



2022 Carbon Accounting Report



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HIGHLIGHTS



Western is a Net Carbon Sink

The impact of all activities associated with our business operations and products removed more carbon from the atmosphere than was emitted.



Lower Atmospheric Carbon Dioxide (“CO₂”)

The combined benefit of Western’s net carbon balance and the product substitution potential of our products was equivalent to removing the emissions caused by over 1 million vehicles each year.



Long-Term Carbon Reductions

Our net carbon balance is projected to decline further over the next 100 years, due to the continued sequestration of forests and long-term carbon storage in wood products.



Forests are Carbon Banks

The forests managed by Western are enormous carbon banks, storing over 2.4 billion tonnes of CO₂ equivalent (“tCO₂e”) in stems, branches, leaves, roots, organic matter and in the soil.



Sustainable Harvesting

Western’s forest management practices resulted in 0.1% of forest carbon being transferred into forest products each year in 2021 and 2022.

1. INTRODUCTION

Forest products have a vital role to play in helping Canada to meet its greenhouse gas reduction goals. Through photosynthesis, trees sequester atmospheric carbon dioxide and store it in their tissues, as wood in stems, branches and roots, and also in the soil and dead organic matter. The forests managed by Western are therefore enormous carbon banks and we carefully monitor forest carbon stocks to ensure that they are maintained through time.

Like forests, forest products also serve as important carbon banks. When trees are processed into lumber and other forest products, some of the carbon is transferred into those products while some is released back to the atmosphere. The carbon transferred into products remains there until the product either decomposes or combusts. This makes wood a critical ally in the fight against climate change as other building materials including steel and concrete require enormous amounts of greenhouse gas to produce, while wood is the result of trees sequestering CO₂. As a result, replacing steel and concrete with wood has net positive climate impacts, which is known as the substitution effect.

The climate benefit of wood and other forest products relies on them coming from sustainably managed forests, where harvested areas are replanted and nurtured into healthy forests. Forests managed by Western are 100% independently certified to internationally recognized sustainability standards and you can read about our world-class forest management practices in our 2022 Sustainability Report.

We believe strongly that carbon accounting should include the full lifecycle of forests and forest products and are committed to demonstrating transparency and continuous improvement in our carbon accounting practices. This report outlines the approach used to determine our organizational carbon footprint for the calendar years of 2021 and 2022 in accordance with the GHG Protocol Corporate Accounting and Reporting Standard (World Resources Institute [WRI], 2004). The report documents the data, models and assumptions used, the organizational boundary considered, and its scope, exclusions, and findings.

2. APPROACH

2.1 ORGANIZATIONAL BOUNDARY

The organizational boundary for this report were the operations of Western Forest Products Inc. (“Western”). This included all of Western’s public tenures and private lands, all purchased volume, all wholly owned subsidiaries and wholly owned or majority-owned limited partnerships, including Cawak ʔqin (“Tsawak-qin”) Forestry Limited Partnership. Emissions information was consolidated using the control approach described in the GHG protocol. Outside of the organizational boundary were joint ventures that Western is a party to and limited partnerships where Western is not the majority partner.

2.2 SCOPE

All supply chain activities and products through to product end of life were within scope. This included:

- Scope 1 – Direct emissions.
- Scope 2 – Indirect emissions from energy purchases.
- Scope 3 – Significant indirect fossil fuel emissions from supply chain activities.
- Forest ecosystem sequestration and decay.
- Net change in carbon stored in harvested wood products during their useable life.
- Net change in carbon stored in landfills after end of product use.

2.3 EXCLUSIONS

The report does not account for carbon associated with:

- Wildfire emissions. This is consistent with the approach used in Canada’s National Inventory Report (Environment and Climate Change Canada, 2022).
- Energy consumption at certain office locations that are separate from our operating locations, on the basis of immateriality.

The following Scope 3 emissions outlined in the GHG Protocol Scope 3 Accounting and Reporting Standard (WRI, 2020) were excluded:

- Purchased goods and services – The upstream emissions associated with the production and transportation of fertilizer and herbicide were excluded on the basis of immateriality.
- Business travel – All business travel other than that conducted using company owned vehicles was excluded on the basis of immateriality.
- Employee commuting – All employee commuting, other than that conducted using company owned vehicles was excluded on the basis of immateriality.
- Upstream leased assets – These are an insignificant portion of Western’s business and were excluded on the basis of immateriality.
- Downstream leased assets – These are an insignificant portion of Western’s business and were excluded on the basis of immateriality.
- Franchises – Western does not operate any franchises.
- Investments – These are an insignificant portion of Western’s business and were excluded on the basis of immateriality.

2.4 DATA USED

The organizational carbon footprint accounting was based on the best available information. Where possible, data linked to financial reporting and audited financial statements was used.

Primary data sources used were:

- Western’s forest inventory, which is updated annually to account for forest growth and depletions from harvesting, road construction and wildfire.
- Lumber production, log production, log exports, log purchases and capital investments from Annual Information Forms and Annual Reports from Western and predecessor companies.
- Invoiced fuel purchases including natural gas, diesel and gasoline.
- Invoiced electricity usage for manufacturing facilities.
- Invoiced costs for transportation of logs from dryland sorts.
- Lumber recovery factors from sawmill internal recordkeeping systems.
- Number of seedlings planted by operation from internal recordkeeping systems.
- Transportation distances from nurseries to company operations and from mills to port of origin from publicly available online mapping systems.
- Transportation distances from company operations offices to cut blocks from Western’s geographic information systems (“GIS”) road layer.
- Sales data of volumes transported from mill to port of origin, and from port of origin to final destination by transport mode, species and green/kiln dried.

Secondary data sourced used were:

- Emissions factors from published sources.

2.5 MODELS AND ASSUMPTIONS

The following models and assumptions were used in this report. A detailed methodology of each assumption is outlined in Appendix 1 and the fuel factors used for calculating emissions in Appendix 2.

2.5.1 Forest Ecosystem

To estimate carbon stocks and emissions from the forest ecosystem, the operational scale Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) was used (Kurz et al., 2009). This model was derived by the carbon accounting team at the Canadian Forest Service and follows the assumptions and methods established by the Intergovernmental Panel on Climate Change (IPCC) (IPCC, 2003). This is the same model used for Canada’s National Inventory Reporting (Environment and Climate Change Canada, 2022). The model is driven by yield curves to track and calculate carbon stocks and fluxes in various carbon pools in forest ecosystems. Yield curves were developed using the Province of British Columbia (“BC”) provincial growth models: Table Interpolation Program for Stand Yields (TIPSY) and Variable Density Yield Projection (VDYP) (Province of British Columbia, 2023a & 2023b).

2.5.2 Harvested Wood Products

Harvested wood products carbon storage was estimated for lumber from Western and certain predecessor entity mills back to 1993. The carbon storage was tracked throughout their lifespan as secondary and recycled products. The longevity of wood products and methods of disposal were determined using market values from the United States (Skog, 2008). The percentage of products assumed to be recycled and the recycled product types followed assumptions outlined in United States Environmental Protection Agency (USEPA) reports (USEPA, 2020a & 2022b). Lumber shipped offshore and to Japan were assumed to be used in housing in some capacity, though different lifespans were used (IPCC, 2019a; Kayo & Tonosaki, 2021). Assumptions associated with product recoveries were derived from Western's sawmill data.

2.5.3 Scope 1: Direct Emissions

Direct emissions were determined from the following sources:

- Heavy machinery utilized in road building, harvesting, and log hauling from Western's tenures. This work is undertaken by a mix of contractor and company crews. The two are reported together under Scope 1 rather than split between Scope 1 and Scope 3 due to the way the data was collected.
- Mobile equipment used at Western's mills and dryland sort yards.
- Light duty vehicles.
- Boom boats.
- Natural gas used at Western's manufacturing sites.
- Slash pile burning methane ("CH₄") and nitrous oxide ("N₂O") emissions from Western's tenures were based on waste surveys, wood densities (Gonzales, 1990) and emission proportions by GHG (Kurz et al., 2009).
- Truck transportation of finished products to points of sale.

2.5.4 Scope 2: Indirect Emissions from Energy Purchases

- Electricity consumption at manufacturing facilities follows reporting from the GHG Protocol Scope 2 Guidance (WRI, 2015). Location-based reporting was used as Western does not buy market instruments and this would result in the same reported values as market-based reporting for Western's supply chain.

2.5.5 Scope 3: Indirect Emissions from Supply Chain Activities

- Emissions associated with harvest, primary transportation and slash pile burning (CH₄ and N₂O) for purchased logs from non-Western tenures.
- Transportation of logs to manufacturing sites and points of sale by barge and tugboat.
- Transportation of product from point of sale to final destination by truck, rail and ship.
- Emissions associated with the extraction, production and transportation of capital goods.
- Custom cutting of logs and third-party kiln drying.
- Emissions associated with the burning of hog fuel.
- Emissions associated with contractor helicopter use to acquire LiDAR data.
- Ferry transportation of finished products.
- Emissions associated with downstream processing of sold products.
- Emissions associated with upstream fuel production.
- End of product life emissions associated with decay in landfills or burning.

Scope 3 emissions were calculated using Western data on product volumes combined with published fuel use estimates for suppliers and other parts of the value chain.

2.5.5.1 *Upstream and downstream distribution emissions*

Upstream and downstream distribution emissions were based on internal data of the volume shipped to mill or final destination by transport mode, species and green/kiln dried using a global logistics carbon calculator (IVE mbH, 2023).

2.5.5.2 *Upstream fuel production and processing of sold products*

Upstream fuel production emissions were based on all fuel consumed in Scope 1 and 2. Processing of sold products utilized the volumes from sold logs and chips. These emissions were estimated using the Scope 3 calculator provided by the National Council for Air and Stream Improvement (NCASI) (NCASI, 2022).

2.5.5.3 Landfill carbon storage and emissions

Landfill carbon storage and methane emissions were estimated using the proportion of degradable organic carbon and decay rates determined by the IPCC (IPCC, 2019b). The percentage of products assumed to be recycled, disposed in landfills versus burnt after their useful life followed the assumptions outlined in the USEPA 2020a and 2022b reports. The proportion of CH₄ captured and converted to CO₂ was based on survey data from the landfill methane database (USEPA, 2022a).

2.5.6 Biogenic CO₂ Emissions

Biogenic CO₂ emissions from burning slash piles, hog fuel and incineration of wood products at landfills, were estimated using wood densities determined by the Canadian Forest Service (Gonzales, 1990) and used assumptions of the proportion of carbon released as carbon dioxide, methane and nitrous oxide (Kurz et al., 2009).

2.5.7 Product Substitution

All solid wood products produced, both directly from Western mills and from lumber produced from Western logs sold to third parties, were assumed to substitute either concrete or steel. Substitution effects were estimated using displacement efficiencies calculated in 2004 from a published scientific paper by the Consortium for Research in Renewable Industrial Materials (CORRIM) (Lippke, 2004). This substitution methodology was chosen as its scope was most applicable to Western's products. Factors associated with single-family home construction were used for the product mix assumed to go to home-building materials. Substitution values for concrete were used, as steel single-family home construction in North America has been negligible for over a decade (Fu, 2022). The selected substitution factor is similar to the average substitution factor found in a meta-analysis of 21 studies (Sathre, 2010) and a mitigation study in British Columbia for wood products used in wood building (Smyth, 2020). For the proportion of products directed towards industrial products, a mix of steel and concrete was assumed to be replaced and therefore an average was taken from the displacement factor derived from concrete and steel (Lippke, 2004).

2.6 IMPROVED METHODOLOGY

We improved our forest carbon methodology by expanding the scope to include our US operations and we completed an analysis of the uncertainty of emissions and removals (Appendix 5). To do so, we conducted 1 million simulations to determine the potential range of our net carbon balance given the uncertainty of the estimates. Western's net carbon balance was found to be net negative in >99.5% of simulated scenarios in both 2021 and 2022.

In addition, we completed our organizational carbon footprints for both 2021 and 2022, bringing our reporting cycle in line with our Sustainability Report. We also improved our approach for estimating recycling carbon pools and emissions by accounting for carbon in recycled products (USEPA, 2020a; USEPA, 2022b).

2.7 BASE-YEAR

As the organizational boundary was expanded to include our US operations, we updated our base year (2020) carbon accounting to use the same scope, allowing for a direct comparison of year-over-year carbon changes. We also updated 2020 emissions and carbon storage numbers to account for updated data and assumptions to ensure alignment with 2021 and 2022 figures.

Future changes to reporting year-over-year are expected for many reasons as GHG accounting and reporting in the supply chain matures. Updates to previous years' reporting could be required due to changes or improvements to methodologies, activity data or emission factors. Changes or improvements, including changes to the organizational boundary that result in changes in total gross Scope 1, 2 and 3 emissions greater than 5%, or harvested wood products transfer and net forest ecosystem emissions or removals greater than 10% will result in restating previous years' emissions.

For material changes in emissions related to the above, restatement will follow the "Base year recalculation methodologies for structural changes" outlined in Appendix E to the GHG Protocol Corporate Accounting and Reporting Standard (WRI, 2004). For boundary expansion or improvements to reporting for business units in the supply chain, restatements will follow the "all year" approach by weighting the current year emissions and restating by the previous year's production compared to the current year. For any acquisitions or divestitures, the "pro-rata" approach will be used.

3. RESULTS

3.1 NET CARBON BALANCE

Western continues to be a net carbon sink, meaning that the total carbon benefit of sequestration in forests and storing carbon in long lived wood products outweighed the emissions from forest carbon pools (such as dead organic matter) and the emissions associated with harvesting and producing lumber (Table 1). Western’s activities were estimated to have resulted in a net reduction of 2,160,624 tCO₂e in 2021 and 2,453,372 tCO₂e in 2022. Carbon in harvested wood products represented the single largest contributor to Western’s negative net carbon balance. This supports the findings from the IPCC, which found that “sustainable forest management aimed at providing timber, fibre, biomass, non-timber resources and other ecosystem functions and services, can lower greenhouse gas emissions” (IPCC, 2020). Detailed summaries of emissions by scope can be found in Appendix 3 and Appendix 4.

Table 1 Total net carbon balance by forest ecosystem and harvested wood products (tCO₂e). Negative values indicate carbon uptake whereas positive values indicate an emission.

CARBON FLUX	2022 (tCO ₂ e)	2021 (tCO ₂ e)	2020* (tCO ₂ e)
Net Forest Ecosystem Balance Scope 1	290,544	748,393	1,207,362
Net Forest Ecosystem Balance Scope 3	-389,579	-353,794	-331,709
Net Change in Carbon Stored in Wood Products†	-2,874,611	-3,056,883	-2,802,805
Scope 1 Emissions	156,572	142,134	127,244
Scope 2 Emissions	3,871	4,488	6,398
Scope 3 Emissions	1,531,323	1,534,160	1,478,003
Net Change in Landfill Carbon Storage	-1,171,491	-1,179,122	-1,217,739
Net Carbon Balance	-2,453,372	-2,160,624	-1,533,246

* 2020 numbers were updated from last year’s report as outlined in section 2.7.

† Includes recycled wood products, which represent 6 to 7% of the carbon stored in harvested wood products.

3.2 CARBON BALANCE PROJECTION

Projecting the net carbon balance for the next 100 years shows the compounding benefit of forest carbon sequestration and storage in wood products and landfills. Using assumptions from current forest management plans, Western’s activities are projected to reduce atmospheric carbon by 210.6 million tCO₂e by the year 2120 (Figure 1). This is equivalent to removing the emissions of over 45 million cars (USEPA, 2023).

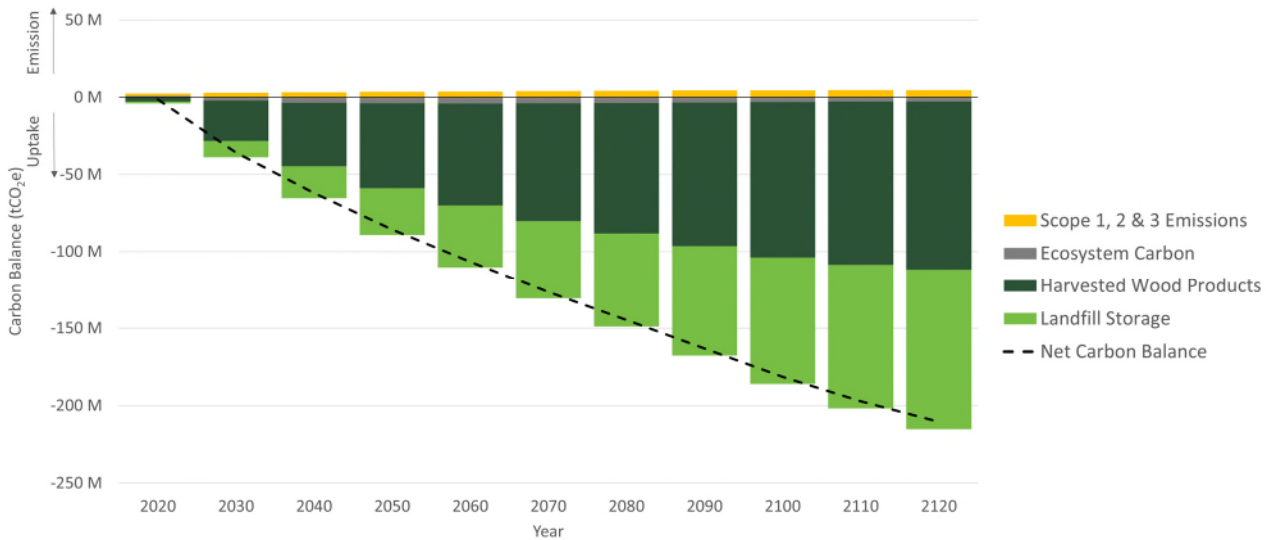


Figure 1 Projected net carbon balance from both forest ecosystem and harvested wood products processes in the next 100 years based on Western’s current operations and forest management plans. Negative values indicate carbon uptake whereas positive values indicate an emission.

3.3 PRODUCT SUBSTITUTION

Substitution effects are excluded from Western’s net carbon balance in accordance with the GHG Protocol on the basis that they are neither an emission nor an emission reduction of the Company (WRI, 2020). However, the carbon benefits of substituting building materials such as steel and concrete with wood are well recognized, including by the IPCC who stated that “where wood carbon is transferred to harvested wood products, these can store carbon over the long-term and can substitute for emissions-intensive materials reducing emissions in other sectors” (IPCC, 2020). Substitution effects were estimated using displacement efficiencies calculated in 2004 by the Consortium for Research in Renewable Industrial Materials (CORRIM) (Lippke, 2004). This substitution methodology assumes all solid wood production is used either to substitute concrete in single-family home construction or a mix of steel and concrete in industrial products. The emissions benefit of substituting steel and concrete with wood produced by Western is estimated to be -2,785,883 tCO₂e in 2021 and -2,660,973 tCO₂e in 2022. The combined benefit of Western’s net carbon balance and product substitution potential was estimated to be -4,946,507 tCO₂e in 2021 and -5,114,344 tCO₂e in 2022, which is equivalent to removing the emissions caused by over 1 million passenger vehicles each year (USEPA, 2023).

3.4 FOREST ECOSYSTEM CARBON

The forests managed by Western are an enormous carbon bank and store carbon in the form of live trees, dead trees, branches, leaves, roots and soil. In 2022, the forest ecosystem stored 2,448,276 kilotonnes CO₂e (Table 2, Figure 2). Soil organic matter is the largest carbon pool, representing 41% of the carbon in the forest ecosystem, followed by dead organic matter (29%), aboveground biomass (24%) and belowground biomass (5%). In 2022, 0.1% of the forest carbon was harvested and transferred into forest products, of which a proportion is stored as long-lived wood products.

Table 2 Total forest ecosystem carbon stocks (kilotonnes of CO₂e)

CARBON POOL	2022 (Kilotonnes CO ₂ e)	2021 (Kilotonnes CO ₂ e)	2020* (Kilotonnes CO ₂ e)
Aboveground Biomass	599,293	596,447	594,191
Dead Organic Matter	712,116	717,524	723,040
Soil Organic Matter	1,004,125	1,004,316	1,004,504
Belowground Biomass	132,742	132,113	131,615
Total Ecosystem Stocks	2,448,276	2,450,400	2,453,351
Annual Transfer to Forest Products	2,200	2,554	2,803

* 2020 numbers were updated from last year’s report as outlined in section 2.7.

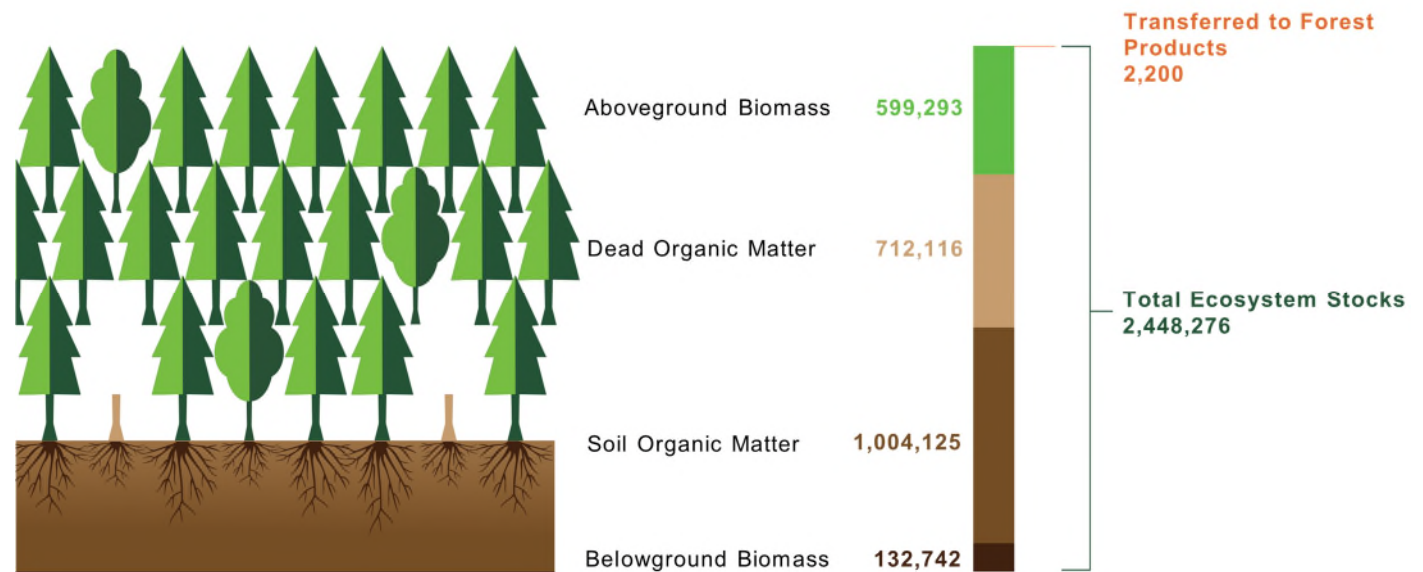


Figure 2 Forest ecosystem carbon stocks (kilotonnes of CO₂e) in 2022.

3.5 BIOGENIC EMISSIONS

Though excluded from the net carbon balance for reporting in accordance with the GHG Protocol (WRI, 2004), biogenic emissions represented 1,073,044 tCO₂e in 2021 and 1,153,017 tCO₂e in 2022 (Table 3).

Table 3 Biogenic CO₂ emissions (tCO₂e)

EMISSION SOURCE	2022 (tCO ₂ e)	2021 (tCO ₂ e)	2020* (tCO ₂ e)
Slash pile burning from Western's operations	394,806	300,963	258,919
Slash pile burning from purchased logs	83,045	106,081	56,745
Hog fuel burning	465,074	455,475	455,324
Waste disposal incineration	210,092	210,524	276,363
Total Biogenic Emissions	1,153,017	1,073,044	1,047,351

* 2020 numbers were updated from last year's report as outlined in section 2.7.

4. REDUCING OUR CARBON FOOTPRINT

Western is committed to identifying opportunities to reduce our carbon footprint. In 2021 and 2022, Western diverted 60,017 m³ of post-harvest residue that would have otherwise been burned in slash piles to Atli Chip to be converted into fibre for coastal pulp and paper facilities. This is estimated to have reduced our direct carbon emissions by 6,592 tCO₂e. As slash pile burning is one of Western's biggest source of direct emissions, we expect to continue to identify opportunities to utilize forest residues and intend to use these carbon accounting results to identify opportunities to further improve emissions.

We have also implemented an initiative to reduce Timberlands heavy equipment emissions by programming engines to shut off rather than idle. This has reduced the fuel burn at idling by more than 20% and we are on track to reduce direct emissions by 78 tCO₂e in 2023.

5. LOOKING AHEAD

Quatern Limited Partnership, a limited partnership between Quatsino First Nation and Western have commenced a project to measure forest carbon sequestration using successive LiDAR derived tree inventories, with financial support from the BC Centre for Innovation and Clean Energy. Together, we will determine how much incremental carbon was captured through large scale forest fertilization programs. We will quantify the rate that forests are sequestering carbon with and without fertilization, under different fertilization treatments, across different stand types, and for different tree species. This will enable us to better deploy fertilization treatments to ensure that the forests we manage are most actively fighting climate change. You can read more about this exciting project at <https://cice.ca/projects/using-successive-lidar-derived-tree-inventories-to-measure-forest-carbon-capture/>.

Going forward, Western may also evaluate opportunities to monetize carbon through carbon offset programs and other markets.

6. GLOSSARY

Additionality	Used in reference to carbon removal projects. A carbon removal project is additional if it results in less greenhouse gas emissions than would have otherwise occurred.
Atmospheric carbon	The natural trade of gaseous carbon compounds between Earth's atmosphere and various components of Earth such as the ocean and the biosphere.
Base year	Companies establish a base year from which all future carbon reporting is compared. Western's base year is 2020.
Biogenic carbon	Carbon released from burning or decaying organic material.
Cap and trade	A market-based approach to lowering GHG emissions. An authority generates a limited number of permits. Each permit allows holder to emit a certain amount of GHGs over a specific period. Those wishing to emit more than allocated must purchase permits from those willing to sell them.
Carbon credit	Within a cap-and-trade system, an organization is allowed to emit the allocated amount of carbon credits. Carbon credits are measured in carbon dioxide equivalent.
Carbon dioxide equivalent (CO_{2e})	As greenhouse gases (GHGs) are not equal in contributing to global warming, CO _{2e} is a common scale for all GHGs. For each GHG, CO _{2e} is the mass of CO ₂ which would warm the earth as much as the mass of that gas.
Carbon flux	The transfer of carbon from one pool to another.
Carbon footprint	All of the GHG emissions (both direct and indirect) and reductions associated with a specific product or activity.
Carbon negative	Where the cumulative activities of a business result in a decrease in atmospheric carbon. Synonymous with climate positive.
Carbon neutral	Where the cumulative activities of a business result in neither an increase nor decrease in atmospheric carbon. Synonymous with net zero.
Carbon offset	To counteract emissions, one can reduce or remove emissions, creating a carbon offset.
Carbon offset protocol	Standards or methodologies for quantifying emissions reduction from a proposed offset project.
Carbon pool	Where carbon is stored.
Carbon positive	Where the cumulative activities of a business result in an increase in atmospheric carbon.
Carbon sequestration	The process of capturing and storing atmospheric carbon.
Carbon sink	More carbon is sequestered than is released.
Carbon source	More carbon is released than is sequestered.
Carbon storage	Storing atmospheric carbon in a carbon pool.
CBM-CFS3	Carbon budget model for the Canadian Forest Sector. CBM-CFS3 is a stand- and landscape-level model to simulate the dynamics of all forest carbon stocks required under the United Nations Framework Convention on Climate Change.
CFS	Canadian Forest Service. Developers of CBM-CFS3
Climate positive	Where the cumulative activities of a business result in a decrease in atmospheric carbon. Synonymous with carbon negative.

Direct emissions	Emissions that a company generates while performing its business activities. Considered scope 1 emissions.
Displacement factor	The reduction in emissions achieved per unit of wood used.
Downstream emissions	Emissions that occur after a company's point of sale. Considered scope 3 emissions.
GHG Protocol	The GHG Protocol is the most widely used greenhouse gas corporate accounting and reporting standard in the world.
Global warming potential (GWP)	The heat trapping potential of each greenhouse gas relative to carbon dioxide (CO ₂). Nitrous oxide and methane trap considerably more heat than carbon dioxide.
Greenhouse gas (GHG)	A gas that contributes to the greenhouse effect by absorbing infrared radiation. They include carbon dioxide (CO ₂), Methane (CH ₄), Nitrous oxide (N ₂ O), hydrochlorofluorocarbons (HCFC), hydrofluorocarbons (HFC) and ozone (O ₃).
Growth and yield curves	Statistical curves that predict the volume of a stand at a specific point in time, given initial conditions.
Hog fuel	Residue from milling process, contains chips, sawdust, bark, etc.
Indirect emissions	Upstream and downstream emissions that are a consequence of a company's operations but outside of their control.
IPCC	Intergovernmental Panel on Climate Change. The United Nations body for assessing the science related to climate change.
Life cycle assessment	A method for evaluating the environmental impact of a product or service from cradle (raw material extraction) to grave (final disposal).
Net zero	When the total amount of greenhouse gases (GHG) in the atmosphere remains constant. Synonymous with carbon neutral.
SASB	The Sustainability Accounting Standards Board (SASB) is a non-profit organization that provides sustainability accounting standards for companies.
Scope 1 emissions	Direct emissions that a company generates while performing its operations.
Scope 2 emissions	Indirect emissions resulting from the production of purchased energy.
Scope 3 emissions	Indirect emissions (not accounted for in scope 2 emissions) that are a consequence of a company's operations but outside of their control.
Slashpile/pile burn	Waste wood from harvest that is burned to reduce the risk of wildfire.
tCO₂e	tonne of carbon dioxide equivalent. A standardized unit to compare the impacts of various greenhouse gases on the atmosphere.
Upstream emissions	Emissions that occur upstream of a company's supply chain. Considered scope 3 emissions.
US EPA	United States Environmental Protection Agency.

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APPENDIX 1: METHODOLOGY FOR SCOPE 1, 2 AND 3 EMISSIONS

Scope	Description	Methodology	Reference
1	Light-duty vehicles	Fuel expenses from light-duty vehicles by operation were obtained from internal recordkeeping systems. Light-duty vehicles account for surveys, planning, layout, engineering, silviculture activities, monitoring and some commuting (excluding commuting in private vehicles). Fuel usage was converted to emissions using a factor of 2.317kgCO ₂ e/L	Environment and Climate Change Canada, 2022, Table A6.1-14
1	Harvesting equipment	Emissions associated with mobile harvesting equipment from within Western tenures (feller-bunchers, chainsaws, grapple yarders, skidders, super-snorkels, log loaders) was estimated using a fuel factor derived from an average of all 5 Western Forest Products CSA Defined Forest Area's from data gathered for the 2021 and 2022 reporting periods. The factor is 14.03kgCO ₂ e/m ³ for 2021 and 14.40kgCO ₂ e/m ³ for 2022.	
1	Transport of logs from cut block to dryland sort	Emissions associated with hauling logs was estimated using a fuel factor derived from an average of all 5 Western Forest Products CSA Defined Forest Area's from data gathered for the 2021 and 2022 reporting periods. The factor is 14.03kgCO ₂ e/m ³ for 2021 and 14.40kgCO ₂ e/m ³ for 2022.	
1	Land and water sorting of logs at dryland sort.	The number of litres of fuel for mobile equipment and boom boats by dryland sort were obtained from internal recordkeeping systems. Fuel usage for two dryland sorts where data was not available were estimated by pro-rating the log volume processed in 2021 and 2022 compared to the dryland sorts where data was available. Fuel usage was converted to emissions using a factor of 2.708kgCO ₂ e/L for machinery and a factor of 2.708kgCO ₂ e/L for boats	Environment and Climate Change Canada, 2022, Table A6.1-14
3	Transport of logs from dryland sort to internal and external manufacturing facilities	Annual expenses to transport logs from dryland sorts to internal and external manufacturing facilities by third-party barge and tugboat was obtained from internal recordkeeping systems. Fuel expenses were estimated at 35% of the total expense, based on an internal analysis. Fuel expenses were converted to litres using the average annual wholesale diesel price in 2021 and 2022 in Vancouver, BC. Fuel usage was converted to emissions using a factor of 2.708kgCO ₂ e /L for marine, unmixed diesel.	Environment and Climate Change Canada, 2022, Table A6.1-14
3	Log purchases	Emissions associated with the purchase of logs were calculated by determining the emissions per cubic metre from Western tenures of all activities upstream from manufacturing facilities (light duty vehicles, harvesting, transport) and multiplying this by the volume purchased.	
3	LiDAR acquisition	Emissions associated with the acquisition of LiDAR were calculated by determining the number of flight hours from the vendor, the average fuel use per hour of the helicopter, and the average CO ₂ e emissions of aviation gasoline.	United States Department of Agriculture, 2019.
1	Mobile equipment at manufacturing facilities	The number of litres of fuel consumed at manufacturing facilities was obtained from internal recordkeeping systems. This was converted to CO ₂ e emissions using a factor of 2.233kgCO ₂ e/L for heavy duty unmixed gasoline, a factor of 2.708 kgCO ₂ e/L for heavy duty diesel and 1.539 kgCO ₂ e/L for propane.	Environment and Climate Change Canada, 2022, Table A6.1-14
1	Natural gas at manufacturing facilities	Natural gas usage at manufacturing facilities was obtained from invoices. This was converted to CO ₂ e emissions using the Western Climate Initiative methodology.	Western Climate Initiative, Inc. 2011, Table 20a, Table 20-4
2	Energy use at manufacturing facilities	Energy usage at manufacturing facilities is sourced from hydroelectricity. From invoices, emissions emitted from BC hydro were estimated using a factor of 9.7tCO ₂ e/GWh for 2021 and 11.5tCO ₂ e/GWh for 2022. The hydro emissions for mills located in Washington were estimated with a factor of 326.8 tCO ₂ e/GWh for 2021 and 274.1 tCO ₂ e/GWh for 2022.	Ministry of Environment & Climate Change Strategy, 2020; EPA eGRID2019, 2021 via EPA 2021. Emissions Factors for Greenhouse Gas Inventories
3	Emissions at custom cutting facilities	Volumes of logs consumed at custom cut mills was obtained from internal recordkeeping systems. Emissions were estimated by pro-rating the emissions from Western mills on a per cubic metre of log consumption basis.	

Scope	Description	Methodology	Reference
3	Emissions at third-party kiln drying facilities	Volumes of lumber processed at third-party kilns was obtained from internal recordkeeping systems. Emissions were estimated by pro-rating the emissions from Western kilns on a per thousand board feet of lumber basis.	
1	Distribution of lumber to point of sale - trucking	Production volumes of lumber by manufacturing site, point of sale, and species were obtained from internal recordkeeping systems. The distance travelled for lumber from each mill to the point of sale via trucks was summed and emissions estimated using the Carbon Care emissions calculator. Scope 1 includes trucking emissions.	CarbonCare, 2022
3	Distribution of lumber to point of sale - ferry	Production volumes of lumber by manufacturing site, point of sale, and species were obtained from internal recordkeeping systems. The distance travelled for lumber from each mill to the point of sale via ferry was summed and emissions estimated using the Carbon Care emissions calculator. Scope 3 includes ferry emissions.	CarbonCare, 2022
1	Transport of seedlings from nursery to block.	The number of seedlings planted in 2021 and 2022 by operation and season was obtained from internal recordkeeping systems. Distances from nursery to operation office was determined from online mapping software and converted to number of trips based on whether the seedlings were on pallets or not. Distances from offices to cutblocks planted in 2021 and 2022 was determined using Western's proprietary GIS road data. The number of trips from office to cutblock was based on an average planting rate and the average crew size per pickup. Fuel use was calculated based on average fuel consumption for a 2014 Ford F-150. Fuel consumption was converted to emissions using a factor for heavy duty trucks 2.708kgCO ₂ e/L, and an emission factor of 2.317kgCO ₂ e/L for light-duty pickup trucks. For heli-blocks, fuel usage was calculated based on average fuel consumption for a Bell 206L-4 passenger and an emission factor of 2.449kgCO ₂ e/L for aviation gasoline.	Environment and Climate Change Canada, 2022, Table A6.1-14
3	Upstream emissions associated with fuel production	A Scope 3 calculator created by the National Council for Air and Stream Improvement was used to estimate these emissions. A total fuel usage of Scope 1 fuels, energy used, and Scope 2 energy use were used as inputs.	NCASI, 2022
3	Emissions associated with capital investments	2021/2022 capital investments were sourced from Western's 2021 Annual Information Form and converted to USD using the 2021 Bank of Canada exchange rate. Emission factors with margins (per USD) was sourced from the US Environmental Protection Agency. Factors used were those specified for "Machinery for the paper, textile, food or other industries (except semiconductor machinery)" from 2018.	USEPA, 2020b
3	Emissions associated with the processing of sold products	A Scope 3 calculator created by the National Council for Air and Stream Improvement was used to estimate these emissions. The proportion of chips and lumber produced from sold logs was used as input.	NCASI, 2022 United Nations Economic Commission for Europe, 2010
3	Downstream distribution emissions	Volumes of lumber by final destination, city, transportation mode, species and seasoning were obtained from internal recordkeeping systems. Container shipped volumes were converted to number of twenty-foot equivalent units ("TEUs") using the average volume per container by species and seasoning. Volumes of logs exported were obtained from Western's 2021 and 2022 Annual Report. Emissions to the final destination were calculated using the EcoTransIT Carbon Calculator by IVE mbH.	IVE mbH. 2023
3	Landfill emissions	After their usable life, for sawnwood, 79% was assumed to be landfilled, 3% of recycled, and 18% burnt. For paper, 37% was assumed to be landfilled, 55% recycled and 8% burnt. Emissions of CO ₂ and CH ₄ were calculated based on the proportion of degradable organic carbon in wood, half-lives, the proportion of CO ₂ and CH ₄ in landfill emissions, and the proportion of methane captured and converted to CO ₂ at US landfills.	IPCC, 2019a USEPA, 2020a USEPA, 2022a USEPA, 2022b
Disclosed separately	Biogenic CO ₂ emissions	Emissions associated with burning harvesting residue in slash piles and burning hog fuel was estimated using wood densities and assumed the proportion of carbon released as carbon dioxide, carbon monoxide, methane and nitrous oxide	Gonzales, 1990, Kurz et al. 2009

APPENDIX 2: CONVERSION FACTORS USED FOR CALCULATING EMISSIONS

Scope	Emission category	Fuel Type	CO ₂ (kg/L)	CH ₄ (kg/L)	N ₂ O (kg/L)	CO ₂ e (kg/L)
1	Dryland Sort ^a	Marine/Diesel	2.681	0.00014	0.000082	2.708
		Heavy Duty/ Diesel/Moderate Control	2.681	0.00025	0.000072	2.708
	Mill Mobile Equipment ^a	Heavy Duty/Gasoline/ Non-Catalytic Controlled	2.307	0.00029	0.000047	2.329
	Planting ^a	Heavy Duty/Diesel/Moderate Control	2.681	0.00014	0.000082	2.708
		Light-Duty Truck/Gasoline/Tier 2	2.307	0.00014	0.000022	2.317
		Aviation Gasoline	2.325	2.19	0.23	2.450

Scope	Emission category	Fuel Type	CO ₂ (kg/GJ)	CH ₄ (g/GJ)	N ₂ O (g/GJ)
1	Mills ^b	Natural gas	63.29	0.966	0.861
	Nursery ^b	Natural gas	63.29	0.966	0.861

Scope	Emission category	2022 CO ₂ e (kg/m ³)	2021 CO ₂ e (kg/m ³)
1	Forest Operations ^c	14.40	14.03

Scope	Emission category	CO ₂ e (kg/1000kg/km) (WTW)
1	Distribution ^d	0.10

Scope	Emission category	Fuel Type	2022 BC CO ₂ e (t/GWh)	2021 BC CO ₂ e (t/GWh)	2022 USA CO ₂ e (t/GWh)	2021 USA CO ₂ e (t/GWh)
2	Hydro ^e	Hydroelectricity	11.5	9.7	274.1	326.8

^a Factor taken from Environment and Climate Change Canada, 2022, Table A6.1-14

^b Factor taken from Western Climate Initiative, Inc. 2011, Table 20a, Table 20-4

^c Fuel factor derived from a mix of fuels compiled by Western Forest Products Inc.

^d Factor taken from CarbonCare, 2020, CO₂ emissions calculator

^e Ministry of Environment & Climate Change Strategy, 2020 and USEPA, 2021

Gas Type ^f	Global Warming Potential (GWP) 100
CO ₂	1
CH ₄	25
N ₂ O	298

^f Global warming potential (GWP) taken from Intergovernmental Panel on Climate Change, 2007, Table TS.2

APPENDIX 3: CALCULATED EMISSIONS FOR SCOPES 1 & 2

2021

Scope	Emission Category	Fuel Type	Consumed (L)	CO ₂ (t)	CO ₂ (tCO ₂ e)	CH ₄ (t)	CH ₄ (tCO ₂ e)	N ₂ O (t)	N ₂ O (tCO ₂ e)	Total (tCO ₂ e)
1	Dryland Sort	Marine Diesel unmixed	394,912	1,059	1,059	0.0995	2.487	0.0284	8.471	1,070
		Heavy Duty Diesel unmixed	990,555	2,655	2,655	0.1387	3.467	0.0812	24.21	2,683
	Mill Mobile Equipment	Heavy Duty Gasoline unmixed	40,874	94.31	94.31	0.0192	0.2963	0.0020	0.5725	95.18
		Heavy Duty Diesel	1,377,707	3,693	3,693	0.1929	4.822	0.1130	33.67	3,731
		Propane	3,629	5.497	5.497	0.0023	0.0581	0.0001	0.0303	5.586
	Planting	Heavy Duty Diesel unmixed	3,412	9.15	9.15	0.0005	0.0119	0.0003	0.0834	9.240
		Light-Duty Truck Gasoline unmixed	8,391	19.36	19.36	0.0012	0.0294	0.0002	0.0550	19.44
		Aviation Gasoline	5,108	11.88	11.88	0.0112	0.2797	0.0012	0.3501	12.51

Scope	Emission category	Fuel Type	Consumed (GJ)	Consumed (m ³)	CO ₂ (t)	CO ₂ (tCO ₂ e)	CH ₄ (t)	CH ₄ (tCO ₂ e)	N ₂ O (t)	N ₂ O (tCO ₂ e)	Total (tCO ₂ e)
1	Mills	Natural gas	553,321	14,296,454	35,450	35,450	0.541	13.53	0.482	143.7	35,608
	Nursery	Natural gas	7,310	186,403	463	463	0.007	0.177	0.006	1.88	465

Scope	Emission category	Consumed (m ³)	Total (tCO ₂ e)
1	Forest Operations	3,476,261	48,786

Scope	Emission category	Distance (km)	Weight (t)	Total (tCO ₂ e)
1	Distribution	1,749	791,410	4,003

Scope	Emission category	Fuel Type	Consumed (kWh)	Total (tCO ₂ e)
2	BC Hydro	Hydroelectricity	110,067,665	4,488

2022

Scope	Emission Category	Fuel Type	Consumed (L)	CO ₂ (t)	CO ₂ (tCO ₂ e)	CH ₄ (t)	CH ₄ (tCO ₂ e)	N ₂ O (t)	N ₂ O (tCO ₂ e)	Total (tCO ₂ e)
1	Dryland Sort	Marine Diesel unmixed	409,698	1,098	1,098	0.1032	2.580	0.0295	8.788	1,110
		Heavy Duty Diesel unmixed	1,113,778	2,985	2,985	0.1559	3.898	0.0913	27.22	3,017
	Mill Mobile Equipment	Heavy Duty Gasoline unmixed	51,661	119.36	119.36	0.0150	0.3745	0.0024	0.7236	120.29
		Heavy Duty Diesel	1,709,481	4,582	4,582	0.2393	5.983	0.1402	41.77	4,630
		Propane	6,919	10.48	10.48	0.0044	0.1107	0.0002	0.0577	10.65
	Planting	Heavy Duty Diesel unmixed	4,273	11.45	11.45	0.0006	0.0150	0.0004	0.1044	11.57
		Light-Duty Truck Gasoline unmixed	12,191	28.13	28.13	0.0017	0.0427	0.0003	0.0799	28.25
		Aviation Gasoline	10,273	23.89	23.89	0.0225	0.5624	0.0024	0.704	25.15

Scope	Emission category	Fuel Type	Consumed (GJ)	Consumed (m ³)	CO ₂ (t)	CO ₂ (tCO ₂ e)	CH ₄ (t)	CH ₄ (tCO ₂ e)	N ₂ O (t)	N ₂ O (tCO ₂ e)	Total (tCO ₂ e)
1	Mills	Natural gas	525,001	13,388,630	33,227	33,227	0.507	12.68	0.452	134.7	33,375
	Nursery	Natural gas	8,372	213,496	530	530	0.008	0.202	0.007	2.15	532

Scope	Emission category	Consumed (m ³)	Total (tCO ₂ e)
1	Forest Operations	3,486,211	50,205

Scope	Emission category	Distance (km)	Weight (t)	Total (tCO ₂ e)
1	Distribution	20,046	696,003	3,628

Scope	Emission category	Fuel Type	Consumed (kWh)	Total (tCO ₂ e)
2	BC Hydro	Hydroelectricity	96,652,826	3,871

APPENDIX 4: INCLUDED EMISSIONS BY SCOPE

Scope 1	2022 tCO ₂ e	2021 tCO ₂ e
Dryland Sort	4,126	3,752
Nursery	532	465
Mills	33,375	35,608
Mill Mobile Equipment	4,761	3,832
Forest Operations	50,205	48,786
Slash pile burning (not including CO ₂)	59,880	45,647
Planting	65	41
Distribution	3,628	4,003
Total	156,572	142,134

Scope 2	2022 tCO ₂ e	2021 tCO ₂ e
Hydro consumption	3,871	4,488
Total	3,871	4,488

Scope 3	2022 tCO ₂ e	2021 tCO ₂ e
Distribution	46,257	53,351
Water Sorting	891	857
Upstream Fuel Production	22,387	23,176
Custom Cutting	126	234
Custom Cut Drying	3,399	2,094
Barging or Towing	18,354	21,923
Capital Investments	8,906	6,443
Forest Operations Purchased Logs	9,107	11,600
Slash pile burning Purchased Logs (not including CO ₂)	12,595	16,089
Hog fuel burning for energy production (not including CO ₂)	70,538	69,082
Processing of sold products	219,369	239,418
Landfill decay	1,087,486	1,057,948
LiDAR acquisition	43	14
Incineration of waste	31,865	31,930
Total	1,531,323	1,534,160

Biogenic CO ₂	2022 tCO ₂ e	2021 tCO ₂ e
Slash pile burning WFP	394,806	300,963
Slash pile burning purchased logs	83,045	106,081
Hog fuel burning for energy production	465,074	455,475
Incineration of waste	210,092	210,524

APPENDIX 5: UNCERTAINTY ANALYSIS

Greenhouse gas reporting comes with considerable uncertainty. Current estimates and forward-looking projections are inherently uncertain. This report involves many projections including the projected lifespan, use and end of life disposal of products, forest growth, natural disturbance frequency, intensity, future product types and lifespans. The emissions associated with the production, distribution of primary products from the mills to the point of sale and upstream emissions are also inherently uncertain. This report used the best available information and scientifically supported models and assumptions.

A quantitative analysis of the uncertainty of inputs was conducted following guidance in the GHG Protocol. Estimations of the 95% confidence interval for each input were generated using the GHG Protocol Uncertainty Calculation Tool (GHG Protocol, 2023) (Figure 3).

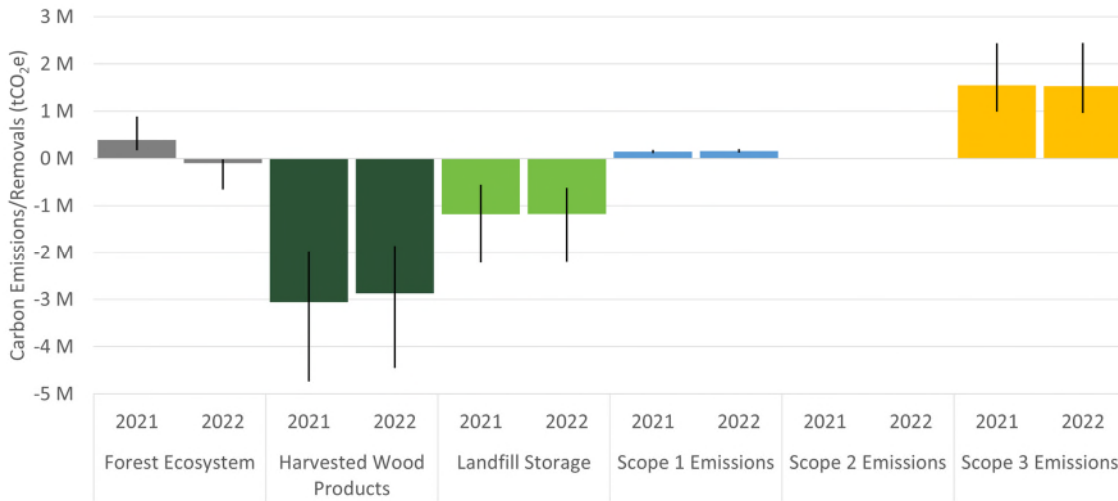


Figure 3 Estimated uncertainty of input components of net ecosystem balance for 2021 and 2022. Error bars represent 95% confidence intervals.

One million Monte Carlo simulations were then conducted to determine the potential range of net carbon balance outcomes given the uncertainty of the estimates (Figure 4). In 2022, 0.04% of the simulations generated a net positive carbon balance, while 0.3% did so in 2021. In other words, Western’s net carbon balance may be considered net negative in >99.9% of simulated scenarios in 2022 and 99.7% of simulated scenarios in 2021.

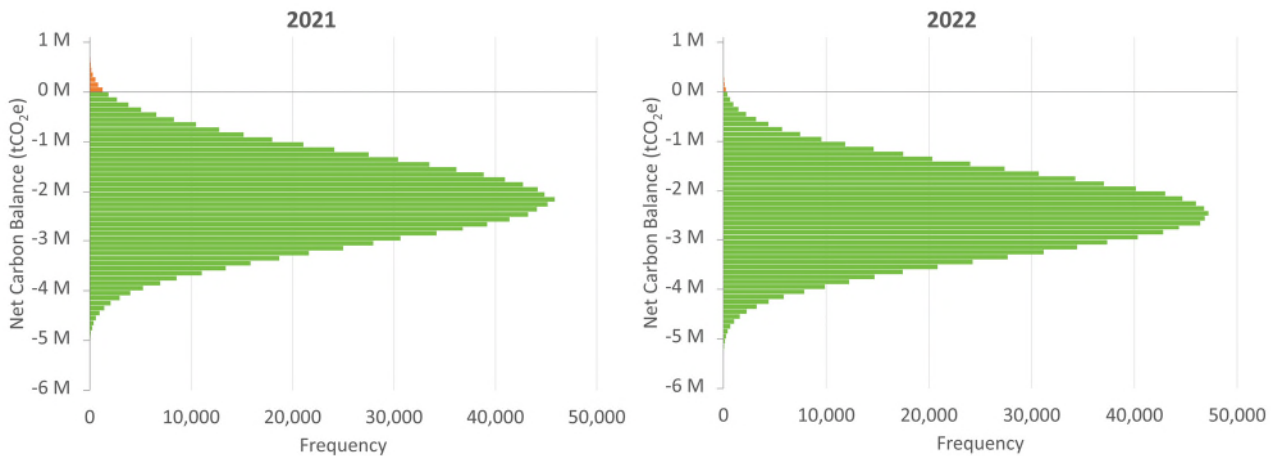


Figure 4 Histograms of Monte Carlo simulations of Western’s net carbon balance in 2021 and 2022 considering the uncertainty of the estimates.

FORWARD-LOOKING STATEMENTS

The report contains statements that may constitute forward-looking statements under the applicable securities law. Readers are cautioned against placing undue reliance on forward-looking statement because such statements are based upon a number of estimates and assumptions of management, and Western can give no assurance that such statements will prove to be correct. Forward-looking statements contained herein may be identified by the use of words such as “will”, “may”, “expect”, “intend”, “project”, “forecast”, “likely”, “continue” and similar references intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statement in this report include, but are not limited to, statements relating to our current intent, belief or expectations with respect to: the stability of forest ecosystem carbon stocks, the impact of Western’s activities on carbon emissions, atmospheric carbon and climate change, Western’s carbon balance, the ability of Western to further reduce its direct emissions and carbon footprint and the expected amount of such reductions, the ability of the Quatern Limited Partnership project to measure forest carbon sequestration, and the ability of Western to monetize carbon.

Although such statements reflect management’s current reasonable beliefs, expectations and assumptions, there can be no assurance that forward-looking statements are accurate, and actual results and performance may materially vary. Forward-looking statements are subject to a variety of risks and uncertainties that could cause our actual results or performance to be materially different from what is contemplated by these statements, including: economic and financial conditions, labour disputes and disruptions, demand for forest products, natural disasters and the impact of climate change, the availability of fibre and allowable annual cut, development and changes in the regulatory framework, the development and performance of technology and other factors set out herein and in our management’s discussion and analysis for the year ended December 31, 2022. The foregoing list is not exhaustive, as other factors could adversely affect our actual results and performance. Forward-looking statements are based solely on information currently available to Western and are made as of the date hereof. Unless stated otherwise, Western disclaims any intent or obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, or other than as required by applicable securities laws.



INDEPENDENT PRACTITIONER’S LIMITED ASSURANCE REPORT

To the management of Western Forest Products Inc. (the “Entity”)

We have undertaken a limited assurance engagement on certain subject matter information of the Entity, included in the accompanying Carbon Accounting Report (the “Report”), as at and for the years ended December 31, 2021 and December 31, 2022, as described in the table below.

Subject Matter Information	Reported amount and units	Page number in the Report	Applicable criteria and basis of presentation
Total Net Carbon Balance (Greenhouse Gases)	<p style="text-align: center;">2022: (2,453,372) Tonnes CO₂e</p> <p style="text-align: center;">2021: (2,160,624) Tonnes CO₂e</p>	Page 7	<ul style="list-style-type: none"> The World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard Revised Edition; GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard; The Corporate Value Chain (Scope 3) Accounting and Reporting Standard as applicable to Scope 3 emissions, excluding categories 6 (business travel), 7 (employee commuting), 8 (upstream leases assets), 13 (downstream leased assets), 14 (franchises), 15 (investments); and, Internally developed guidelines described in the Report. <p>Presented as:</p> <ul style="list-style-type: none"> Net forest ecosystem balance scope 1 Net forest ecosystem balance scope 3 Net change in carbon stored in harvested wood products Scope 1 direct GHG emissions Scope 2 indirect GHG emissions from energy purchases Scope 3 significant indirect GHG emissions from supply chain activities Net change in landfill carbon storage.



Subject Matter Information	Reported amount and units	Page number in the Report	Applicable criteria and basis of presentation
Biogenic emissions	<p>2022: 1,153,017 Tonnes CO₂e</p> <p>2021: 1,073,044 Tonnes CO₂e</p>	Page 9	<ul style="list-style-type: none"> • The World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard Revised Edition; • GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard; • The Corporate Value Chain (Scope 3) Accounting and Reporting Standard as applicable to Scope 3 emissions, excluding categories 6 (business travel), 7 (employee commuting), 8 (upstream leases assets), 13 (downstream leased assets), 14 (franchises), 15 (investments); and, • Internally developed guidelines described in the Report. <p>Presented as:</p> <ul style="list-style-type: none"> • Biogenic emissions from burning slash piles, hog fuel and incineration of wood products at landfills
Substitution benefits	<p>2022: (2,660,973) Tonnes CO₂e</p> <p>2021: (2,785,883) Tonnes CO₂e</p>	Page 8	<ul style="list-style-type: none"> • Internally developed guidelines described in the Report. <p>Presented as:</p> <ul style="list-style-type: none"> • Substitution benefits of using wood over alternatives

Other than as described in the preceding table, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Report, including revised 2020 reported amounts, and accordingly, we do not express a conclusion on this information.

Management’s Responsibility

Management is responsible for the preparation and presentation of the subject matter information in accordance with the applicable criteria.

There are no mandatory requirements for the preparation, publication or presentation of the subject matter information. As such, the Entity applies the criteria described under the applicable criteria and basis of presentation in the table above in calculating the reported amounts including their own internal reporting guidelines and definitions which can be found in the Report (collectively the “applicable criteria”).



Management is responsible for determining the appropriateness of the use of the applicable criteria.

Management is also responsible for determining the Entity's objectives in respect of sustainability performance and reporting, including the identification of stakeholders and material issues.

Management is also responsible for such internal control as management determines necessary to enable the preparation and presentation of the subject matter information that is free from material misstatement, whether due to fraud or error.

Practitioner's Responsibilities

Our responsibility is to express a limited assurance conclusion on the subject matter information based on evidence we have obtained. We conducted our limited assurance engagement in accordance with International Standards on Assurance Engagements (ISAE) 3410 *Assurance Engagements on Greenhouse Gas Statements*. This standard requires that we plan and perform our engagement to obtain limited assurance about whether based on the procedures performed and evidence obtained, any matter(s) has come to our attention to cause us to believe that the subject matter information is materially misstated.

The procedures performed in a limited assurance engagement vary in nature and timing from and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, it is not a guarantee that a limited assurance engagement conducted in accordance with this standard will always detect a matter that causes the practitioner to believe that the subject matter information is materially misstated.

Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the decisions of users of our report.

The nature, timing and extent of procedures performed depends on our professional judgment, including an assessment of the risks of material misstatement, whether due to fraud or error, and involves obtaining evidence about the subject matter information.

Our engagement included: assessing the appropriateness of the subject matter information, the suitability of the criteria used by the Entity in preparing the subject matter information in the circumstances of the engagement and evaluating the appropriateness of the methods, policies and procedures, and models used in the preparation of the subject matter information, and the reasonableness of estimates made by the Entity.

Our engagement included, amongst others, the following procedures:

- Inquiries with relevant staff at the corporate and site level to understand the data collection and reporting processes for the subject matter information;
- Assessment of the suitability and application of the applicable criteria in respect of the subject matter information;
- Where relevant, performing walkthroughs to test the design of internal controls relating to data collection and reporting of the subject matter information;
- Comparing the reported data for the subject matter information to underlying data sources on a sample basis;
- Inquiries regarding key assumptions, estimates and the appropriateness of the associated models, methods, policies and procedures;
- The re-performance of calculations on a sample basis; and,
- Reviewing the presentation of the subject matter information in the Report to determine whether the information presented is consistent with our overall knowledge of, and experience with, the environmental performance of the Entity.

The engagement was conducted by a multidisciplinary team which included professionals with suitable skills and experience in both assurance and in the applicable subject matter.

Practitioner's Independence and Quality Management

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Management 1, *Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements* which requires the firm to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Significant Inherent Limitations

Historical non-financial information, such as that contained in the Report, is subject to more inherent limitations than historical financial information, given the characteristics of the underlying subject matter and methods used for determining this information. The absence of a significant body of established practice on which to draw allows for the selection of different but acceptable evaluation techniques, which can result in materially different measurements and can impact comparability. The nature and methods used to determine such information, as described in the applicable criteria, may change over time, and it is important to read the Entity's reporting methodology within the Report.



Conclusion

Our conclusion has been formed on the basis of, and is subject to, the matters outlined in this report. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion. Based on the procedures performed and evidence obtained, no matters have come to our attention to cause us to believe that the subject matter information as described above and disclosed in the Entity's Report as at and for the years ended December 31, 2021 and December 31, 2022, has not been prepared and presented, in all material respects, in accordance with the applicable criteria as at the date of our report.

A handwritten signature in black ink that reads 'KPMG LLP'. The signature is written in a cursive, slightly slanted style. Below the signature is a horizontal line that starts under the 'K' and extends to the right, ending under the 'P'.

Chartered Professional Accountants

October 31, 2023

Vancouver, Canada