

To: Rep. Kathy Castor, Chair, House Select Committee on the Climate Crisis
Rep. Frank Pallone, Chair, House Energy and Commerce Committee
Rep. Raúl Grijalva, Chair, House Natural Resources Committee
Rep. Collin Peterson, Chair, House Agriculture Committee
Sen. Lisa Murkowski, Chair, Senate Committee on Energy and Natural Resources
Sen. John Barrasso, Chair, Senate Committee on Environment and Public Works
From: Scientists concerned about climate and biodiversity impact of logging
Date: 13 May 2020

Dear Members of Congress,

As forest and climate change scientists and experts, we are writing to urge you to oppose legislative proposals that would promote logging and wood consumption, ostensibly as a natural climate change solution, based on claims that these represent an effective carbon storage approach, or claims that biomass logging, and incinerating trees for energy, represents renewable, carbon-neutral energy.

We find no scientific evidence to support increased logging to store more carbon in wood products, such as dimensional lumber or cross-laminated timber (CLT) for tall buildings, as a natural climate solution. The growing consensus of scientific findings is that, to effectively mitigate the worst impacts of climate change, we must not only move beyond fossil fuel consumption but must also substantially *increase* protection of our native forests in order to absorb more CO₂ from the atmosphere and store more, not less, carbon in our forests (Depro et al. 2008, Harris et al. 2016, Woodwell 2016, Erb et al. 2018, IPCC 2018, Law et al. 2018, Harmon 2019, Moomaw et al. 2019).

Furthermore, the scientific evidence does not support the burning of wood in place of fossil fuels as a climate solution. Current science finds that burning trees for energy produces even more CO₂ than burning coal, for equal electricity produced (Serman et al. 2018), and the considerable accumulated carbon debt from the delay in growing a replacement forest is not made up by planting trees or wood substitution (noted below). We need to increase growing forests to more rapidly close the gap between emissions and removal of CO₂ by forests, while we simultaneously lower emissions from our energy, industrial and agricultural sectors.

In your deliberations on this serious climate change issue, we encourage you to consider the following:

- The logging and wood products industries suggest that most of the carbon in trees that are logged and removed from forests will simply be stored in CLT and other wood products for buildings instead of being stored in forest ecosystems. However, this is clearly incorrect. Up to 40% of the harvested material does not become forest products and is burned or decomposes quickly, and a majority of manufacturing waste is burned for heat. One study found that 65% of the carbon from Oregon forests logged over the past 115 years remains in the atmosphere, and just 19% is stored in long-lived products. The remainder is in landfills (Hudiburg et al. 2019).
- Logging in U.S. forests emits 617 million tons of CO₂ annually (Harris et al. 2016). Further, logging involves transportation of trucks and machinery across long distances between the forest and the mill. For every ton of carbon emitted from logging, an additional 17.2% (106 million tons of CO₂) is emitted from fossil fuel consumption to support transportation, extraction, and processing of wood (Ingerson 2007). In fact, annual CO₂ emissions from logging in U.S. forests are comparable to yearly U.S. emissions from the residential and commercial sectors combined (<https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>). The

cumulative climate change impact of logging in the U.S. is even higher, since logging causes substantial reductions in carbon sequestration and storage potential in forests due to soil compaction and nutrient removal, and these combined impacts can often reduce forest carbon storage potential by 30% or more (e.g., Elliott et al. 1996, Walmsley et al. 2009).

- The wood products industry claims that substituting wood for concrete and steel reduces the overall carbon footprint of buildings. However, this claim has been refuted by more recent analyses that reveal forest industries have been using unrealistic and erroneous assumptions in their models, overestimating the long-term mitigation benefits of substitution by 2 to 100-fold (Law et al. 2018, Harmon 2019). The climate impact of wood is even worse if the reduced forest carbon sequestration and storage caused by nutrient loss and soil compaction from logging is included, as discussed above.

In countless public communications, and at numerous Congressional hearings, industry representatives have advocated for increased logging in the context of reducing wildland fire and related emissions. While small-tree thinning can reduce fire intensity when coupled with burning of slash debris (e.g., Perry et al. 2004, Strom and Fulé 2007) under very limited conditions, recent evidence shows intensive forest management characterized by young trees and homogenized fuels burn at higher severity (Zald & Dunn 2018). Further, the extremely low probability (less than 1%, Schoennagel et al. 2017) of thinned sites encountering a fire where thinning has occurred limits the effectiveness of such activities to forested areas near homes. Troublingly, to make thinning operations economically attractive to logging companies, commercial logging of larger, more fire-resistant trees often occurs across large areas.

Importantly, mechanical thinning results in a substantial net loss of forest carbon storage, and a net increase in carbon emissions that can substantially exceed those of wildfire emissions (Hudiburg et al. 2013, Campbell et al. 2012). Reduced forest protections and increased logging tend to make wildland fires burn *more* intensely (Bradley et al. 2016). This can also occur with commercial thinning, where mature trees are removed (Cruz et al. 2008, Cruz et al. 2014). As an example, logging in U.S. forests emits 10 times more carbon than fire and native insects combined (Harris et al. 2016). And, unlike logging, fire cycles nutrients and helps increase new forest growth.

We are hopeful that a new and more scientifically sound direction will be considered by Members that emphasizes increased forest protections, and a shift away from consumption of wood products and forest biomass energy, to help mitigate the climate crisis. We believe having a dialogue now would be productive, and we could help members of your Committees to be more effective in achieving the conservation and climate change goals that we share. We look forward to hearing from you and are available to provide additional scientific sources and serve as a resource for your Committees as you consider policy proposals on the climate crisis.

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