CLEARCUT CARBON: SUMMARY

A Sierra Club BC report on the future of forests in British Columbia

December 2019, Jens Wieting, Senior Forest and Climate Campaigner, with mapping analysis by David Leversee

Our planet is in the midst of a climate crisis, and the latest science calls for reducing global emissions by half within the next decade to avoid catastrophic climate change. Most of the world's intact forests, particularly primary (unlogged) forests, help slow climate change by taking carbon out of the atmosphere and storing it in living and dead trees and soil. However, according to provincial data, as a result of destructive logging and climate impacts like beetle outbreaks, forests in B.C. have released more carbon than they absorb for over a decade.

Forest clearcutting is a major contributor to carbon emissions and loss of carbon capture in the Pacific Northwest of North America. Clearcutting causes a rapid and large loss of carbon from decomposing organic matter and soils, particularly when old-growth forests are logged. Additionally, it takes 13 years or more before the replanted young forest begins to absorb more carbon than is still being released from the area cut. For at least 13 years, these areas are "sequestration dead zones": clearcut lands that emit more carbon than they absorb.

For this report, Sierra Club BC reviewed B.C. government data to identify the total area of old-growth and second-growth forest logged across the province over 13 years (2005-2017), and to estimate the carbon emissions and the loss of carbon capture caused by this logging.

The analysis shows a total area of about 3.6 million hectares of "sequestration dead zones," an area larger than the size of Vancouver Island. This includes over 1.9 million hectares of old-growth forest and close to 1.7 million hectares of second-growth that were cut. The "sequestration dead zones" make up 9.1% of the total area of relatively productive provincial forests.

The latest provincial data show annual emissions from logging as 42 million tonnes of carbon dioxide. Temperate forests capture about 2 tonnes of carbon per hectare per year. This analysis suggests that in B.C., in addition to emissions from logging, clearcutting also prevented trees from removing at least 26.5 million tonnes of carbon dioxide per year from the atmosphere. This amount of carbon capture that cannot occur because the forest has been logged is known as foregone carbon sequestration.

For comparison, B.C.'s officially reported emissions (primarily from burning fossil fuels, not counting forest emissions) were about 65 million tonnes of carbon dioxide in 2017. Considering the 42 million tonnes of carbon dioxide emissions caused annually by logging and the 26.5 million tonnes of foregone capture of carbon dioxide per year together, their combined impact on our climate exceeds

A burnt clearcut on Vancouver Island. Slash-burning or fire in clearcut areas speeds up the release of carbon from wood waste left behind, instead of leaving more trees standing to continue to grow and sequester carbon (Photo by TJ Watt/Ancient Forest Alliance).

the impact of B.C.'s officially counted emissions. This means reforming forestry to avoid emissions from logging and loss of carbon capture is as important for provincial climate action as phasing out fossil fuels.

Overall, B.C.'s growing forest emissions from destructive logging, wildfires and beetle outbreaks are now three times greater than official provincial emissions. Yet these forest emissions are largely ignored because they are not counted as part of B.C.'s official emissions in provincial greenhouse gas inventories.

Old-growth forests in B.C. can store over 1,000 tonnes of carbon per hectare, one of the highest rates on earth. These old-growth forests are like a carbon bank, accumulating carbon in soil, trees and organic matter over millennia. The carbon loss from logging old-growth is much greater than from logging second-growth.

We can defend communities and future generations by increasing protection of carbon-rich old-growth and intact forests, improving forest management by transitioning to selective logging and allowing trees to grow older. A rapid shift towards increased forest conservation and improved management would not only reduce emissions from forests but also allow for increased carbon capture. These steps would also help defend communities from worsening climate change impacts like droughts and flooding.

This report includes a number of recommendations for forest conservation and reform of the provincial forestry sector to support a stable climate and healthy communities.

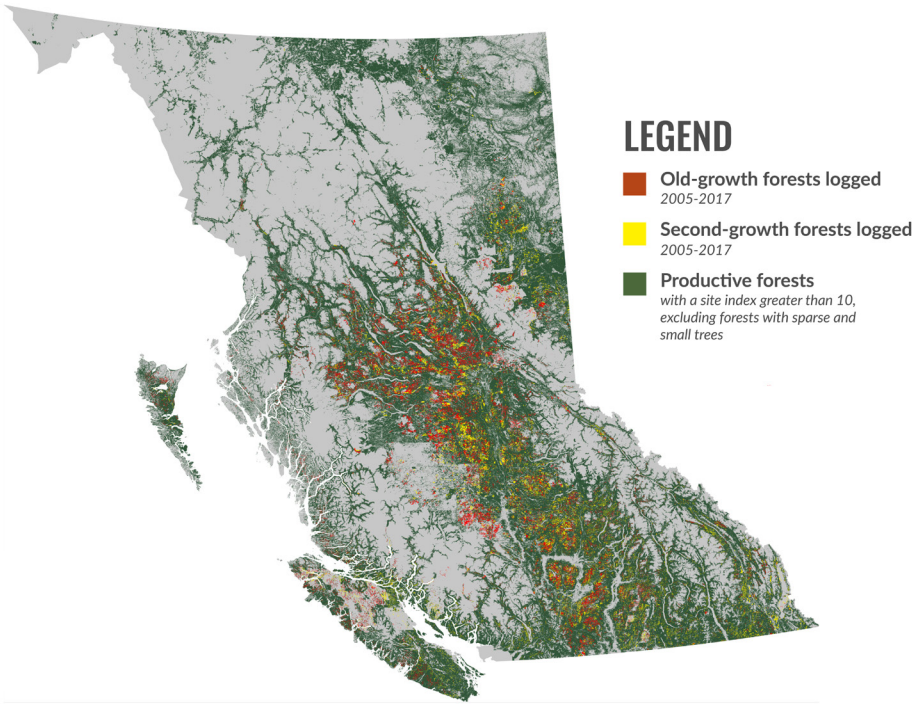

Figure 1: *"Carbon sequestration dead zones" in B.C. Areas shown in red (logged old-growth) and yellow (logged second-growth) were clearcut between 2005 and 2017. The forests shown in green show relatively productive forests of B.C. (with small gaps in data), excluding marginal stands with very sparse and small trees (and limited potential for carbon storage and capture). The forests shown in green include many second-growth areas that were logged before 2005 and some of them remain "sequestration dead zones"—for example, stands permanently lost to logging roads. For full data and references, see the Appendix.*