

High Production Forestry Fails to Account for Carbon Value

1. CBC News. (2020, February 11). Available: <https://www.cbc.ca/news/politics/conservative-party-climate-change-mackay-otoole-gladu-1.5458278>
2. Wikipedia. (2020). Available: https://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions
3. TD Bank Group, Nature Conservancy of Canada. (2017, March 21). *Putting a Value on the Ecosystem Services Provided by Forests in Canada: Case Studies on Natural Capital and Conservation*

A natural world, without human interference, has supported life for hundreds of millions of years. The carbon cycle works, but humans have not lived in a sustainable way with this natural cycle. To harvest wood we must account for every tonne of carbon, whether sink or source, to attain a sustainable relationship with our environment. Forests are not just a monetary resource for fibre. Forests are valuable, enabling CO₂ sequestration through living wood fibre and soil carbon storage. Diligent carbon accounting must be started so the true value of today's harvest is known including debt financing for the carbon (new fibre and soil) lost in the following years. Forestry practices to date with clear, shelter and variable retention harvests may have turned Nova Scotia's forests and soils into carbon sources, worsening climate change and our children's future. This must be turned around in a manner that will still generate enough wood, at a reasonable price, for Nova Scotia. The High Production Forestry discussion paper ignores this completely. Carbon accounting, both soil and forest must become paramount for Lands and Forests.

Nova Scotians have the right to know what is our current forest and soil carbon balance. We have the right to know if we are sourcing or sinking carbon. The carbon value must be part of every Nova Scotian budget since climate change can no longer be denied. Nova Scotia is now affected by a 2 degree rise in temperature, precipitation changes and an ever increasing number of extreme weather events. Nova Scotia is small however, we must take responsibility for every carbon intervention we engage in. International demands to account for all carbon transactions will grow. Canada demands accountability, through an annual, escalating carbon price. We cannot take the conservative approach that "*We're not the problem*" and with respect to green house gas emissions we are a "*relatively unimportant factor in a global issue*" [1]. The sum of all small CO₂ emission offenders equals the sum of the top three international emission offenders [2]. If we took that flagrantly irresponsible approach only half the carbon emissions would be targeted.

We must encourage, through a financially sound process, Nova Scotia's forests and soils to increase its carbon wealth. If for example our forest are now venting 1 million tonnes of carbon to the atmosphere and next year we vent 900 thousand tonnes, we are heading in the right direction. At this point in time we are not required to account for this emission. Forest carbon loss is not yet required to meet international milestones. Our cap and trade system is still keeping us honest with the federal government. We however, must acknowledge that international climate pressure will eventually demand that we account for our forest and soil CO₂ emissions. The science is not firm enough right now to accurately calculate how much carbon poor forestry practices released this year, but it soon will. We must be proactive enough to turn our forests into a healthy and wealthy carbon sink. By selecting a starting point and values based on our current science we can begin the accounting process. If crown

lands are deemed this year to have sunk 100,000 tonnes at the 2020 \$30 a tonne rate, then allow \$3,000,000 worth of offsets to be purchased. Apply this money directly to retraining forestry workers and invest into increasing efficiency of selective harvest operations. At budget time, adjust variables and introduce new science to modify next year's calculation. Iterate our way to a more accurate carbon accounting.

Clear cuts for High Production Forestry land will introduce a massive carbon debt. In the first year the carbon loss will be the carbon held in the tree mass minus the carbon sequestered in the lumber produced. This will be a loss. Every year thereafter, we must declare the carbon that the original forest's new growth would have sequestered minus the sequestered carbon from the planted seedlings.. This debt must also account for the loss of soil carbon in the post harvest years. This carbon debt will continue to accumulate over the time. Again, the value of carbon will continue to escalate and the requirement to account for forest and soil carbon will be required. Carbon accounting doesn't even come close to estimating the value of a forest. A better estimate published in 2017 of an Acadian forest's value is \$26,250/ha. This value is used by the TD Bank Group and Nature Conservancy of Canada [3] and includes other less tangible values. Using a very low estimation for the annual sequestration of carbon at 1 tonne/ha the High Production Forestry would put Nova Scotia into an immediate 333,000 ha * 1 tonne/ha * \$40/tonne (2021 next year) equals \$13.32 million carbon debt. Note that 2022 the value rockets up to \$50/tonne or \$16.65 million plus soil loss. The amount of carbon a 2021 planted red spruce seeding would sequester is negligible. Our forests are extremely valuable and High Production Forestry must be limited to lands that are currently devoid of trees. We cannot afford new clear cuts for High Production Forestry.

We have, for too long, played a warfare game with industrial forest harvesters and never gave a thought about the carbon wealth our forests hold. Only the wealth that spruce studs brings and the benefit of a low wage job. We have recklessly managed our forest with little care for the environment and now with complete neglect of its carbon value. With every clear, shelter or variable retention cut we watch our carbon wealth evaporate. Our governments have always taken the easiest way out by employing Nova Scotians, at near poverty wages in the forest industry. We still remain Canada's poorest province with the highest taxes with a near exhausted forest that now may not even support our threatened species. We now are the proud owners of a forest that is probably going to help devastate our grandchildren. This has happened under the current and previous Land and Forests or Natural Resources departments under various Nova Scotian governments. Use the cap and trade system to put an end to the perpetual clear cutting. Use carbon sequestration credits to develop an efficient selective harvest for both crown and private wood lots. As time goes on, use the cap and trade to let our private wood lot owners develop optimum forests for lumber, environment and carbon sequestration. Develop Lahey's selective harvest option of the triad first and only populate already cleared lands for High Production Forestry.

Responsible wood lot owners are not financially rewarded in any way for being good stewards and sinking enormous amounts of carbon. The decision to clear cut their land is market driven. Let the wood lot owners manage selective harvests while earning carbon offsets from our cap and trade system. Of course the wood lot owner would have to account for the harvest they make, however, the 100 trees they planted or selectively encouraged 10 years ago will appreciate in carbon value very quickly.

Nova Scotia must earn carbon based wealth from its forests. Income from crown lands would be applied to help retrain forest workers and retool mills to manufacture modern engineered timbers to enable up to 18 story wooden structures. Halifax's current building regulations set structure height limits around 18 stories. This would greatly reduce high carbon costs associated with concrete and steel. Cross-laminated timber or structural composite lumber would open the way to utilizing different

tree species that will survive a warming climate. It would also become a clean, locally sourced higher value manufacturing industry as compared to exporting raw spruce studs.