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Title:

Comments: To: Methow Valley Ranger District

The proposed Twisp Watershed restoration project, is a very large, complex and ambitious project that has many interesting proposed actions. However there are many parts to the proposal and associated documents that are not as specific as they should be regarding on the ground conditions in the Twisp watershed.

In general, I agree with and support the five comments and requests submitted by the Methow Valley Citizens Council. I want to offer my specific comments given my extensive experience working as the Principal Scientist for the Pacific Watershed Institute (PWI) in the Twisp Basin with (USFS, USFWS) for watershed analysis and restoration.

Issue 1. Not including all watershed specific information and data in the analyses.

The PWI in cooperation with USFS Methow Ranger District and the forest supervisor office in Wenatchee conducted a detailed watershed assessment in 2002 (Twisp Watershed Assessment Restoration Strategies and Action Plan, The Pacific Watershed Institute, 2003). The purpose of the assessment was to identify and prioritize key habitat areas and habitat forming watershed processes for protection and restoration. The restoration strategy goal was to identify actions that will assist and encourage the community in restoration and protection of the natural habitat forming processes that formed and sustained the habitats to which Twisp Watershed salmonids are adapted. The proposed actions concentrated on restoring those processes and functions to conditions that will sustain the native species (fish, vegetation, and others).

During the assessment we gained considerable knowledge concerning the processes and conditions in the watershed. However, even though the Methow District Ranger office was involved with the assessment and has copies of the Twisp Watershed Assessment Restoration Strategies and Action Plan (The Pacific Watershed Institute, 2003), it does not appear that this document was consulted during the writing of your proposal. Oddly enough, the PWI's Lower Chewuch River Fisheries Habitat Survey Final Report (The Pacific Watershed Institute 2000) was referenced, but that report should not be used as an analog for Twisp Basin conditions.

oRecommendation: The Forest Service needs to read and reference the PWI's Twisp Report before making final decisions on proposed basin alternatives. That report is much more relevant than the Chewuch report since it includes all survey methods and data. The surveys and data we collected addressed fish presence and species (snorkeling and redd counts), aquatic and wildlife habitat, water temperature, stream sediment, wood, channel condition, channel migration, riparian and upland vegetation conditions, land use impacts, dispersed camping, road and culvert status, slope stability, and hydrologic characteristics for the Twisp River downstream of Roads End and in the tributary watersheds.

olf you can't find it at the Methow Ranger District call the Methow Salmon Recovery Foundation contact me and I will provide a copy.

Issue 2: Hydrology and geomorphology related comments

The specialists' report on hydrology and geomorphology provides large landscape scale and relatively general information concerning the conditions in the Twisp watershed. As the primary hydrologist and fluvial geomorphologist for the above referenced assessment, I had the rare opportunity to evaluate on the ground hydrologic and geomorphic characteristics and conditions on the Twisp River and most of the basin's tributary streams and sub- watersheds. As such I observed hydrologic characteristics that are not discussed in the specialist's report.

In 2002 there were drought conditions in the Methow during our surveys. The importance of groundwater, including seepage and groundwater supplied to/from sloping and forested wetlands located beyond the stream riparian areas was quite evident in moderating stream water temperatures and supplementing streamflow. For example, while measuring discharge in North Creek water temperature was 50 degrees F even though the air temperature had been +90 degrees F for many days. The North Creek fan and Gilbert Mine area supplied by groundwater from North Creek watershed is prime bull trout spawning habitat. The specialists report does not address the important influence of groundwater on necessary aquatic conditions and potential impact on it from the proposed forest practices.

As stated in the water quality section in Table 1 of the hydrology specialist report, the project presumes to "not have a measurable effect upon temperature at the reach or HUC scale. Direct solar radiation is the largest driver for temperature alteration, and the buffers as outlined in the design features and BMPs would not remove any overstory trees along fish-bearing perennial or intermittent streams. Vegetation management and prescribed fire ignitions would follow design features and benefit riparian values. Tree felling along stream channels and into streams as proposed in this project would be done in a manner so as to not impact overall shading and increase temperatures. This action may have a negligible impact to stream temperature but will not be analyzed further."

While this is true especially on the HUC scale where adequate shade covers the channel, groundwater is a substantial contributor for cooling stream temperatures in the Upper Twisp watershed, for example in North Creek on multiple reaches. Groundwater contributions are essential to continued success of bull trout in the upper watershed. There is no mention of this in the report. It needs to be addressed in relation to effects of proposed treatments on groundwater and extensive seepage and wetlands in the old growth and mixed forest areas. On the local scale these are important considerations that have not been included in your analysis. At the same time, we know from numerous other riparian studies throughout the Pacific Northwest that protecting surface water from solar radiation with vegetation shading only keeps the stream from getting any warmer, but the shade in and of itself cannot reduce surface water temperatures on larger streams unless shade extends to mid channel or more. Rather, a stream's temperature regime primarily reliant on the incoming temperature of groundwater in continuity with surface waters.

oRecommendation: Include additional analysis on the proposed forest practices on groundwater and groundwater influenced wetlands. As an example, removal of vegetation can increase shallow groundwater temperature which in turn alters temperature of groundwater inflow to streams. Another example, larger trees use less soil water and subsequent groundwater recharge than young vegetation. Neither of these examples are hypothetical. There is much research that illustrates these impacts.

Again, in Table 1 of the specialists' hydrologic report for the EA references research on runoff increases due to clear cutting (Beche and others 2005; John Stednick 2010). The document states: "resource measure will not be carried forward since there are no clear-cut harvest areas proposed and regeneration harvests (selective seed tree) proposed are equivalent to ~1% of the watershed in this project."

The report continues: "Project Design Features (EA, Appendix B) would require that no more than 20% of any watershed area be treated annually." If so, how does Stednick's research equate to the 20% of any watershed?.

Recommendation: This conclusion should be further discussed and substantiated in terms of applicability to the Twisp watershed. Neither reference used in the above statements are listed in references cited. Add them so others can evaluate the relevance to the Twisp watershed for themselves.

Section 4.3.1 - Direct/Indirect and Cumulative Effects Boundaries first paragraph states "The temporal context for analysis is during implementation and ten years post-project because it is assumed any vegetation removal, bare ground, etc. would return to conditions similar to existing as it pertains to the hydrologic regime." The project is

proposing to remove large trees up to 30" dbh. If large trees are removed, this assumption may not hold depending on where in the landscape they are removed, especially considering current and future changes in local climate patterns which subsequently affect the snowmelt driven hydrologic regime.

oRecommendation: This topic needs much more discussion and analysis. The cumulative effects need to be reevaluated in terms of climate change and subsequent changes to a snowmelt dominated hydrologic regime. For example, a reduction in snowmelt or an earlier snowmelt will affect the assumption that post-practice conditions will return to pre-practice conditions after 10 years may not be justifiable.

The No Action Alternative, resource indicator on the road drainage network increase, (pp 20): states that the "alternative would have a direct, long-term, negative, moderate effect on the road drainage network increase because roads in RRs and the project area would continue to exist (in?) current locations at current high densities with an increased rate of drainage from roads."

oRecommendation: Substantiate and justify the conclusion that there would be an increased rate of drainage/ Issue 3. None of the specialists' reports addresses geomorphic characteristics as related to the Twisp Watershed.

There are important geomorphic processes such as channel migration and shallow rapid debris flows (and other slope stability issues) that may be affected by the project. On slope stability, the maps scale is not appropriate to accurately pinpoint what the projects are and where they will occur. Some of the tributaries such as War Creek and Reynolds Creek have experienced debris flows and other slope stability issues.

The Twisp River has had and will continue to have channel migration. Channel migration is important for creating side channels, channel complexity and wood recruitment. All these processes are essential for creating and sustaining the aquatic habitat in the Twisp River.

oRecommendation: If aquatic restoration is an important goal, then the geomorphic processes need to be addressed, as well as slope stability if forest practices occur in the areas where slopes are not stable.

Issue 4. The EA (October 2020) addresses climate change but is very generic and necessarily relevant to the project area.

For example, a statement on page 121 illustrates that not much effort was invested on more specific discussion (particularly refer to the last sentence in the quote): "indefinite period of time (IPCC 2000) (e.g., conversion of forest land to agricultural or developed landscapes). However, forest land in the United States has had a net increase since the year 2000, and this trend is expected to continue for at least another decade (Wear et al. 2013, USDA Forest Service 2016). In addition, estimates of forested area on the [National Forest] have [remained stable, decreased, or increased since [provide year or range of years]].

oWeather patterns and climate conditions are not the same throughout the entire Wenatchee-Okanogan NF.

oRecommendation: Climate change should be addressed for the upper/middle Methow Valley in general and the Twisp River watershed specifically. For example, discussion on changes in snow melt timing, trends in snow depth, increase (or not) in rain on snow events, flooding, drought, etc., that maybe influenced by proposed actions.

Issue 5. Increasing ATV access.

This should not be included in this EA except if the project is going to address reducing the impacts have had on the riparian areas and stream bank erosion. I have seen the impacts and they are not beneficial to restoration of these areas.

Thank you for providing opportunity to comment on the project. I do have other comments and recommendations but time is gone.