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Erin Uloth, District Ranger
Mt. Baker District
Mt. Baker-Snoqualmie National Forest
810 Highway 20
Sedro-Woolley, WA 98284

Dear Ranger Uloth,

Thank you for receiving public input on scoping for the North Fork Nooksack Vegetation Management Project. You and your staff are to be commended for your efforts to align the project with goals and objectives of the Northwest Forest Plan. That plan envisioned forest management and restoration on a time scale spanning more than a century, commensurate with processes of complex forest development. As we approach the end of the third decade in the plan's implementation, some short-sighted voices have called for abandoning the plan. Your emphasis on the plan's goals and management designations represent thoughtful recognition of its vision and dedication required to realize that vision.

Vegetation treatments to facilitate rapid growth of large trees, thin dense second growth stands, and restore subalpine huckleberry habitat appear well-conceived and consistent with NWF Plan goals. Similarly, re-routing FSR 31 away from the Jim Creek Slide and replacing the Thompson Creek Bridge would improve both infrastructure safety and aquatic habitat connectivity.

My substantive comments concern the extent and locations of stand replacement harvest. The scoping map locates most of this treatment in the Canyon Creek subbasin. In decades prior to the Northwest Forest Plan, that basin was subjected to intensive timber harvest. Heavy precipitation on harvested slopes in the subbasin exacerbated slope instability, resulting in floods and debris flows. Plans to thin or harvest trees in the Canyon Creek subbasin should consider prior history, flood risk, and slope instability. Such consideration would require geotechnical and hydrological analysis. Harvest that would increase these risks should be excluded.

The Canyon Creek subbasin provides spawning and rearing habitat for several important salmonid populations. Chinook salmon (*Oncorhynchus tshawytscha*) was listed as threatened 21 years ago, and the population associated with the North Fork Nooksack River has remained at an abundance less than 1% of historic levels. Unless conditions in the North Fork and its tributaries improve, extinction of this population and Chinook throughout the Nooksack basin is inevitable. If conditions supporting Chinook degrade in the North Fork due to forest removal, hydrologic changes, sediment deposition, or other factors resulting from the proposed vegetation management, extinction of that population will be hastened. This issue alone should require an environmental impact assessment for the project.

Canyon Creek and the North Fork also support steelhead (*O. mykiss*), another threatened ESU, and coho salmon (*O. kisutch*) which has been proposed for T&E listing. Although their life histories differ from Chinook, both species are sensitive to impacts to aquatic and adjacent terrestrial environments. Both should be addressed in an EIS for the project.

Any management plan should support the Endangered Species Act mandate to restore Chinook, steelhead, and other listed species. The vegetation management proposal could be consistent with this mandate through restoration thinning. Continued natural forest growth also would improve fish habitat, so a "no action" alternative represents net improvement. Any management plan also should be compatible with recent restoration in the lower Canyon Creek basin conducted by Whatcom County.

An EIS or other assessment should consider cumulative impacts of proposed timber harvest and ongoing climate change. Stand regeneration harvest in particular could compound many hydrologic impacts of climate change, with consequences for Chinook salmon and steelhead. Those impacts include increased frequency and magnitude of winter flooding (and associated redd scour), decreased snowpack, earlier snowmelt, lower summer flows, and increased water temperature (Dickerson and Mitchell 2013, Truitt 2018). Areas of proposed stand regeneration harvest include mid-elevation montane forest, which offer the greatest potential to mitigate climate change impacts to Chinook salmon (Battin et al. 2007). These areas, especially riparian forests, should be prioritized for protection and not stand regeneration harvest.

Extensive stand regeneration harvests could decrease riparian and total forest cover below thresholds required to maintain hydrologic functions needed to support salmon and water quality (Hjältén et al. 2016, McLaughlin 2018, NWIFC 2016). Such harvests also could decrease forest cover below the District's own standards (Mt. Baker RD 1995). Crossing these thresholds would increase extinction risk for salmon and other species to unacceptable levels. Project assessment should include analysis of impacts relative to hydrologic thresholds and associated riparian species and habitats.

Before further planning or implementation proceeds, management impacts should be evaluated in an EIS, which includes results of a Chinook salmon population viability analysis (PVA). A PVA should address compounding impacts of timber harvest and climate change. An example of such an analysis is in Battin et al. (2007).

Thank you for stewarding a place so important to the community, and for reviewing comments from diverse members of that community. I look forward to seeing your work in the next stage of the project.

Sincerely,

John McLaughlin

John McLaughlin
Associate Professor

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