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Comments: Comments on North Fork Stillaguamish Landscape Analysis Project #61659 (Feb. 2023) Draft EA

D. Brady Green

3/15/2023

To: Greta Smith, District Ranger, Darrington Ranger District

Re: Comments on North Fork Stillaguamish (NF Stilli) Landscape Analysis Project #61659 (Feb. 2023) Draft EA

Date: March 15, 2023

Thank you for the opportunity to provide comments on the NF Stilli Landscape Analysis Project #61659 (Feb. 2023) Draft EA. Previously, I provided comments on the 4/22/22 NF Stilli Landscape Analysis Project #61659 scoping letter.

I support the need for thinning second growth stands in the NF Stilli and Deer Creek watersheds. However, due to the glacial geology, sensitive soils and steep topography, and to the extent of naturally occurring unstable soils, slope stability issues, poor road maintenance, and the past history of extensive logging and road building impacts in these watersheds, I am very concerned about conducting variable density thinning at the scale (up to 17,363 acres in alternative 2) being proposed by this project to be conducted over 15 years. There are 352 timber stands proposed for commercial and non-commercial (stand improvement) treatment totaling (up to 17,363 acres in EA Table 6 page 8, however 19,169 acres in Tables 4, 7 & 9 in the Silviculture Report). Over 193 miles of roads (EA Table 13) out of 267 total miles (Table 1, page 11 in Transportation Report) are proposed for treatment in the project area. This is 72 % of all the roads in the project area will be involved in some kind of treatment, which is a significant amount of road-related activity that would occur with the project. Although part of the Purpose and Need for this project is to enhance the health of streams and associated aquatic ecosystems, by modifying the transportation system, the current and future condition of the watersheds in the project area, are at a high risk, considering the extensive areas of natural soil instability and other factors as described above. In addition, according to the Transportation Report, an estimated 174 miles of roads would be used for timber haul, plus 63 miles of new specified roads.

The high risk that the proposed actions (commercial and non-commercial thinning in Riparian Reserves, timber harvest and road construction activities, etc.) would have on adjacent, and downstream, riparian and other aquatic ecosystems (especially ESA listed fish species) in these sensitive watersheds is not justified.

I am particularly concerned about proposed treatments (3,005 acres in alternative 2) inside of riparian reserves. In addition, I am concerned about 128 miles of NFS system roads identified for log haul activities that would result in 44 miles of additional road mileage and new road soil disturbance expected from new temporary roads, skid trails and landings within ground-based harvest units.

Following are my general comments and then more specific comments on the Draft EA and corresponding specialist reports follow.

General Concerns

Watershed analyses for project area out of date and need to be updated or amended

Two old watershed analyses have been conducted that cover the NF Stilli LA project area which includes two Tier 1 Key Watersheds:

1. Deer Creek WA (1996)
2. North Fork Stillaguamish WA (2000)

According to in the ROD S&G's NW Forest Plan (USDA FS & USDI BLM 1994) watershed analysis will be an on-going, iterative process that will help define important resource and information needs (USDA FS 1995). As watershed analysis is further developed and refined, it will describe the processes and interactions of

all applicable resources. It has been 27 years and 23, years, respectively since these two watershed analyses were completed. Since then, ESA federal listing of threatened species status for the North Fork Stillaguamish Chinook (1998), Bull Trout (1999) and Steelhead Trout (2003), has occurred. In addition, external watershed partner monitoring results, changing management conditions, and reoccurrence of large flood events from 1995-1996 and into the 2000's time period have occurred. All of these management activities should have been included in an updated watershed analysis for the project area.

Since 1996 and 2000, many land management activities and habitat changes have occurred in this project area, as well as downstream private and state lands in these watersheds, making these watershed analyses badly out of date and in need of update, revision, or amendment, that reflect these changes. In addition, this project involves thinning RR to harvest non-successional trees and to actively manage roads (temporary and system) over a period of at least years 15 years.

The EA, and specialist reports, do not appear to have used much of the Deer Creek or North Fork Stillaguamish watershed analyses. which is the whole idea of the. Watershed analysis is one of the principal analyses for implementing the Aquatic Conservation Strategy (ACS) set forth in the Northwest Forest Plan (USDA & USDI 1994).

Concern about economic viability of the project

According to the Silviculture Report, "There are about 352 stands that are proposed for commercial and non-commercial (stand thinning) treatments and total approximately 19,169 acres." However, the report also states that "Common Stand Exam (CSE) data was collected in 2021 for 44 of the stands proposed for variable density thinning in the eastern portion of North Fork Stillaguamish Vegetation Project Area. After stand exams were performed, a change in the project boundary before scoping, included areas that were not sampled." Consequently, 308 stands have no information and "Data would need to be collected and analyzed for the expanded section of the project area prior to implementation to ensure compliance with all conditions required for treatment as part of condition-based management."

The Silviculture Report also states that "Estimated acres presented are maximums and subject to change. According to recent timber sales on the MBD NF and project design, treated acreage is expected to reduce by 50-60% of total stand area. This is due to portions of stands containing no-cut riparian buffers or being inaccessible for timber harvesting equipment. Road reconstruction costs may also be prohibitively high in some areas, making it not economically viable to include certain stands and associated access roads in a timber sale when the value of the timber to be harvested is less than the costs of harvest." I submit that, due to the extensive areas of naturally unstable soils in the project area, that when actual field work for each stand is finally completed, many stands will be dropped as a result, and therefore there will not be enough commercial timber value left for a viable timber sale contract.

Concern about continued watershed impacts (ground disturbance, soil erosion, etc.) of opening and closing roads to conduct treatments during the 15+ years of project operation in watersheds that are so sensitive due to combination of a significant amounts of natural soil instability and previous timber and road management problems.

According to soil mapping conducted by Snyder and Wade (1970) the project area contains extensive areas with deep glacial soils and deep glacial lake-deposit soils (Lacustrine) which are generally highly erosive and unstable as well as deep, unstable soils occurring on steep toe-slop and midslope drainages). The valleys of Deer Creek, Little Deer Creek and Higgins Creek have a considerable amount of deep, unstable, glacial lake deposits, till and outwash soils and this instability is caused by a combination of steep slopes, fine textured plastic subsoils and restrictive drainage and natural deep-seated failures frequently occur and are greatly accelerate by management activities (Snyder and Wade 1970).

Concern about the ability of existing USFS staff (technical expertise and knowledge) to handle all of the enforcement duties identified in Appendix B. Project design Criteria with 352 timber stands scattered over a large area and due to the complexity of meeting the required design criteria (multiple laws, regulations, BMP's, etc.). Also, I have concerns about the ability to have adequate technical skills to meet all the requirements of this project as proposed.

Lack of references cited in EA and many specialists' reports

The Draft EA has no references cited section associated with it and many specialists' reports do not have references cited in their reports included in their references cited sections. How is the public able to find out about details on key references, and their validity, if the full reference is not even included in the references cited sections?

Concern about mechanical felling and/or tipping trees into stream channels without conducting hydrological modeling prior to tree placement

Recent experiences in the North Fork Nooksack River system (Ruth Creek near Hannegan Pass Trailhead and NF Nooksack River near Excelsior Group Camp) where the USFS used tree falling to place trees into streams and rivers for restoration purposes resulted in serious damage to stream channels, stream banks, aquatic habitat, adjacent roads and even loss of access to an important trailhead into the North Cascades National Park. Without conducting hydrological modeling prior to tree placement to estimate storm flows and channel capacity, these tree placements will result in more adverse flooding, dam break floods, severe bank erosion, and more habitat damage will occur. The regional guide (USDA FS 2019) states on page 73 that "Tree felling shall not create excessive stream bank erosion or increase the likelihood of channel evulsion during high flows." However, the guide does not include any provisions for conducting pre-project planning or modeling to determine potential benefits or risks.

Creation of complex riparian structure by thinning in RR's sounds great, however, many of these riparian areas that have identified stands for treatment, are in areas with very unstable soils and on steep ground. My concern is that the damage resulting from getting into these areas to thin trees and dropping trees into stream channels, may be more than any habitat benefits that might result.

Condition-Based Management (CBM)

What is this? It needs to be defined and described where it has been used and what its limitations are. It is used in the EA for Riparian Reserves (RR) for Condition 1 types of riparian areas to justify treatments inside of the RR in the name of improving habitat. It seems to be an attempt to cut corners by collecting less on the ground data and extrapolate existing data in order get around NEPA compliance by allowing proposed treatments to be aligned post treatment.

The Hydrology Report seems to be referring to it in Table 3 on page 6 as resource condition indicators and then in Tables 5 & 6 uses condition-based descriptions, but otherwise does not define CBM.

The Fisheries Report states on pages 28-29 "Alternative two proposes a condition-based approach to identify the appropriate buffer width on both perennial and intermittent non-fish streams. During field verification of various perennial and intermittent streams in the MBS Snoquera Landscape Analysis two common ecological relationships connected to vegetation functions were observed. These ecological conditions are referred to and categorized as Riparian Reserve (RR) condition 1 and RR condition 2." I cannot find a reference for the MBS Snoquera Landscape Analysis. What kind of analysis was it (GIS, field verified, etc.)? When was it conducted, in what areas, and how extensive was the analysis?

Climate Change

As stated in the EA, "Across the project watershed, hydrology is especially vulnerable to climate change. Warmer winters will lead to increased flood events and the earlier onset of snowmelt. As frequency and severity of winter

flood events grows, the threat of landslides and subsequent damage to roads and trails will make maintenance more difficult." The scale of this project, 17,363 acres of thinning in 352 stands, and treating over 193 miles of roads (even with the proposed road maintenance work), combined with extensive areas of unstable soils and past timber and road management activities in the project area, added to the expected climate change impacts, will make aquatic habitat in these watersheds even more vulnerable.

Specific Comments EA

No references cited section!

Page 2. NWFP and the Finney Adaptive Management Area

Although the REO approved the plan for changes to LSR in 2011, to my knowledge they have not approved the thinning and tree tipping into stream channels within Riparian Reserves as proposed for this project.

Pages 5-6. Need for the Proposal

Due to the combination of extensive areas of unstable soils and past timber and road management activities in the project area, two of the four major project needs, Aquatic and Riparian, will not be met. Thus, several of the ACS Objectives would not be met with the project as proposed.

Page 8. Table 6. Summary & Comparison of Alternatives Proposed Activities

The total acres to be treated in Alternative 2 is up to 17,364 acres, which is a significant amount of area proposed for treatment, considering concerns about the high risk of impacts to the sensitive subwatersheds in the project area. My concerns are due to the combination of extensive glacial geology, sensitive soils and steep topography, and to the extent of naturally occurring unstable soils, slope stability issues, poor road maintenance, and the past history of extensive logging and road building impacts in these watersheds

Table 6. Summary & Comparison of Alternatives Proposed Activities

Page 9. As stated previously, 1,936-3,005 acres of riparian reserve variable density thinning along 152 miles of streams and riparian reserve non-commercial thinning along 236 miles of streams is a significant amount.

Also, 63.3 miles of new temporary and temporary construction on existing roads is significant. Considering the overall sensitivity of these watersheds due to a combination of natural instability (geology, soils, topography) and steepness of the majority of the channels, together with land management history, has created unstable stream banks along the mainstem of upper NF Stilli and Deer Creek and major tributaries.

Decommissioning 12 miles (alternative 2) or 48 miles (alternative 3) sounds great but I am concerned with how successful decommissioning will, be considering the extent of natural instability and abundance of steep slopes in these watersheds. In addition, the cost per mile for decommissioning can be as expensive as new road construction. Also, changing road maintenance levels on 175 miles of roads is ambitious, considering there has been little or, no, road maintenance funding on the MBS NF for almost 10 years now. Storm proofing 194 miles and providing aquatic organism (fish) passage (culverts, bridges, etc.) on up to 30 sites is also ambitious. Where is the funding coming from to do all of this?

Page 12. Temporary Roads

States that "These roads would be closed and rehabilitated after management activities have been completed. For portions of this project area, up to 7 miles of temporary road would be constructed to a 'specified' standard. These roads would be placed on abandoned roads with limited adjustments to accommodate modern logging systems. " Project activities could last at least 15 years, so how many times would these roads be closed and then opened again during this time period in order to conduct thinning activities? I am concerned about repeated impacts to downstream aquatic systems from conducting road-related work over the 15 years of the project, in these sensitive watersheds that have extensive areas of unstable soils prone to failures and landslides.

Pages 12-14

System Roads and Stormproofing

Road maintenance, reconstruction and storm proofing is proposed. This includes many different measures and activities that are costly. Considering that very little road maintenance has been conducted on the MBS NF for about 10 years, where will all the funding be coming from?

Page 14. Top page States "Roads were prioritized and targeted based on modeled impacts to streams where most indicators were rated high or very high." Where is this information displayed?

Aquatic Organism Passage (AOP):

States "Coupled with storm proofing treatments are targeted methods to restore aquatic organism passage at road crossings with perennial fish bearing streams." What about providing passage for other non-fish aquatic organisms like amphibians, in non-fish bearing streams?

Improve Instream Habitat Quality

States that "Large wood supplantation may involve tree tipping, which could include felling or pushing (with heavy equipment) live trees (generally 18-24 inches in diameter) into channels and floodplains. LWD actions would be technically informed by a collaborative approach between Forest Service, Tribes and Washington Department of Fish and Wildlife (WDFW)." What does "technically informed" mean? Does this mean on the ground surveys or technical ID team meetings to determine which trees to push or tip and determine hydrological consequences? How many sites will be visited? See general comments above about my concerns with tree tipping or pushing without conducting pre-project planning or modeling to determine potential benefits or risks.

Pages 14-15. Condition-based Management (CBM)

It states that "Under CBM, best currently available site-specific data is paired with subsequent field validation surveys conducted before implementation to verify that conditions on site match those predicted during the project planning phase." How much site-specific data is available now and how much remains to be collected? The fact that only 44 of the total 352 stands planned for treatment, currently have stand exams, and that the remaining 308 stands are planned to be conducted before project implementation, that is not very encouraging about the reality of having the most up-to-date information to make accurate decisions in a project area that has so many sensitive and naturally unstable soil areas.

It states that "Project components analyzed with CBM include dispersed camping and Alternative 2 riparian reserve stream buffers. Appropriate treatments for each condition found in these areas have been determined. Using existing data, the IDT used these conditions and criteria to estimate the maximum treatments that could be implemented using condition-based management. While the IDT expects that some of these areas would not be treated because they may not meet the decision criteria, the maximum estimates of condition-based treatments were used to determine effects in the analysis for this project." This sounds like there is more on the ground work to be done before actual treatments can be determined.

Page 15. Dispersed Camping

States that "Recreation and Aquatic Specialists would identify and evaluate the dispersed camping sites." This sounds like a great idea but it appears that there is much more work to be done before treatments can be determined. When will these site identifications and evaluations be conducted and do you have adequate staff and funding available to conduct these evaluations identified in Table 11?

Page 17. Riparian Reserves Variable Density Thinning

States that "Treatments would help attain Aquatic Conservation Strategy objectives." As pointed out previously, I have serious concerns about meeting ACS objectives when proposing to conduct variable density thinning at such a large scale (10,572 acres) being proposed due to the extreme sensitivity (glacial geology, extensive naturally occurring unstable soils, etc.) of the watersheds in the project area.

Condition-based management seems to be used in the EA for Riparian Reserves (RR) Condition 1 types of riparian areas to justify treatments inside of the RR in the name of improving habitat.

It seems to be an attempt to cut corners by collecting less on the ground data and extrapolate existing data in order get around NEPA compliance by allowing proposed treatments to be aligned post treatment.

States that "In unthinned or lightly thinned patches, a few individual trees, 18" to 24" in diameter, would be evaluated for potential manual felling into the channel to improve channel function in the short-term." Who would do the evaluation? The technically informed by a collaborative team mentioned on page 14? See my general comments above about my concerns with tree tipping or pushing without conducting pre-project planning and hydrologic modeling to determine potential benefits or risks.

Bottom page 17-top 18. States that "Prior to project implementation, validation surveys would be conducted throughout all riparian reserves to determine the current condition (RRC1 or RRC2) and would assign the appropriate buffer width to each section (Table 12)." Who will be conducting these surveys throughout 352 stands proposed for treatment over an extensive area? It appears that all of this work remains to be completed before project treatments begin. That is a huge undertaking and requires adequate staff and funding which the MBS NF does not currently have.

Figures 16-18. Top of page 18 states "For maps of proposed potential extent of treatments as related to RR1, RR2 and the below changes to system roads for each alternative, see Figures 16-18." There is essentially no apparent difference between the three figures, other than the titles. When everything is the same on all maps, how are we supposed to differentiate the treatment types between RR conditions 1 and 2, in relationship to the streams, roads, etc., in the area?

Page 18. Changes Proposed to System Roads

2nd paragraph. States "There are certain instances however, where the proposed action deviates from past management decisions or the SRS recommendations based on current analysis of site-specific conditions." What and where are these sites located?

Road Storage:

These proposed measures may not be very effective in steeper areas with unstable soils.

Road Decommissioning:

Decommissioning will not be 100% effective and require some types monitoring and maintenance needs due to the prevalence of naturally unstable soil areas in the watersheds.

Page 19. Table 14. Proposed Road Treatments by Subwatersheds

Why is Upper Finney Creek listed for 12.26 miles of road storage, when it is not within the project area?

If it is in the project area then the analysis area should be increased to include upper Finney Creek.

Page 26. Effects of Proposed Forest Plan Amendment

3rd paragraph. States "The proposed forest plan amendment would apply to all areas of MA-19 across the forest, however there are no ground disturbing actions proposed on any MA-19 areas outside of the North Fork Stillaguamish Landscape Analysis project boundary."

4th paragraph. States "Additional site-specific analysis of effects would be required to implement actions in MA-19 areas located outside of the North Fork Stillaguamish Landscape Analysis project boundary." I do not understand how the MBS NF can propose having a forest plan amendment in this project EA that applies to all MA-19, Mountain Hemlock Zone areas across the forest, without looking at potential impacts that could occur on

those areas outside the project area?

Page 27. Climate Change

1st paragraph. States "Across the project watershed, hydrology is especially vulnerable to climate change. Climate analysis recently completed in support of the 2014 climate change vulnerability assessment show a 1.5 C temperature increase by mid-century." I assume that this climate analysis was by Raymond et al. (2014). However, the details for this citation are not in any other References cited sections.

"Warmer winters will lead to increased flood events and earlier onset of snowmelt. As the frequency and severity of winter flood events grows, the threat of landslides and subsequent damage to roads and trails will make maintenance more difficult." "To counter this pattern of climatic stressors, active management can be used to increase forest resiliency and address the climate vulnerabilities of hydrologic interactions with road and trail networks. The warming trend will expose climate sensitivities and be more pronounced for the aquatic resources in the project area and across the associated watersheds."

As stated previously in the general section, I am very concerned that with climate change increasing the risk damage to roads and existing naturally unstable soil areas, the proposed project thinning of over 19,169 acres and over 193 miles of road treatments, conducted over 15+ years, will add the existing resource problems in the project area.

Page 28. Adaptation Tactics

States that "Active management can be used to implement strategies and adaptation tactics to address climate change sensitivities." I think that this statement is very optimistic for a number of reasons. In order to restore riparian habitat and transportation systems within the project area will require adequate funding and staffing to have a chance of accomplishing any of the objectives. The MBS NF has received very little funding for road maintenance over the last 10 years or so and lacks adequate engineering staffing. Where is all of the funding going to come from to accomplish all of the admirable objectives?

Rationale for Project-Scale Effects Conclusions in Climate Change

8th Paragraph. States "The proposed actions would affect no more than 11,972 acres of forest by commercially thinning smaller trees from the stand, retaining a residual stand of about 63% of the original stand basal area. This scope and degree of change would be minor relative to the amount of forest land being 182,261 acres in the watershed."

I disagree, as this does not include the disturbance from treating over 193 miles of roads out of a total of 267 miles in the project area and the fact that much of the watershed contains significant number of areas containing naturally unstable soils at high risk of erosion and slope failure.

Appendices

Appendix A. Maps & Figures

Figures 1-9 and 16-21. The small scale size of the maps makes using a magnifying glass essential to be able to read the names of streams and mountains, road numbers, and other features.

Figure 2. Only "19-AMA-R - Mountain Hemlock Area Reserved" is visible on the map as diagonal blue bars over a light green background. However, "19-AMA-R - Mountain Hemlock Area Nonreserved" dark blue color is shown in the legend but does not appear on the map?

Figures 7 & 8. Why are roads outside the project area in Finney Creek shown as being changed from Figure 6. Current road maintenance levels? FSR 17 shows being changed from a Level 4 road to a level 3 road. FSR 1730 (Clendenen Creek) from a Level 2 to a Level 1. If they are part of the proposed project then they should be included in the EA.

Figures 16 & 17. Why is there is no discernible difference between the two maps so that there is no visible difference between RR Condition 1 and RR 2?

Figure 21. Potential Beaver Enhancement Areas. The map is blurry and not readable.

Appendix B. Project Design Criteria

There are 81 different enforcement tasks identified in 20 pages for the project preparation and implementation as follows: Botany - 11, Recreation - 9, Soil, Water & Fisheries - 36, Wildlife - 14

Many of these tasks are assigned to contract administrators, timber sale administrators, project administrators, and numerous specialists (engineers, hydrologists, soils, etc.). How is the MBS NF going to get adequate funding to provide staffing to accomplish the 81 for this proposed project?

Appendix C. Sustainable Roads Strategy

Table C.2 "Displays all roads proposed for project use, including proposed changes, and roads that may be used as haul routes but travel outside of the project area boundary." As mentioned previously, if this project involves changes to roads outside the project area boundary the effects of these road changes should be covered in this EA. It is not clear whether this is the case.

Specialist Reports

Draft Hydrology Resource Effects Analysis (Feb. 2023)

Page 2. Summary

3rd paragraph. "However, both alternatives have the objective to place Maintenance Level 1 roads into a hydrologically stable storage condition within the project area. This long-term goal of placing enough road into this condition would decrease the effects of roads on instream environments. The objective would be to achieve this in 10 to 15 years." A concern I have is that it is unclear how many of these roads will be opened and closed during the 10-15-year period of the project? As mentioned previously, due to the combination of factors (extensive naturally unstable soils, glacial history, etc.) that effects of the road treatments and stand thinning treatments over 352 stands, could increase the risk of sedimentation into the aquatic systems in the project area.

Page 4. Table 2. Watershed Condition Classification indicator ratings by subwatershed for in the Project Area. It is notable that 5 out of the 8 subwatersheds in the project area had a significant number of indicators (Aquatic Biota, Aquatic Habitat, Roads & Trails and Soil) with low ratings. In particular, Day Creek, French-NF Stillaguamish R, Headwaters NF Stillaguamish R., Lower Deer Creek, Segelsen Creek- NF Stillaguamish R., and Upper Deer Creek. To me these ratings point out the risk of conducting timber stand treatments and road-related treatments in the whole project area.

Page 10. Table 7. Alternative 2 Proposed Road Implementation Use & Post-Implementation Conditions Grand Total column for "Alt 2 Implementation ML" shows a 2.02 "Density ML 1-3 Rds" It should be noted that 2.02 is an average road density.

Page 11. Table 8. Alternative 2 Goals for Roads Near Streams

How were the "Post-implementation" mileage figures (57.6 miles, 5.0 miles and 482 miles) determined? Was this by using aerial photos, GIS, field work, etc.? This should be shared.

Page 17. 1st full paragraph. Discusses the Stillaguamish River Watershed Temperature study (DOE 2004, Adams and Sullivan 1989). However, none of these are included in the References Cited section. There are a number of other references that were cited in the report that were not References Cited section.

Page 21. Table 16. Open Road Density..

It is noteworthy that Lower Deer Creek and Segelsen-NF Stillaguamish R. subwatersheds have 3.25 and 3.14 mi/mi² open road densities which are considered "poor" and can impair watershed function. Again, I am concerned that over the proposed 15+ years of activity (sedimentation impacts from roads being opened and closed) combined with the proposed thinning treatments in these subwatersheds with the project, could increase the risk of soil erosion and road-related failures.

Page 28. Land and Resource Management Plan (1990)

Water Resources and Riparian Areas (11 Bullets)

Bullets 3, 9, and 11 require on-site surveys to make determinations to meet these requirements. How does the MBS NF plan to handle this significant work load (funding and staffing) considering that there are 352 stands identified for treatments?

Pages 29-31. Aquatic Conservation Strategy Objectives (ACSO's)

How does the MBS NF plan to meet these 9 ACSO's? In order to meet these requirements will take significant increases in budget, staff, equipment and supplies. Where will the funding come from?

Page 33. Conclusion

1st Paragraph. States "There is little potential for the proposed action alternatives to have long-term adverse effects on the geomorphic, hydrologic, or riparian characteristics and aquatic habitats in affected watersheds." I disagree. With the existing conditions due to a combination of factors (extensive naturally unstable soils, glacial geology, steep topography, road failures, poor road maintenance, landslides, extensive logging history, etc.) combined with expected climate change impacts, the NF Stillaguamish and Deer Creek watersheds will still be at high risk if the proposed project is implemented.

Draft Silviculture Analysis (Feb. 2023)

Pages 8-9. Forest Plan Amendment in MA-19

Top Page 9. "A programmatic amendment to the 1990 Mt. Baker-Snoqualmie Land and Resource Management Plan is needed to modify plan components by removing the condition consistency with the non-existent Study Plan from MA-19 to allow management activities to improve habitat diversity in MA 19 across the Forest, particularly when the primary objective is to restore habitat for huckleberries. The Forest Plan would be amended under the 20-12 Planning Rule (36 CFR 219)."

I do not understand how you can do a programmatic amendment to cover all MA-19 Mountain Hemlock Zone areas over the whole Mt. Baker-Snoqualmie National Forest in this project EA, without evaluating the effects and consequences of doing an analysis of the change in management of MA-19 areas on the other parts of the Forest?

Page 10. Top. States that "The Mt. Baker-Snoqualmie interdisciplinary team also developed an experimental design for each habitat type within the project area which outlines multiple treatments ranging in thinning intensity. Each treatment also prescribes gaps of 1-2 acres in size." Where is the information located?

1990 Forest Plan

Forest-Wide Standards & Guidelines - Timber

Relevant Standards:

Bullet 1 states "Provide for the production of timber on lands classified as suitable for timber production consistent with various resource objectives, environmental constraints, and considering cost efficiency (MBS Forest Plan, p. 4-130)." As I have stated previously, due to environmental constraints resulting from a combination of special factors (glacial geology, sensitive soils, steep topography and to the extent of naturally unstable soils, etc.), as proposed, this project may not be economically feasible.

Pages 10-12. Methodology

See concerns previously expressed in "Concern about economic viability of the project" under "General Concerns."

Page 13. Existing Condition. Table 4.

The Total acres of all treatment types is shown as 19,169 acres. This differs from the 17,363 total acres shown in Table 6, on page 8 of the EA. Why the difference?

Pages 21-22. Variable Density Thinning

This whole section is hard to follow and understand what these varied commercial thinning intensities would look

like. Terms like skips, gaps, heavily thinned sections, etc., and numeric descriptions such as gaps .5-2 acres in size, around 5 trees per acre, extend to 3-10% of the treatment area, etc., are very hard to visualize. Somehow you need to figure out ways of visually displaying what these terms and metrics look like so that the general public can understand what this is all about.

Page 24. Decision Points for Variable Density Thinning in Riparian Reserves

States that "Sample field verification of varying stream classification showed two common ecological relationships connected to vegetation function. These ecological conditions are referred to and categorized as Riparian Reserve (RR) condition 1 and RR condition2."

When were these sample surveys conducted? Where are they summarized and how extensive were these surveys? By saying that "sample field verification" occurred does that mean that just a few sites were visited and then that information was extrapolated across the Riparian Reserves in the project area? This sounds like that elusive CBM. My concern is that due to combination of factors that make much of the project area high risk for soil, and bank erosion, that extrapolating data and then assuming that riparian areas are similar, creates a high risk of unforeseen problems that won't be apparent until the thinning units are laid out when it is too late to make changes.

Page 30. Past and Present Actions

The whole paragraph appears to have been accidentally cut and pasted from the Canyon Creek portion of the North Fork Nooksack Vegetation Management Project document on the Mt. Baker Ranger District!

Pages 32-34. Glossary

Add definition of Condition-based Management, including where it came from, why and where it is being used.

Draft Transportation Report (no date)

Page 16. Table 5. Should be renumbered as Table 4

Page 21. Road Decommissioning

States that "These roads would be evaluated for treatments to mitigate resource damage while balancing tribal and user access needs." Suit of decom treatment options includes these or a combination (Blocked, CMPs removed, Recontoured, Unstable slope removed, Revegetated, Waterbared/outsloped). Each road will be evaluated for the best fit treatment for a given road situation." Why haven't these evaluations already been done prior to the EA?

Pages 23-24. Forest Service Road 2810000 (North Mountain Road) Proposed Easement Termination

Page 24. States that "Portion road easement proposed for termination Starting from MP 0.47 of Segment D to MP 6.65 of Segment M as depicted in "Exhibit A." What will happen to this road if it is primarily utilized for Private timber haul and State of Washington trailhead access and timber haul operations? Will the road maintenance change?

Draft Soil Resource Effects Analysis (Feb.. 2023)

Incomplete report with many references cited were left out of the References section.

No page numbers.

Figure 1. Soil Mapping units distributed across the project area

There is no key to the SRI Soil codes shown in the legend and the figure was not even referred to in the report.

Draft Fisheries Specialist Report (Feb. 20-23)

Page 10. Analysis Methodology, Assumptions

States that "This report is a quantitative analysis of readily available HGIS data that has not been verified for specific locations associated top this project." "A new revised report will be required if: 1) the proposed Action is modified in manner that cause new effects not previously considered; 2) new information becomes available that reveals the actions may affect Special Status fish species or habitat in a manner or extent not previously considered and disclosed; 3) a new fish species is listed; or 4) the project is modified in a way to necessitate additional analysis, such as the addition of an alternative."

This implies that there still needs to be a lot of fish/aquatic work on the ground to implement this project.

Page 32. Sediment

1st paragraph states that "A portion of nearly 870 stream crossings would receive needed maintenance and replacement." How will this be paid for?

Page 38. Cumulative Effects

6th Paragraph. States "The action alternatives would take place over fifteen to twenty years." I have seen 15 years in other reports and in the EA.

Pages 41-44. References and Citations.

A number of references cited in the report are not included in this References and Citations section which is out of order too.

References Cited

Snyder, R. V. and J.M. Wade. 1970. Mt. Baker National Forest Soil Resource Inventory. USDA Forest Service, Pacific Northwest Region. September 1970. 274pp.

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