March 26, 2024

Kathy Bushnell, Helena District Ranger
2880 Skyway Drive
Helena, MT 59602

**In Reply To:** Larabee Hat Scoping

Dear Ms. Bushnell:

American Forest Resource Council (AFRC) is a regional trade association whose purpose 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. AFRC represents over 50 forest product businesses and forest landowners throughout the West. Many of our members have their operations in communities adjacent to the Helena Ranger District, and the management of these lands ultimately dictates not only the viability of their businesses, but also the economic health of the communities themselves. Montana's forest products industry is one of the largest components of manufacturing in the state and employs roughly 7,000 workers earning about $300 million annually.

AFRC is pleased to see the Helena Ranger District proposing vegetation management that will likely provide useful timber products to our membership. We are also pleased to see that the provision of timber products is included in the Project's purpose and need. The timber products provided by the Forest Service are crucial to the health of our membership. Without the raw material sold by the Forest Service these mills would be unable to produce the amount of wood products that the citizens of this country demand. Without this material our members would also be unable to run their mills at capacities that keep their employees working, which is

crucial to the health of the communities that they operate in. Technical reports from both 2010[1] and 2012[2] completed for the Forest Service determined, among other things, that:

- The forest products sector helps sustain the social, economic, and ecological benefits of forestry in the United States.
- Product revenues sustain economic benefits that include jobs and income.
- Ecological and social benefits can be supported by timber revenue to landowners that help keep land in forests and by forest treatments that can help maintain ecological functions.
- Wood products fulfill fundamental needs per capita and have remained competitive with alternate means of meeting those needs.
- US lumber production and demand is expected to increase through 2040.

It is encouraging to see that regeneration harvest is included among the proposed commercial vegetation treatments. We believe that a sustainable management paradigm must include treatments that regenerate mature forest stands in addition to intermediate thinning treatments. We encourage the Forest Service to highlight this concept in the ensuing EA to illustrate why regeneration treatments are a necessary component in the Forest's vegetation program. We are also supportive of the treatments proposed to improve resiliency to fire, including those located in the wildland urban interface (WUI).

***Inventoried Roadless Area***

The scoping document indicates that management treatments may occur in the IRA, but those treatments are limited to prescribed fire. We would like the District to consider whether mechanical treatments are warranted in these areas prior to the use of prescribed fire as well as in those areas not identified for prescribed fire. Improvements to wildfire resiliency should not be excluded in any area of the National Forest System, including IRAs. In fact, ignitions in remote locations such as IRAs have the potential to be more damaging due to limitations on effective initial attack. As such, mechanical treatments to remove hazardous fuels and reduce fire risk should be a priority in IRAs. The Forest Service should also recognize that the WUI overlaps the northern portion of the Electric Peak IRA. Protection of communities and adjacent landowners in this area should be prioritized and weighed appropriately against any perceived risk that the Forest Service identifies with timber harvest in the IRA.

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[1] Ince, P.J., et al. 2011. *U.S. forest products module: a technical document supporting the Forest Service 2010 RPA assessment.* Res. Pap. FPL-RP-662. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 61 p.

[2] Skog, Kenneth E., et al. 2012. *Status and Trends for the U.S. Forest Products Sector: A Technical Document Supporting the Forest Service 2010 RPA Assessment.* General Technical Report FPL-GTR-207. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 35 p.

As the Forest likely knows, active management, including commercial timber harvest, is permitted in IRAs. Section 294.13 of the Roadless Rule permits the cutting and removal of "generally small diameter timber" if needed to "maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects." We believe that such removal is likely needed in the Electric Peak IRA to address wildfire risk. Also, this particular IRA, despite its designation, has existing roads within its boundary that could facilitate mechanical treatments without the need to create additional roads. Focusing treatments near these existing roads would also support potential fire suppression activities. Please consider developing an alternative that includes mechanical and commercial treatment in the IRA.

***Riparian***

The scoping document does not address the potential for mechanical treatments within Riparian Management Zones (RMZ). Treatments in the outer zones of RMZs, including timber harvest, are permitted in the Land Management Plan Standards, and we encourage the District to consider and analyze such treatments where appropriate. The purpose and need elements regarding resiliency, diversity, and restoration are all appropriate objectives for RMZs and it is likely that the undesirable conditions identified in the uplands also exist in the riparian areas. In fact, much of the RMZs closely resemble upland forests due to their wide buffer widths, particularly the intermittent streams.

***Carbon/Climate***

AFRC encourages the Forest to conduct a detailed analysis on the Project's impacts to climate change, carbon sequestration, and greenhouse gas emissions. Interim CEQ regulations pertaining to the analysis of this resource have recently been updated and the Forest Service must conduct its analysis on this Project accordingly. Specifically, those regulations require that greenhouse gas emissions be analyzed for all federal actions. Those regulations also encourage federal agencies to consider the context of short-term emissions as a result of actions that will improve long term sequestration and storage. We strongly believe that the minor, short-term emissions associated with timber harvest and other associated treatments are dwarfed by the long-term benefits associated with such treatments.

We urge the District to clearly outline how the proposed treatments, while possibly emitting carbon in the near term, would ultimately benefit climate change mitigation goals by 1.) reducing the likelihood of carbon emissions through wildfire; 2.) increasing the rate of carbon sequestration by reducing competition to residual trees; and 3.) storing carbon in long lasting

wood products that would otherwise be at risk of loss through wildfire. Carbon loss through high intensity wildfire has become a leading cause of our national forests transitioning from carbon sinks to carbon sources. Active management to reduce such a transition would not only reduce carbon loss but accelerate carbon sequestration. And ultimately, any timber products harvested to further these two objectives has been shown to have long lasting carbon storage potential.

Please consider the points below from a technical report by the Climate Change Vulnerability Assessment and Adaptation Project (SWOAP) in Southwest Oregon.

- Wood harvested from the forest, especially timber used for durable structures, can be reservoirs of long-term carbon storage (Bergman et al. 2014).
- Forests and their products embody a closed-loop system in which emissions associated with harvests and product use are eventually recovered as forests regrow.
- Although products may be retired in solid waste disposal sites, they decompose quite slowly, causing carbon to continue to be stored for many decades.
- Products derived from the harvest of timber from national forests reduce carbon emissions by substituting for more energy-intensive materials including concrete, steel, and plastics.

There is scientific support for the practice of regular harvests at an age where tree growth begins to slow, storage of that tree carbon in long-lasting wood products, and proactive reforestation. A failure to do so would hamper that acre's ability to maximize carbon sequestration through the replacement of slow growing large trees with fast growing small trees and the storage of those large trees in long-lasting wood products. Not storing that carbon in wood products also poses the risk of losing the carbon in standing trees from high intensity wildfire, which is becoming increasingly prevalent on public lands in western states. A 2022 study estimated that wildfires in California in 2020 emitted 127 million metric tons of carbon into the atmosphere, making the greenhouse gas (GHG) emissions from wildfires the second most important source in the state, after transportation.[3] For context, the U.S. Forest Service recently disclosed that the agency only "commercially harvests one tenth of one percent of acres within the National Forest System each year. Harvests designed to improve stand health and resilience by reducing forest density or removing trees damaged by insect or disease make up 86 percent of those acres. The remainder are final regeneration harvests that are designed to be followed by reforestation."[4] There is extraordinary opportunity to increase the practice of sustainable forest management on federal lands as an effective tool to sequester carbon.

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[3] Jerrett, Michael, et al., Up in smoke: California's greenhouse gas reductions could be wiped out by 2020 wildfires. Environmental Pollution, Volume 310, 2022, 119888,ISSN 0269-7491, available at, https://doi.org/10.1016/j.envpol.2022.119888.

[4] 88 Fed. Reg. 24,497 (April 21, 2023).

Harvesting trees and transferring the stored carbon to wood products allows a land manager to "stack" the sequestration potential of that land. For example, assume an objective to maximize carbon sequestration on 100 acres over a 150-year period starting at year zero. Without active management and timber harvest, those trees would grow to 150 years and represent the only carbon sequestered on those 100 acres at the end of the 150-year cycle (assuming they don't burn in a wildfire). Alternatively, the trees could be harvested on a 50-year rotation and stored in wood products. After 150 years, there would be carbon stored in an existing 50-year-old stand, plus carbon stored in wood products from an additional two 50-year-old stands previously harvested. The figure below from the IPCC (2007) illustrates the concept of stacking[5]. Please consider adopting this graph into the Larabee Hat project analysis.

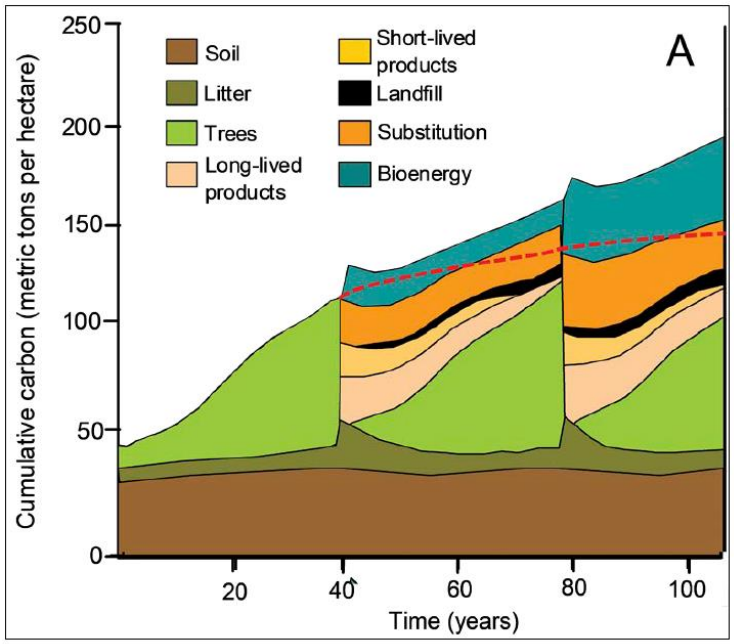


Figure 8.7—Carbon balance from a hypothetical forest management project in which the forest is harvested roughly every 40 years from land that started with low forest carbon stocks. This figure accounts for forest regrowth and carbon stored in wood products in use and landfills as well as the prevented release of fossil fuel carbon (also counted as stored carbon) via product substitution and biomass energy. It illustrates how forests can continue to accrue carbon over time with forest management. Figure is from McKinley et al. (2011) and adapted from IPCC (2007).

We believe that this graph encapsulates the forest management paradigm that would be most effective at maximizing carbon sequestration on a per-acre basis by "stacking" storage in wood products and regrowth of newly planted trees. A 2013 study from the Journal of Sustainable Forestry summarized these concepts well: *More CO2 can be sequestered synergistically in the products or wood energy and landscape together than in the unharvested landscape. Harvesting sustainably at an optimum stand age will sequester more carbon in the combined products, wood energy, and forest than harvesting sustainably at other ages*.[6]

[5] McKinley, Duncan C., et al., A synthesis of current knowledge on forests and carbon storage in the United States, Ecological Applications, 21(6), pp. 1902–1924 (2011)

[6] Oliver, Chadwick Dearing, et al., Carbon, Fossil Fuel, and Biodiversity Mitigation With Wood and Forests, Journal of Sustainable Forestry, 33:3, 248-275 (2014), DOI: 10.1080/10549811.2013.839386.

We would like to encourage the Helena District to consider several additional 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.

U.S. Department of Agriculture, Forest Service. 2023. Future of America's Forest and Rangelands: Forest Service 2020 Resources Planning Act Assessment. Gen. Tech. Rep. WO-102. Washington, DC. 348 p. https://doi.org/10.2737/WO-GTR-102.

To further support the concepts validated by Gray et al., the USDA recently published a Technical Report on the future of America's forests and rangelands.

Key points of the Report include:

- The projected decrease in young forests and increase in older forests will result in overall decreases in growth rates and carbon sequestration.
- The amount of carbon sequestered by forests is projected to decline between 2020 and 2070 under all scenarios, with the forest ecosystem projected to be a net source of carbon in 2070.
- Without active management, significant disturbance, and land use change, forests approach a steady state in terms of C stock change over time.
- Annual carbon sequestration is projected to decrease, indicating carbon saturation of U.S. forests, due in part to forest aging and senescence.

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.

In the absence 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). 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.

***Operations***

The desired outcomes outlined in the scoping document can only be realized if the Forest Service sells their timber products through sales that are economically viable. This viability is tied to both the volume and type of timber products sold and the manner in which these products are permitted to be delivered from the forest to the mills. There are many ways to design a timber sale that allows a purchaser the ability to deliver logs to their mill in an efficient manner while also adhering to the necessary practices that are designed to protect the environmental resources present on Forest Service forestland.

The primary issues affecting the ability of our members to feasibly deliver logs to their mills are firm operating restrictions. As stated above, we understand that the Forest Service must take necessary precautions to protect their resources; however, we believe that in many cases there are conditions that exist on the ground that are not in step with many of the restrictions described in Forest Service EA's and contracts (i.e. dry conditions during wet season, wet conditions during dry season). We would like the Forest Service to shift their methods for protecting resources from that of firm prescriptive restrictions to one that focuses on descriptive end-results; in other words, describe what you would like the end result to be rather than prescribing how to get there. There are a variety of operators that work in the Barlow market area with a variety of skills and equipment. Developing a contract that firmly describes how any given unit shall be logged may inherently limit the abilities of certain operators. For example, restricting certain types of ground-based equipment rather than describing what condition the soils should be at the end of the contract period unnecessarily limits the ability of certain operators to complete a sale in an appropriate manner with the proper and cautious use of their equipment. To address this issue we would like to see flexibility in the EA and contract to allow a variety of equipment to the sale areas. We feel that there are several ways to properly harvest any piece of ground, and certain restrictive language can limit some potential operators. Though some of the proposal area is planned for cable harvest, there are opportunities to use certain ground equipment such as fellerbunchers and processors in the units to make cable yarding more efficient. Allowing the use of processors and fellerbunchers throughout these units can greatly increase its economic viability, and in some cases decrease disturbance by decreasing the amount of cable corridors, reduce damage to the residual stand and provide a more even distribution of woody debris following harvest.

The effectiveness of harvesting and yarding low volume per acre on steep slopes is a significant obstacle to implementation. Tethered-assist logging is becoming a more economical,

safe, and available method of yarding on steep slopes throughout the region. The weight displacement provided by tethering allows tracked equipment to operate on steep ground with limited soil displacement or compaction. Standard psi levels for that tracked equipment are transferred to the tethering uphill. Other Forests in the Region have permitted this equipment to be used on Forest Service thinning stands on slopes up to 70%. We urge the Helena District to consider allowing this equipment to be used where appropriate on the Larabee Hat project to mitigate implementation obstacles.

Green, P. Q., Chung, W., Leshchinsky, B., Belart, F., Sessions, J., Fitzgerald, S. A., Wimer, J. A., Cushing, T., Garland, J. J. (2019). Insight into the productivity, cost and soil impacts of cable-assisted harvester-forwarder thinning in western Oregon. *For. Sci.* 66(1):82–96

Key Point of the Green paper include:

- The use of cable assistance can reduce track coverage and reduce shear displacement, and thus likely lessen potential soil impact caused by forestry machines.

Garland, J., F. Belart, R. Crawford, W. Chung, T. Cushing, S. Fitzgerald, P. Green, *et al.* 2019. Safety in steep slope logging operations. *J. Agromedicine* 24(2):138–145.

Key Point of the Garland paper include:

- Use of new tethered-assist technology reduces exposure to hazards and reduces workers exposed to the most dangerous work in logging—felling and working on cable operations on steep slopes.

AFRC is happy to be involved in the planning and decision-making process for the Larabee Hat project. Should you have any questions regarding the above comments, please contact me at 541-525-6113 or ageissler@amforest.org.

Sincerely,

Andy Geissler
Federal Timber Program Director
American Forest Resource Council