field for old growth condition are included in the list of stands to be screened. The minimum number was never intended to be used as a definition of old growth.

The Forest Service cannot display the location of the old growth stands they report under their FIA analysis. One just has to trust that it is out there someplace based on plot locations which they can’t even identify. Field verification on Hungry Ridge does not support their FIA claims. Hungry Ridge is presumably a high-risk area with lots of mature forest, yet the Forest Service could only find 7% old growth in the 50,814 forested acres they examined for the Hungry Ridge Project (Supplemental EIS – Chapter 3, Page 14). This is in an area where they have targeted for the largest timber sale planned in 40-years and where there is scrutiny from the court to upgrade their old growth analysis process.

Similarly, information in the recently released for the Green Horse project area, suggests that there are six old growth units and none of them have 10% old growth? Old growth meeting Forest Plan requirements in four of the units equals 5.6%, 6.1%, 6.8% and 7.7%. Two of the units that were affected by the Wash Creek wildfire don’t even meet the 5% requirement and have 0% and 0.5% old growth. Total old growth in the 43,067-acre area examined for old growth condition was 1845-acres or 4.3% of the six old growth compartments.

In the Clear Creek project where the Forest Service has made a site-specific Forest Plan amendment to modify the Forest Plan old growth definition. The analysis (2015 FEIS, Page 3-121) reports that there are 4,654-acres of verified old growth in the 43,666-acre old growth evaluation area as measured by the Green et al. (1992) screening criteria. This is approximately 11% of the evaluation area, but it is unclear how many of these stands would actually meet the requirements of Appendix N of the Forest Plan. Given that the Green et al. 1992 screening criteria only require 10-trees per acre over 21-inches DBH instead of 15-trees per acre over 21-inches DBH it is very likely there is less than 10% of the area that meets the requirements of Appendix N.

I could go on with numerous other examples where the Forest Service has failed to find greater than 10% old growth to meet the requirements of Appendix N in project planning. If they can’t find 10% old growth in Hungry Ridge and Green Horse and have to modify their standards in Clear Creek to achieve 10%, where are they going to find the additional old growth to meet the Forest wide 10% standard?”

**The Nez Perce Clearwater NF responded with: “The Appendix N standard is not by Project. There is a minimum percent OG in each prescription watershed (OGAA). All action alternatives are consistent with the Appendix N standards Forest wide this number is also met, see Reyes and Morgan 2022.”**

Thus, the Forest Service is doubling down on their FIA analysis which doesn’t appear to be supported by any of the old growth inventories they have done at the local level. If they have all of this old growth, they should be able to show it at the project level, but in all cases their local figures do not support the contention that the Forest wide total is above 10%. If the Forest wide total is above 10% and most local areas are below 10%, some other local areas must be above 10%. Where are these areas?

**Objection 6 – Thinning, burning, mechanical non-commercial treatment and road construction in old growth.**

My comments in the supplemental EIS in regard to intermediate treatments and other activities in old growth were: “In the Forest Service analysis of impacts of the various alternatives on FPOG, the Nez Perce Clearwater NF makes no reduction in the amount of FPOG due to intermediate treatments, prescribed burning or road construction. Stands with intermediate logging treatments are unlikely to qualify as old growth once the logging is complete. Such activity will remove snags, downed logs, small trees and understory plants that are important components of old growth. Logging corridors or skid trails will also be required and there is likely to be felling of high-risk trees that pose a risk to forest workers.

It is unlikely, that the remaining stands will have much resemblance to old growth as described in Appendix N of the Forest Plan when logging actions are completed. The mere presence of a minimum number of large trees, while important, is not the only consideration that should be utilized in old growth determinations (Green et al. 1992). Logging within old growth stands was never a consideration of the existing Forest Plan and is not compatible with the whole concept old growth as described in Appendix N.

Prescribed burning that mimics natural processes may have some value in few stands, but likely will be most beneficial in drier Ponderosa pine habitat types. Little benefit can be expected in moister habitats that historically supported a mosaic of species such as western red cedar, grand fir, Douglas fir and western white pine. Stand replacement wildfire and time play a much important role in these forest types which are known to have high densities of understory trees that gradually decline as the stand matures (Haig 1932). Upper elevation cool moist stands supporting sub-alpine fir, spruce, mountain hemlock and lodgepole follow similar patterns.

There ample evidence to suggest that the removal of understory trees and other components of the understory in moist and upper elevation old growth stands will significantly compromise the old growth stand characteristics as described in Appendix N. Little evidence is available to support Forest Service claims that these stands will be improved by understory removal and prescribed burning. The supplemental DEIS does not identify how many of the proposed 902-acres of understory removal and burning are located in dry ponderosa pine habitat types and how many acres are located in more mesic or upper elevation areas.

New roads will result in a total elimination of old growth and the reconstruction of existing roads within and adjacent to existing old growth will also compromise the integrity of nearby old growth stands Dependent on topography, new road construction generally removes about 4 to 5-acres per mile including the road surface and associated side-slopes. The Forest Service needs to acknowledge these losses in the final supplemental EIS.

In summary, I believe the Nez Perce/Clearwater NF has significantly underestimated the direct impacts that the project will have on old growth. The loss of 409-acres of existing old growth to regeneration harvest is a significant impact in and of itself, let alone the losses that will occur due to intermediate harvest, understory thinning, prescribed burning and road construction. When the combined impacts of all of this activity is added together it appears that over 1500-acres of old growth (40% of the existing acres) will be negatively impacted by the proposal. Old growth stands have developed without Forest Service intervention for centuries and the rationalization that these stands are at high risk from wildfire is very overstated in the DEIS.”

**The response of the Nez Perce- Clearwater NF was presented in four statements: 1) “Thank you for your opinion. The Forest is following the Forest Plan definition of old-growth. Intermediate treatments in old-growth are designed to maintain a fully stocked stand that maintains the characteristics of old-growth. Mitigation of risk to forest workers is incorporated within the written prescription, contractual documents, and OSHA rules/guidelines.” 2) See Final EIS, Chapter 3, Old Growth - Appendix N effects analysis that clarified the potential effects of timber harvest or prescribed burning. 3 “Road construction through an old-growth stand does cause effects that we are disclosing; however, the removal of vegetative material to create a roadway does not affect enough acres within the old-growth stand itself to affect the required characteristics to the point that the stand would no longer qualify as old-growth. New figures are presented in the Final SEIS, Chapter 3, Section 3.18, Figures 6, 7, and 8. The maps present all proposed road actions with old growth types and Management Area 20. Table 9 and Table 13 also presents this information. Additional clarification of effects was added.” and 4) New roads will not result in the total elimination of OG. Please see FSEIS sections 'Road Activities and other Restoration' and the 'Cumulative Effects Conclusion'.”**

The idea that intermediate treatments and new road construction will have no impact on old growth because the stocking level of large trees will be maintained and the fact that new roads only eliminate a small amount of old growth is not consistent with Appendix N of the Forest Plan. Appendix N describes old growth as “Old-growth habitat is defined as a community of forest vegetation which has reached a late stage of plant succession characterized by a diverse stand structure and composition along with a significant showing of decadence. The stand structure will have multi-storied crown heights and variable crown densities. There is a variety of tree sizes and ages ranging from small groups of seedlings and saplings to trees of large diameters exhibiting a wide range of defect and breakage both live and dead, standing and down. The time it takes for a forest stand to develop into old-growth condition depends on many local variables such as forest type, habitat type, and climate. Natural chance events involving forces of nature such as weather, insect, disease, fire, and the actions of man also affect the rate of development of old-growth stand conditions.

Old-growth stand refers to a stand of timber that, generally, meets the following criteria:

1. At least 15 trees per acre ?>? 21 inches diameter at breast height (DBH). Providing trees of this size in the lodgepole pine and sub-alpine fir stands may not be possible.
2. Two or more canopy layers.
3. At least .5 snags per acre ?>? 21 inches DBH and at least 40 feet tall.
4. Signs of rot and decadence present.
5. Overstory canopy closure of 10-40 percent; understory canopy closure of at least 40 percent; total canopy closure at least 70 percent.
6. Logs on the ground.”

Appendix N also suggests “Where possible, roads should not be located through or adjacent to old-growth stands in order to reduce human disturbance, loss of snags to firewood cutters, windthrow, and micro-climate changes.”

The bottom line is that the Hungry Ridge project proposes to harvest a significant amount of old growth harvest with both regeneration and intermediate timber harvest. Prescribed fire, new road construction and mechanical treatments are also proposed in many other existing stands and most of these treatments could be easily removed from the project proposal, but the Nez Perce Clearwater remains steadfast in their desire to manipulate these existing old growth stands despite an inadequate project and Forest wide inventories and no real data to suggest that their treatments will actually be successful in maintaining or improving old growth.

**Objection 7 - Impact of old growth and mature forest timber harvest on management indicator species like the fisher**

My comments to the supplemental EIS were: “The updated supplemental EIS has determined “there are no changes to the conclusions of the effects to wildlife species presented in the Final EIS.” I can agree that the Forest Service has not made any changes to their proposal as a result of the supplemental old growth analysis other than to report that they didn’t do a very thorough analysis of old growth condition and that they are now cutting more old growth than they previously reported. I believe that their analysis of impacts to wildlife suffers from several similar oversights and under represents the actual impact the proposal will have on species that utilize older forests.

Several wildlife species that utilize the Hungry Ridge project area rely on old growth and mature forests. These species are sensitive to both the loss of older forests and habitat fragmentation in their home ranges. For example, Hargis et al. (1999) reported that “Martens were nearly absent from landscapes having >25% non-forest cover, even though forest connectivity was still present.” Similarly, Sauder and Rachlow (2014) suggested that an “increase of open area from 5% to 10% reduces the probability of occupation by fishers by 39%.

Other species like the pileated woodpecker and forest bats require habitat components that are generally found in older forests for nesting, roosting and/or foraging. For example, pileated woodpeckers require dead snags over 20-inches in size for successful nesting (Bull and Holthausen 1993, McClelland and McClelland 1999). Pileated woodpeckers also feed in dead and diseased trees as well as downed logs. Forest bats utilize large snags for day roosts, maternity colonies and thermal protection. Goshawk nests are generally found in older forest stands Moser and Garton (2009) and older forest stands are utilized by goshawks to raise their young after they leave the nest. These areas have been termed post-fledgling areas (Reynolds et al. 1992).

My comments here largely focus on the protection of fisher habitat, but recognize that the habitat protections that have been outlined for the fisher will likely protect a variety of other species. In Region One, the fisher is considered a sensitive species that has an elevated management concern. Protection of fisher habitat is likely to protect habitats for a variety of other sensitive species like forest bats and management indicator species like the pine marten, goshawk and pileated woodpecker. Numerous other more common species that have no special status like forest owls, song birds and small mammals will also likely benefit from the protection of fisher habitat.

The Hungry Ridge project area is 29,974-acres and contains 29,383-acres of national forest and according to the silviculture report it currently contains 4,554-acres of forests that have an average diameter of 20+ inches and 16,733-acres that have an average diameter of 15-19+ inches. These stands represent the mature forest component on the landscape that is discussed by Sauder and Rachlow (2014) and this acreage currently represents 72.5% of the national forest portion of the project area. According to the Vegetation Report there are approximately 1,423-acres of shrub or herbaceous cover (5% of the project area), which would represent the open areas described by Sauder and Rachlow (2014). These conditions would provide ideal habitat for the fisher and other species that rely on older forests since there are very few openings and an abundance of mature forest.

This situation is reflected in the probable fisher habitat maps that have been included in the Hungry Ridge project file and while I agree that it is appropriate to exclude drier and more open slopes from the analysis of fisher habitat such as the open slopes just outside of the project area along the South Fork of the Clearwater River. I do not agree with using a Region wide analysis of probable fisher habitat (Sauder 2014) as the description of probable habitat is appropriate at the project scale.

The (Sauder 2014) analysis is a broad-brush approach using remotely sensed data that is trying to identify probable habitat availability at a scale of several million acres. The Sauder (2014) analysis does not consider the impact of habitat fragmentation which is a critical component of habitat use at the home range scale. Both the fisher and pine marten are known to avoid highly fragmented landscapes despite the fact that some older forests may still be present. Any natural open area or recent timber harvest area that is included in the regional coverages will not be displayed as probable habitat in the computer-based queries that generate these maps. Such maps do not actually reflect the on the ground dilemmas that fishers face when using the landscape. While they can avoid large open areas like the open slopes along the South Fork of the Clearwater River, they cannot fly from one habitat patch to another in their selected home range.

In a more detailed analysis at the home range scale, Sauder and Rachlow (2014) found individual fishers “selected landscapes for home ranges, with larger, more contiguous patches of mature forest and reduced amounts of open areas. Landscapes that had >50% mature forest arranged in connected, complex shapes with few isolated patches, and open areas comprising <5% of the landscape characterized a forest pattern selected by fishers in our study.” In designating probable habitat the project biologists for the Hungry Ridge project excluded interspersed open areas from the landscape prior to their analysis and then made all calculations of habitat based on the reduced acreage that had the interspersed openings removed. I see no reason to remove potential habitat prior to the analysis and believe the entire West John’s Creek and Mill Creek drainages provide suitable habitat for the fisher.

Probable habitat should have included the entire landscape where fishers were likely to be found, and by displaying probable habitat as a series of disconnected patches and eliminating interspersed open areas from the analysis upfront the Forest Service biologists are eliminating existing open areas from the analysis and not using the appropriate recommendations from the (Sauder and Rachlow 2014) publication. The analysis does not reflect how fishers must actually utilize the landscape. These interspersed openings are the openings that Sauder and Rachlow (2014) discuss in their publication and I have no idea why the Forest Service biologists have eliminated these areas from their analysis.

As I have suggested on numerous occasions to the Forest Service, theoretical home ranges should have been utilized evaluate habitat conditions for the fisher. The attached map (Figure 1) displays three possible theoretical home ranges (blue outline) that I have utilized to conduct an analysis of the impact of the project on fishers using the recommendations of Sauder and Rachlow (2014). These theoretical home ranges are largely based on existing watersheds in the two project areas and I have also displayed the Hungry Ridge (grey shading), Adams Camp (green shading) and Doc Denny (yellow shading) project areas in Figure 1.

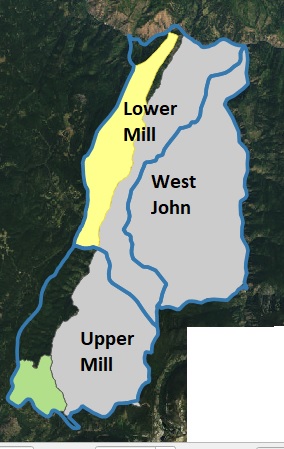
The theoretical home ranges I have utilized for my analysis are forested areas where fishers and other species that utilize older forests are likely to find preferred habitat. Unlike the current Forest Service analysis, these evaluation areas include existing interspersed openings. These theoretical home ranges have been appropriately sized to correspond to the home range size of a female fisher which has been reported to be approximately 12,200-acres (Sauder and Rachlow 2014). In their analysis the Forest Service uses 25,329-acres of what they call probable habitat within project area. They also evaluate cumulative impacts in a larger 45,191-acre centered on Mill Creek and Lower Johns Creek. Boundaries of this larger evaluation area are not displayed, but likely are similar to the three combined theoretical home ranges I have used for my analysis.

Like the Forest Service, I have utilized information from Forest Service Vmap (Table 5) to categorize the existing vegetation condition in each of the three theoretical home ranges in the project area. This information is based on 2011 satellite imagery and accuracy assessments are available online (USDA Forest Service Vmap). Vmap is not perfect and does have some accuracy concerns that should be confirmed by the interdisciplinary team with field verification and/or survey plots conducted according to procedures outlined in the Forest Service stand examination system (USDA Forest Service 2016). The advantages of Vmap are: that the coverage is comprehensive across all ownerships, the data can be collected relatively cheaply and coverages can be updated as new satellite imagery becomes available. Since data for Vmap was collected in 2011, it does not include recent timber harvest on projects like Doc Denny and Adams Creek or proposed harvest on Hungry Ridge.

I have considered forested stands with less than 24.9% crown closure (the lowest designation in Vmap) and the following Vmap codes (HERB-3100, SHRUB-3300. SPVEG-7000, SHRUB/BURN-8900) as openings. Mature forests were identified as stands in either category 4400 (DBH 15-19.9”) or 4500 (DBH 20+ inches) that have a crown closure of at least 25%. All other Vmap codes were considered “other” habitat in the analysis. These are likely younger stands that have resulted from past timber harvest, and they are not stands that provide much value to the fisher due to a lack of structural components such as large trees, downed logs, snags and decayed hollow trees.

The results of the Vmap analysis suggest adequate amounts of mature forest were available in all three potential home ranges in 2011 to meet Sauder and Rachlow’s recommendation of more than 50% mature forest. However, the amount of opening is starting to approach levels that can generate concern in a few of the units. For, example the Upper Mill theoretical home range already has over 9% open area, and Lower Mill Creek theoretical home range has over 14% open area. Note that my analysis includes the recent Adams Camp and Doc Denny projects that occur in the Upper and Lower Mill Creek theoretical home ranges (Table 6). These recent timber sales occur in the narrow intervening area between the Hungry Ridge and the End of the World project areas. Recall that Sauder and Rachlow (2014) reported that most fisher home ranges had less than 5% open area.

**Figure 1 - Theoretical home ranges used in this analysis of the impact to fisher habitat for the Hungry Ridge Timber Sale (Blue Outline).**

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\*Hungry Ridge shaded in gray, Adams Camp shaded in green, Doc Denny shaded in yellow

**Table 1 – Current habitat conditions based on 2011 Vmap Data (USDA Forest Service) and the recommendations of Sauder and Rachlow (2014).**

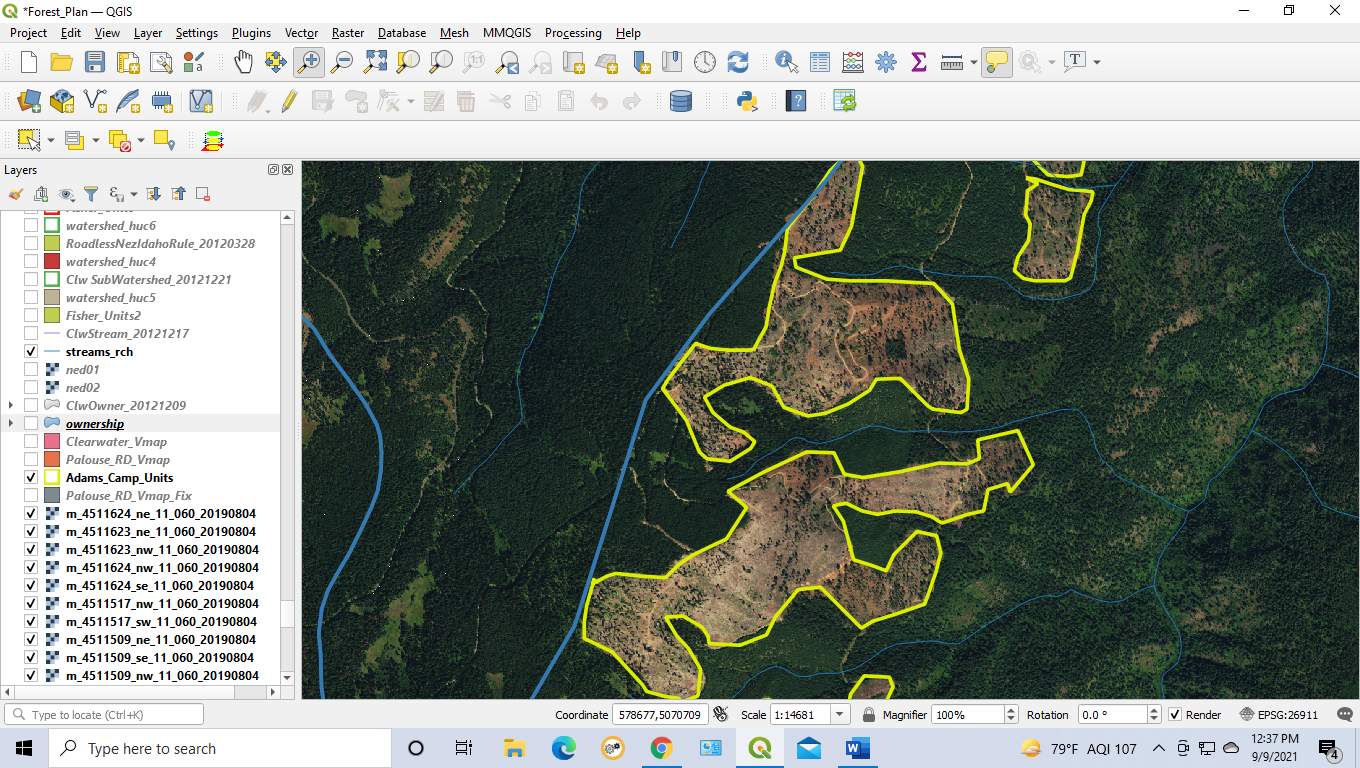
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fisher AA | Area (Ac) | Mature Ac | Mature Percent | Open (Ac) | Open Percent |
| West John | 14,321 | 11,114 | 77.6% | 1,127 | 7.9% |
| Upper Mill | 12,709 | 7,588 | 59.7% | 561 | 4.4% |
| Lower Mill | 12,998 | 9,333 | 71.9% | 1,027 | 7.9% |

**Table 2 –** **Existing condition after incorporation of two recent timber sales not identified in the Vmap data (Adams Camp and Doc Denny)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Fisher AA | Area (Ac) | Mature Forest converted to open  Condition (Acres)1 | Mature  Acres | Mature Percent | Open (Ac) | Open Percent | Probability of Occupancy (Sauder and Rachlow 2014) |
| West Johns | 14,321 | 0 | 11,114 | 77.6% | 1,127 | 7.9% | 60% |
| Upper Mill | 12,709 | -692 | 6,896 | 55.3% | 1,253 | 9.9% | 50% |
| Lower Mill | 12,998 | -799 | 7,735 | 59.5% | 1,826 | 14.1% | 25% |

**1. Analysis assumes units were mature forest prior to harvest**

**Figure 2 - Example of recent cutting on the Doc Denny Project. Adams Camp units and the remaining units on the Doc Denny Project appear similar to this example.**



**Table 3 - Expected condition after incorporation of the proposed Hungry Ridge Project**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fisher AA | Area (Ac) | Mature Forest converted to “open”  (Acres)1 | Mature Forest converted to “other” (Acres)2 | Mature  Acres | Mature % | Open (Ac) | Open % | Prob. of Occupancy. (Sander Rachlow 2014) |
| West Johns | 14,321 | -2,056 | -460 | 8,598 | 60.0% | 3,183 | 22.2% | 10% |
| Upper Mill | 12,709 | -2,355 | -286 | 4,255 | 33.5% | 3,608 | 28.4% | 1% |
| Lower Mill | 12,998 | -772 | -1.214 | 5,749 | 44.2% | 1,826 | 20.0% | 10% |

1 Analysis assumes regeneration harvest units will be converted from mature forest to openings following timber harvest. GIS coverages of proposed harvest units were unavailable to me to overlay with Vmap coverages.

2 – Analysis assumes commercial thinning units will be converted from mature forests (Vmap Size Class 15-19”) to the “other” category following logging. GIS coverages of proposed harvest units were unavailable.

**Results**

The results of the analysis suggest the three theoretical home ranges in the project area will decline substantially with implementation of the Hungry Ridge project. Several new openings will be created as a result of regeneration harvest and this will cause a corresponding loss of mature forest (Table 3). According to Sauder and Rachlow (2014) this will cause the probability of occupancy by the fisher to very low levels in all three of the theoretical home ranges. When the new project is combined with the impacts from the recent Doc Denny and Adams Camp projects, it is expected that the probability of occupancy will decline to less than 10% according to information in the Sauder and Rachlow 2014 publication.

Canopy closure would be significantly reduced in intermediate harvest units and such treatments will remove most stand components that are important to the fisher and other species that utilize older forests. Although a few snags and decadent trees may be retained according to the FEIS, trees with evidence of decay, disease or insect infestation will generally be removed. Downed logs, snags and understory plants will also be removed and skid trails or cable corridors will be required for logging. These treatments will cause additional impacts to canopy closure and understory vegetation. In variable density thinning it is predicted that openings of up to 5-acres might be created. There are 247-acres of variable density thinning on the Hungry Ridge project.

Use of stands that have been sanitized by intermediate harvest treatments by fishers and other species that utilize older forests is debatable, and I am unaware of any scientific study that suggests that fishers or other species that utilize older forests are attracted to stands that have been treated in this manner. I therefore considered such stands as moving from the mature forest to the “other” category in my analysis. Thus, the analysis predicts significant declines in the mature forest component and suggests that fishers would likely avoid such an intensively managed area. This is exactly what I would expect to occur as a result of implementation of this very large project.

**Discussion**

Despite the fact that their own analysis suggests that the amount of open area within the project area would increase from 5% to 26%, the Forest Service concluded that the Hungry Ridge proposal will only have a small impact to fisher habitat at the Forest level and that while the project may impact individuals or habitat, it would not likely result in a trend toward federal listing or reduced viability for the populations or species. According to Sauder and Rachlow (2014) a landscape with 26% open area would have a probability of use by fishers of about 8%.

My analysis differs not so much in numbers, but rather in the conclusion that the Hungry Ridge project will result in a significant decline in the probability of use by fishers in the project area. The proposal will likely to create a loss of three fisher home ranges. This is largely due to the size of the proposal and the extensive amount of timber harvest and prescribed burning that has been proposed. Some sort of activity is proposed on most of the acreage in the project area and there will be an excessive amount habitat loss and disturbance. Just looking at the project and the recent Doc Denny and Adams Camp projects, I am dismayed how the Forest Service can dismiss all impacts to the fisher and other species that utilize older forests. This project is the largest proposal on the Nez Perce/Clearwater National Forest that I am aware of since the 1960’s and is immediately adjacent to the End of the World project which proposes the removal of another 144 million board-feet. The just released Twenty-mile project which is only 5-miles away will remove another 62.2 million board=feet.

The project is not occurring in isolation and there has been a large uptick in both the number and extent of timber sales across the Nez Perce Clearwater National Forest. Over the last five years, the two Forests have increased annual timber harvest levels by approximately 40-million board feet per year over the previous 20-year average of around 50-million board feet. Based on the number and size of projects being planned, all indications are that the Forest Service is planning to increase these numbers even higher. For example, several other projects are planned or are currently being implemented such as End of the World, Center Johnson, Clear Creek, Crane Point, Dead Laundry, Dixie-Comstock Community, East Saddle, French Larch, Gold Hill, Green Horse, Histloc Fuels, Johnson Bar, Limber Elk, Little Boulder, Lolo Creek, Lowell WUI, Lower Orogrande, Newsome Fuels, Northside Powell, Orogrande Community, Parachute Fuel, Pete King, Red Moose Divide, Red Siegel, Section 16, Smith Ridge, Stray Creek, Tinker Bugs, White Pine, Windy Shingle and Longleaf.

Most of these proposed projects occur in low elevation areas preferred by the fisher and they will harvest and fragment thousands of acres of mature forest in an area that has been termed the roaded front. These are the most productive areas on the Nez Perce-Clearwater National Forest and the best habitat for the fisher because of the productive forest types that are found there. Sauder and Rachlow (2014) report that “in our study area, composition and configuration of roadless areas differed significantly from occupied fisher home ranges, suggesting that roadless areas might not be preferred fisher habitat in this region. The abundance of open areas was significantly higher and the proximity of mature forest patches was significantly reduced in roadless landscapes relative to occupied fisher home ranges. The Sauder and Rachlow (2014) study was conducted on the Nez Perce-Clearwater National Forest.

My specific results for the project area differ from the Forest Service results for four reasons. First is the fact that I have chosen to utilize analysis areas that have been appropriately sized to the home range size of a female fisher. The home range is where the female fisher must find the resources to raise her young, and it is critical to evaluate habitat at the scale of habitat use to assure that those resources are available. In contrast, the Forest Service uses larger analysis areas that include the entire 29,383-acre Hungry Ridge project boundary and one large cumulative effects area.

Second, the Forest Service analysis takes an upfront approach to the identification of probable habitat. As previously discussed, they have excluded much of the existing intermingled openings from their analysis by using a large region wide coverage of probable habitat (Sauder 2014). This results in a false picture of the existing habitat fragmentation within the two project areas and how the proposal will actually impact fisher habitat.

Although, there has been a long history of timber management in the project area as evidenced by older harvest units and existing roads, my review of the project area suggests it is still heavily forested and with a relatively small amount of recent timber harvest. These observations are supported by the silvicultural report. According to the silvicultural report the amount of mature forest in the Hungry Ridge project area is 72.5% and natural openings amount to approximately 5% of the landscape. These conditions suggest the entire Hungry Ridge project area is currently capable of supporting fishers and that large areas of suitable habitat should not have been eliminated with the use of landscape scale analysis that was done by Sauder (2014). A site-specific habitat evaluation of habitat conditions is required by the project biologist to determine if conditions are suitable for this species and others.

Third, the Forest Service analysis does not predict any changes in habitat quality for stands treated by intermediate harvest. In their analysis these stands are still considered mature forest despite the fact that there are numerous activities that will reduce habitat components that are important to fishers such as snags, downed logs and decant trees. Even the fact that small openings of less five acres in size are included in variable density harvest units does not appear to have caused any habitat reductions.

Finally, and most importantly is the fact that Forest Service pretty much ignores the existing literature and suggests there would be minimal impact because “there would still be a lot of mature forest remaining in the project area.” My analysis suggests that only the West Johns theoretical home range would have the minimum level (50%) of mature forest recommended by Sauder and Rachlow (2014) following project implementation. This is largely due to the amount of unroaded habitat in that theoretical home range and lessor amounts of proposed timber harvest in that portion of the project area. Little consideration is also given to the other project proposals with similar impacts that are being planned in prime fisher habitat across the Nez Perce/Clearwater NF.

One other consideration is the proposed landscape burning and mechanical fuel treatments outside of harvest units. There are 6,618-acres of landscape burning outside of the timber harvest units on the Hungry Ridge Project. The objectives of this landscape burning are still very unclear especially for stands in moist and high elevation habitat areas. The FEIS primarily talks about understory encroachment in ponderosa pine types, but does not actually document how much of this 6,618-acre area actually occurs on ponderosa pine habitat types. We now know that 902-acres of this understory burning and small tree removal will occur in old growth stands. Many of the other stands proposed for landscape burning are identified as being either in the 15-19.9” or 20+” size class in Vmap. Current species composition suggests the stands are dominated by grand fir and Douglas fir forest types. The wildlife analysis predicts no impact to fisher habitat from any of these burns, which is highly unlikely if the current Vmap condition is correct. Loss of both understory and overstory trees, snags and downed wood can be expected and will be dependent on how the burning operations are conducted and the objectives of the proposal. This information is very difficult to ascertain from information available in the DEIS.”

**The Nez Perce – Clearwater responded with the following two statements: 1) “The fisher analysis documented in the wildlife specialists’ report, and summarized in the FEIS, is based upon best available science including incorporation of the Sauder habitat model. The cumulative effects analysis was expanded between the DEIS and FEIS to include activities beyond the project area boundary and is based upon the size of an average fisher home range size. The analysis concluded the project could adversely affect how fisher move through or use the project area, but that fisher habitat would remain available within the project area in untreated, mature forest stands, including riparian areas. At the Forest level and across the range of the species, the effects of past, present, and reasonably foreseeable future actions appear small when considering the amount of habitat remaining available. Alternatives 2, 3, and 4 “may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the populations or species. Please see Final EIS and Wildlife Specialist's Report pp.34-39. The Draft SEIS only considers supplemental input on old growth, which is a separate analysis utilizing different information than the fisher analysis. See also Appendix F, for literature considered in this analysis.” and 2. “A wildlife biologist has reviewed the Draft SEIS and updated old growth analysis and determined the conclusions in the wildlife analysis in the FEIS are still valid. Forest Plan standards regarding old growth from Appendix N are being met, which means forest conditions are providing for minimal viable populations of old growth-dependent species. The fisher analysis documented in the wildlife specialists’ report, and summarized in the FEIS, is based upon best available e science including incorporation of the Sauder habitat model. The cumulative effects analysis was expanded between the DEIS and FEIS to include activities beyond the project area boundary and is based upon the size of an average fisher home range size. The analysis concluded the project could adversely affect how fisher move through or use the project area, but that fisher habitat would remain available within the project area in untreated, mature forest stands, including riparian areas. At the Forest level and across the range of the species, the effects of past, present, and reasonably foreseeable future actions appear small when considering the amount of habitat remaining available. Alternatives 2, 3, and 4 “may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the populations or species.” See 2020 FEIS and Wildlife Specialist's Report pp. 34-39. The Draft SEIS only considers supplemental input on old growth, which is a separate analysis utilizing different information than the fisher analysis. See also Appendix F, Table F-3 for literature considered in this analysis: Bull and Holthausen 1993, Hargis et al 1999, Sauder and Rachlow 2014. Sauder 2014. McClelland and McCelland 1999, Moser and Garton 2009, Reynolds et al 1992.”**

The response from the Nez Perce - Clearwater NF largely ignores the latest scientific research on the fisher as outlined by Sauder and Rachlow 2014. Despite the fact that even their own analysis predicts a significant decline in the probability of occupancy by fishers (from near ideal to 8%) they still conclude that the proposal “may impact individuals. but will not result in a trend toward federal listing……”. In conclusion, there appears to be no threshold of habitat loss that causes a concern on the part of the Nez Perce – Clearwater NF. Instead of modifying the project to better accommodate species of concern, the Forest continues to rely on minimal standards and questionable analyses that do not incorporate or grossly modify the latest scientific literature.

Sincerely,

/s/ Harry R. Jageman

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