



December 30, 2024

Caila Campbell  
Clackamas River Ranger District  
16400 Champion Way  
Sandy, OR 97055

**In Reply To:** Stone Creek Scoping

Dear Ms. Campbell:

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 Clackamas River Ranger District, 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 state of Oregon's forest sector employs approximately 61,000 Oregonians, with AFRC's membership directly and indirectly constituting a large percentage of those jobs. Rural communities, such as the ones affected by this project, are particularly sensitive to the forest product sector in that more than 50% of all manufacturing jobs are in wood manufacturing.

AFRC is pleased to see the Clackamas River Ranger District proposing vegetation management on lands designated as Matrix that will likely provide useful timber products to our membership. Our members depend on a predictable and economical supply of timber products off Forest Service land to run their businesses and to provide useful wood products to the American public. A timber supply that is managed in accordance with the principles of sustained yield are also critical to our membership as long-term timber supply is equally important as near-

term timber supply. Lands designated as Matrix are the only lands on the Forest where sustained-yield timber management can occur and it is imperative to AFRC that the Clackamas River Ranger District recognize this and design vegetation management project accordingly. Although the primary purpose of this project does not directly address sustained-yield timber management, the treatments designed to increase forest resiliency by harvesting commercial timber products, if implemented correctly, will help maintain a viable forest ecosystem capable of growing and sustaining timber products for future needs.

The treatments on the Stone Creek project will also likely provide short-term products for the local industry and we want to ensure that this provision is an important consideration for the decision maker as the project progresses. As we will discuss later in this letter the importance of our members' ability to harvest and remove these timber products from the timber sales generated off this project is paramount. We would like the Forest Service to recognize this importance by **adding economic viability & support to the local infrastructure to the purpose and need** of the Stone Creek project. Supporting local industry and providing useful raw materials to maintain a robust manufacturing sector should be a principal objective to any project proposed on Forest Service land, particularly those lands designated as Matrix.

We urge the Forest Service to treat as many acres in need of treatment within the project boundary. Typically, AFRC visits project areas during the scoping period to provide more substantive and site-specific comments to the Forest Service. During those visits we review proposed treatment units as well as stands that are not proposed for treatment. Due to the timeframe of this scoping period and the current snowpack we are unable to conduct these site visits. Regardless, we ask that the Forest Service maintain flexibility to add additional commercial treatment stands to the project beyond the 850 acres currently proposed. We plan to visit the Stone Creek project area as soon as access permits and hope that the Forest Service will be open to the potential for supplemental treatment units should any be identified.

### **Riparian Reserve Management**

The scoping notice is unclear on whether stands within Riparian Reserves are proposed for commercial treatment. Although AFRC was unable to access the project area during the scoping period due to snowpack we are aware that forest conditions in riparian buffers are typically the same as the conditions in the adjacent uplands. In particular, riparian conditions along small, high elevation intermittent and ephemeral streams typically only extend a short distance from the creek channel. Beyond that short distance, forest conditions are essentially identical to the uplands. **Therefore, we urge the District to consider an alternative where commercial, and non-commercial, treatments are included to meet the project purpose and need.**

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 needed structures for wildlife and stream health. We encourage the Forest Service to focus their riparian reserve treatments on a variety of native habitats. The Aquatic Conservation Strategy (ACS) describes the need for treatments that meet the need of multiple habitat types and we encourage the Clackamas River District 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 planning process 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 planning 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.

### ***Dry Forests***

Messier, Michael S., Shatford, Jeff P.A., and Hibbs, David E. 2011. Fire Exclusion effects on riparian forest dynamics in southwestern Oregon. *Forest Ecology and Management*. 264 (2012) 60-71.

Key points of the Messier paper include:

- Fire exclusion has altered the structure, composition, and successional trajectory of riparian forests in fire-prone landscapes.
- Fire exclusion has been associated with increase in tree density and recruitment of shade-tolerate species that may replace large diameter, more decay-resistant Douglas-fir trees.

- A hands-off management regime for these riparian forests will have ecologically undesirable consequences.

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/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.<sup>1</sup> 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."<sup>2</sup> There is extraordinary opportunity to increase the practice of sustainable forest management on federal lands as an effective tool to sequester carbon.

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-

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<sup>1</sup> 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>.

<sup>2</sup> 88 Fed. Reg. 24,497 (April 21, 2023).

old stands previously harvested. The figure below from the IPCC (2007) illustrates the concept of stacking<sup>3</sup>. **Please consider adopting this graph into the Stone Creek project analysis.**

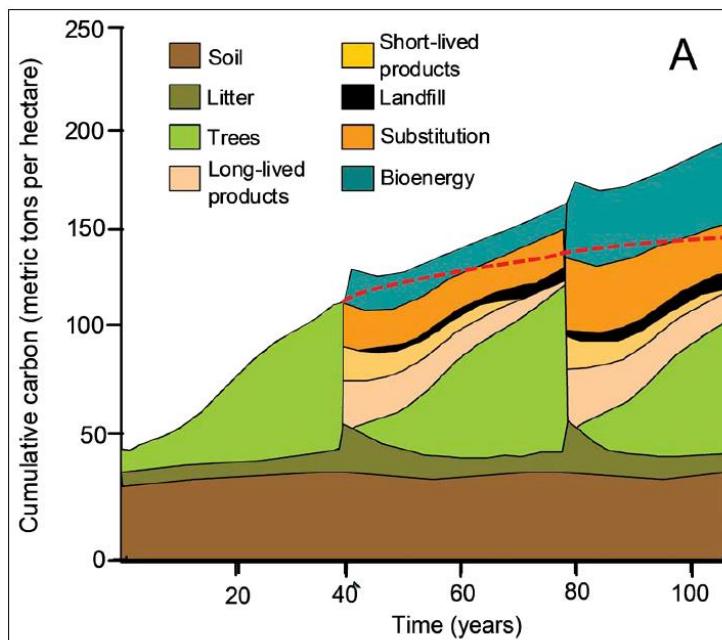


Figure 8.7—Carbon balance from a hypothetical forest management project in which the forest is harvested roughly every 40 years from land that started with low forest carbon stocks. This figure accounts for forest regrowth and carbon stored in wood products in use and landfills as well as the prevented 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 CO<sub>2</sub> 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.*<sup>4</sup>

We would like to encourage the Clackamas River 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:

<sup>3</sup> 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)

<sup>4</sup> 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.

- 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 CO<sub>2</sub>, 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 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. These benefits 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 Clackamas River 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.

Constructing forest roads is essential if active management is desired, and we are pleased that the Forest Service is proposing the roads that are needed to access and treat as much as the project area as possible in an economically feasible way. Proper road design and layout should pose little to no negative impacts on water quality or slope stability. Consistent and steady operation time throughout the year is important for our members not only to supply a steady source of timber for their mills, but also to keep their employees working. These two values are intangible and hard to quantify as dollar figures in a graph or table, but they are important factors to consider.

The ability to yard and haul timber in the winter months will often make the difference between a sale selling and not, and we hope that the Clackamas River District is working to accommodate this. The Project Design Criteria associated with the scoping notice seem to indicate that log haul will be permitted throughout the year under favorable conditions, typically

measured by rainfall amounts. We appreciate the District striving to accommodate year-round haul when conditions warrant it.

AFRC is happy to be involved in the planning and decision-making process for the Stone Creek EA. Should you have any questions regarding the above comments, please contact me at 541-525-6113 or [ageissler@amforest.org](mailto:ageissler@amforest.org).

Sincerely,



Andy Geissler  
Federal Timber Program Director  
American Forest Resource Council