June 9, 2020

[redacted]

USDA Forest Service
Objection Reviewing Officer
26 Fort Missoula Road
Missoula, MT 59804

Subject: White Pine Project

Dear Sir:

Attached are my objections to the Environmental Assessment and Draft Record of Decision for the White Pine Project on the Palouse Ranger District. Overall, I thought the proposal was very excessive, given the past history of timber harvest in the project area and the intensity of timber harvest on lands surrounding the project area. There are several large cutting units included in the proposal and a significant amount of road construction (2-miles of system road and 15-miles of temporary road). The EA estimates that there will be no measurable increases in sedimentation which I believe is unrealistic given the size of the proposed project. I also believe impacts to various wildlife species using the project have been underestimated. Species like the fisher, goshawk and the pileated woodpecker are known to avoid large open areas. Deer and elk will utilize the edge of larger openings but avoid areas over 500-feet from cover and both have needs for hiding and security cover which the project will eliminate.

Objection 1 – Failure to utilize Forest Plan identified drainages for the watershed analysis

The Watershed analysis uses two HUC 12 watersheds [Headwaters Hangman Creek (37,374-acres) and Meadow Creek (25,618-acres)], but fails to provide adequate information for three drainages identified in the Clearwater Forest Plan (White Pine Creek, Blakes Fork and Mannering Creek). These smaller drainages are more applicable to impacts that will occur at the project scale and are composed of lands that are primarily controlled by the US Forest Service. Only 7% of the Headwaters Hangman Creek HUC 12 watershed is managed by the Forest Service and 55% of the Meadow Creek HUC 12 watershed is managed by the Forest Service.

Using the HUC 12 watersheds tends to dilute project area impacts, increases uncertainties related to activities on private land and is not in compliance with the existing Clearwater Forest Plan since drainages identified in the plan (Appendix K) have not been fully analyzed. While the Fisheries Specialist Report does provide some existing information in regard to conditions in these three smaller watersheds, most of information in the Watershed Report and Environmental Assessment is focused on the larger HUC 12 watersheds.

Adding the acreage in these larger HUC watersheds will tend to mask activities on smaller Forest Service controlled drainages like White Pine Creek, Blakes Fork and Mannering Creek. For example, the 1997 White Pine EIS indicates there are 2,950 acres in the White Pine Creek drainage and that 78% is managed by the Forest Service Based on the proposed unit acreages listed in the current environmental assessment, I have estimated that the proposal includes approximately 640-acres of regeneration harvest (21.7% of the drainage), 170-acres of commercial thinning (5.8% of the drainage) and 70-acres of fuel treatment (2.4% of the drainage). Recent regeneration harvest on Potlatch lands in Section 27 and 28, T43N, R3W appears to have occurred on approximately 230-acres (7.8% of the drainage) and there were approximately 200-acres of regeneration harvest (6.8% of the drainage) associated with the 1997 White Pine project. These units were harvested around 2005. Most of the remaining private land in the drainage was harvested in the 1980's and those stands are now considered pole sized forest. There has been very little other recent logging in the drainage on lands managed by the Forest Service.

Dependent on the regrowth of existing harvest units, the proposal could bring the existing ECA in White Pine Creek to approximately 35%. This is a much higher number than the 9% value for the Meadow Creek HUC 12 watershed than is reported in the watershed report. It is also above the thresholds of concern that have been listed in the Matrix of Pathways and Indicators of Watershed Condition (NOAA 1998).

In the 1997 White Pine EIS, the District hydrologist utilized White Pine Creek, Blakes Fork Creek and a smaller headwater drainage of Upper Hangman Creek (drainage area 8,350-acres) for his analysis. There was no activity in Mannering Creek (drainage area approximately 2,800-acres) in the 1997 White Pine EIS. Downstream impacts to Meadow Creek were also discussed, but this analysis was limited to portion of the drainage area above the confluence with the East Fork of Meadow Creek (drainage area 11,948-acres). These smaller drainages are much more appropriate for the current project than the large HUC 12 drainages that are utilized in the current water resources report and should be utilized in the new analysis.

Objection 2 – Failure to account for cobble embeddedness changes that have occurred in Blakes Fork Creek and possibly other drainages following implementation of the previous White Pine project

Similar to the watershed analysis for White Pine Creek, the watershed analysis did not consider impacts to Blakes Fork Creek. This drainage is 1,261-acres in size and except for a small area near the mouth of the stream (20-acres or less) it is entirely under Forest Service management. I have estimated that approximately 380-acres of regeneration harvest (30.1% of the drainage) and approximately 200-acres fuel treatment (15.9%) is proposed in the drainage. Previous management on the 1997 White Pine project included the extension of Road 3833 down the ridgeline between White Pine Creek and Blakes Fork Creek. This road extension is similar the temporary road construction that is proposed on the east side of the Blake's Fork drainage along the existing Sampson trail. There were approximately 50-acres of regeneration harvest (4.0% of the drainage) and 70-acres of commercial thinning (5.6% of the drainage) in 2005 as a result of the 1997 White Pine EIS.

Cobble embeddedness numbers in Blakes Fork Creek have changed significantly since implementation of the previous White Project which also predicted no sedimentation. According to the Fisheries Report, cobble embeddedness increased by nearly twice the amount from previous surveys conducted in 1990 and 1996 prior to the implementation of the White Pine project. In 1990, average cobble embeddedness was sampled at 64% on 48 transects. In 1996, average cobble embeddedness was sampled at 51% on 68 transects. In 2018, average cobble embeddedness was 85% on 18 transects. One new sample (2018) of cobble embeddedness (14 transects) was taken in Meadow Creek. The Meadow Creek sampling location also had an average cobble embeddedness of 85%. No recent cobble embeddedness information is provided for White Pine Creek, Hangman Creek or Mannering Creek in the Environmental Assessment or Fisheries Report.

Why has the level of cobble embeddedness increased in the Blakes Fork drainage? The only known activity in the drainage has been the activities associated the previous White Pine project. The District Hydrologist at the time (Mike Philbin) suggested that "Blakes Fork is a B4 stream type which is bordering on instability. This condition is not due to past management, but is the nature of this stream system. This stream system has a very narrow "window of opportunity" for human caused disturbance. In the professional judgement of Philbin, the level of fines in Blakes Fork is probably within the range that naturally occur for B4 channel types flowing through fine textured alluvia valley bottoms. However, small increases in sediment deposition can cause this stream to become unstable, as can increasing the size and frequency of rain-on-snow events."

The new project will increase the amount of opening to 35.7% of the drainage and construct several miles of new temporary road. Previous activity may have already triggered the response that former hydrologist Mike Philbin was concerned about. Until these questions are answered in a more scientifically sound manner, it does not appear that more activity is warranted in the Blakes Fork drainage. It is also unclear how cobble embeddedness has changed in other project watersheds since the last surveys in 1996. Are these other drainages also experiencing similar conditions to those that are occurring in Blakes Fork?

Objection 3 - Unrealistic assumptions that no measurable increases in stream sedimentation will occur as a result of the project

The Forest Service tries to make the claim that instream conditions really don't matter because the project has been designed to result in no increase in measurable sediment. They base much of this conclusion on the fact that they have included PACFISH buffers. that they will build roads on ridgetops and a flawed WEPP analysis. PACFISH buffers do not stop sedimentation once it gets into the stream. Much of the proposed logging and fuel treatment will be conducted with ground based heavy equipment. Use of such equipment will create skid trails, landings and temporary roads that will link directly to existing roads and road ditches. These in turn are linked to small streams that can carry sediment to larger fisheries streams. Exposed areas of mineral soil will be created, particularly in areas that are subject to machine piling.

All of these areas are subject to erosion and it is unrealistic to assume that you can harvest 1707-acres with regeneration harvest, commercially thin 276-acres, treat fuels on an 722-acres largely with heavy equipment, build 2-miles of new system road, construct over 15-miles of temporary road, reconstruct or recondition 39.5 miles of existing road, replace several existing culverts, decommission 6.3 miles of non-system roads and remove 2.4 miles of unauthorized trail and not create any measurable sediment.

The Forest Service has completed a Disturbed WEPP and WEPP Road analysis (Traeumer and Hovde 2019) to back up their conclusions, but the assumptions used in these models appear to have been significantly flawed and applied to such a large area that they have little significance to project level impacts. Assumptions have been made that mature forest stands are converted directly to shrubs within tractor harvest units and directly into young forests in skyline harvest units, without any acknowledgement of the sediment producing activities that will be required to make these changes. Admittingly, the choices in WEPP are limited suggesting that another model should have been utilized. Even the traditional WATBAL model used in the 1997 White Pine EIS appears to do a better job than WEPP. However, the analysis could have been completed more thoroughly by using all of the available tools in WEPP.

Some accounting of the impact of skid trails and actual road development should have been included in the analysis. New and temporary roads should have been segmented by the actual conditions within each road segment and sediment generated by those roads should have been applied to the appropriate drainages that are identified in the Forest Plan.

In the following paragraphs, I have tried to display some of the concepts that I believe should have been used in the WEPP watershed analysis by using White Pine Creek as an example. My numbers likely are not exact as I do not have access to all of the tools available to the hydrologists who prepared the watershed report. However, I believe this example displays some of the important limitations of the Watershed Report.

The WEPP Roads analysis is limited to three example runs for three different situations (WEPP analysis of 150-feet of temporary road located above a 150 ft. RHCA buffer, WEPP analysis of 500-feet a new or reconstructed road located above a 150 ft. RHCA buffer and WEPP analysis of a new or reconstructed road-stream crossing). These activities are predicted to produce 503.1, 698.39 and 643.8 pounds of sediment leaving the buffer respectively, but there is no analysis as to where these conditions might occur and no estimate of total sediment production that might occur in individual drainages. To utilize the WEPP Roads model properly, new roads should be appropriately segmented and the total amount of sediment from each segment added together. Segments should vary by appropriate parameters such as slope steepness, distance to buffers and width of the existing buffer below each road segment. These sediment numbers then need to be applied to the appropriate drainage, which in this case would be Blakes Fork, White Pine Creek, Mannering Creek or Upper Hangman Creek (8,350-acre drainage used in the 1997 EIS).

The EIS suggests that two-miles of system road will be built in the White Pine drainage. That is over 10,500 feet of system road which has the potential to produce 21*698.39 pounds or 7.3 tons of sediment according to WEPP numbers in the project file. There appear to be five stream crossings on this road generating 5*643,8 pounds or 1.6 tons of sediment. It is unclear how many miles of temporary road are being created in the White Pine drainage, but if five miles are being constructed that would be 176*503.1 pounds or 44.3 tons. This would indicate that 53.2 tons of sediment would be generated from the roads alone without any consideration of the harvest units. There are 4.6 square miles in the White Pine Watershed suggesting that 11.6 tons per square mile would be produced from the roads alone. Natural sediment was modeled to be 6-tons per square mile in the 1992 White Pine EIS, suggesting that the proposed roads would produce 192% of the base level.

Harvest units would produce appreciably less sediment, but review of the WEPP analysis indicates that skid trails, log landings and impacts of machine piling and burning were not considered in the analysis of either tractor harvested units or ground based fuel treatments. In the analysis, mature forest is basically converted to shrubs or young forests without any consideration of the activities required to make that change.

Data in the EA suggests 364-acres of the regeneration harvest units and all of the 276-acres of the commercially thinned stands will be harvested with ground-based equipment. The acreage of fuel treatments that could be conducted with ground-based could be as high as 700-acres since heavy equipment could be utilized in areas outside of INFISH buffers (riparian harvest is listed as 25-acres in the fisheries report).

If heavy equipment is utilized in the fuel treatments or within harvested areas, skid trails will be required and the use of this equipment will likely create areas of exposed mineral soil. Log landings will be required for both tractor and skyline harvested units. In contradiction to the watershed report, tractor harvested areas are unlikely to broadcast burned and it is more likely that heavy equipment will be utilized for fuel piling and burning in these units. This activity will create additional areas of exposed mineral soil and hydrophobic soils are likely to be created under the burn piles. Hydrophobic soils encourage more overland flow of water and soil displacement.

Given all of these factors, it is not unreasonable to assume that skid trails and areas of exposed mineral soil will compose 10% of ground-based regeneration and commercial thinning harvest units and 5% of stands treated with fuels management. According to the soils report, average DSD estimates for ground-based regeneration harvest units is 12%, average DSD for ground-based commercial thin units is 10%, and for fuel treatments is 4%. Most DSD impacts can be expected to result from skid trails and landings that are a necessary component of ground-based logging or the mechanical fuel treatment. Some acknowledgement of these activities should have been included in the WEPP analysis.

Proposed ground-based treatments in White Pine Creek are approximately 171-acres of commercial thinning, 72-acres of fuel treatment and 117-acres of regeneration harvest. There are also 527-acres of regeneration harvest using skyline logging systems. WEPP analysis of skid trails using all of the same parameters as the watershed report and a 150-foot buffer (Attachment 1) and a 300-foot buffer (Attachment 2) suggests sediment production leaving the buffer would vary from 1.3 to 1.7 tons per year on skid trails and other areas of exposed mineral soil. This activity could add another 42-55 tons (288 acres * 0.1 and 72 *0.05 * 1.3 or 1.7) tons of sediment to the drainage or 9.2-12 tons/square mile to the watershed. This is 153-200% of the base level sedimentation rate for the drainage.

Of lessor concern is the fact that skyline harvest units should have at least gone to the shrub condition in the analysis instead of the young forest condition. While the shrub condition is probably the best choice available in Disturbed WEPP to reflect conditions that might occur after regeneration harvest, it is pretty obvious that a recent regeneration harvest unit is not going to be dominated entirely by shrubs and certainly not by young forests as suggested in the watershed report. If shrubs had been used in the WEPP analysis for skyline units the average amount of sediment produced in units with a 150-ft buffer goes from 0.03 to 0.24 tons/acre leaving the buffer (Attachment 3).

Expecting 90% cover in regeneration harvest units that are then being treated with logggin and broadcast burning seems optimistic. The standard default for low severity wildfire in a non-logged area is 85% and additional fuel concentrations generated by logging are likely to increase burn intensity. If residual cover values are decreased from 90% to 80% in units with a 150-ft buffer the average sediment leaving the buffer goes from 0.04 to 0.20 tons/acre (Attachment 4).

There is also no acknowledgement that regeneration harvest units will include two treatments which include both the logging and the subsequent fuel treatment. Since these actions are occurring on the same acreage, predicted sediment production needs to be added together to appropriately predict sediment being generated from the harvest unit. For example, the estimated average sediment level from logging and burning by my estimates (using shrubs and an 80% cover value) would be 0.24 plus 0.20 or 0.44 tons/per acres (Table 1).

The watershed report claims that there will be no sedimentation from any activity since the WEPP model predicts that all activities are below 0.5 tons/acre and that this amount of sediment is unmeasurable. Review of the WEPP model outputs suggests that construction of skid trails and roads will exceed the 0.50 tons/per acre threshold in most situations within Forest Plan drainages if the WEPP analysis had been properly completed. Harvest treatments may also exceed the 0.50-acre if there are slight modifications of parameters in the WEPP model. For example, appropriately changing the post-regeneration harvest condition for skyline logging to shrubs instead of young trees can cause the amount of sediment leaving a 150-foot buffer to exceed the 0.50 tons/per acre threshold if there is a 15-year or 30-year rainfall event (Table 1). If WEPP outputs for sediment production are appropriately combined for logging and fuel treatments in regeneration harvest units, this threshold can also be exceeded if there is a 6-year rainfall event (Table 1).

Table 1 – Sediment production (tons per acre) in regeneration harvest cable units with a 150-foot buffer

Return Period	Skyline Logging Watershed Report – Using Young Forest	Skyline Logging Sediment Production Appropriately Using Shrubs	Watershed Report – Fuel Treatment Using 90% Residual Cover	Fuel Treatment – Using 80% Residual Cover	Combined sediment production – Logging and Fuel Treatment (Modified Analysis)
30 year	0.20	0.56	0.33	0.98	1.54
15 year	0.10	0.55	0.25	0.7	1.25
6 year	0.08	0.47	0.11	0.57	1.04
3 year	0.03	0.31	0.02	0.18	0.49
1.5 year	0	0.14	0	0.02	0.16
Average	0.03	0.24	0.04	0.20	0.44

In summary, the watershed analysis needs to be redone using a better watershed model or the WEPP analysis needs to be redone to include all of the appropriate tools available in this model. The biggest oversights appear to be the inaccurate accounting of road sedimentation and the lack of any consideration of the impact of skid trails and other activities that expose raw mineral soil such as landing construction. There are other problems such as using the young forest cover type for the vegetation structure type following skyline regeneration harvest and using low severity fire in tractor harvest units where fuel treatments will actually be conducted with heavy equipment. The watershed analysis assumes all prescribed burns are low-severity burns that retain 90% cover when the recommended value is 85% for low-severity wildfires. Prescribed burns in regeneration harvest units with are likely to remove higher amounts of cover than wildfires due to the slash accumulations resulting from logging. Sediment values for logging and fuel treatment in regeneration harvest units need to be added together since both treatments are occurring on the same acreage.

Objection 4 – The Hydrologic Analysis of Alternative 1 is Unrealistic.

The watershed report assumes that the project area and larger HUC-12 watersheds that it analyzes could be subject to a large-scale high intensity wildfire if the project proposal is not implemented. It does not assume that this could also occur under Alternative 2. In reality, the potential for a large-scale wildfire will still exist regardless of which alternative is selected.

Timber harvest could actually increase fire risk and not reduce it. Several researchers (Baker 2015, Rhodes and Baker 2008, Noss et al. 2006, Stone et al. 2004, Brown 2000) have recently found that timber harvest) can actually accelerate fuel drying and increase the risk of wildfire. Logging and road building operations will also increase the risk of an accidental wildfire start. In Northern Idaho and most other locations, weather is the most important factor in the start and spread of wildfire. When hot, windy and dry conditions occur, Alternative Two is not going to stop a wildfire and assigning speculative prejudiced scenarios to what is supposed to be a scientific evaluation of the facts is not appropriate.

You have scheduled a great deal of logging in a rather small area and interspersed all of this activity with prescribed fire. Opening of existing stands will increase the amount of sunlight reaching the forest floor and dry out fuels. Until logging slash is treated with prescribed fire or other methods it will represent an additional hazard particularly in stands treated with intermediate harvest prescriptions. Prescribed burning near recently logged areas also presents a very real fire hazard. In summary, your interpretation that there is a significant risk of wildfire with Alternative 1 and not with Alternative 2 is self-serving and inconsistent with the facts.

Objection 5 – Safety considerations associated with Unit F21 appear to be very exaggerated and the rationalization for fuel treatment in the INFISH buffer along Meadow Creek appears to be overstated.

Unit F21 is entirely within the existing INFISH buffer along Meadow Creek and it is located at the base of a large regeneration harvest unit (T02 and T03). It is supposedly being harvested for safety considerations along Road 328 so that the road corridor can be safely traveled in the event of a wildfire, but the treatment seems fairly excessive to achieve this goal. It is also unclear why the proposal is even necessary from a safety prospective. As far as I can tell, Unit 21 is not that much different than several other forested stands that are adjacent to existing roads across the Palouse Ranger District.

The Forest Service only manages a small section of Road 328 and most of land along the road is under the management of Potlatch Corporation. Unit F21 involves 1,200-1,400 feet of a road that is several miles long and it is unclear why this short section is considered such a safety hazard and how treatment of this small area would actually increase safety. There are no homes or managed camp grounds that would need evacuation in the event of a wildfire, and I am unaware of any recent wildfire situation on the highly-roaded Palouse Ranger District where the public has been trapped by a wildfire. Wildfire would likely spread uphill and away from Meadow Creek and this uphill area is already proposed for regeneration harvest in the proposal. No evidence is presented in the EA that there are a significant number of hazard trees in Unit F21 that might fall across the road in the event of a wildfire.

It is really hard to understand why fuel treatment is being proposed on 12-acres between Road 328 and Meadow Creek, when the concern is mostly associated with a few hazard trees that might fall across the road in the event of a wildfire. A 25-foot no-cut buffer will be retained along the stream, but beyond that the fuel treatment is expected to occur throughout the existing 300-foot INFISH buffer. Why is this level of fuel treatment necessary? Activities such as removal of small trees, piling and burning within the INFISH buffer and any use of mechanized equipment in the riparian zone are inconsistent with your stated objective.

If Unit F21 absolutely must be treated, please limit treatment to the selection of individual hazard trees that might fall across Road 328 and stay out of the INFISH buffer along Meadow Creek with all other activity! All felled trees should be retained on site, except for the portions of those trees that actually block the roadway.

Objection 6 - Inconsistent Description of the Forest Plan Water Quality Standards

The stated Forest Plan water quality standards do not agree between the Fisheries and Watershed report and both have failed to recognize that the Basic Forest Plan Standard applies to all streams on the Forest. Management activities on all Forest streams are to be managed below their geomorphic threshold. According the Jones and Murphy (1997) Watershed Condition report the geomorphic threshold for project area streams are: Blakes Fork Creek -278%, White Pine Creek - 267%, Mannering Creek - 283% and Meadow Creek - 283%. Philbin determined that the Geomorphic Threshold of Upper Hangman Creek (8,350-acre drainage) was 278% in the White Pine EIS.

Both the Watershed Report and the Fisheries Report suggest the Forest Plan Objectives for Blakes Fork and White Pine Creek are 400% over base (Low Fish – B-Channel). These numbers are well over the geomorphic threshold. Meadow Creek is listed as 350% (Minimum Viable – C - Channel) in the Fisheries Report, but in the Watershed Report it is listed at (Low Fish – C-Channel) 200% over base. Evidently, the Fisheries biologist missed that the Forest Plan was amended in 2001 to upgrade this standard. Hangman Creek is listed as 650% over base in the Watershed Report (Minimum Viable -B Channel) and 150% over base in the Fisheries Report (Moderate Fish-B-Channel) due to concerns over red-band trout in that drainage. Recommendations in the Fisheries report seem to be most appropriate. The Minimum Viable standard has been changed to Low or Moderate Fish on may past Clearwater projects by Forest

Plan Amendment. This is largely due to idea that the Minimum Viable standard provides no surplus fishery for the actual harvest of any fish from the drainage, and therefore is illegal.

Objection 7 – Why is Detrimental Soil Disturbance (DSD) is being allowed to exceed Region 1 standards in Unit 16?

The Regional Soil Standard for the amount of Detrimental Soil Disturbance (DSD) is 15%, but DSD in Unit 16 is being allowed to increase to 18%. The existing level of DSD is 5% in Unit 16, so there is no reason why the Regional Standard needs to be exceeded and restorative actions taken to correct the situation following logging. Please redesign Unit 16 to meet regional standards from the beginning. Elimination of tractor logging within the unit or use of alternate harvest methods such as cable logging for the entire unit could easily correct this problem.

Objection 8 - Vegetation management objectives are based on flawed conclusions and purpose and need statements that do not reflect the integrated objectives of the Clearwater Forest Plan

General

The current vegetation analysis relies on desired conditions for structural stages and species composition from documents prepared for the upcoming Revision of the Forest Plan (Probert 2017). Specifically, the analysis utilizes the desired condition for Management Area 3 (Forest Plan Revision - Draft Environmental Impact Statement) and suggests that the project area is not meeting the "Desired Conditions" largely because there are not enough stands in an early seral condition and that too many of the stands are composed of grand fir, Douglas fir and western red cedar.

Biophysical Setting

The analysis erroneously suggests that the project area is within the Idaho Batholith Breaklands biophysical setting when it should more appropriately be located in the Bitterroot Mountains Upland biophysical setting. According to the geological analysis there 3,476 acres of colluvial mid-slopes, 3,407 acres of low relief rolling hills and 145 acres of stream bottoms in the project area. There are no breaklands!

Patch Size

The vegetation analysis inaccurately quotes Nez Perce-Clearwater National Forests Assessment (USDA, 2014) and suggests patch sizes ranged "from 57 acres (high severity) to 1,000 acres (low severity), depending on fire regime and topography". The Assessment actually says "A study done on the forest showed that on both north and south aspect breaklands, patches averaged 57 acres, and 47% of old forest acres were in patches of 1,000 to 6,000 acres. (Green, unpublished data)."

According to the Nez Perce-Clearwater National Forests Assessment (USDA, 2014) "Patches on the Uplands biophysical setting were much more variable than those on the breaklands (Figure 1-21). Old forest patches averaged 30 to 60 acres, with half to two-thirds of the acres occurring in 40 to 1500-acre patches (Green, unpublished, 2000)." While I agree that historical patch sizes would have been larger than 40 acres, this suggests that existing patch sizes may not be as significantly different from historical sizes as stated in the vegetation report. This is particularly relevant when one considers the large harvest units that have occurred on nearby private lands.

Warm Moist PVT (95% of the Project Area)

The White Pine Vegetative report accurately describes the fact that 95% of the project area occurs in the Warm Moist PVT, but I strongly disagree with the conclusions of the report that conversion to more early seral types is a current need in the project area and that extensive fuel treatments are necessary. The analysis has failed to consider successional pathways for the common forest habitat types found in the project area and look at the larger landscape for impacts to various wildlife, aquatic and sensitive plant species. Early seral habitat is not in short supply on the Palouse Ranger District.

According to the White Pine Vegetative Report, 63% of the project area is currently composed of grand fir and western red cedar forest types. Another, 22% is composed of Douglas fir dominated stands. According to the vegetation report only 13% of this PVT is composed of ponderosa pine, western larch and white pine, but your objective is to convert 50-90% of the project area to these three species. Your objectives suggest that you would reduce grand fir, Douglas fir and western red cedar to 12-25%. Currently these three types compose 85% of the project area.

Such wholesale conversions are very risky and make no sense from an ecological perspective. There is a good reason why 85% of this PVT is currently composed of grand fir. Douglas fir and western red cedar. All three of these species find prime habitat in this PVT and historically they have always made up a significant component of the mixed species stands that are common in this PVT. Their presence does not indicate a need for "restoration". In fact, western red cedar is one of the longest lived and most resilient species found on the Nez Perce/Clearwater National Forests. Western red cedar has few problems with insects and disease and historically old growth cedar stands where the hallmark of stable stands that lasted for hundreds of years on the Nez Perce - Clearwater.

It would be more appropriate to use existing habitat types (Cooper et al. 1991) as the basis of your analysis. Habitat types are generally determined in forest stand examinations and successional pathways are outlined by Cooper et al. (1991) for each habitat type. Habitat types in the project area are most likely to be in cedar/queencup beadlily in all but some of the driest south facing slopes. These drier sites likely support grand fir/queencup beadlily habitat types.

According to Cooper et al. (1991), the major seral species in the cedar/queencup beadlily habitat type are Douglas fir, grand fir and western larch. They also indicate that white pine and ponderosa pine will do well in this habitat and that Western red cedar is the climax species.

In the grand fir/queencup beadlily habitat type they indicate that grand fir "in addition to being the climax dominant, is a major and most consistent dominate of seral stages, even following clearcutting or severe wildfire." They also indicate that Douglas fir is the only consistently important seral species in the grand fir/queencup beadlily habitat type.

Thus, the presence of Douglas fir, grand fir and western red cedar are the norm for the project area, and are not the result of fire suppression, historical logging or other factors as you have outlined in both the Vegetation Report and Environmental Assessment. Based on the information from Cooper et al. (1991) your ideas that the project area is "inconsistent with historical and desired future conditions" in the purpose and need statement is just plain wrong. Forests in these habitat types are generally competition-based systems that develop after large scale stand replacing fire. Stand density is usually not the driving factor in the initiation of these large-scale fires that generally occur at intervals of 250-300 years and under drought conditions such as those that occurred in 1910 and 1933.

This fact is even documented in the Nez-Perce Clearwater National Forest Assessment (2014) "Clearly cool wet trends resulted in lower wildfire occurrence regardless of the fuel loading across the region. Climate is the most controlling factor for wildfire and the one we can least influence." Green et al. (1992) report that the oldest trees, in the old growth habitat group most appropriate for the project area (Type 4B), averaged 210 years with a range from 160 to 264 years. They report that "western red cedar may reach an age of 400-700 years".

In western red cedar habitat types intolerant species like western white pine and western larch have an initial advantage due to fast growth rates that allow them to capture the site and outpace the growth of other more tolerant species like grand fir, Douglas fir and western red cedar. Ponderosa pine, while present, is generally out competed in all but the driest locations. In the 4A and 4B old growth descriptions, Green et al. (1992) report that "Ponderosa pine is a seral species on cedar and grand fir habitat types."

White pine and larch can remain on the site for long periods of time, but they are gradually replaced by more tolerant grand fir and western red cedar on more northerly aspects. On southerly aspects Douglas fir has an advantage due to its greater tolerance of drought and intermediate shade tolerance. White pine is not favored on southerly aspects due to moisture requirements, but western larch does well. The introduction of white pine blister rust changed this dynamic and gave a greater advantage to grand fir and cedar especially on northerly aspects.

Most of the competing trees would have been present at the time of stand establishment and stands would have changed overtime due to competition, blowdown, and insect and disease attacks. These are factors that the EA appears to dismiss as unnatural conditions, even though most stands have low to moderate levels of root disease and other pathogens and fuel loadings are not excessive. Contrary to assertions in the EA, the conditions in the project area are typical of other locations in Northern Idaho and appropriate for the habitat types that occur in the project area.

Except for past harvest operations and the introduction of blister rust, this system pretty much operates as it did historically. Overtime, white pine may make a comeback as foresters develop and plant rust resistant stock and the tree develops resistant mechanisms on its own. I agree that the retention of disease-free white pine should be included in harvest prescriptions and planting of disease resistant stock practiced. However, a strategy that emphasizes white pine as the primary component of most stands (as you propose here) is highly questionable given the current status of white pine blister rust. White pine is subject to an introduced pathogen that has resulted in catastrophic losses across the species range and we don't know how that pathogen might respond to climate change.

The fact that these systems always had high densities of trees is well documented by Haig (1932) in his description of the white pine type years ago and long before the effects of fire suppression was considered a major issue. He reported that "The extremely rapid decrease in number of trees with increasing age is strikingly apparent. On good sites (site index 60) the total number of trees per acre drops from 4,700 at 20 years to 720 at 80 years, and to 390 at 120 years. The number of trees also decreases rapidly with increase in site index." On excellent sites (Site index 70) Haig found an average of 2,800 trees per acre over a diameter of 0.6 inches in diameter at 20 years of age, on fair sites (site index 50) Haig's tables show approximately 7,800 trees per acre over a diameter of 0.6 inches DBH at age 20 and on poor sites (Site Index 40) he found an 11,500 trees per acre at age 20.

Clearly, the idea of understory encroachment is not an applicable in the moist cedar habitat types that predominate in the Warm Moist PVT. Tree species found here like cedar, grand fir and white pine have made very little genetic investment in mechanisms to survive fire. Instead they rely on fast growth and extensive canopies that allow for light capture in densely stocked stands.

In the Warm Moist PVT your desired condition is to have only 10-35% of the PVT composed of stands exceeding 20" + DBH inches. Again, this appears to be an underestimate for an area that is dominated by moist habitats that seldom burn except in large scale stand replacing fire events. Trees grow quickly on these sites and stand replacing fires generally occur at intervals of 250-300 years or longer as evidenced by historical logging photos and large diameter old growth trees than can still be found on the Forest. Assuming trees can reach 20" + DBH in as little as

100 years on these sites (Haig 1932) it is not unrealistic to suggest that 35-60% of the historical stand in this PVT would have had stands exceeding 20" + inches.

You have not even followed your own objectives in the Warm Moist PVT regarding the number of stands you propose to change to young age classes and the amount of forest you will retain in the 20+ size class. Your objectives call for having 15-25% of the landscape in the 0-4.9" size class, yet you propose moving 33% of the stands to this smaller size class. This comes at a 3% decline of stands exceeding 20+ inches (12% to 9%) and a 14% decline (39% to 25%) in stands in the 15-19.9" size class. Your objectives for stands in the 20+ inch size class is 10-35% and in the 15-19.9" size class is 15-25%.

These older stands are of critical importance to a variety of wildlife species including the fisher, goshawk, pileated woodpecker, pine marten and even elk on the Palouse Ranger District. Extensive levels of timber harvest are occurring on State and Private lands on the Palouse Ranger District. The White Pine project area is essentially surrounded by extensive cutting on private land and you have not even considered the impact of that activity in your cumulative effects analysis.

You attempt to rationalize the extent of this harvest by referring to an obscure section of the existing Clearwater Forest Plan that displays what might happen if the 1987 Forest Plan direction was continued for 50-years. This section has no meaning for timber harvest objectives in the existing Forest Plan and it is even stated that this is "not likely to occur" on page II-18. Your reference in the Environmental Analysis to the harvest of 440 million board feet of timber as a Forest Plan objective is very misleading. This level of harvest was the maximum sustained yield as predicted by the inaccurate FORPLAN model and is not a Forest Plan objective. The Allowable Sale Quantity on the Clearwater National Forest is 173 MMBF as written in the 1987 Plan and this was further reduced to 80 MMBF under the Forest Plan Lawsuit Settlement Agreement. The 1987 Forest Plan includes many other objectives such as the protection of water quality and fish and wildlife habitat that you are not considering when you tout the idea of managing the Forest at the questionable maximum sustained level.

Warm Dry PVT (5% of the Project Area)

Your idea of understory encroachment is most applicable to the warm dry PVT which comprises 5% of the project area, but even here your thinking appears to be very cloudy. Removal of small diameter understory trees with a focus on grand fir would likely be an appropriate treatment, but your emphasis on wholesale conversion to ponderosa pine dominance types does not make any sense. You have a goal of converting 50-60% of this PVT to the ponderosa pine dominance type when the current condition is only 19%.

This seems very unrealistic in the relatively moist climates of the project area. It is likely that Douglas fir played a much more dominate role than you suggest in this PVT and that historical stands in the Warm Dry PVT were composed of a mixture of Douglas fir and ponderosa pine. Douglas fir is a thick barked species that is relatively resistant to understory fire and older trees would have survived understory wildfires much like older Ponderosa pine. It should be noted that Douglas fir dominance types (35% of the project area PVT) are currently almost twice as common as ponderosa pine (19% of the project area PVT).

In the Warm Dry PVT, your desired condition is only for 10-35% of the landscape in older forest exceeding 20" + DBH. In forests that are dominated by ponderosa pine and understory fire regimes at frequent intervals as you suggest for this PVT, this number should be much higher. It would not be unrealistic to expect that 35-60% of this PVT was composed of older stands exceeding 20+ inches historically. Once again, you propose to exceed your own objectives for the amount of stands in the 0-4.9" size class and will increase the amount of this size class to 32% of the Warm Dry PVT. This is 7% beyond your objective of 10-25% in this size class.

Objection 9 – Timber harvest, fuel treatments and road construction in existing old growth or previously designated old growth replacement stands

The Environmental Assessment claims that old growth recruitment stands that were designated as recruitment in the 1997 White Pine EIS (Alternative G Modified) will not be impacted by timber harvest. However, it appears that this may not be true for Units T06 and possibly T07. Although it is difficult to tell from the included maps, both of these units appear to extend into previously designated areas along Blakes Fork Creek. If there is any timber harvest within previously designated recruitment stands, such treatments need to be dropped from the proposal.

There are also 110 acres of fuel treatment in the Blakes Fork Creek old growth recruitment area (Units F1 and F2) and 26 acres of fuel treatment in stepdown old growth (Units F3 and F16). The purpose of these treatments is very unclear as most of the areas proposed for treatment (except for Unit 16) are not adjacent to private land and they all border existing regeneration harvest units. Given the amount of past and proposed timber harvest the fuel treatments cannot have much additional value as fuel breaks and they offer little value to the developing recruitment and stepdown old growth stands. Such treatments will simplify the complexity of these natural stands as they progress towards the complexity that is usually associated with old growth. Heavy equipment operations will be particularly disruptive to old growth characteristics, particularly if skid trails must be constructed to accommodate any heavy equipment use.

Please reconsider your proposal to harvest and conduct fuel treatments in field verified old growth, step-down old growth or previously designated old growth replacement stands.

Objection 10 - The need for additional fuel treatments is very questionable

The project proposal includes 1,707-acres of regeneration harvest and 276-acres of commercial thinning. The proposal is occurring in an area that was previously harvested approximately 15-years ago and most of the proposed units involve the removal of leave strips adjacent to past harvest units. The area is already extensively roaded and the new proposal will add at least two more miles of system road and 15-miles of temporary road. Fire access is currently very accessible in the project area.

Most of the fuel treatments are scattered across the project area in locations that not have been previously logged and they are often adjacent to the proposed timber harvest units. It appears that the only locations that have been spared from some sort of treatment in the project area occur in some old growth retention areas, some riparian buffers and portions of the White Pine Scenic Drive. Only a few of the fuel treatments are located adjacent to private land (Hangman Creek area) where there might be a concern for wildfire spread to from and to private land.

Given the extensive amount of past and proposed timber harvest, fire accessibility and the expense of the treatments it appears that most of these treatments are unnecessary. The fuel treatments will cause impacts important resources such as impacts to sensitive plants, loss of snags and downed wood, removal of important old growth components, impacts to undisturbed wildlife habitat and impacts to aquatic resources. Why must almost every acre of the project area be treated with some sort of management activity?

Objection 11 – General wildlife concerns

My overall impression is that the White Pine project will have negative consequences to most wildlife species using the area. Alternative 2 includes 1,707-acres of regeneration timber harvest, 276-acres of commercial thinning and 722-acres of fuel treatments in a 7,028-acre area that already has had extensive timber harvest in the recent White Pine Project and other older projects. Surrounding private land just outside of the project area has already been heavily impacted by timber harvest and agricultural activities.

At least eight regeneration harvest unit complexes exceed 100-acres and there are several others that exceed 40 acres. This has eliminated the idea of providing suitable hiding cover and thermal cover adjacent to harvest areas. Harvest and fuel treatments will remove snags, downed wood, shrubs, understory plants and important hiding cover.

Two miles of new system road will be constructed along with 15-miles of temporary road. This will occur in an area that already has a high road density. Even with decommissioning, temporary roads will provide travel corridors that may be accessed as user created routes. This has been observed on many past projects.

The wildlife analysis makes several erroneous conclusions that are not supported by the best available science and fails to answer the "so what" question of what habitat losses associated with the project mean. Spatial requirements of territorial species have generally not been considered and no thresholds of management activity have been set for most species. The impact of high levels of motorized use has not been considered for any species. While some roads will be closed or decommissioned, motorized trails 221 and 223 remain open to use during the hunting season. These trails and the roads that they intersect provide easy access to most of the project area during the hunting season. The examination of cumulative effects is also very weak for most species.

Schultz (2010) outlined most of these problems in a critique of Forest Service wildlife analysis. Schultz found that the Forest Service often relies on stand exam queries to determine acres of suitable habitat, but then makes no interpretation as to what that loss of habitat means to the species. Similar to what has been done on the White Pine project, they fail to set meaningful thresholds and assume that habitat losses are insignificant. Schultz (2010) concludes that "the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact."

Schultz (2010) also examined the Sampson assessment (Sampson 2006a and 2006b) which is the mentioned in the discussion of several project area wildlife species. She states that the Sampson assessment "suffers from several problems, the most prominent being that the analysis is based on habitat availability, which alone is insufficient for understanding the status of populations (Noon et al. 2003, Mills 2007)". Her recommendations generally call for more peer review of large-scale assessments and project level management guidelines. She suggests that we must adopt more robust scientifically sound monitoring and measurable objectives and thresholds if we are to be successful in meeting obligation of maintaining viable populations of all native and desirable non-native wildlife species. This has not been done on the White Pine project.

An interesting observation of the Sampson assessment is that it focuses on short-term viability and long-term viability using what is called the 50/500 rule (Bessinger 2002). In fact, all six species considered in Sampson's analysis are all evaluated for short-term viability using this "rule of thumb". Sampson did not evaluate long-term viability for the fisher and marten, but he did do if for the goshawk, pileated woodpecker, flammulated owl and black-backed woodpecker. Sampson concluded that "In regard to long-term viability, this conservation assessment has found that long-term habitat conditions in terms of Representativeness, Redundancy, and Resiliency are "low" for all species."

The White Pine wildlife analysis does not mention Sampson's long-term viability conclusions, and only focuses on his short-term projections which are based on maintaining 50 individuals (25 male and 25 female). In his analysis, Sampson merely uses home range size for each species and makes assumptions of overlap in ranges of males and females. Home range size is then multiplied by the effective population size (n_e - a number that includes young and non-breeding individuals - Allendorf and Ryman 2002) and this is projected as the amount of habitat required to maintain a minimal viable population in the short-term. This simplistic approach ignores a multitude of factors and makes no assumptions about habitat loss or change over time. For the fisher and marten, Samson uses a "critical habitat threshold" as calculated in another publication (Smallwood 2002). Some of these numbers have been reported in the EA for the various species of concern.

There are several problems with such an approach and the risk to the species would be extremely high if any of the species ever reached these levels in the Northern Region. Surely, all six species would be listed as endangered if this was to occur and the probabilities for their continued existence would be very low. There is also no way that National Forest Management Act (NFMA) and Endangered Species Act (ESA) requirements could be met of maintaining species across their range and within individual National Forests with such an approach. Mills (2007) captured the futility of such approach in his book on Conservation of Wildlife Populations: "MVP is problematic for both philosophical and scientific reasons. Philosophically, it seems questionable to presume to manage for the minimum number of individuals that could persist on this planet. Scientifically, the problem is that we simply cannot correctly determine a single minimum number of individuals that will be viable for the long term, because of inherent uncertainty in nature and management…."

Sampson also admits that "Methods to estimate canopy closure, forest structure, and dominant forest type may differ among the studies referred to in this assessment and from those used by the Forest Service to estimate these habitat characteristics" and that "FIA sample points affected within the prior 10 years by either timber harvest or fire are excluded in the estimates of habitat for the four species" and finally that "FIA does not adequately sample rare habitats". This especially concerning given the reliance on the FIA queries to identify suitable habitat and the fact that the data used in the analysis is now over 20 years old.

Since the Sampson short-term viability analysis was completed, we have seen more wildfires and the level of timber harvest has increased on the Nez Perce – Clearwater National Forest. More sales are being planned at this time (Clear Creek, Lolo Insects and Disease, Center Johnson, Windy Shingle, Hungry Ridge, Tinker Bugs, Red Moose Divide, End of the World, Smith Ridge, etc.) than at any other time in the past twenty years.

I therefore object to the use of the Sampson short-term viability analysis in the EA. The short-term viability analysis is scientifically unsound and it is very doubtful it could sustain scientific peer review. The analysis is clearly out of date and does not reflect recent increases in both logging and wildfire. Schultz (2010) captured this sentiment in her critique of the Sampson report: "some interviewees also thought the work should be peer reviewed, especially if it was conducted by USFS management, and several were skeptical that it would survive such review." I agree with the reviewers.

The analysis assumes the project will not contribute to cumulative habitat losses at the Forest level, when the Nez Perce/Clearwater has no idea what the cumulative impact of numerous past and proposed projects are having on the species of concern. While I am encouraged to see that the Forest has included some project level monitoring for species like the goshawk in this project, I am concerned that it has been over 30-years since the current Forest Plan was signed, yet there is currently no statistically reliable monitoring information on the impacts of Forest Service activities on any wildlife species of concern. With the possible exception of elk (populations monitored by the Idaho Fish and Game) and the North Idaho Elk Guidelines (Servheen et al. 1997), there is no habitat proxy that is being used on the Forest that has any field verification. For example, it has not been confirmed that old growth standards are truly protecting old growth-related species like the fisher, goshawk, pine marten and pileated woodpecker.

The Forest Service is fond of the argument that viability cannot be discussed at the project level, but they then use habitat numbers outside of the project area to defend excessive development within the individual project area. They rationalize that sufficient habitat is available in other areas to make up for losses within the project area. Under this scenario, no project ever creates a significant impact and species are lost by "10,000 cuts" as project after project is allowed to proceed. The Forest Service cannot have it both ways; either they need to have project designs that create minimal impacts to species of concern, or they need to have monitoring information that confirms their habitat proxies are "providing for a diversity of plant and animal communities based on the suitability and capability of the specific land area" as required by the National Forest Management Act.

Objection 12 – Failure to evaluate habitat for the Black-backed woodpecker

I don't understand why there is no analysis of black-backed woodpecker habitat when there are mature stands and dead trees that could provide suitable habitat. While black-backed woodpeckers are known to respond positively to recent wildfires, populations are thought to persist at lower levels in unburnt mature and old growth stands. An unpublished report (Taylor and Schachtell 2002) by former Idaho Panhandle wildlife biologist Jenny Taylor found considerable use of unburned areas on the nearby Idaho Panhandle National Forest and black-backed woodpeckers have been documented using unburnt stands on the Palouse Ranger District in the past.

The Environmental Assessment indicates that black-backed woodpecker habitat is not being evaluated because "tree mortality is patchily distributed across the project area" and that there are “insufficient areas of snags clustered at densities required for nest sites.” This appears to be in contrast language in the Draft Decision document (Page 3) which states “there is widespread insect and disease infestations within the project area”.

Regeneration harvest and fuel treatments are clearly going to impact snags and diseased trees and the impacts to black-backed woodpecker habitat should have been analyzed in the EA. When coupled with past actions in the project area and nearby activity on private land and other nearby Forest Service projects (Gold Hill, Strychnine Pine and Crane Point) there is a high probability that black-backed woodpecker habitat will be negatively impacted.

Objection 13 - Conclusion that bats will not be harmed by proposed project

The White Pine wildlife report suggests that there will be a loss of snags in regeneration harvest units and commercially thinned areas, but that the impacts of fuel treatments will be negligible. Thus, there is some acknowledgement of bat habitat loss in the wildlife report, but these losses are generally discounted due to the fact that individual trees, old growth stands and PACFISH buffers will be retained. Conversion to ponderosa pine, larch and white pine is suggested as a positive development for bats, despite the fact that the project proposal will remove a considerable amount of habitat in the form of older forests and dead trees. The overall conclusion of the wildlife report is that Alternative 2 “may impact individual bats or their habitat, but are not likely to result in a trend toward federal listing or reduced viability for the populations or species within the project area or range wide.”

The analysis for bats is just another example of how the conclusions of the vegetative analysis have crept into the entire EA including the wildlife report. Trees that die in the upper canopy are important to bats and these are more likely to occur in older stands rather than newly regenerated stands regardless of tree species. Lacki and Baker (2007) demonstrated that most roost snags for the fringed myotis extended above the existing canopy by an average of 33.8 feet and were larger than random snags (32.5 inches for roost trees and 20.8 inches for random snags). Random snags generally had heights that did not extend above the existing canopy (-8.2 feet). Roost trees occurred in stands with more trees per acre (239 vs 119 per acre) and higher basal areas of trees over 9.8 inches in diameter (125.5 ft^2/acre vs 69.7 ft^2/acre).

Working in three different study areas Lacki et al. (2010) found in Washington, important factors for roost tree selection by long-legged myotis were tree height, surface area of exfoliating bark, and if the tree had a broken top. Bats selected recently dead snags whose height extended above the general canopy. Intact snags were preferred over broken topped snags, since they were more likely to extend above the canopy. In Oregon, bats preferred areas with high snag basal area and a diversity of stands within 250 meters of the roost tree. Bats in Oregon also preferred trees without broken tops. In Idaho, bats preferred roost trees in stands with lessor amounts of edge and fewer stand types within 750 meters of the roost tree.

Most foraging by bats occurs over water where insect populations are higher. As shown by Lacki et al. (2010), Idaho bats preferred to roost in stands with less edge. Alternative 2 will create a significant amount of edge and remove older forest stands and existing snags. The wildlife report claims this will improve habitat conditions for bats in the long-term, but provides no data to support this assertion. It is the responsibility of the Forest Service to provide monitoring data or scientific information that stand conversion to ponderosa pine, white pine and larch would improve foraging conditions for bats as stated in the EA. Bat habitat is not going to be improved by implementation of Alternative 2 and it can be expected that there will be a general decline in bats and other species that utilize older forests and snags.

Objection 14 – Failure to utilize the best available science in the fisher habitat analysis

As accurately reported in the White Pine Wildlife Report, most studies have found that fishers are reluctant to stray from forest cover and that they prefer more mesic forests (Buskirk and Powell 1994, Olson et al. 2014, Schwartz et al. 2013, Sauder 2014, Sauder and Rachlow 2014, Weir and Corbould 2010). Both Sauder and Rachlow (2014) and Weir and Corbould (2010) predicted the influence of openings on fisher habitat occupancy based on their data. For example, Weir and Corbould (2010) predicted that a 5% increase in forest openings would decrease the likelihood of fisher occupancy by 50%.

Sauder and Rachlow (2014) suggested that an “increase of open area from 5% to 10% reduces the probability of occupation by fishers by 39%. Sauder and Rachlow (2014) reported that the median amount of open area within fisher home ranges was 5.4%. This was consistent with “results from California where fisher home ranges, on average, contained < 5.0% open areas” (Raley et al. 2012).

Sauder and Rachlow (2014) found that radio tracked fishers had an average of 50% mature forest (greater than 82 feet tall) and less than 5% open areas in their home range. According to their work of the arrangement of habitat is very important and they suggest that fishers select home ranges that have forests “arranged in connected, complex shapes with few isolated patches, and open areas comprising <5%...” Concentrated areas of timber harvest like those proposed on this project could significantly influence an individual fisher home range.

Sauder and Rachlow (2014) report the average home range size is approximately 12,200 acres and for a female fisher and approximately 24,300 acres for a male fisher. Home ranges generally do not overlap greatly for the individual sexes (21.3% for females and 15.3% for males), but male home ranges can overlap female home ranges.

Based on these findings, the 7,028-acre project area is smaller in size than that of a female fisher and the analysis area should be expanded to properly evaluate impacts on this species. Most appropriately the analysis area could be expanded to the north to include lands on the Idaho Panhandle National Forest or to the east to include portions of the Clearwater National forest in eastern half of the Mannering Creek drainage. These areas are likely to support fishers since there are two observations of the species reported just outside of the project area (Animal Observations of At-risk Species Map in the Project File).

Private land to the south and west of the project area is already heavily logged or includes agricultural areas that are unlikely to support the fisher. The analysis area needs to be large enough to support the home range of a female fisher, but not so large as to dilute the overall impacts of the proposed White Pine project. Using two large HUC 12 drainages (Hangman Creek and Meadow Creek) as was done in the Wildlife Report is an example of how impacts can be diluted when a larger analysis area is utilized.

To evaluate fisher habitat properly, the analysis area should have been expanded to 12,200 acres to represent an area that might accommodate a female fisher's home range. This approach would be very similar to the designation of the elk analysis areas, but be based on the home range size of a female fisher instead of a female elk as is done in the elk guidelines. A similar process was used in the 1997 White Pine EIS for the evaluation of goshawk and pileated woodpecker habitat.

If a larger area is utilized it should be subdivided into theoretical home ranges with at least one theoretical home range centered on the project area. Theoretical home ranges should not overlap in order avoid double counting of habitat and the range size of the female is preferred since these home ranges are more directly tied to reproductive success. Sauder and Rachlow's (2014) recommendations should have then been applied to the expanded area to see if it could support a female home range and to determine how that home range might be impacted by the project proposal.

Currently, the habitat evaluation of fisher habitat relies on an older and questionable habitat evaluation by Sampson (2006b). That report is out of date and of questionable reliability when it was published (Shultz 2010) and does not consider the more recent findings of Sauder and Rachlow (2014). The idea that there are only 270-acres of suitable fisher habitat in a 7,028-acre project area that is mostly in the warm moist (PVT) seems ridiculous. This PVT represents prime habitat for the fisher (Sauder and Rachlow 2014) and 12% (801-acres) of the existing stands in the Warm Moist PVT are in size classes exceeding 20+ inches and 39% (2,604-acres) are in size classes between 15-19.9". These areas should all be suitable habitat for the fisher.

Using numbers from the Vegetation Report (Seral Shrub/Grass and stands in the 0-4.9" size class) it appears that approximately 15% (1,001-acres) of the Warm Moist PVT are currently in an open condition and 14% (49-acres) of the Warm Dry PVT are currently in an open condition. According to the Sauder and Rachlow (2014) publication (Figure 2) a landscape with 15% open area would have a relative probability of occupancy of around 25%. This number could be increased if more unharvested areas (like those in Mannering Creek) were added to the evaluation area. For, example 1,050 acres is approximately 8% of 12,200-acres (female fisher home range size) or a relative probability of occupancy of around 50%.

Proposed harvest levels on Alternative 2 are expected to increase the amount of open area to 39% (2604-acres) of the Warm Moist PVT and 38% (134-acres) of the Warm Dry PVT. This amount of open area would suggest a relative probability of occupancy of 0% in the project area according to the Sauder and Rachlow (2014) publication.

The conclusion of the wildlife report is that Alternative 2 "may impact individual fisher or fisher habitat, but are not likely to result in a trend toward federal listing or reduced viability for the populations or species within the project area or range wide". This conclusion seems highly subjective and self-serving given the fact that no comprehensive evaluation of fisher habitat has occurred on the Nez Perce/Clearwater National Forest using the latest scientific literature from publications like Sauder and Rachlow (2014) and the fact that the relative probability of the project area to support the fisher will be reduced to zero in the project area.

This does not even consider the fact that you intend to conduct several fuel treatments in mature stands (722-acres) and commercially thin 276-acres. These activities will remove snags, downed logs and other forest components like forest cover that are important to the fisher and the prey species on which the fisher relies. These impacts should have been given more consideration in the fisher analysis, which basically ignores the findings of Sauder and Rachlow (2014).

Sauder (2014) suggested that "almost 80% of the predicted habitat for fishers in the Rocky Mountains of Idaho and Montana occurs on federally owned national forests, and we conclude that successful conservation of fishers in the Rocky Mountains of Idaho and Montana will rely heavily on policy and management decisions made on these landscapes." He estimates that the Nez Perce/Clearwater National Forest contain approximately 22.7% of the probable habitat and 26.3% of the high-quality habitat for this species in Montana and Idaho. Most of this habitat occurs on low elevation areas like the project area and other locations that are considered the "front country" on the two National Forests. One of the most important conclusions of Sauder and Rachlow's work was their conclusion that "wilderness and roadless areas alone are unlikely to provide sufficient habitat or population reserves to ensure persistence of fishers in Idaho and Montana."

Similar conclusions to those presented in the White Pine project have been brought forward on many other recent projects on the Nez Perce/Clearwater National Forest (French Larch, Lower Orogrande, Johnson Bar, Clear Creek, Little Boulder, Dutch Oven, Windy Shingle, Center Johnson, Smith Ridge, Tinker Bugs, Crane Point, Gold Hill, End of the World, Hungry Ridge etc.). Fisher habitat is clearly at risk as a result of the White Pine project and other proposals being brought forward on the Nez Perce-Clearwater National Forests. Like White Pine, most of these projects target the already heavily logged and roaded front country which provides prime fisher habitat on the Nez Perce-Clearwater.

At some point, all of this activity is going to have an impact on the fisher population across the Nez Perce/Clearwater National Forests. The findings of Sauder and Rachlow (2014) cannot continue to be ignored on each and every project, with the same old statement that the "project may impact individual fisher or fisher habitat, but are not likely to result in a trend toward federal listing or reduced viability for the populations or species within the project area or range wide". You must consider the cumulative impact of all of these projects and adjacent activity on State and Private land which is extensive on intermingled lands of the Palouse Ranger District

Objection 15 – The pileated woodpecker habitat analysis is not supported by the best available science and significantly underestimates suitable habitat and project level impacts

The wildlife report claims there are 412-acres of pileated nesting habitat in the project area based on the acreage of stands with 60% crown closure and an average DBH size class of 20+ inches. This number seems low given that the vegetation analysis suggests that 12% (843-acres) of the stands in project area exceed 20+ inches and most unharvested stands have crown closures exceeding 60%. There are also 2,604-acres (0.95*0.39*7,028) in the warm moist vegetation type and 148-acres (0.05 X 0.42 X 7,028) in warm dry PVT in the 15-19.9-inch DBH size class. Some portion of the stands in this smaller size class likely include individual snags/trees exceeding the 20-inch diameter size and are suitable for nesting. It should be relatively easy to identify these stands based on completed stand examinations or field examinations that you have done as part of your work on this proposal.

While pileated woodpeckers do require individual snags greater than 20 inches DBH for nesting (Bull and Holthausen 1993, McClelland and McClelland 1999) they can successfully nest in mature stands that contain individual nesting snags of suitable size. They do not require that the average size of all trees within the nest stand to exceed 20-inches as you have apparently concluded in your evaluation of suitable nesting habitat.

The pileated woodpecker analysis is not spatially explicit. While it is mentioned in the wildlife report that the average home range size of pileated woodpeckers is approximately 1,005 acres (Bull et al. 1992) and that methods of determining home range suitability are available in publications by Bull and Holthausen (1993) and Bull et al. (2007). These publications are not utilized in the pileated woodpecker analysis. Using the Bull publications would have given the Nez Perce/Clearwater National Forest a way of evaluating habitat potential and setting cumulative habitat thresholds where habitat loss becomes significant (Schultz 2010). Such an analysis would have been based on the latest scientific information and would display some concern for maintaining management indicator species within the project area.

Bull and Holthausen (1993) recommend that approximately 25% of the home range be old growth and 50% be mature forest. They suggested that 50% of the area should have stands with greater than 60% canopy closure and at least 40% should remain unlogged (any type of logging). Follow up work (Bull et al. 2007) found that bird density did not change in 30 years (despite major infestations of spruce budworm) in home ranges meeting these guidelines, unless extensive regeneration harvesting (like that proposed on the White Pine project) had occurred in the home range. They defined extensive regeneration harvest as 25% of the area. They also examined nesting success and found that birds that successfully produced young had on average 85% of their home range unlogged and less than 15% logged with any type of logging including fuel reductions. Whereas unsuccessful nesters had 62% of the home range unlogged and 38% logged (Bull et al. 2007).

In order to conduct such an analysis, it would be necessary to identify potential or theoretical home ranges across the project area. Home ranges should be roughly 1,000-acres in size and it is best if topographical features are utilized to define the home ranges and all potentially suitable acreage in the project area is included. This assures that there is no overlap or unevaluated acreage in the project area like might occur if circular areas are utilized or if the theoretical home ranges are centered on nesting habitat which was the approach in the 1997 White Pine EIS.

The 1997 EIS analysis does present the concept of theoretical home ranges, but it needs to be updated with current information. Instead of four home ranges centered on nesting habitat, it would be more appropriate to identify seven to ten non-overlapping theoretical home ranges that cover the entire project area. I suggest seven to ten theoretical home ranges due to the ownership patterns in the project area and the idea that topographical features likely will not follow ownership boundaries.

Cumulative impacts have not been adequately addressed in the pileated woodpecker analysis and the analysis for other species. While the analysis talks about the fact that private and State lands are unlikely to support the pileated woodpecker habitat in the future, the analysis does not adequately consider the importance of older forest stands on National Forest lands to this species. The cumulative impacts discussion for Meadow Creek and the Hangman Creek sub-watersheds mentions other Forest Service activities in four other projects (Gold Hill, Crane Point, Strychnine Pine and Upper Palouse ATV), but makes no habitat deductions for these projects or any past and future activity on State and private lands.

For example, the wildlife report suggests that 58 acres of nesting habitat will be removed in the project area, but this number is exactly the same for the Meadow Creek and Hangman Creek sub-watersheds and for the entire Clearwater National Forest despite the fact that there are four additional Forest Service projects in the Meadow Creek and Hangman Creek sub-watersheds and a multitude of other projects occurring on the Forest (Windy Shingle, Center-Johnson, Johnson Bar Salvage, Lolo Insects and Disease, Little Boulder Creek, Tinker Bugs, Hungry Ridge, End of the World, Crane Point, Lower Orogrande, French Larch, Clear Creek, Red Moose Divide, Pete King, Gold Hill etc.). The same situation exists for all other numbers presented in the cumulative impact analysis.

Numbers in Forest level reports (Sampson 2006a, 2006b, Bush and Lundberg 2008) are treated as static and there is no accounting for changes (timber sales and wildfires) that have occurred in the twelve to fourteen years since these reports were produced. It is ironic that the wildlife report uses the Samson (2006b) short-term viability analysis and the Bush and Lundberg 2008 habitat estimates as a way to show that pileated woodpeckers are being maintained at the Forest level and that the White Pine project will not contribute to cumulative impacts.

The Bush and Lundberg (2008) numbers are based on a simplistic query of FIA data is not spatially explicit and relies on meaningless definition of pileated woodpecker habitat that is not supported by the available literature (Bull and Holthausen 1993, McClelland and McClelland 1999, Mellen et al.1992). Nesting habitat is simply defined as a stand with one dead tree per acre over 15 inches DBH and foraging habitat is defined as a stand with one dead tree per acres over 9 inches DBH. This is not a defensible description of pileated woodpecker habitat and makes the analysis pretty much meaningless. There is no requirement for the snags to be part of a mature stand and 15-inch DBH snags are not suitable for nesting by this species. If methods used in the Sampson, Bush and Lundberg had been utilized in the project area it is likely that most of the stands in the area would have been classified as nesting habitat.

The White Pine project will add 1,707 acres of regeneration harvest, bringing the total percentage of stands in the 0-4.9" size class to 2,320 acres or 33% of the project area, commercial thinning will treat 276-acres (3.9% of the project area) and fuel treatments are proposed on another 722 acres (10.3% of the project area). While we do not know how individual potential home ranges would be impacted since no analysis has been completed, these levels of harvest and fuel treatment would not be consistent with recommendations from Bull and Holtausen (1993).

Clearly, the best available science does not support the contention that pileated woodpeckers will be unaffected by the White Pine proposal. Long-term studies (Bull et al. 2007) suggest that the pileated woodpecker is highly sensitive to regeneration harvest. Fuel treatments were also shown to negatively influence foraging habitat. "Stands with fuel reduction treatments at Starkey had significantly fewer logs, fewer logs with ants, and less pileated woodpecker foraging" (Bull et al. 2005). Please update your analysis to display the appropriate impacts to this species.

Objection 16 – Incorrect use the latest scientific literature for evaluating goshawk habitat

The work of (Moser and Garton 2009) and Hayward and Escano (1989) should be used to identify nesting habitat in the project area as these two publications were conducted in Idaho and are the best available scientific information on nesting habitat in this area. Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands who's average DBH of overstory trees was over 12.2 inches and all nest stands had $\geq$ 70% overstory tree canopy. They described their findings as being similar to those described by Hayward and

Escano (1989). Hayward and Escano reported that nesting habitat "may be described as mature to overmature conifer forest with a closed canopy (75-85% cover) …." Moser and Garton state "this classification corresponds with Reynolds et al. (1992) vegetation structural stages four to six".

Reynolds et al. (1992) describe foraging areas as a "mosaic of vegetation interspersed throughout the foraging area". The indicate "the majority (60%) of the foraging area should ultimately be in the three older age classes VSSs (4,5,6), approximately 20% in each". In mixed species stands they suggest the VSS 6 stands have a minimum crown closure of 60%, VSS 5 stands have a minimum crown closure of 50% and one third of VSS 4 stands have a minimum crown closure of 60% and the remaining two-thirds of VSS-4 stands have a minimum crown closure of 40%. Reynolds et al. (1992) classify VSS-6 as old forest exceeding 24 inches DBH, VSS-5 as mature forest 18-24 inches DBH and VSS-4 as mid-aged forest 12-18 inches DBH.

The criterion for nesting habitat used in the White Pine analysis was 40% crown closure and stands over 15 inches DBH. Based on the findings of Moser and Garton 2009) and Hayward and Escano (1989), it appears that stand crown closure should be increased to 70%. Average DBH could remain at 15+ inches. The criterion for foraging habitat used in the White Pine Analysis was 25% crown closure and 10-inches DBH. Based on the findings of Reynolds et al. (1992) it appears the description of foraging habitat should be modified to 12-inches DBH and a crown closure of 40% which is the minimum size and crown closure of VSS-4.

Moser (2007) reported that, goshawk home range size was largely related to nesting success and the amount of opening and mature forest within the home range. Birds of both sexes with successful nests generally had smaller home ranges. For example, males with successful nests (N=4) had an average home range size of 9,657 acres and females with successful nests (N=8) had an average home range size of 6,600 acres. Male bird home range size increased as the number of openings in the home range increased and the amount of closed canopy forest decreased, but these factors weren't significant for female birds. Studies in other areas have reported smaller home range sizes in the neighborhood of 5,000-6,000 acres (Reynolds et al. 1992).

Thus the 7,028-acre project area would likely support at least one goshawk home range and indeed a historical nest location has been identified within the project area. Evidently, this historical nesting location has not been utilized for some time as monitoring has not detected any use since 2016. The wildlife report displays a 6,000-acre theoretical circular home range around the nest location. A smaller 420-acre circular area is also displayed depicting the post-fledgling area around the nest site (Reynolds et al. 1992).

Reynolds et al. (1992) suggest that at least 180 acres of suitable nesting habitat be maintained in each goshawk home range. This nesting habitat be maintained in uncut blocks of at least 30 acres in size and that at least three suitable nesting areas be maintained in each home range. Regional direction based on Clough (2000) suggests the amount of nesting habitat should be increased to at least 240-acres and uncut nesting areas be increased to 40-acres. Reynolds recommends a suitable post-fledging area of at least 420-acres in size with at least 60% old forest (VSS 4-6) surrounding the potential nest stands.

Thus, the Reynolds et al. (1992) guidelines actually require maintaining more than 180 or 240-acres of mature forest in each goshawk home range. The exact amount of mature forest to be maintained is dependent on the configuration of the existing nesting habitat and the composition of the surrounding post-fledgling areas. This needs to be determined prior to timber harvest based on the location of identified nesting habitat. Allowing post-fledging areas to be extensively harvested after the active nesting season (Aug 15th) will likely assure that the nesting area will be abandoned in the following year. This approach is proposed in the White Pine project and several other projects on the Nez Perce – Clearwater NF provides little assurance of long-term protection of goshawk habitat.

When possible, Reynolds et al. (1992) recommend three additional replacement nesting areas. This recommendation fits well with the findings of Moser and Garton (2009) who found that alternate nest sites will be used within the home range if the previous year's nest site is lost for some reason. Foraging habitat should maintain the diversity of conditions that Reynolds et al. (1992) discusses in his management guidelines. That will likely mean a sufficient component of older forest stands along with some stands in younger age classes.

Moser and Garton (2009) tested Reynolds et al. (1992) recommendation for leaving 60% mature forest in the post-fledgling area by experimentally clearcutting mature stands in the post-fledgling area after the nesting season (average harvest unit size 104 acres). When Moser and Garton (2009) experimentally clear-cut in the post-fledgling area they found goshawks, re-nested when approximately 39% of the post-fledging area (164 acres) remained as mature forest (potential nesting habitat). From their work, Moser and Garton (2009) suggested that the amount of mature forest in the post-fledgling area could potentially be reduced to 39%, but this will likely place greater risk on the species (Clough 2000) and I think the more conservative approach suggested by Reynolds is more appropriate for National Forest management.

The circular theoretical home range has not been evaluated based on the recommendations of Reynolds et al. (1992), but the amount of goshawk nesting habitat and foraging habitat has been determined based on Vmap data and stand exams in the project area. Nesting habitat has been determined by VMap queries using the previously described criteria. The project area may actually be a better analysis area for impacts to goshawk habitat, since most of the western portion of theoretical circular home range is on private land the area has been extensively logged. In its current state, it is likely that goshawks would avoid that area.

According to the project area analysis there are 2,769-acres of nesting habitat and 2,723-acres of additional foraging habitat. Nesting habitat is also considered suitable for foraging. According to the analysis, 1,536-acres are currently considered unsuitable for either foraging or nesting (presumably because the stands are young or natural openings). Alternative 2, will harvest 707-acres of nesting habitat and 792-acres of additional foraging habitat. This will leave 2062-acres of nesting habitat, 1931-acres of additional foraging habitat and 3,035-acres of unsuitable habitat. Numbers may be slightly modified if the changes I have suggested were adopted.

The goshawk analysis needs to be updated to assure both nesting habitat and the surrounding post-fledgling habitat is being maintained. I suggest an examination of the project area similar to what was done in the 1997 White Pine EIS to determine the number and location of potential post-fledgling areas. In that analysis four potential post-fledgling areas were identified and one of those was lost due to activities associated with selected Alternative G-modified. This left sufficient nesting habitat to maintain the suitability of goshawk habitat in the project area.

We know the current proposal will significantly modify the historical post-fledgling area, but don't know the actual condition of that post-fledgling area or any other potential post-fledgling areas in the project area. For example, much of the historical post-fledgling area is already in young stands (The historical post-fledgling area includes regen harvest Unit 4, a portion of regen harvest Unit 5, and slash and burn Unit 44 from the 1997 project).

According to the wildlife report, the additional level of harvest in the historical PFA is 110-acres of regeneration harvest (26% of the PFA) and 32-acres commercial thinning (8% of the PFA). Existing regeneration harvest is at least 30-acres (7% of the PFA) and there are unknown amounts of young stands that do not qualify as nesting or foraging habitat. Just considering the existing regeneration harvest units and the proposed units the PFA would be just below (59% mature stands) the recommendations of Reynolds et al, 1992. How many additional acres that don't meet the criteria described by Moser and Garton (2009) or Reynolds et al. (1992) within the historical PFA is unknown? We also do know how many other potential PFAs exist in the project area and how many of these potential PFAs may be negatively impacted.

The time to figure out how the project will impact potential PFAs and goshawk habitat is before project implementation. Protecting PFAs until after the breeding season and then allowing significant logging in the PFA as outlined in the project mitigation measures does little good in providing protection in subsequent breeding seasons. While it is true that goshawks will select alternate sites in the following breeding season (Moser and Garton 2009), they must have alternate areas to select from. Your analysis has provided no assurances that this is the case.

Regeneration harvest on 1,707-acres, commercial thinning on 276-acres and 722-acres of fuel treatment is 38.5% of the 7,028-acre project area and is bound to affect goshawk use of the project area. Whether goshawks will continue to utilize the project area after project implementation is still in question and not answered by your analysis. The proposed harvest is occurring in an area that had a rather large timber sale approximately 20-years ago and also has a considerable amount of older clear-cuts that have now regenerated to pole sized forest, After the project there is going to be a significant decline in late successional forest preferred by this species.

Your treatment of cumulative impacts is very similar to what you have done for the pileated woodpecker. Once again, the analysis relies on the outdated Sampson (2006a and 2006b) and the Bush and Lundberg (2008) reports. These outdated and questionable reports Schultz (2010) are once again they are treated as static conditions.

Despite the fact that there are four other national Forest projects in the Meadow Creek/Hangman Sub-watershed, a myriad of other projects on the Clearwater National Forest and extensive activity on State and Private land, the amount of harvest in nesting habitat is exactly the same for all examined areas. For example, there 707-acres of nesting habitat scheduled for harvest in the project area, the Meadow Creek/Hangman sub-watershed and the entire Clearwater National Forest.

Objection 17– Elk, deer and moose

The proposed project will significantly reduce the amount of hiding and security cover in the project area. Lack of hiding and security habitat is major concern on the Palouse Ranger District due to significant levels of past harvest on all ownerships including lands managed by the Forest Service. The 1997 White Pine EIS suggested that the White Pine project area is one of only twelve relatively unfragmented large blocks of late successional forest remaining on the Palouse Ranger District. These large blocks (generally around 1,000-acres or more) are important to a variety of wildlife species and are particularly important to big game during the hunting season due to the security they provide.

The project will significantly fragment the existing stands in the project area and relegate security cover to the previously designated old growth retention area along Blakes Fork Creek (1987 White Pine EIS). Several large openings will be created that will be over 100-acres in size and many of these openings are adjacent to previously harvested areas that are still relatively open. Big game (especially deer and elk) will not utilize these large openings. The elk guidelines (Servheen et al. 1997) stress that in order to be fully utilized, openings need to be less than 500 feet from cover and be bordered on all sides by cover not less than 800 feet in width. According to the guidelines "elk forage is present in openings and under forest canopies, and quantity is usually not a limiting factor on summer range."

The project will also allow for the construction of 2-miles of system road and 15-miles of temporary road that will partially decommissioned after the project. The Forest Service claims these roads will not impact big game security because the new system road will be closed with a gate during the fall hunting season and the temporary roads will be decommissioned. The new system road is behind an existing gate on Road 3832 that is closed to motorized use from June 15th to September 30th, but motorcycles are permitted on Trail 223 that crosses Road 3832 behind the existing gate from May 1st to November 1st.

A large portion of the temporary road that will be constructed is located on top of the old Sampson Trail 221 which will be reopened to ATV and motorcycle use from May 1st to November 1st following project completion. A similar situation exists with the Sampson Trail 221 that is occurring with Trail 223. The Sampson trail crosses Road 3830 and 3831 behind the gate closing those roads. Between Trail 221 and 223 motorized access is generally available to most of the project area during the October hunting season and it will be very difficult to prevent unauthorized motorized traffic (motorcycles and ATVs) from using roads 3830, 3831 and 3832 during the hunting season.

The existing closures are inconsistent and do not provide the security during the hunting season that is claimed in the Environmental Assessment. The Forest Service does not have a good track record of maintaining existing road closures and the likelihood that gate closures will be effective in stopping illegal use on existing roads is low when motorcycles and ATVs are permitted on trails that cross those roads.

In summary, foraging habitat is not a limiting factor for elk on the Palouse Ranger District, and the extensive management activity coupled with and the expanded road network that will result from implementation of Alternative 2 will only work to further deteriorate habitat conditions for big game in the project area. If the Palouse Ranger District really wants to protect big game habitat, motorized access on trails 221 and 223 needs to be closed during the fall hunting season and it would be best if the restrictions on the trails were consistent with access restrictions on the existing roads (i.e. June 15th to September 30th). Harvest units that are in excess of 500 feet of cover should be dropped.

Sincerely,

/s/ Harry R. Jageman

Harry R. Jageman

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