May 23, 2022

Gretchen Smith
District Ranger
Darrington Ranger District
1405 Emens Avenue North
Darrington, WA 98241

RE: North Fork Stillaguamish Landscape Analysis Scoping Comments

Dear Ms. Smith:

The American Forest Resource Council (AFRC) submits the following comments for scoping for the proposed North Fork Stillaguamish Landscape Analysis project.

AFRC represents the forest products industry throughout Oregon, Washington, Idaho, Montana, and California. AFRC's members include over 50 forest product businesses and forest landowners. AFRC's mission is to advocate for sustained yield timber harvests on public timberlands throughout the West to enhance forest health and resistance to fire, insects, and disease. We do this by promoting active management to attain productive public forests, protect adjoining private forests, and assure community stability. We work to improve federal and state laws, regulations, policies, and decisions regarding access to and management of public forest lands and protection of all forest lands. Many of our members have their operations in communities adjacent to the Mount Baker Snoqualmie National Forest (MBSNF), and the management on these lands ultimately dictates not only the viability of their businesses, but also the economic health of the communities themselves. The forest products sector in Washington State continues to provide around 40,000 direct and about 100,000 indirect jobs. Many of these are found in rural communities near the Mount Baker Snoqualmie National Forest. In addition to the wages paid, the taxes and other monetary transactions generated by these businesses and family-wage jobs, contribute to the infrastructure and well-being of the local communities. AFRC submits these comments on behalf of its members.

Lack of supply of raw materials to fill manufacturing demands for wood products continues to be an issue in Washington. Several mills have closed in the past few years. Vegetation management projects, both current and future, on the MBSNF can help contribute to the wood supply in Washington that many mills depend on to continue operation and employment of their work force. The economic activity created through these treatments contribute to the greater community well-being.

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Purpose and Need

Sustainable commercial timber harvest on the Mount Baker Snoqualmie National Forest and neighboring National Forests is critical to the near and long-term success of our members. Our members, their contractors, and their employees rely on the timber output from the MBSNF and surrounding lands, including other National Forests. The economic activity created by this work also serves to support local economies and local government services. Commercial timber harvest is critical for the vitality of many rural communities around Washington state.

Additionally, much of the non-commercial and non-timber work proposed in the project requires and will benefit from both economically viable and productive commercial timber projects as well as healthy and vibrant local economies. Too often we see Purpose and Need statements where the economic contribution of timber harvest appears to be more of an afterthought or byproduct of the proposed work. However, we would suggest that well maintained roads supported by timber operations leads to huckleberry enhancement, safe and efficient recreational access, and ultimately the ability to accomplish much of the restoration work outlined in these types of proposals.

Because of this strong economic benefit to commercial timber management from National Forest lands, we strongly encourage the Darrington Ranger District to provide clear, affirmative, and strong language in the Purpose and Need statement regarding economic contributions from the North Fork Stillaguamish Landscape Analysis project. This language should emphasize both the overall economic benefits of the proposal as well as the ongoing sustainable economic and volume benefits provided by management of AMA lands as well as the added economic benefits derived from recreation.

Proposed Actions

Thinning Harvest

Condition Based Management:

AFRC supports the proposed use of Condition Based Management (CBM) for this project. The use of CBM, allows for flexibility of implementation of the project as conditions vary across the landscape. However, we would caution the Forest from trending toward over conservatism when implementing the projects in this proposal. We have seen on other Forests in Region 6 where risk aversion or over conservatism has led to projects that have not met prescriptions and left too many residual trees to accomplish the projects goals.

Expansion / Modification of LSR Boundaries

Given the level of detail provided in the Scoping Letter, AFRC does not support the modification of LSR Boundaries as part of this proposal. Disclosure of the "non-LSR" acres current land allocation along with a thorough analysis of the economic and ecological impacts from such a modification should be conducted. Additionally, it is unclear if this would require a Forest Plan amendment to conduct such an adjustment.

AMA Thinning:

AFRC generally supports the proposed treatments in the Finney AMA. Since Condition Based Management is being proposed, we strongly encourage the Forest to maximize the areas

treated with the heavy thinning and not limit it to less than 10% of the treatment area. We support the use of variable retention harvests to create early seral patches and provide a mosaic of habitats across the landscape.

We also support the treatment of stands up to 120 years of age and would encourage the MBSNF to maximize the treatments in the 80-to-120-year age classes. This will allow the Forest to explore how stands in this age class responds to treatments to accelerate late seral characteristics.

We urge the Forest to assure that all non-commercial thinning is truly non-commercial in size and not potential sawlog material. Given the scale of non-commercial thinning we caution the Forest in how it incorporates this work into commercial projects. We would be disappointed to see an economically viable project be made non-viable due to the amount of non-commercial included.

"Tree Tipping"

AFRC would caution the Forest on excessive use of this prescription due to potential cost. True tipping is best accomplished with heavy equipment, and it is unclear if the riparian prescriptions and analysis will support operating equipment close enough to the stream course to effectively place the trees in the stream. Hand falling is possible but will add costs to the project and should have limited use.

Transportation System / Travel Management:

An intact road system is critical to the management of Forest Service land, particularly for the provision of timber products. Without an adequate road system, the Forest Service will be unable to offer and sell timber products to the local industry in an economical manner. We strongly encourage the use of Maintenance Level 1 (ML 1) designations over the use of decommissioning. While based on today's access needs some roads may be deemed unnecessary the future needs based on regulations and technology may require those roads for access. If placed in ML 1 status, we believe the Forest can address aquatic and wildlife needs while not foreclosing on potential future needs of land managers.

Road and Bridge Maintenance

AFRC strongly supports this portion of the proposal. A maintained road system provides safe, efficient access to a variety of Forest users. And proper maintenance minimizes the potential impacts those roads can have on aquatic systems. Proper running surface maintenance (crowning, rolling dips, in-slope, etc.) can help to assure water is shed from the roadway as quickly as is practical. Ditch and culvert cleaning are a critical factor to controlling the flow of surface water coming off the road running surface. These drainage structures can also help to assure that sediment is not delivered to flowing streams. We would encourage the Forest to consider including the replacement of cross drains as needed during this work. Many of these roads have been in place longer than the expected life span of the corrugated metal culverts often installed during construction. Replacing worn, rusted or undersized cross drains, especially with plastic culverts, when road maintenance work is being completed can reduce the overall cost. Additionally, modern double wall plastic culverts have a longer life span and tend to flow water and debris better than equal sized corrugated metal culverts.

We would encourage the District and Forest to include rock quarry development work as part of this proposal. On Forest rock pits and the associated products that can be made from them (pit run, crushed aggregate, etc.) can help to reduce both future maintenance costs as well as costs associated with timber harvest projects. Another factor contributing to timber sale economic viability is rock source for required and/or optional road work. Costs associated with hauling rock long distances has been escalating in recent years and often represents a significant cost in timber sale implementation for our members. In fact, this spike in cost has recently been identified by several purchasers as a primary contributor to sales going no-bid.

Slope and fill stabilization also is critical and important work to maintaining a safe and effective transportation system while minimizing potential negative impacts to both aquatic and terrestrial habitats. Over time "side-cast" construction on steeper slope, often coupled with buried organic debris near the toe of the fill slope and poor drainage maintenance, has led to numerous "slumps" of the outer roadbed or road shoulder failures. Stabilizing these side cast slopes coupled with other needed maintenance can increase safety and minimize impacts from potential road failures.

Additional Comments

Riparian Reserve Management

The below comments and information apply to all proposed timber management proposals in the North Fork Stillaguamish project.

It has been well documented that thinning in riparian areas accelerates the stand's trajectory to produce large conifer trees and has minimal effect on stream temperature with adequate buffers. Removal of suppressed trees has an insignificant short-term effect on down wood, and ultimately a positive effect on long-term creation of large down woody debris and large in stream wood, which is what provides the real benefit to wildlife and stream health. We encourage the Forest Service to focus their riparian reserve treatments on a variety of native habitats. The ACS describes the need for treatments that meet the need of multiple habitat types, and we encourage the Darrington RD to look for ways to incorporate treatments that meet those needs. Utilization of gap cuts to promote early seral habitat in the reserves, treatments to diversify all areas of the reserve, and prescriptions that account for the full range of objectives that the ACS mandates should be considered.

The tradeoffs that the Forest Service will likely be considering through the ensuing environmental analysis will be between achieving these forest health benefits and potentially having adverse impacts to streams. These impacts to streams typically include stream temperature, wood recruitment, and sedimentation associated with active management. We would like the Forest Service to review the literature cited below and incorporate its findings into your environmental analysis that will shape the level of management permitted to occur in riparian reserves.

Stream temperature

Janisch, Jack E, Wondzell, Steven M., Ehinger, William J. 2012. Headwater stream temperature: Interpreting response after logging, with and without riparian buffers, Washington, USA. *Forest Ecology and Management,* 270, 302-313.

Key points of the Janisch paper include:

- The amount of canopy cover retained in the riparian buffer was not a strong explanatory variable to stream temperature.
- Very small headwater streams may be fundamentally different than many larger streams because factors other than shade from the overstory tree canopy can have sufficient influence on stream temperature.

Anderson P.D., Larson D.J., Chan, S.S. 2007 Riparian Buffer and Density Management Influences on Microclimate of Young Headwater Forests of Western Oregon. *Forest Science,* 53(2):254-269.

Key points of the Anderson paper include:

- With no-harvest buffers of 15 meters (49 feet), maximum air temperature above stream centers was less than one-degree Celsius greater than for unthinned stands.

Riparian reserve gaps

Warren, Dana R., Keeton, William S., Bechtold, Heather A., Rosi-Marshall, Emma J. 2013. Comparing streambed light availability and canopy cover in streams with old-growth versus early-mature riparian forests in western Oregon. *Aquatic Sciences* 75:547-558.

Key points of the Warren paper include:

- Canopy gaps were particularly important in creating variable light within and between reaches.
- Reaches with complex old growth riparian forests had frequent canopy gaps which led to greater stream light availability compared to adjacent reaches with simpler second-growth riparian forests.

Wood Recruitment

Burton, Julia I., Olson, Deanna H., and Puettmann, Klaus J. 2016. Effects of riparian buffer width on wood loading in headwater streams after repeated forest thinning. *Forest Ecology and Management*. 372 (2016) 247-257.

Key points of the Burton paper include:

- Wood volume in early stages of decay was higher in stream reaches with a narrow 6-meter buffer than in stream reaches with larger 15- and 70-meter buffers and in unthinned reference units.
- 82% of sourced wood in early stages of decay originated from within 15 meters of streams.

Sedimentation

Rashin, E., C. Clishe, A. Loch and J. Bell. 2006. Effectiveness of timber harvest practices for controlling sediment related water quality impacts. *Journal of the American Water Resources Association*. Paper No. 01162

Key points of the Rashin paper include:

- Vegetated buffers that are greater than 33 feet in width have been shown to be effective at trapping and storing sediment.

Collectively, we believe that this literature suggests that there exists a declining rate of returns for "protective" measures such as no-cut buffers beyond 30-40 feet. Resource values such as thermal regulation and coarse wood recruitment begin to diminish in scale as no-cut buffers become much larger. We believe that the benefits in forest health achieved through density management will greatly outweigh the potential minor tradeoffs in stream temperature and wood recruitment, based on this scientific literature. We urge the Forest Service to establish no-cut buffers along streams no larger than 40 feet and maximize forest health outcomes beyond this buffer.

Carbon Literature

We would like to encourage the Darrington RD to consider several documents related to carbon sequestration related to forest management.

McCauley, Lisa A., Robles, Marcos D., Wooley, Travis, Marshall, Robert M., Kretchun, Alec, Gori, David F. 2019. Large-scale forest restoration stabilizes carbon under climate change in Southwest United States. Ecological Applications, 0(0), 2019, e01979.

Key points of the McCauley paper include:

- Modeling scenarios showed early decreases in ecosystem carbon due to initial thinning/prescribed fire treatments, but total ecosystem carbon increased by 9–18% when compared to no harvest by the end of the simulation.
- This modeled scenario of increased carbon storage equated to the removal of carbon emissions from 55,000 to 110,000 passenger vehicles per year until the end of the century.
- Results demonstrated that large-scale forest restoration can increase the potential for carbon storage and stability and those benefits could increase as the pace of restoration accelerates.

We believe that this study supports the notion that timber harvest and fuels reduction practices collectively increase the overall carbon sequestration capability of any given acre of forest land and, in the long term, generate net benefits toward climate change mitigation.

Gray, A. N., T. R. Whittier, and M. E. Harmon. 2016. Carbon stocks and accumulation rates in Pacific Northwest forests: role of stand age, plant community, and productivity. Ecosphere 7(1):e01224. 10.1002/ecs2.1224

Key points of the Gray paper include:

- Although large trees accumulated C at a faster rate than small trees on an individual basis, their contribution to C accumulation rates was smaller on an area basis, and their importance relative to small trees declined in older stands compared to younger stands.

- Old-growth and large trees are important C stocks, but they play a minor role in additional C accumulation.

We believe that this study supports the notion that, if the role of forests in the fight against climate change is to reduce global greenhouse gasses through maximizing the sequestration of carbon from atmospheric CO2, then increasing the acreage of young, fast growing small trees is the most prudent management approach.

The Washington State Legislature during the 2020 legislative session passed HB2528 – "Recognizing the contributions of the state's forest products sector as part of the state's global climate response." This bill codified in RCW 70.235 identifies the forest products industry as a key tool in the states efforts to address atmospheric carbon levels. Sustainable forest management for carbon sequestration coupled with manufactured wood products that store carbon, are outlined as critical aspects of Washington's greenhouse gas emissions reduction goals. The North Fork Stillaguamish project can play a key role in this work.

Absent the use of commercial thinning, the forest where this proposed action would take place would thin naturally from mortality-inducing natural disturbances and other processes resulting in dead trees that would decay over time, emitting carbon to the atmosphere. Conversely, the wood and fiber removed from the forest in this proposed action would be transferred to the wood products sector for a variety of uses, each of which has different effects on carbon (Skog et al. 2014). Additionally, the regeneration harvests proposed in this project can accelerate carbon flux (the rate at which carbon is sequestered from the atmosphere) further benefiting carbon reduction goals. Carbon can be stored in wood products for a variable length of time, depending on the commodity produced. It can also be burned to produce heat or electrical energy or converted to liquid transportation fuels and chemicals that would otherwise come from fossil fuels. In addition, a substitution effect occurs when wood products are used in place of other products that emit more GHGs in manufacturing, such as concrete and steel (Gustavasson et al. 2006, Lippke et al. 2011, and McKinley et al. 2011). In fact, removing carbon from forests for human use can result in a lower net contribution of GHGs to the atmosphere than if the forest were not managed (McKinley et al. 2011, Bergman et al. 2014, and Skog et al. 2014). The IPCC recognizes wood and fiber as a renewable resource that can provide lasting climate-related mitigation benefits that can increase over time with active management (IPCC 2000). Furthermore, by reducing stand density, the proposed action may also reduce the risk of more severe disturbances, such as insect and disease outbreak and severe wildfires, which may result in lower forest carbon stocks and greater GHG emissions. And finally, as mentioned above, this work is in alignment with the goals put forth by the Washington State Legislature and signed into law by the Governor.

Gustavsson, L., Madlener, R., Hoen, H.-F., Jungmeier, G., Karjalainen, T., KlÖhn, S., … Spelter, H. (2006). The Role of Wood Material for Greenhouse Gas Mitigation. Mitigation and Adaptation Strategies for Global Change, 11(5–6), 1097–1127.

Lippke, B., Oneil, E., Harrison, R., Skog, K., Gustavsson, L., Sathre, R. 2011 Life cycle impacts of forest management and wood utilization on carbon mitigation: knowns and unknowns, Carbon Management, 2:3, 303-333.

McKinley, D.C., Ryan, M.G., Birdsey, R.A., Giardina, C.P., Harmon, M.E., Heath, L.S., Houghton, R.A., Jackson, R.B., Morrison, J.F., Murray, B.C., Pataki, D.E., Skog, K.E. 2011. A synthesis of current knowledge on forests and carbon storage in the United States. Ecological Applications. 21(6): 1902-1924.

Skog, K.E., McKinley, D.C., Birdsey, R.A., Hines, S.J., Woodall, C.W., Reinhardt, E.D., Vose, J.M. 2014. Chapter 7: Managing Carbon. In: Climate Change and United States Forests, Advances in Global Change Research 57 2014; pp. 151-182.

Some additional generic details for consideration:

- **Prescriptions:**
  - Removal of low volumes per acre in thinning operations can lead to harvest costs outweighing the value of the timber removed, particularly as the logging systems costs increase (ground vs. cable vs. helicopter).
  - Wider spacing of the residual stems in thinning can aid in both operational efficiency and also the safety of crews working on the ground, cable and helicopter logging systems.
    - Downhill cable yarding increases costs and risk of residual stem damage. Increasing spacing of residual trees by removing greater volume in these stands can enhance economic viability of the project.
  - Consider opportunities to include hardwood removals where appropriate, including road daylighting.
    - Expanded treatment prescriptions in AMA could evaluate hardwood removals in development of forest structure.

- **Harvest Systems:**
  - Selection of the appropriate harvest systems for the economic need of specific units.
  - Maximizing opportunities for mechanical harvesting and yarding can enhance economic viability.
    - This includes consideration for expanding ground-based operations beyond the slope limitations typically set for these logging systems.
    - The use of tethered logging systems for both cutting and yarding should be evaluated in the Environmental Analysis.
  - Seasonal timing restrictions, particularly in the case of helicopter operations, can create economic challenges to a successful project. Expanding operating windows to the maximum as practically allowed, including options for winter operations, should be evaluated. Other Forests within Region 6, including West Side Forests, are implementing and evaluating opportunities to expand operating windows. These include more outcome-based constraints as compared to prescriptive.
  - Selection of prescriptions and residual stem spacing appropriate for the type of harvesting.
    - Downhill yarding in a thinning will be less expensive and should have less residual stem damage with a wider spacing.
  - Fixed “move in costs” spread over a smaller volume could mean the difference between success and failure of a project from an economic viewpoint.
  - Prescriptions and sale timing and “packaging” needs to have careful consideration for units proposed for helicopter logging to assure economic viability.

- **Roads**:
    - Roads are an important part of the infrastructure providing access to the forest for a variety of stakeholder uses including forest management and recreation needs.
    - Opportunities to invest in this infrastructure through the maintenance and improvement of systems roads should be evaluated and appears to be part of the Proposed Action. This maintenance can lead to reduction and elimination of potential sediment delivery sources. It also has the potential to allow the Forest to examine opportunities for expanded operating windows, including winter operations.
    - The use of new temporary roads and existing non-system roads will help to reduce logging costs. When BMPs are used, these roads can be relatively low standard roads and then decommissioned as planned.
    - AFRC strongly encourages the Forest to explore and include the analysis of rock pit expansion and development of Forest Service rock resources. This has the potential to reduce operational costs and improve economic viability of future sales and road maintenance.

Thank you for the opportunity to comment on this project. We look forward to participating in the further development of this proposal. Should you have any questions regarding the above comments or would like additional information, please contact me at 360-352-3910 or mcomisky@amforest.org.

Sincerely,

Matt Comisky
Washington State Manager
American Forest Resource Council