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Protecting Forests from Logging: The Missing Piece Necessary to Combat Climate Change

Unless we take bold action to curb human-caused climate change, within the next 20 to 70 years 25% or more of the residences in hundreds of U.S. towns and cities will be under sea water, severely impacting some of the nation's largest coastal cities, such as New York City, Boston, Jersey City, and Honolulu, as well as Long Beach, Oxnard, and Richmond in California.¹ Within this same timeframe, at least 414 U.S. towns and cities will be even more impacted, with at least 50% of residences being overwhelmed by seawater, including Miami, New Orleans, Norfolk, VA, as well as Sacramento, Stockton, and Huntington Beach in California. Today residents in 17 U.S. towns are starting to relocate due to climate caused sea level rise.

The need to reduce fossil fuel consumption to meet climate change goals is widely known, but fewer people understand that forest protection is equally necessary to solve this climate crisis. Our forests absorb CO₂ from the atmosphere—trees “breathe in” CO₂, store the carbon from CO₂ in their growing trunks, branches, leaves and needles, and then emit oxygen. Intact forest ecosystems, including those affected by natural disturbances such as fire, drought and native insects, are the very best at carbon storage and sequestration. **Here is why protecting forests in the United States from logging is essential to combat climate change:**

- It is largely understood that logging in forests internationally, such as in the rainforests of the Amazon, is contributing to climate change and that these areas need to be protected. However, **most people do not know that more logging and deforestation occurs annually in the U.S., including on our public lands, than in any other nation in the World.**² The logging of forests is not just an “overseas” problem. If we are to have the credibility to leverage change abroad and increase forest protection globally to mitigate climate change, we must simultaneously do our part by substantially curtailing logging of American forests.
- Logging not only removes the carbon stored in trees from forest ecosystems, but it also compacts and damages soils, removes vital nutrients that are stored in trees, and disturbs the carbon contained in soils.³ All of these impacts from logging combine to significantly reduce forest productivity (the rate at which trees and plants will grow), and therefore reduces the capacity of our forests to absorb and sequester CO₂ over time. In addition, research shows that **45-60% of the carbon stored in trees that are logged becomes CO₂ emissions as soon as the trees are removed from the ecosystem and processed into wood products.**⁴ **100% of the carbon stored in trees that are logged and then burned for biomass energy becomes CO₂ emissions,** making biomass burning more polluting than burning coal.⁵ Logging forests does not result in more resilient or productive ecosystems or more carbon storage.

¹ Strauss, B.H., et al. 2015. Proceedings of the National Academy of Sciences, Vol. 112, pp. 13508-13.

² (a) Hansen, M.C., et al. 2013. Science, Vol. 342, pp. 850-53. (b) Prestemon, J.P., et al. 2015. The global position of the U.S. forest products industry.

³ (a) Elliot, W.J., et al. 1996. The effects of forest management on erosion and soil productivity. Symposium on Soil Quality and Erosion Interaction. July 7, 1996, Keystone, CO. (b) Helmisaari, H.S., et al. 2011. Forest Ecology and Management, Vol. 261, pp. 1919-27. (c) Achat, D.L., et al. 2015. Scientific Reports, Vol. 5, Article 15991.

⁴ Harmon, M.E., et al. 1996. Climatic Change, Vol. 33, pp. 521-50.

⁵ <http://www.pfpi.net/carbon-emissions>

- Scientists agree, it is not realistically possible to achieve necessary climate change mitigation goals solely by reducing fossil fuel consumption—we must protect our forests.⁶ **Only by substantially increasing forest protection from logging, while also recovering forests which have suffered industrial deforestation, in combination with reducing fossil fuel use and emissions, will we have a greater than 66% chance of keeping additional global warming below 2 degrees Celsius.** If we take even bolder and immediate action to prevent the loss of forests and forest productivity caused by logging, we have a 90% chance of keeping warming below 1.5 degrees Celsius. Failing to include forest protection from logging in our climate change strategy reduces our chances of successfully mitigating global temperature rise to less than 10%.
- Logging, conducted ostensibly to “thin the forest”, “reduce fuels” or for so called “restoration”, causes a net loss of carbon from forest ecosystems.⁷ Whereas ***Wildfires are not a significant contributor to greenhouse gas emissions.*** Even in the largest, most intense, crown fires, only a very small percentage of carbon stored in trees is actually consumed by the fire. Forests burn in a mosaic pattern of low, moderate and high severity, and in the areas of a forest which burn at low and moderate severity (which amounts to most of the area of any given fire), this percentage is even lower. After fires, including in high severity fire areas, forests rapidly and dramatically sequester carbon from the atmosphere, incorporating CO₂ into the abundant plant and tree regeneration that begins to occur almost immediately after the fire burns out.⁸

Making the link between climate change mitigation and forest protection from logging currently lacks the recognition needed to truly offset the buildup of CO₂ in Earth’s atmosphere and prevent the planet from heating above 2° C. The policies being proposed in Congress to subsidize, expedite and increase logging on both private and public lands, for either wood products or biomass energy, illuminate a disconnect between climate change rhetoric and the actions that are necessary to reach our CO₂ reduction goals. We need elected officials to exercise visionary and bold leadership to not only oppose all efforts to fund and accelerate logging, but also to push for the reforms and restraints on logging that we need in order to limit global temperature rise. We need to protect our National Forests and other federal forestlands from logging, and eliminate taxpayer subsidies that drive logging on private and state lands.

⁶ Griscom, B.W., et al. 2017. Proceedings of the National Academy of Sciences, Vol. 114, pp. 11645-50.

⁷ Campbell et al. 2011. Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Frontiers in Ecology and Environment* 10: 83-90.

⁸ (a) Meigs et al. 2009. Forest fire impacts on carbon uptake, storage, and emission: the role of burn severity in the eastern Cascades, Oregon. *Ecosystems* 12: 1246-67; (b) Hanson. 2018. Landscape heterogeneity following high-severity fire in California’s forests. *Wildlife Society Bulletin* (in press).