The Truth About Industrial Forestry and Carbon Emissions

Carbon dioxide released by logging is Oregon's second largest emissions source

All forms of logging generate carbon dioxide emissions because roughly 80 percent of the carbon dioxide stored in trees ends up being lost to the waste stream or burned in the manufacturing and consumption of lumber, paper, or biomass products. The waste stream decays rapidly, releasing major amounts of carbon dioxide into the atmosphere within a year or so of logging. Longer lived wood products like wood beams and furniture store the residual 20 percent for decades, but paper products and biomass store nearly zero.

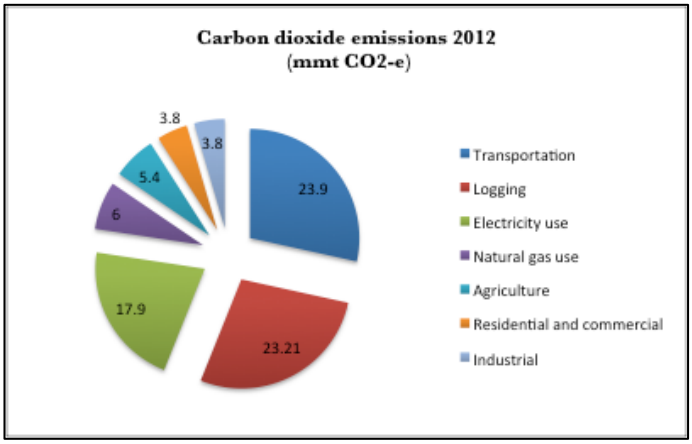

Figure 1: *Carbon dioxide emissions from timber harvest averaged over 20 million metric tons between 1990 and 2002 according to a study prepared by the Oregon Global Warming Commission and over 23 million between 2000 and 2014 according to Center for Sustainable Economy.*

Because of this, proper accounting of emissions from the industrial forestry sector must include emissions associated with all forms of logging and differentiate between end uses. In the only study it has completed on the subject to date, the Oregon Global Warming Commission found that emissions associated with timber harvest in Oregon between 1990 and 2002 averaged over 20 million metric tons carbon dioxide equivalent (20 mmt CO2-e) per year – the second largest emissions source in the state. CSE conducted an independent assessment for 2000 – 2014 and found that logging related emissions averaged over 23 mmt CO2-e (Figure 1).

Clearcutting destroys carbon sequestration capacity of a site for over a decade

Most forms of logging, especially clearcutting, reduce the carbon sequestration capacity of a given site simply because trees that were once there capturing and storing carbon dioxide are no longer present. Lost carbon sequestration capacity is a form of indirect emissions because carbon dioxide that was once being removed from the atmosphere now remains and thus contributes to increasing carbon dioxide concentrations.

Figure 2: *These clearcut lands will not begin to absorb more carbon than they emit until 2025 or later.*

For clearcut sites, carbon sequestration capacity is not only reduced to zero but actually transforms sites from net carbon dioxide sinks to net carbon dioxide emitters for a period of 10-15 years. This is because any carbon dioxide sequestered by new seedlings or residual vegetation is overshadowed by emissions associated with the decay of slash, stumps, and roots left behind after logging as well as the carbon dioxide released from disturbed soils. In addition, logging roads permanently destroy sequestration capacity.

Clearcutting faster than the rate of forest regrowth pushes emissions even higher

Clearcutting at a rate that exceeds the rate of forest cover regrowth further reduces carbon sequestration capacity because as the proportion of land in recently clearcut condition (15 years or less) grows so too does the proportion of land that is emitting rather than sequestering carbon dioxide. Between 2001 and 2014 Oregon experienced a net loss of 1.2 million acres of forest cover, about half (520,000 acres) of which was

due to excessive rates of clearcutting in western Oregon. Because of this, it is critical for climate policy makers to ensure that forest cover loss is halted and reversed and that landowners who clearcut their lands faster than the rate of forest regrowth are identified and penalized.

Short rotation timber plantations store vastly less carbon than old growth forests

In the Pacific Northwest, short rotation forestry – clear-cutting a site every 50 years or less – results in vastly less carbon dioxide stored on site than long rotation forestry or management to create old growth forest conditions. This is because mature and old growth forests continue to sequester and store more carbon dioxide than they release well into their fifth or sixth century. Old growth forests in the Pacific Northwest store on average over 600 tons of carbon per hectare at age 450 while tree plantations 60 years in age store only about 260. Most plantations in Oregon are now managed to be only 30-40 years in age. The conversion of old growth forests into timber plantations in Oregon and Washington has caused a net release of over 1.7 billion metric tons of carbon into the atmosphere since 1890.

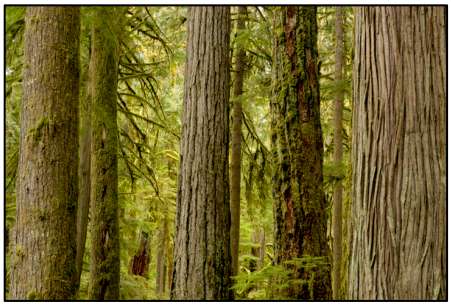

Figure 3: *Ancient forests store on site over 2.3 times the amount of carbon stored by a 50-year-old timber plantation.*

Pacific Northwest forests can play a critical role in the fight against global warming

If managed properly under long rotations and with the goal of maximizing the proportion of the forested landscape in mature and old growth condition, Pacific Northwest forests can sequester and store more carbon dioxide per hectare than any other forest type in the world and thus provide opportunities for policy makers in Oregon, Washington, Alaska, and California to make a major contribution to the fight against global warming. Tragically, this opportunity is being squandered as old growth forests continue to be cut and as management of state and private lands is, essentially, unregulated. State and private lands are being clearcut at an increasing rate as export markets soar.

Forests that are on the chopping block do not count as emissions offsets

Unless permanently removed from timber production, lands should not qualify as carbon offsets or serve to reduce the emissions assigned to any particular timberland owner. Residual forests not cut down in any one year are simply "emissions in waiting," and should not be used as an excuse to exempt the timber industry from regulation. One of the litmus tests of a credible carbon offset is permanence – and simply delaying clearcutting of a particular site does not meet this test. Moreover, reforestation is state law, and unless a landowner goes beyond mere compliance with the law they are barred from offset markets because there is no "additionality" associated with their actions.

Good actors using carbon neutral or "carbon plus" practices need help to compete

Natural selection forestry (cutting only dead trees), individual tree selection, and many forms of thinning are "carbon-plus" forestry techniques because trees that remain have more sunlight, water, and nutrients to grow faster and absorb more carbon dioxide than is released by logging. Sophisticated labor-intensive techniques to do this can employ tens of thousands of laid off wood products workers. Revenues from a forest carbon tax could be used to make these techniques more competitive through cost share assistance provided by states and counties.

For more information about these facts as well as legislative and legal solutions we are pursing please contact us at:

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