

# **2022** CARBON AND CLIMATE REPORT



Carbon Record

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## Carbon Record

Provided transparency on our carbon record methodology.

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# Greenhouse Gas Emissions

Reported Scope 1, Scope 2, and Scope 3 greenhouse gas emissions with detailed methodology.



# Physical Climate Impacts

Evaluated physical climate impacts under four RCP scenarios for the Southeast and the Lake States.

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Carbon Record

Greenhouse Gas Emissions

Physical **Climate Impacts** 

### **To Our Stakeholders**



Anna Torma Vice President, Public Affairs and Chief ESG Officer, PotlatchDeltic

Our 2022 carbon and climate report provides details on our methodology for measuring carbon removals and storage and for calculating our Scope 1, Scope 2, and Scope 3 greenhouse gas emissions. The Report complements our 2022 ESG Report which provided a summary of the calculations.

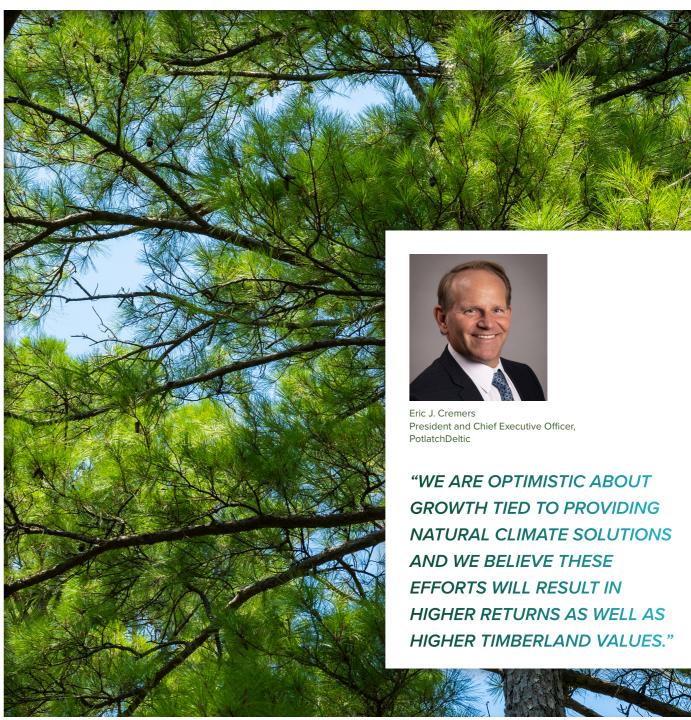
In late 2022, we established a 2030 GHG reduction target for our Scope 1 and Scope 2 emissions of 42% from a 2021 baseline and we set a 2030 GHG reduction target for our Scope 3 emissions of 25% from a 2021 baseline. We also committed to a goal to achieve net-zero GHG emissions by 2050. These reduction targets are in accordance with the non-FLAG (Forest, Land, and Agriculture) Science-based Targets initiative (SBTi) to keep global temperature increases to less than 1.5°C compared to pre-industrial levels.

FLAG removals guidance has not been finalized, which has delayed our ability to submit the targets to SBTi for approval.

We recognize that climate change can present both risks and opportunities to our business. As part of the foundation for our TCFD (Task Force on Climate-related Financial Disclosures) reporting, our Carbon and Climate Report expands on our 2022 ESG Report discussion of these issues and details a climate scenario analysis that models potential impacts of temperature and precipitation on key species in our forests. In our 2021 Carbon and Climate Report, we included an analysis of Idaho forests and Arkansas forests impacts under four Representative Concentration Pathways (RCP) climate scenarios. This year's Carbon and Climate Report adds the same climate impact analysis of our forests in the southeast - Georgia and South Carolina - and the Lake States forests we rely on as a fiber source for our Bemidji, Minnesota and Gwinn, Michigan wood products facilities.

Forest-based climate solutions play a critical role as a solution to climate change through the removal and storage of biological carbon and the role of wood fiber in the transition to a circular bioeconomy. As a result, several potential transition opportunities are emerging for sustainably managed forests. We are engaged in emerging natural climate solutions market opportunities and recently added a dedicated position to these efforts.









# **Our Carbon Record**



**Our Existing Carbon Stored** 

Greenhouse Gas Emissions Physical Climate Impacts

### **Carbon Record**

SUSTAINABLY MANAGED FORESTS COMBAT CLIMATE CHANGE THROUGH CARBON REMOVAL, STORAGE, AND CYCLING. TREES ABSORB ATMOSPHERIC CARBON DIOXIDE THROUGH PHOTOSYNTHESIS AND STORE IT. USING WOOD PRODUCTS FOR BUILDING STORES TREE CARBON AND USING BIOMASS FOR ENERGY RETAINS CARBON WITHIN A NATURAL LOOP.

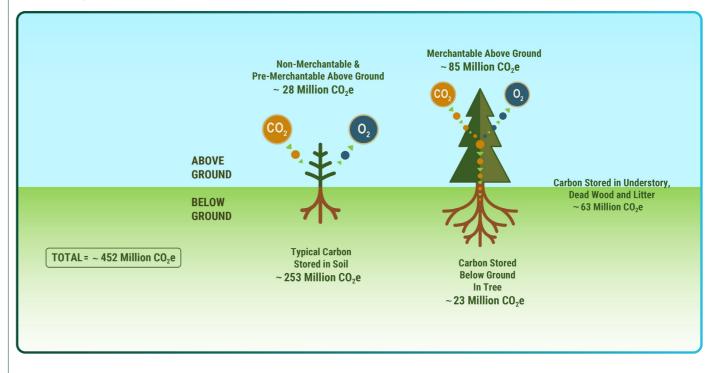


We have divided our forest carbon stocks into three pools that allow us to track our carbon inventory and to follow and account for stored carbon when timber is harvested. The three pools are: 1) merchantable portions of trees, 2) above ground non-merchantable portions of merchantable trees and pre-merchantable trees, and 3) below ground portions of all trees (excludes soil carbon).

Our forests, on all lands owned at the end of 2022, stored a total of ~136 million metric tons of CO<sub>2</sub>e in all three pools. Merchantable above ground portions accounted for ~85 million metric tons of CO<sub>2</sub>e, ~28 million metric tons of CO<sub>2</sub>e were in pre-merchantable above ground portions, and ~23 million metric tons were in below ground portions of trees.

The carbon stored in forest soils accounts for approximately 56% of forest carbon stocks and is a major component of the contribution of forests as a natural climate solution.<sup>1</sup> Soil carbon pools can be dynamic over long periods of time, but they do not flux in predictable, reportable ways like above ground carbon does in response to annual tree growth and harvest. The U.S. Forest Service Forest Inventory and Analysis program is continuing to develop methods to accurately measure soil organic carbon (SOC) and include estimates in their reporting.<sup>2</sup> Utilizing the most recent regional estimates of SOC measured to a depth of 100 cm, our Idaho soils are storing ~103 million metric tons CO<sub>2</sub>e, our South soils are storing ~150 million metric tons CO<sub>2</sub>e, and our ownership is storing ~63 million tons CO<sub>2</sub>e in

the understory and dead wood. Our combined total tree carbon, soil carbon, and understory and dead wood is storing ~452 million metric tons CO<sub>2</sub>e and is a result of our lands being maintained in working forest conditions.



Category	Description	Estimated Proportion of Total Forest Carbon	Calculated to a Single Value (MTCO <sub>2</sub> e)	
Live Tree Carbon	All carbon stored above ground and below ground in live trees	30%	~ 136 Million	
Soil Carbon	Carbon stored in soils	56%	~ 253 Million	
Other	Understory, dead wood and litter	14%	~ 63 Million	



**Carbon Record** 

Greenhouse Gas Emissions Physical Climate Impacts

### Carbon Record (Continued)

THE GROWING AND HARVESTING OF TIMBER, THE PRODUCTION OF PRIMARY WOOD PRODUCTS SUCH AS LUMBER, AND THE USE OF SAWMILL RESIDUALS TO MANUFACTURE SECONDARY PRODUCTS CREATE COMPLEX FIBER FLOWS INTO MULTIPLE END PRODUCTS. We utilize a comprehensive carbon and greenhouse gas (GHG) accounting methodology that tracks removal of carbon from the atmosphere, storage in standing trees, storage in end products, and greenhouse gas emissions from forest management, harvesting, hauling, and manufacturing.

Our net annual atmospheric carbon removals include the growth and harvest on our timberlands and our share of the change in carbon in the standing stocks of trees on other landowners in the procurement basins from which our mills source logs. Carbon storage values include the products we manufacture, and products manufactured by others from our logs and mill residuals. Greenhouse gas emissions include our Scope 1 and 2 emissions as well as Scope 3 upstream and downstream emissions.

While established protocols exist for calculating greenhouse gases, there is currently no formal protocol for land sector removals. Our approach is consistent with the methodology used by some of our peers. The World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) are currently finalizing a Greenhouse Gas Protocol - Land Sector and Removals. Our removal results may need to be restated if a formal methodology is adopted.

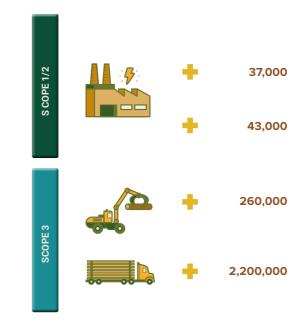
Removals are based on acreage owned for fullyear 2022 and therefore do not include removals associated with the timberland acquired in our merger with CatchMark Timber Trust, Inc. in September 2022. Scope 1 direct, Scope 3 storage, and all emissions use a 2018-2020 pre-fire 3-year average for our Ola, Arkansas wood products facility.

Details regarding calculation type, input data sources and data confidence per GHG Protocol (GHGP) standard are provided in the Appendix.





NET CARBON ATMOSPHERIC REMOVALS & STORAGE



**GREENHOUSE GAS EMISSIONS** 

Note: May not sum due to rounding.

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OUR GHG EMISSIONS

GHG EMISSIONS FROM ELECTRICITY PURCHASED (MARKET-BASED) (LOCATION-BASED = 61,000)

GHG EMISSIONS FROM UPSTREAM

GHG EMISSIONS FROM DOWNSTREAM

**Carbon Record** 

Physical **Climate Impacts** 

### LAND-BASED REMOVALS

### SCOPE 1 – NET CHANGE IN OUR TIMBERLANDS

The amount of carbon stored in our timberland changes over time. These changes occur due to tree growth, harvests, natural disasters, and other factors. Because harvest removes carbon from the land base (transitioning much of it into storage in wood products) and tree growth adds carbon to the land base, we are interested in understanding how the amount of carbon stored on our land varies over time. Because the "true" value fluctuates on a moment-to-moment basis, we quantify the net change by comparing the carbon storage in our forests at year-end to the beginning of the year.

To avoid conflating the effects of our management activities with the changes of our landbase, we compare carbon storage only on acreage we owned for the full calendar year. The use of this consistent spatial footprint for analysis means any acquisitions or divestitures that occurred during the year are omitted. Therefore, we exclude lands acquired during 2022, including those obtained in the merger with CatchMark.

Keeping track of carbon storage in standing trees and carbon removals via tree growth is compatible with the way we keep track of our standing tree inventory and growth. As with any actively managed forests, a variety of changes can occur throughout the year that affect the standing amount of carbon. Some major activities that can alter the inventory in an area are harvests, growth, and updated stand inventory (newly collected data). The magnitude of the annual change associated with these activities is tracked.

The basis of our tree and carbon inventories has two major components, inventory cruising and growth modeling. Our extensive inventory cruising program involves ground-based sampling in our forests to get a tree-list for stands. Since stands are not sampled every year, our growth models estimate growth in the stands in the interim between samples. This allows us to have an up-todate tree list for every stand in our ownership at the end of every year.

Greenhouse Gas

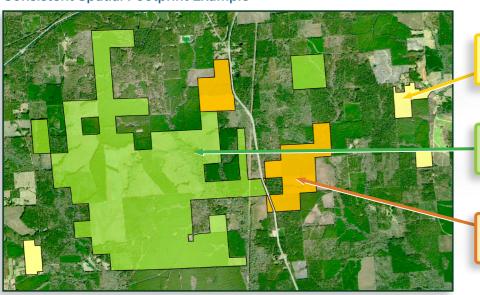
Emissions

At year-end, we take these stand level tree lists and apply well-documented biomass estimators or species-specific moisture contents to calculate component-based carbon inventories for our land base.<sup>3,4</sup> The difference between standing carbon at year-end compared to the beginning of the year is the net change for that year.

In 2022, we calculated the net change in our forests (our Scope 1 timberlands value) for three carbon pools: 1) merchantable portions of trees, 2) above ground non-merchantable portions of merchantable trees and pre-merchantable trees, and 3) below ground portions of all trees (excludes soil carbon).

In 2022, above ground tree growth on our timberlands removed approximately 5.8 million metric tons of CO<sub>2</sub>e from the atmosphere. On a net basis, following harvest and other inventory changes of nearly 7.0 million metric tons of CO<sub>2</sub>e, the net flux in our forests was a decrease of

**Consistent Spatial Footprint Example** 



**Disposed during 2022:** Not Considered in Net Change

Owned all of 2022: **Considered in Net Change** 

Acquired during 2022: Not Considered in Net Change 2021.

1.2 million metric tons CO<sub>2</sub>e. The annual net change in our forests did not result in an emission because almost all the harvested carbon moved into long term storage in wood products or other forest pools. The decrease occurred because of harvest, mortality, and other inventory changes exceeding growth during the year. A significant portion of the decrease was driven by harvesting overmature trees in 2022 from timberlands acquired in late



2022 Change In Our Sourcing Regions

**Carbon Record** 

Greenhouse Gas Emissions

Physical **Climate Impacts** 

### SCOPE 3 – NET CHANGE IN FORESTS OF **OUR SOURCING REGIONS**

Each of our mills has a geographic sourcing region. The carbon stored in forest pools in each of these sourcing regions changes or fluxes over time with the local timberlands of a region either acting as a sink or a source of atmospheric carbon. Carbon sinks absorb more carbon than they release, while carbon sources release more carbon than they absorb. While forests are typically carbon sinks, they can become carbon sources if disease and other disturbances cause forests to die and decay or due to land use changes.

### **Calculating Change in Sourcing Regions**



CO<sub>2</sub>e

**1.7 Million Metric** 

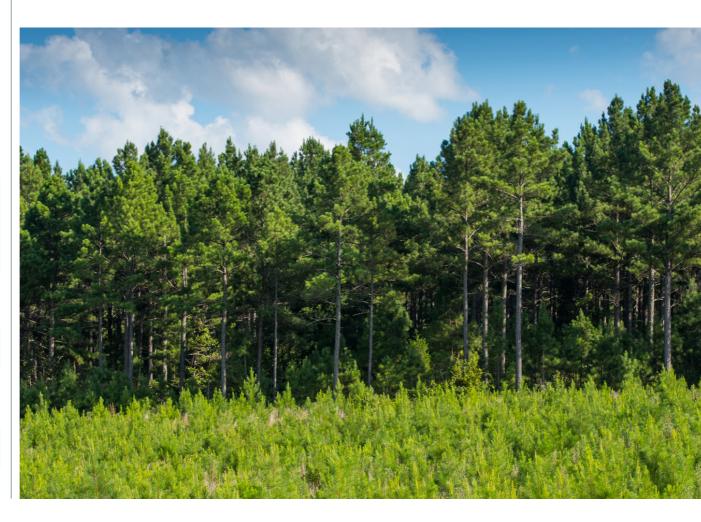
**Tons Removed** 

Net change in sourcing region = change in carbon stocks or growth-harvest-mortality

**Percent of State Harvest** Purchased by Our Mills

> Our Share of State **Carbon Flux**

		Our % Sourcing	Our Share Carbon Flux	
	(MMTCO <sub>2</sub> e)		(MMTCO <sub>2</sub> e)	
Arkansas	(22.6)	4%	(0.8)	
Idaho	6.2	3%	0.2	
Michigan	(8.6)	4%	(0.3)	
Minnesota	(8.4)	9%	(0.8)	



The concept of accounting for carbon from nonowned forests where we source fiber is that a mill should also take "responsibility" for some of this annual flux in forest carbon. The proportion of the regional carbon flux attributed to a mill should be equal to the proportion of the total regional external harvest that a mill consumes.

For carbon accounting purposes, we consider the sourcing region for a mill to be the state in which the mill is located. The statewide net flux in above ground carbon is determined using a USDA GHG Emission Report.<sup>5</sup> We use the estimated overall harvest in the state and calculate the land-based carbon flux associated with those harvests. We then determine our sourcing from the harvest in the state and establish our share of the land-based carbon flux associated with those harvests.

In 2022, we owned and operated mills in 4 states: Idaho, Arkansas, Minnesota, and Michigan. Note that a negative value indicates net uptake in atmospheric carbon so that Arkansas, Minnesota, and Michigan forests were a net sink of carbon, while Idaho forests were a net source. Adjusting to include a 2018-2020 average sourcing for our Ola lumber facility, our calculated combined contribution to the net change for these states was an atmospheric removal of carbon equal to approximately 1.7 million metric tons CO<sub>2</sub>e.

Idaho forests have become a source of carbon emissions primarily because of declining forest carbon storage on public forest lands resulting from slow growing older stands of trees and tree mortality from insects, disease, and fire in unmanaged stands. The carbon stored in wood products from harvested trees is not included in the state sink / source calculations.

**Carbon Record** 

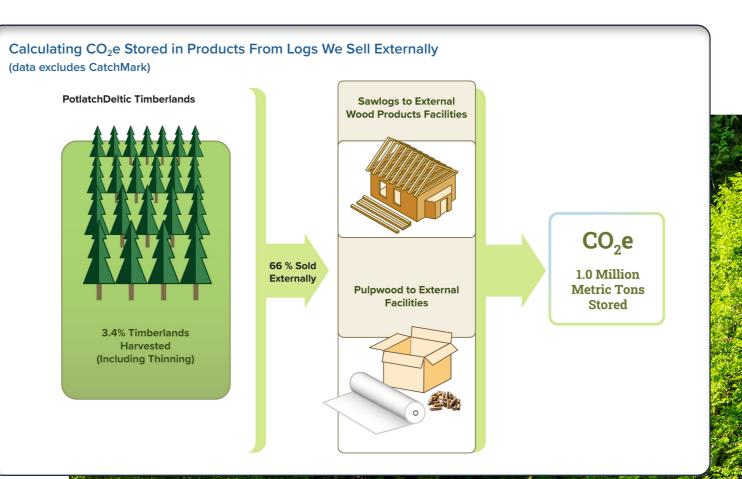
Greenhouse Gas Emissions Physical Climate Impacts

## SCOPE 3: STORED IN LOGS WE SELL EXTERNALLY

Some of the sawlogs harvested from our timberlands are sent to external customers to be converted to wood products such as lumber and plywood. In addition, wood from thinnings or the tops are often sent to external customers as the fiber for a wide range of end products including paper, packaging, and other uses.

Our carbon storage analysis for external log sales is based on the type of log sold. We track all log volumes harvested from our timberlands delineated by hardwood vs softwood and by pulpwood vs sawlog. We estimate the average carbon stored over 100 years in each log category sold using US Department of Agriculture's Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory (Table 6-a-5 and Table 6-a-6).<sup>6</sup> The publication provides 100year average product storage by region and log category.

In 2022, excluding CatchMark, and including a 3-year average for Ola, our timberlands sold approximately 3.6 million tons of fiber externally to non-PotlatchDeltic owned mills. Approximately 56% of these external fiber sales consisted of sawlogs with 44% being pulpwood. Nearly all the logs were softwood, with less than 10% consisting of hardwoods. Using the GHG methodology described above, this stores an average of approximately 1.0 million metric tons  $CO_2e$  over the next 100 years.







Appendix

Emissions

Physical

### **SCOPE 3: STORED IN WOOD PRODUCTS** WE MANUFACTURE

The trees grown on our timberlands are grown and harvested using sustainable long-term, fiveyear, and annual forest management plans. In 2022, excluding CatchMark and including a three-year average for Ola, about 34% of the logs we harvested, or approximately 1.8 million tons of sawlogs from our timberlands, were used in our wood products facilities. An additional 2.4 million tons of sawlogs were purchased by our mills from external sources. These logs were converted by our wood products facilities into lumber and industrial plywood.

These wood products store carbon by remaining in use, with slow reversals over their lifetime. The storage values were developed using decay curves for specific wood products that have been identified in the US Forest Service report, Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory. Since the amount of carbon stored in a wood product decreases as the time since production increases, we use the average quantity of carbon stored over a 100-year period.

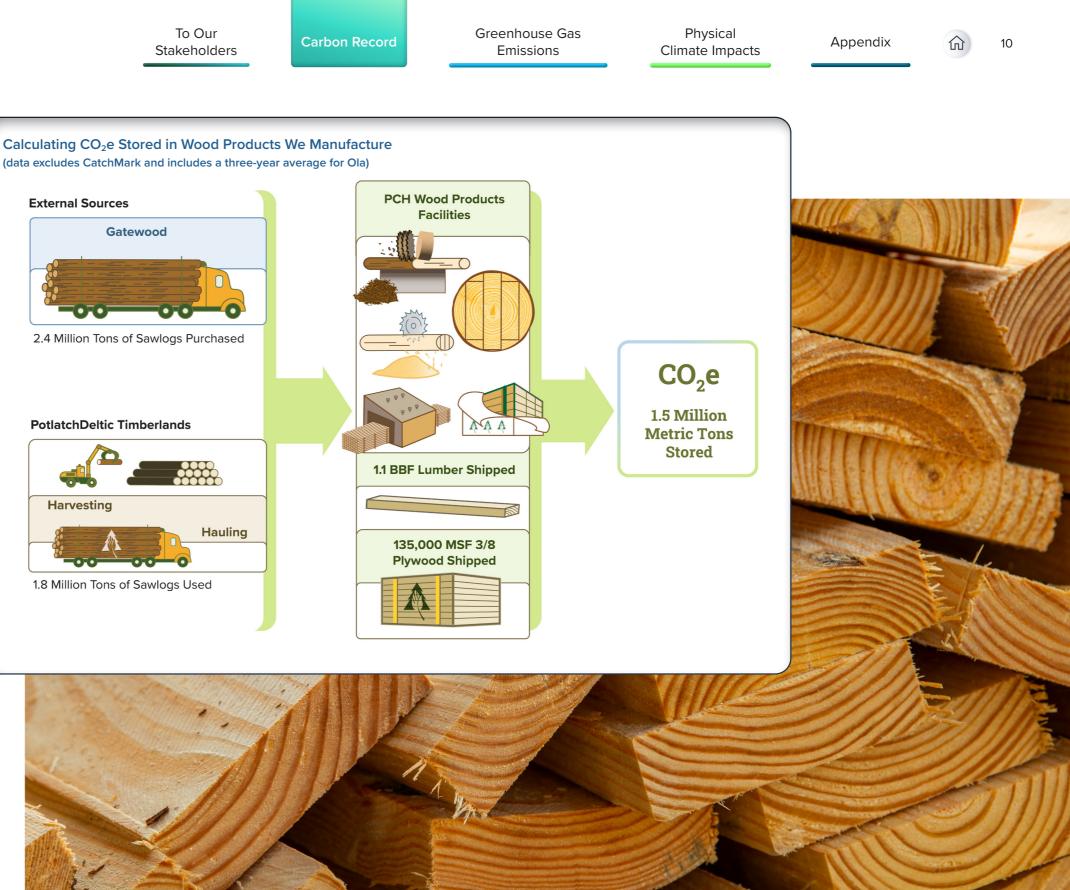
In 2022, PotlatchDeltic sold 1.0 billion board feet of lumber and 133 million square feet (3/8") of industrial and structural plywood. Adjusting to include a 2018-2020 average for our Ola lumber facility, PotlatchDeltic would have sold 1.1 billion board feet of lumber and 135 million square feet (3/8") of industrial and structural plywood in 2022. Using our GHG methodology, these wood products store an average of approximately 1.5 million metric tons CO<sub>2</sub>e.







 $CO_2e$ 1.5 Million **Metric Tons** Stored



Greenhouse Gas Emissions

### SCOPE 3: STORED IN WOOD RESIDUALS WE SELL

When a log is prepared to be sawn at our mills, we maximize the value of each log and minimize residuals. At most mills, 3-D scanners and optimizers are used to automate the process. The full profile of the front and back of the log is scanned which creates a computerized image of each log. The optimizer then selects the cuts of the log and how the log should be oriented to maximize value and minimize waste. It determines the number of boards to be cut and maximizes the yield by following the curvature of the log. This process increases productivity and quality at the mill. Overall, about 51% of each log is processed into lumber, with the remaining wood residuals consisting of sawdust, chips, shavings, and bark. These by-products can be used internally to produce biogenic energy or sold externally to be converted into a wide range of other wood products, paper and packaging products, or other end uses. Essentially all the log is utilized.

In 2022, our wood products facilities utilized an average of 22% of the wood residuals they produced for fuel in their boilers to generate thermal energy in the form of steam and approximately 78% of the wood residuals generated were sold for a wide range of end uses. We estimate the average carbon stored in the wood residuals sold and we do not include the carbon stored in internally utilized wood residuals.

In 2022, our wood products facilities sold approximately 1.5 million metric tons of wood residuals. Adjusting to include a 2018-2020 average for our Ola lumber facility, PotlatchDeltic would have sold 1.6 million metric tons of wood residuals in 2022. Using our GHG methodology, the end use products from these residuals store an average of approximately 200,000 metric tons  $CO_2e$  over the next 100 years.





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200,000 Metric Tons Stored

# **Greenhouse Gas Emmissions**





### **GREENHOUSE GAS EMISSIONS**

Greenhouse Gas Emissions	Baseline			
	2022	2021	2020	
Scope 1 Direct Emissions (metric ton CO <sub>2</sub> e)	37,000	36,000	36,000	
Scope 2 Market-based Indirect Emissions (metric ton CO <sub>2</sub> e)	43,000	43,000	39,000	
Total Scope 1 & 2 Emissions (metric ton CO <sub>2</sub> e)	80,000	79,000	75,000	
Scope 3 Indirect Emissions (metric ton CO <sub>2</sub> e)	2,500,000	2,500,000	2,700,000	
Total Scope 1, 2, & 3 Emissions (metric ton CO <sub>2</sub> e)	2,500,000	2,600,000	2,800,000	
Scope 1 GHG Intensity (metric ton $CO_2e$ per thousand board feet)	0.03	0.03	0.03	
Scope 2 GHG Intensity (metric ton CO <sub>2</sub> e per thousand board feet)	0.04	0.03	0.03	
Total Scope 1 & 2 GHG Intensity (metric ton $CO_2e$ per thousand board feet)	0.07	0.06	0.06	
Scope 3 GHG Intensity (metric ton CO <sub>2</sub> e per thousand board feet)	2.05	2.03	2.21	
Total Scope 1, 2 & 3 GHG Intensity (metric ton CO <sub>2</sub> e per thousand board feet) <sup>7</sup>	2. 11	2.10	2.27	
Scope 2 Location-Based Indirect Emissions (metric ton CO <sub>2</sub> e)	61,000	61,000	58,000	
Wood Residual Derived Biogenic Emissions (metric ton CO <sub>2</sub> )	500,000	490,000	470,000	
Note: May not sum due to rounding.				

### **SCOPE 1 EMISSIONS: DIRECT EMISSIONS FROM OUR OPERATIONS**

Scope 1 emissions are greenhouse gas (GHG) emissions that are emitted directly from our activities in our timberlands, our wood products facilities, and real estate operations. These emissions are emitted from stationary sources and associated control devices (boilers, kilns, dryers, and a regenerative catalytic oxidizer (RCO)) mobile sources (fork trucks, log yard equipment, company-owned vehicles), long-term storage of wood residuals at our mills, and the methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions from biomass combustion.

To consistently calculate Scope 1 emissions, we use the National Council for Air and Stream Improvement (NCASI) tool. This approach is consistent with methodology and emission factors consistent with guidance from the International Panel on Climate Change, and it reflects widely accepted protocols such as the Greenhouse Gas Protocol. This tool calculates CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from wood products manufacturing facilities and their ancillary operations. Scope 1 emissions from our timberlands and real estate segments are also calculated with this methodology.

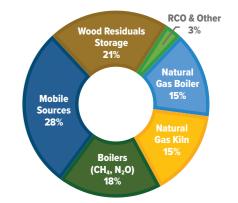
The calculations involve the following:

- For each site, we use our purchasing records and standardized emission factors to calculate CO<sub>2</sub>-equivalent (CO<sub>2</sub>e) emissions resulting from fossil fuels usage.
- For each site, we use our steam production records to calculate biomass usage and subsequent biogenic CO<sub>2</sub> emissions (excluded from Scope 1) and remaining CO<sub>2</sub>e emissions (CH<sub>4</sub>, N<sub>2</sub>O).
- For sites with long-term residuals storage, we calculate the quantity of residuals onsite, use a methane generation rate, and apply a standardized Global Warming Potential (GWP) to estimate CO<sub>2</sub>e emissions.

Our consolidated 2022 Scope 1 emissions were approximately 37,000 metric tons CO<sub>2</sub>e with 32% from stationary sources, 28% from mobile sources, and 21% from long-term storage of wood residuals. The remaining 19% is from non-biogenic emissions from biomass combustion.<sup>8</sup>

Over 99% of our Scope 1 emissions are from our wood products facilities with less than 0.1% from timberlands and real estate. Within wood products Scope 1 emissions, our Gwinn, Michigan wood products facility accounts for 35% of GHG emissions with higher emissions the result of the use of natural gas to fire a boiler and a direct-fired kiln. Our facility at St. Maries, Idaho has higher GHG emissions as a result of comprising of both a sawmill and a plywood mill, long-term wood residuals storage, and the RCO for pollution control.

Emissions generated from biogenic carbon include energy fueled by the use of wood residuals at our wood products facilities. These emissions in 2022 were 500,000 metric tons CO<sub>2</sub>e and were not included in our GHG direct Scope 1 emissions. Biogenic CO<sub>2</sub> emissions can be considered carbonneutral given the residual wood used for energy has a net sequestration benefit as areas harvested are replanted and the CO<sub>2</sub> absorption cycle is renewed as the forests grow. These biogenic emissions are also not additive to the carbon released into the atmosphere because they are considered part of the natural carbon cycle and as a result, they are preferable to the alternative use of fossil fuels.

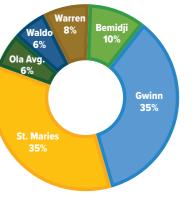


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### Scope 1 GHG Emissions By Type - 2022

#### Scope 1 GHG Emissions By Facility - 2022



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Physical **Climate Impacts** 

### **SCOPE 2 EMISSIONS: INDIRECT EMISSIONS** FROM ELECTRICITY PROVIDERS

Scope 2 emissions are GHG emissions associated with the production of the grid electricity used at our facilities and offices. For the electricity used onsite, there are emissions offsite associated with the production of that electricity. These emissions vary depending on the method of production of the electricity, with fossil fuels having high emission factors and renewable sources having low emission factors. Emission factors for electricity production vary by region and source of the grid electricity. Although these emissions are indirect, the user has some control over the amount of electricity used.

There are two methods for calculating Scope 2 emissions. The GHG Protocol Scope 2 Guidance defines both methods. A location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using gridaverage emissions factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen. This method would include any type of contract with a utility and can include renewable energy credits (RECs) or other energy attribute certificates.

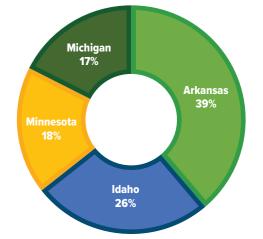
To calculate the emissions associated with our electricity usage, we use the same NCASI tool as used in Scope 1, which follows the GHG Protocol. We calculate Scope 2 emissions in both locationbased and market-based formats. Location-based Scope 2 emissions are calculated with regional emission factors, while market-based Scope

2 emissions are calculated with utility-specific emission factors. The calculations involve the following:

- For each site, we collect electricity purchasing records and consolidate electricity usage by site.
- For location-based Scope 2 emissions, we apply a regional GHG emissions factor from the Environmental Protection Agency (EPA) **Emissions & Generation Resource Integrated** Database (eGRID) for each site. Emissions are calculated for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions, which are then adjusted to CO<sub>2</sub>e with standardized Global Warming Potentials (GWPs).
- For market-based Scope 2 emissions, we apply a utility-specific emissions factor from the utility serving each site. Emissions are calculated for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions, which are then adjusted to  $CO_2e$  with standardized GWPs.

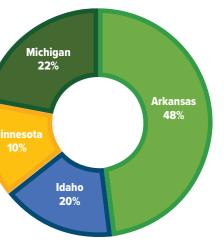
Our consolidated location-based Scope 2 GHG emissions were approximately 61,000 metric tons of CO<sub>2</sub>e in 2022, using the most up to date emission factors from EPA's eGRID.<sup>9</sup> Our market-based Scope 2 emissions were 43,000 metric tons of CO<sub>2</sub>e in 2022, using the most up to date utility-specific emission factors from our electricity providers.

While our location-based Scope 2 emissions show a higher emissions quantity, the marketbased approach is a more precise approach since it is using the emission factors with our specific electricity providers. Our market-based Scope 2 emissions results in a lower emissions calculation, because our electricity provider in Arkansas has a much lower emission rate for electricity production than the Arkansas state average emission rate. We have three facilities in Arkansas, so this results in a lower market-based Scope 2 emissions calculation.



#### Scope 2 Market-Based by State Total in 2022 = 43,000 Metric Tons CO<sub>2</sub>e

#### Scope 2 Location-Based by State Total in 2022 = 61,000 Metric Tons CO<sub>2</sub>e





Physical **Climate Impacts** 

### **SCOPE 3 EMISSIONS: INDIRECT EMISSIONS FROM VALUE CHAIN**

Scope 3 emissions, or indirect emissions, are the GHG emissions associated with our upstream and downstream value chain. These emissions are divided into 15 categories. These categories represent a wide array of emissions ranging from products and services that are paid for, to assets leased to other entities.

To consistently calculate Scope 3 emissions, we used the NCASI Scope 3 Screening Tool. This tool calculates Scope 3 emissions with an estimated 80% accuracy. Using fiber flows, we use the Screening Tool to calculate emissions for categories 1 (Purchased Goods and Services), 3 (Fuel-Energy-Related Activities), 4 (Upstream Transportation), 9 (Downstream Transportation), 10 (Processing of Sold Products), and 12 (End-of-Life for Sold Products) for Scope 3 emissions.

The calculations involve the following:

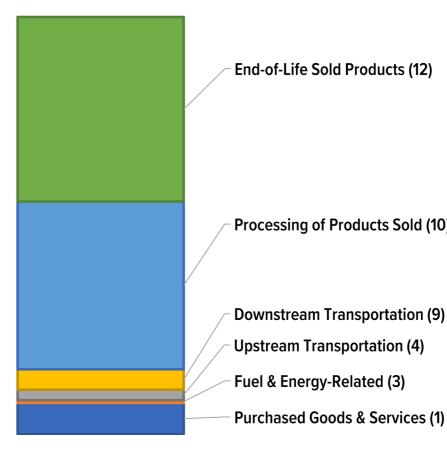
- We consolidate all accounting records for log sales from our Timberlands business.
- We consolidate all accounting records for our Wood Products business for log purchases, primary product (lumber, plywood) shipments, and secondary product (wood residuals) shipments.
- We convert all fiber data to dry weight.
- We consolidate Scope 1 and Scope 2 CO<sub>2</sub>e emissions.

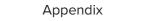
- We input fiber flow data into the NCASI Screening Tool.
- Wood Products business log purchases.
- Wood Products business primary and secondary product sales.
- Timberlands business log sales.
- We apply appropriate emission factors for bark and planer shavings, matching the sawdust default emissions factor for categories 1, 9, 10, and 12.
- We input Scope 1 CO<sub>2</sub>e emissions to calculate upstream processing and distribution emissions for fuels.
- We input Scope 2 CO<sub>2</sub>e emissions to calculate transmission and distribution losses of electricity.
- Scope 3 indirect emissions associated with our Real Estate business are excluded as de minimis.

Company-wide consolidated 2022 Scope 3 emissions were approximately 2,500,000 metric tons of CO<sub>2</sub>e using market-based Scope 2 emissions.<sup>10</sup> Category 1: Purchased Goods and Services makes up 8% of Scope 3 emissions and includes emissions from professional services, telecommunications services, and wood fiber. Category 3: Fuel-Energy-Related Activities makes up 1% of Scope 3 emissions and includes energy losses from transportation and distribution of purchased energy in Scope 2, and any other utility or fuel information not covered by Scope 1 or Scope 2. Category 4: Upstream Transportation and Category 9: Downstream Transportation result in 3% and 5% of our calculated Scope 3 emissions, respectively. Category 10: Processing of Sold Products includes emissions from our sold logs and sold residuals that are processed in our customers' mills and

represents 40% of our Scope 3 emissions. Category 12: End-of-Life of Sold Products is the emissions from the recycling, landfilling, and disposal of our sold products and is 43% of our Scope 3 emissions. Other Scope 3 categories result in insignificant amounts of Scope 3 emissions. Overall, upstream emissions (including harvesting, hauling, and purchased materials and services) accounted for 12% of our Scope 3 emissions.

### Scope 3 GHG Emissions By Category - 2022





43%

ts Sold	(10)	<b>40</b> %
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ortation (9)	5%
tion (4)	3%
d (3)	1%

8%

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Physical Climate Impacts

The rationale for not including the remaining categories is described below:

*Category 2*: Capital Goods. Scope 3 emissions associated with the purchase of capital goods has not been recognized as being a significant source of emissions in our industry. A general review of emissions associated with the purchase of capital goods supports this assumption at this time.

*Category 5*: Waste Generated in Operations. The majority of materials that could become waste from our operations are wood residuals which are either utilized for energy production (via biomass boilers) or used for other products by our downstream customers. Emissions from biomass combustion

are a renewable source of energy and get reported as biogenic emissions. Emissions from materials sent to downstream customers get calculated in category 10 of our Scope 3 inventory. We do have some long-term storage of woody debris onsite, which is reported as part of our Scope 1 emissions as methane emissions.

*Category* 6: Business Travel. We reviewed emissions from business travel utilizing travel expenses from our accounting data. The analysis included air travel, hotels, rental car mileage, and mileage reimbursement (for mileage driven in private vehicles for business purposes). This did not result in a significant amount of Scope 3 emissions. *Category 7*: Employee Commuting. We estimated our employees' commuting using typical commuting habits from Census Bureau data and used EPA emission factors to calculate these emissions, which were approximately 3,000 MT CO<sub>2</sub>e in 2022.

*Category 8*: Upstream Leased Assets. Although we lease mobile equipment for use at our mills, the fuel used in that equipment is captured in Scope 1 emissions.

Category 11: Use of Sold Products. No emissions result from the use or operation of our sold products. Separately, we account for carbon stored in our wood products as part of our removals. *Category 13*: Downstream Leased Assets. We lease our land for recreation, and we lease some mineral rights. Recreation does not account for a significant quantity of emissions, and a preliminary quantification of mineral rights activity showed that it is an insignificant amount of Scope 3 emissions.

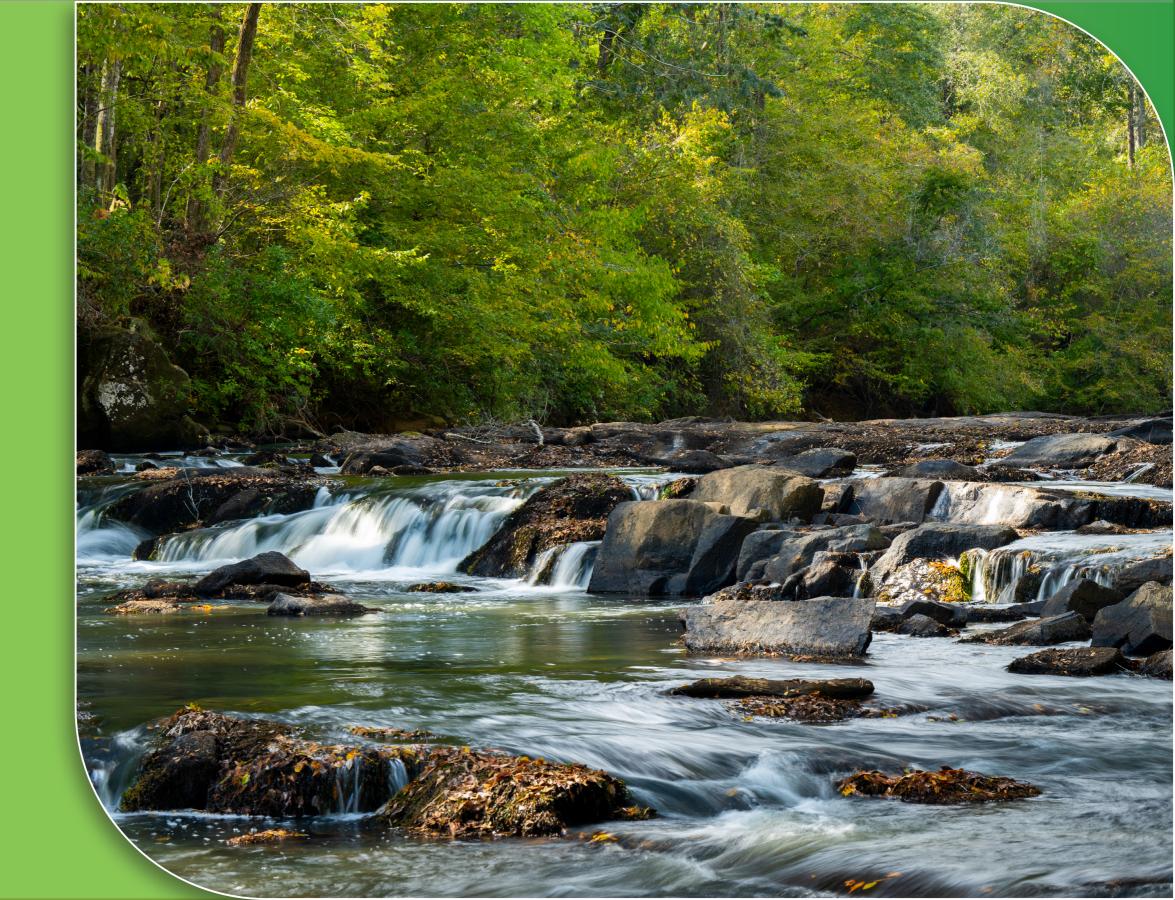
*Category 14*: Franchises. This category does not apply to us since we do not operate franchises.

Category 1 apply to us.



Category 15: Investments. This category does not

# Physical Climate Impacts



Greenhouse Gas Emissions Physical Climate Impacts

## Physical Climate Impacts

**CLIMATE MODELING OF OUR TIMBERLAND PROJECTS THAT PHYSICAL CLIMATE CHANGES IN TEMPERATURE AND PRECIPITATION WILL BE COMPATIBLE WITH THE COMMERCIAL SPECIES** WE GROW. IN ADDITION. NUMEROUS RESEARCH **STUDIES FIND THAT INCREASED ATMOSPHERIC CO<sub>2</sub> CONCENTRATIONS ARE FAVORABLE FOR TREE GROWTH AND WILL RESULT IN PRODUCTIVITY** GAINS IN THE GULF SOUTH.

### **OVERVIEW**

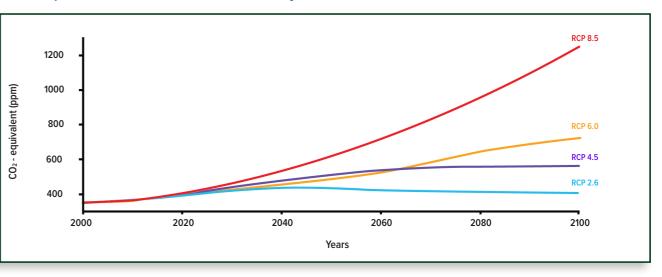
PotlatchDeltic's timberland climate analysis evaluates the potential physical impacts that changes in atmospheric CO<sub>2</sub>, temperature, and precipitation could have on our timberlands under various greenhouse gas (GHG) scenarios. In this year's report, we have evaluated potential physical impacts on two regions: 1) our Southeast timberlands (Georgia and South Carolina); and 2) the Lake States region where we source wood products for our Gwinn, Michigan and Bemidji, Minnesota sawmills. The analysis was conducted utilizing guidance from the Task Force on Climate-related Financial Disclosures (TCFD) and using the National Council for Air and Stream Improvement (NCASI) Climate Projection Analysis Tool (CPAT).

The analysis is based on the Intergovernmental Panel on Climate Change (IPCC) scenarios called Representative Concentration Pathways (RCP). An RCP represents a prescribed pathway for anthropogenic (human caused) GHG emissions and land use change and serves as the basis for modeling the resulting atmospheric CO<sub>2</sub> equivalent concentration. Concentrations project the resulting radiative forcing or additional warming that could occur in the lower atmosphere under a given emission pathway.

Following TCFD guidance, we evaluated four RCPs or sets of potential future scenarios, including a highly unlikely, high consequence scenario: RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5. The RCP 2.6 pathway assumes rapid reductions in emissions with broad global participation and would result in about 1.5°C to 2°C of warming by 2100 relative to pre-industrial levels. Warming occurs by decade 2040-2049 and no additional warming occurs through 2100. RCP 4.5 assumes emissions peak around 2080 and then remain level through 2100 with global temperature projected to rise 2.5°C to 3°C by 2100 relative to pre-industrial levels. RCP 6.0 stabilizes warming by 2100 by reducing GHG emissions and applying new technologies and would result in about 3°C to 3.5°C of warming by 2100 relative to pre-industrial levels with the higher warming occurring from 2060 to 2100. RCP 8.5 assumes little effort to reduce emissions resulting in a failure to curb radiative forcing by 2100 and would result in about 5°C rise in global temperature by 2100 relative to pre-industrial temperatures. We are including RCP 8.5 as a highly unlikely high consequence scenario since the probability of this scenario is broadly considered unplausible given the global climate policies and reduction initiatives already implemented.

CPAT utilizes spatially downscaled climate model projections from the Coupled Model Intercomparison Project (CMIP-5) dataset for the period 2000-2099 for the four RCP scenarios. The model projections include temperature and precipitation impacts to 2100 for our two identified regions and enable the evaluation of climate boundaries for our primary tree species in each region. In addition, we address the general biological response for timberlands arising from higher  $CO_2$  levels in the atmosphere. It is important to note that confidence in climate model output is greatest for global and continental-scale results. Downscaled models, currently, cannot reliably replicate climate histories at local to regional scales. This means that model outputs for any region may not be representative of actual future conditions.

### **IPCC Representative Concentration Pathways**





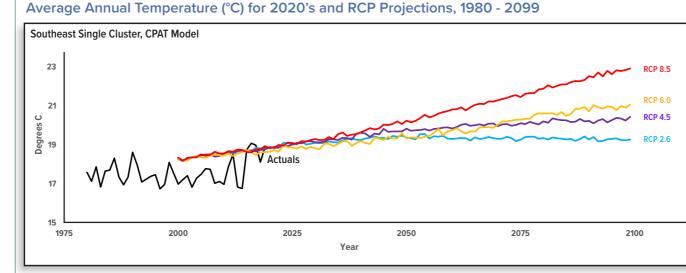
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Greenhouse Gas Emissions Physical Climate Impacts

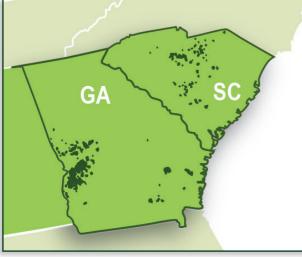
### SOUTHEAST SCENARIO ANALYSIS

PotlatchDeltic owns approximately 278,000 acres of timberland in the Southeast.<sup>11</sup> This includes approximately 215,000 acres in Georgia and approximately 63,000 acres in South Carolina. Over 86% of our upland stands in the area are dominated by loblolly pine with other conifer species such as slash and long-leaf pine also present. Riparian acreage is dominated by hardwoods such as oaks, yellow poplar, or sweetgum. Of the Southern forest holdings, our tracts located in Coastal Georgia boast the highest site productivity of the region.

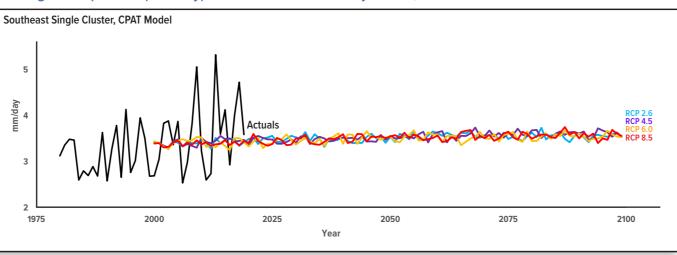
Third-party nurseries grow our Georgia and South Carolina seedlings. We benefit from generations of selected breeding to promote growth, improve form and increase resistance to insects and disease.







### Average Precipitation (mm/day) for 2020's and RCP Projections, 1980 - 2099



To evaluate climate impacts, we used a central point located within Georgia and South Carolina. Temperature projections were modeled using CPAT under the four RCPs. Using RCP 2.6 downscaled temperature projections reveal a temperature increase of about 0.43°C from the 2020s to the 2040s with 0.01°C additional increase through the rest of the century. RCP 4.5 shows a temperature increase of approximately 0.74°C from the 2020s to the 2040s with an additional increase of about 0.81°C expected through the rest of the century. Similarly, RCP 6.0 shows a temperature increase of about 0.55°C from the 2020s to the 2040s with an additional increase of approximately 1.8°C through the rest of the century. RCP 8.5 shows a steady increase of roughly 4.1°C between the 2020s and the end of the century.

Precipitation projections for the Southeast do not vary meaningfully by RCP and all four pathways project a gradual increase of 1-2% from 2020 to 2100. Coastal area increases are expected to be slightly higher, averaging between 6-7% for all RCP.



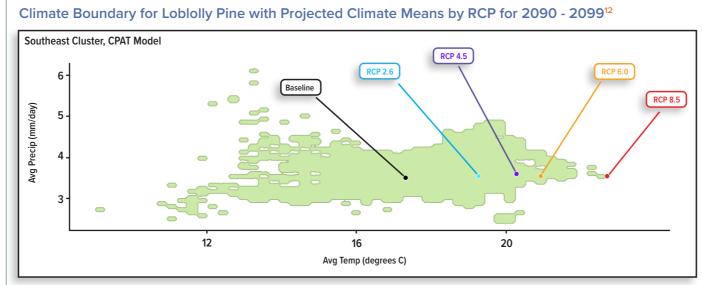
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Carbon Record

Greenhouse Gas Emissions Physical Climate Impacts

### Loblolly Pine Climate Boundary and Productivity Assessment

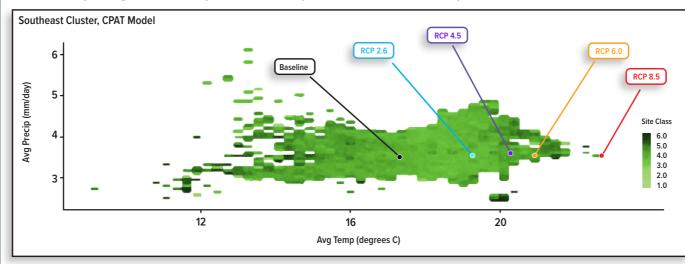
Loblolly pine accounts for approximately 86% of our Southeast forest inventory. The species grows best in full sun and prefers acidic soil. It is moderately drought resistant. Downscaled RCP 2.6, 4.5, 6.0, and 8.5 projections for the region indicate annual climatic conditions are projected to be well suited for growth and productivity through 2100.



The CPAT climate boundary analysis for loblolly pine forecasts that the projected range of temperature and precipitation will be suitable for its growth under all RCP scenarios through 2100. Its climate requirements include humid and hot summers along with a mild winter. Seasonal fluctuations in weather patterns that include the projected warmer winters, modest precipitation increases, and hot, humid summers may prove favorable for many decades under all RCP.



Productivity Range for Loblolly Pine with Projected Climate Means by RCP for 2090 - 2099<sup>13</sup>



The analysis for loblolly pine productivity arising from a combination of temperature and precipitation suggests that the species will remain within its historic range for all RCP through 2100. There is little to no change in projected site productivity in this part of the species' range.



Carbon Record

Greenhouse Gas Emissions

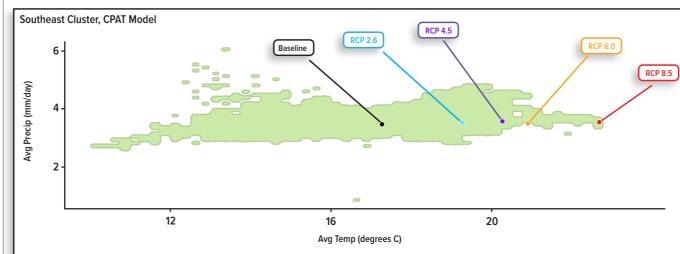
**Climate Impacts** 

### Sweetgum Climate Boundary and Productivity Assessment

Sweetgum accounts for approximately 5% of our Georgia and South Carolina inventory. It is common in riparian hardwood stands, often comprising 20% of the inventory. Known for its exceptional adaptability, this species demonstrates commercial growth potential in upland soils and thrives along streams and river bottoms. Projections for sweetgum in the southeast indicate climatic conditions are projected to be well suited for growth and productivity through 2100 for all RCP.



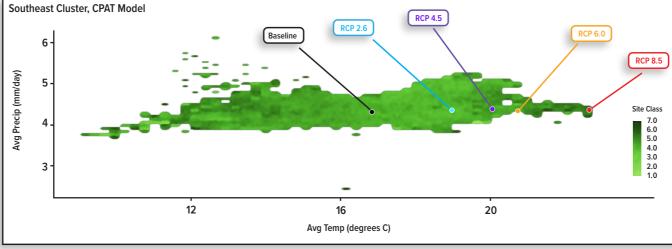
#### Climate Boundary for Sweetgum with Projected Climate Means by RCP for 2090 - 2099<sup>14</sup>



The CPAT climate boundary analysis for sweetgum illustrates that the projected range of temperature and precipitation will be suitable for its growth under all RCP scenarios through 2100. sweetgum's adaptability may allow colonization of higher elevation areas while maintaining a fair degree of drought tolerance. This species is found from Texas to Central Florida, to New Jersey, across all the southern portion of the Midwest demonstrating its ability to adapt and thrive in different climatic conditions. Genetic variation of sweetgum across the U.S. allows considerable management flexibility for this important riparian species.



Productivity Range for Sweetgum with Projected Climate Means by RCP for 2090 - 2099<sup>15</sup>



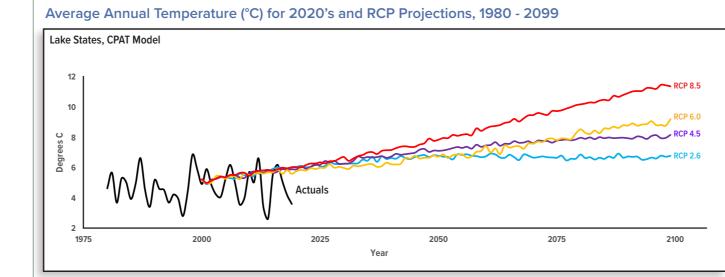
The analysis for sweetgum productivity arising from a combination of temperature and precipitation under various RCP scenarios in 2090-2099 suggests that RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5 will remain within a range of historic distribution. There is little to no change in site productivity. Sweetgum is adapted to both high and low precipitation and may be more capable of responding to intra-annual variation in rainfall compared to other hardwoods. A non-projected annual decrease in precipitation could cause conditions to become unsuitable for growth under RCP 6.0 and 8.5.

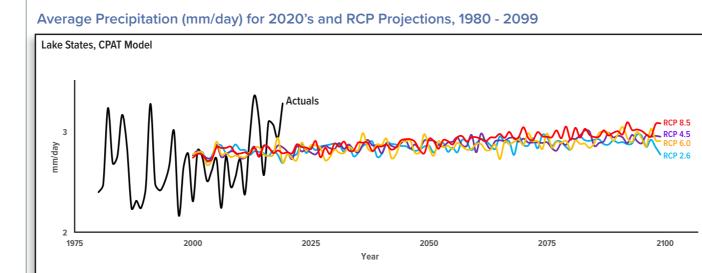


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### LAKE STATES SCENARIO ANALYSIS

PotlatchDeltic owns two sawmills in the Lake States. The sawmills produce precisioncut studs from spruce, pine, and fir (SPF). The Gwinn, Michigan sawmill has 185 MMBF annual capacity and the Bemidji, Minnesota sawmill has 140 MMBF annual capacity.<sup>16</sup> We do not own timberlands in the Lake States and both sawmills procure all their logs from external sources. We procure a variety of conifer species including white spruce, red pine, jack pine, Norway spruce, balsam fir, and black spruce. Red pine accounts for approximately 75% of the log volume at Bemidji and Gwinn.





Temperature projections for our Lake States region were modeled using CPAT under the four RCPs. RCP 2.6, downscaled temperature projections for the region reveal a temperature increase of about 0.6°C from the 2020s to the 2040s with an increase of 0.14°C from 2040 through 2100. RCP 4.5 shows a temperature increase of approximately 0.85°C from the 2020s to the 2040s with an additional increase of roughly 1.4°C expected through the rest of the century. RCP 6.0 shows a temperature increase of 0.45°C from the 2020s to the 2040s with an additional increase of approximately 2.9°C through the rest of the century. RCP 8.5 shows a steady increase of approximately 5.4°C between the 2020s and the end of the century.

Precipitation projections for our Lake States region do not vary by RCP through 2040. Projections are for a precipitation increase of 0-2% from the 2020s through 2040 and a 1-7% increase from 2040 through the end of the century.

### Lake States Sawmill Locations





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To evaluate climate impacts, we used a central geographic point located between the two sawmills. Care was taken to ensure the point represented the forecast climate at both locations.

Carbon Record

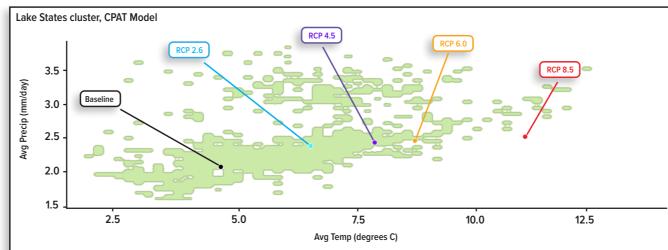
Greenhouse Gas Emissions Physical Climate Impacts

### Red Pine Boundary and Productivity Assessment

Red pine, also known as Norway pine in the region, is the most important species for logs sourced into our Lake States region mills. Red pine are fairly drought tolerant and prefer acidic sandy soil conditions. Downscaled climate projections in the Lake States for RCP 2.6, 4.5, and 6.0 indicate favorable growing conditions, especially in the eastern portion of the region closer to Gwinn.

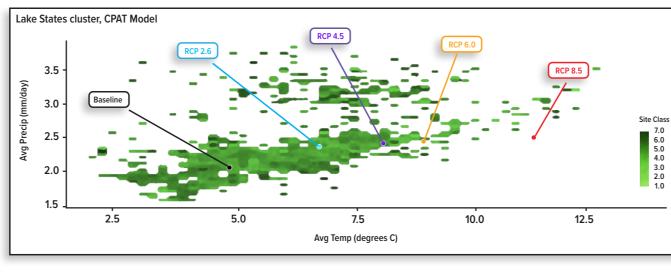






The CPAT climate boundary analysis for red pine illustrates that the projected range of temperature and precipitation will be well-suited for its growth under RCP scenarios 2.6, 4.5, and 6.0 through 2100. Precipitation amounts are lower in the western portion of the Bemidji log sourcing area and when coupled with the rising temperature projected under RCP 8.5 red pine's productivity could decrease and conditions for its growth and survival may become unsuitable.

Productivity Range for Red Pine with Projected Climate Means by RCP for 2090 - 2099<sup>18</sup>



The analysis for red pine productivity arising from a combination of temperature and precipitation under RCP scenarios 2.6, 4.5, and 6.0 in 2090-2099 project favorable productivity for red pine. Conditions in the eastern portion of the region closer to Gwinn are most favorable. RCP 8.5 places red pine at the periphery of its range beginning in 2060 and warmer conditions without increases in precipitation may cause decreases in productivity and eventually eliminate its ability to survive. The presence of the Great Lakes are confounding factors in downscaled climate projections. As climate projection models improve our ability to assess productivity and suitability for survival will increase.



Carbon Record

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### **OUR CONCLUSIONS**

#### CLIMATE BOUNDARIES AND PRODUCTIVITY

Our Lake States and Georgia/South Carolina climate projections were undertaken at regional scales that are appropriate for the application of downscaled climate models. For each region we evaluated four RCP scenarios including a highly unlikely, high consequence scenario: RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5.

Climatic conditions in the Southeast are projected to be favorable for loblolly pine growth under all RCP through 2100. Conditions also remain favorable under all RCP for productivity and survival of hardwood species such as Sweetgum and Oak, which predominate in riparian areas.

The Southeast's climate is projected to increase in temperature and maintain current precipitation levels. Commercial rotations of less than 30 years for loblolly pine provide the opportunity to adapt forest management to changing conditions. Active forest management and deployment of improved genetic stock may play a crucial role in the adaptation of forests to a changing climate and to maintaining productivity. Loblolly pine and the hardwood species along streams and rivers are welladapted to projected climatic conditions.

In the Lake States region, climatic conditions remain favorable for production of softwood log species through 2060 for RCP 2.6, 4.5 and 6.0.

Projections for red pine, which accounts for approximately 75% of our log volume, indicate its productivity and survival could decline under RCP 8.5, particularly in the western portions of the region.

Temperatures in the Lake States have warmed more than in the South and warming in the region is projected to continue through the end of the century for RCP 6.0 and 8.5 with little change in precipitation. Long growth cycles for northern softwood log species increase the risks that climatic conditions will eventually become unsuitable for sawlog production. This contrasts with lower levels of growing season warming that have occurred in the south and shorter sawlog cycles, both of which decrease risks from a warming climate.

Tree improvement programs for loblolly pine are active in the South and for red pine in the Lake States. These tree breeding programs are used to improve or genetically enrich tree species and produce trees well-adapted to regional soils, sites, and climate. Tree breeding experts use progeny testing to identify and select the best trees for growth, form, disease resistance and adaptation. Testing is conducted under local growing conditions and trees that are performing the best are adapting to changing regional climates. Landowners select improved planting stock to ensure they are planting seedlings that will grow and perform well under these changing conditions. These types of climate adaptive forest management and tree improvement techniques could help mitigate long-term physical climate risks.





Greenhouse Gas Emissions Physical Climate Impacts

### **CASE STUDY**

### **GENETIC ENRICHMENT OF TREE SPECIES**

In forest management, we often talk of genetically enriching a tree species, but what does that really mean? One thing it does NOT mean is that we plant genetically modified organisms (GMO). GMOs are created through splicing, separating, and adding distinct genetic material to a model organism using various molecular biology techniques. As a member of the Sustainable Forestry Initiative® (SFI®), PotlatchDeltic is committed to maintaining natural planting stocks and not introducing GMO saplings to our forests.

A genetically enriched organism has a change in appearance or characteristic (phenotype) through a natural process known as Mendelian inheritance. While more complex than stated, this process has a donor parent, which is selected for desirable traits by trained silviculturists, impart genetic material to a mother tree to produce a new generation of plants. Through time and careful selection silviculturists can extract the best traits a family of trees has to offer.

In controlled mass pollination the female strobili, where pollen enters, are covered with a bag during a short window in which they are capable of breeding. This prevents random undesirable pollen from pollinating the trees.

The genetically superior pollen of desirable trees is inoculated into the bags, which are removed shortly after, allowing the strobili to grow into cones. The cones produce seeds which are grown into the next generation of trees on our timberlands. This process is manually intensive and takes decades to create seed orchards; however, the payoff of improved trees is well worth it.

PotlatchDeltic has been involved with tree enrichment and improvement programs for the last sixty years. We operate seed farms in our Idaho timberlands but also collaborate with other companies, universities, and consortiums to develop the latest tree genetics in other regions.

Fusiform rust, an endemic fungal pathogen of the Southeastern US, has been a blight on the forestry sector throughout the history of American forestry. A successful collaboration between the public and private sector has led to the creation of disease-resistant planting stocks alleviating issues relating to stand establishment.

Natural tree enrichment is not only an integral part of maximizing returns on our timberlands, but also in mitigating effects of climate change for other tree species. Significant research is focused on creating more vigorous varieties of keystone hardwood species such as American Chestnut, Red Bay, among others, which have been negatively impacted by global pathogens in recent history.



#### Appendix





# Appendix



## Footnotes

- 1. G. M. Domke et al., "Toward Inventory-Based Estimates of Soil Organic Carbon in Forests of the United States," Ecological Applications 27, no. 4 (April 19, 2017): https://doi.org/10.1002/eap.1516
- 2. Forest Service Forest Inventory and Analysis Program: https://www.fia.fs.usda.gov
- 3. Alexander Clark and Richard F. Daniels, "Estimating Moisture Content of Tree-Length Roundwood," Pulping/Process and Product Quality Conference, Sheraton Boston (2000): https://www.fs.usda.gov/research/treesearch/9741
- 4. J. Jenkins et al., "National Scale Biomass Estimators for United States Tree Species," Forest Science, no. 49 (February 1, 2003): https://www.fs.usda.gov/research/teesearch/6996
- 5. Grant M. Domke et al., "Greenhouse Gas Emissions and Removals from Forest Land, Woodlands, and Urban Trees in the United States, 1990-2019," U.S. Department of Agriculture, Forest Service, Northern Research Station Resource Update FS-307 (April 21, 2021): https://doi.org/10.2737/fs-ru-307
- 6. M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 (July 2014): https://www.usda.gov/sites/default/files/documents/USDATB1939\_07072014.pdf
- 7. GHG Intensity = Total Scope 1, 2, and 3 emissions per total division production.
- 8. Greenhouse gas emissions estimates are based on the methods outlined in NCASI Report Calculation Tools for Estimating Greenhouse Gas Emissions from Wood Products Facilities Version 1.0 and associated workbook NCASI Spreadsheets for Calculating GHG Emissions from Wood Products Manufacturing Facilities Version 1.0. CO<sub>2</sub>e (CO<sub>2</sub>-equivalent emissions) is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO<sub>2</sub>e signifies the amount of CO<sub>2</sub> which would have the equivalent global warming impact. For PotlatchDeltic, CO<sub>2</sub>e emissions include emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Calculations include 2018-2020 average for Ola as actuals are not representative due to 2021 Ola fire.
- 9. 2022 Scope 2 emissions were calculated with the 2021 eGRID factors that were released in January 2023. Emissions & Generation Resource Integrated Database (eGRID) | US EPA
- 10. Scope 3 emissions were calculated with NCASI's workbook, NCASI Scope 3 Greenhouse Gas Screening Tool, Version 1.1, and fiber flow data. Calculations include 2018-2020 average for Ola as actuals not representative due to 2021 Ola fire.
- Georgia and South Carolina timberland acreage as of June 30, 2023.
- The green shaded areas are FIA plot data for climate and productivity where loblolly pine is currently located.
- 13. The green shaded areas are FIA plot data for climate and productivity where loblolly pine is currently located.
- 14. The green shaded areas are FIA plot data for climate and productivity where sweetgum is currently located.
- 15. The green shaded areas are FIA plot data for climate and productivity where sweetgum is currently located.
- 16. Sawmill capacity as of December 31, 2022. Capacity represents the proven annual production capabilities of the facility under normal operating conditions and producing a normal product mix. Excludes overtime.
- 17. The green shaded areas are FIA plot data for climate and productivity where red pine is currently located.
- The green shaded areas are FIA plot data for climate and productivity where red pine is currently located.





### Land Sector Input Data Classifications for Removals & Storage (2022)

Scope	Reported Value	Carbon & Climate Report Page	Calculation Type			Input Data Source(s)
				Primary	Reported Inventory for stands within our consistent spatial boundary	PCH internal accounting.
			Static Accounting	Secondary	Carbon component equations - relate standing inventory to abo-	J. Jenkins et al., "National Scale Biomass Estimators for United States Tree no. 49 (February 1, 2003): https://www.fs.usda.gov/research/treesearch/699
AN	Our Existing Carbon Stored (Carbon Pools)	5			veground carbon pools	Alexander Clark and Richard F. Daniels, "Estimating Moisture Content of Tr Pulping/Process and Product Quality Conference, Sheraton Boston (2000): research/treesearch/9741.
					Carbon pool proportion estimates	Domke, G. M., et al. "Toward Inventory-Based Estimates of Soil Organic Can States." Ecological Applications, vol. 27, no. 4, 2017, pp. 1223–1235.
				Primary	Reported Inventory for stands within our consistent spatial boundary	PCH internal accounting.
Scope 1	Net Change in Our Forests (Scope 1)	7	Static Accounting		Carbon component equations - relate standing inventory to abo	J. Jenkins et al., "National Scale Biomass Estimators for United States Tree no. 49 (February 1, 2003): https://www.fs.usda.gov/research/treesearch/699
Sco	Net Change in Our Porests (Scope I)		Static Accounting	Secondary	Carbon component equations - relate standing inventory to aboveground carbon pools	Alexander Clark and Richard F. Daniels, "Estimating Moisture Content of Tr Pulping/Process and Product Quality Conference, Sheraton Boston (2000): https://www.fs.usda.gov/research/treesearch/9741.
				Primary	Volume of wood purchased from external landowners, by state	PCH internal accounting.
Scope 3 Upstream Removals	Net Change in Forests of Our Sourcing	8			Flux in aboveground carbon storage by state	Grant M. Domke et al., "Greenhouse Gas Emissions and Removals from Fou Urban Trees in the United States, 1990-2019," U.S. Department of Agricultu Research Station Resource Update FS–307 (April 21, 2021): https://doi.org/
3 C	Region (Scope 3)		Static Accounting	Secondary		University of Montana - http://www.bber.umt.edu/FIR/HarvestID.aspx.
Pa Ba					Statewide harvested volume for states we source from	Idaho Department of Lands public harvest records.
Sco					Statewide harvested volume for states we source from	USFS quarterly cut & sold reports for Regions 1 and 4.
						USFS Forest Inventory and Analysis One-Click Factsheet and supporting de
		9	Dynamic Accounting	Primary	Volume of lumber and plywood produced from our mills	PCH internal accounting.
	Storage in Wood Products We Manufacture (Scope 3)			Secondary	Solidwood product to metric tons C conversion factors	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 usda.gov/sites/default/files/documents/USDATB1939_07072014.pdf. Table 6-A-1 on page 6-88.
					Average fraction of carbon in wood products still in end uses over a 100 year period	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 https://www.usda.gov/sites/default/files/documents/USDATB1939_070720 Table 6-A-2 on page 6-89.
Storage					Average fraction of carbon in wood products still in landfills over a 100 year period	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 usda.gov/sites/default/files/documents/USDATB1939_07072014.pdf. Table 6-A-3 on page 6-90.
E				Primary	Volume of wood sold to external mills	PCH internal accounting.
Scope 3 Downstream Storage	Storage in Logs We Sell Externally (Scope 3)	ternally 10	Dynamic Accounting	Secondary	Regional and species-specific ratios of bark to wood by weight	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 https://www.usda.gov/sites/default/files/documents/USDATB1939_070720 Table 6-A-6 on page 6-106.
Scope 3					Average disposition patterns of carbon (as fractions) in roundwood by region and roundwood category over a 100 year period	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 usda.gov/sites/default/files/documents/USDATB1939_07072014.pdf. Table 6-A-5 on pages 6-100 through 6-104.
				Primary	Volume of sold wood residuals by residual type and vendor	PCH internal accounting
	Storage in Wood Residuals We Sell	We Sell 11	Dynamic Accounting	Secondary	Average fraction of carbon in wood products still in end uses over a 100 year period	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 usda.gov/sites/default/files/documents/USDATB1939_07072014.pdf. Table 6-A-2 on pages 6-100 through 6-89.
	(Scope 3)			Secondary	Average fraction of carbon in wood products still in landfills over a 100 year period	M. Eve et al., "Quantifying Greenhouse Gas Fluxes in Agriculture and Fores Inventory," U.S Department of Agriculture, Technical Bulletin Number 1939 usda.gov/sites/default/files/documents/USDATB1939_07072014.pdf. Table 6-A-3 on pages 6-100 through 6-90.

Appendix

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	Confidence per GHGP Scope 3 Standard
	Very Good
Species," Forest Science, 96.	Good
ee-Length Roundwood," : https://www.fs.usda.gov/	Good
rbon in Forests of the United	Fair
	Very Good
Species," Forest Science, 96.	Good
ee-Length Roundwood," :	Good
	Very Good
rest Land, Woodlands, and Ire, Forest Service, Northern 10.2737/fs-ru-307.	Fair
	Good
	Very Good
	Very Good
locumentation.	Fair
	Very Good
stry: Methods for Entity-Scale (July 2014): https://www.	Fair
stry: Methods for Entity-Scale (July 2014): 14.pdf.	Fair
stry: Methods for Entity-Scale (July 2014): https://www.	Fair
	Very Good
stry: Methods for Entity-Scale (July 2014): 14.pdf.	Fair
stry: Methods for Entity-Scale (July 2014): https://www.	Fair
	Very Good
stry: Methods for Entity-Scale (July 2014): https://www.	Fair
stry: Methods for Entity-Scale (July 2014): https://www.	Fair

### Input Data Classifications for GHG Emissions (2022)

Scope	Reported Value	Carbon & Climate Report Page	Calculation Type	Data Type	Input Data Description	Input Data Source(s)	Confidence per GHGP Scope 3 Standard
				Primary	Fossil fuel purchase records. PCH internal accounting.		Very Good
	Mobile Sources (Scope 1)	13	Direct Calculations	Secondary	IPCC emissions factors.	Intergovernmental Panel on Climate Change (IPCC). 1997. Revised 1996 IPCC guidelines for national greenhouse gas inventories: Reference manual (volume 3). IPCC National Greenhouse Gas Inventory Program. http://www.ipcc-nggip.iges.or.jp/public/gl/invs6.htm ( as of 2 July 2003).	Very Good
	Wood Residuals Storage (Scope 1)	13	Waste-type-specific Method	Primary	Annual waste deposits.	Annual deposits from TRI workbook - 5% of hog fuel produced is landfilled (excluding ash). Weight of hog fuel produced based on 0.4822 BDT/MBF and 50% MC.	Fair
Biogenic		15		Secondary	Ultimate methane potential, methane generation rate, fraction of uncollected methane that oxidizes in the landfill cover.	NCASI emissions factors.	Fair
liog				Primary	Steam production/fuel usage.	PCH internal accounting.	Very Good
Scope 1 and B	Boilers (Scope 1 and Biogenic)	13	Direct Calculations	Secondary	IPCC emissions factors.	Intergovernmental Panel on Climate Change (IPCC). 1997. Revised 1996 IPCC guidelines for national greenhouse gas inventories: Reference manual (volume 3). IPCC National Greenhouse Gas Inventory Program. http://www.ipcc-nggip.iges.or.jp/public/gl/invs6.htm ( as of 2 July 2003).	Very Good
S				Secondary		Emission factor for solid biomass from Intergovernmental Panel on Climate Change (IPCC). 1997. Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual (Volume 3). Table 1.1, corrected for 1% unburned carbon per USEPA AP-42.	Good
				Primary	Fossil fuel purchase records.	PCH internal accounting.	Very Good
	Natural Gas Kiln and Boiler, and RCO (Scope 1)	13	Direct Calculations	Secondary	IPCC emissions factors.	Intergovernmental Panel on Climate Change (IPCC). 1997. Revised 1996 IPCC guidelines for national greenhouse gas inventories: Reference manual (volume 3). IPCC National Greenhouse Gas Inventory Program. http://www.ipcc-nggip.iges.or.jp/public/gl/invs6.htm ( as of 2 July 2003).	Very Good
	Market-Based (Scope 2)	14	Market-Based Method	Primary	Electricity purchase records.	PCH internal accounting.	Very Good
N				Secondary	Utility emissions factors.	Emission factors provided by utilities.	Very Good
Scope					eGRID emissions factors where utility emissions factors were unavailable.	US EPA eGRID emissions factors.	Good
Š	Location-Based (Scope 2)	14	Location-Based Method	Primary	Electricity purchase records.	PCH internal accounting.	Very Good
		17		Secondary	eGRID emissions factors.	US EPA eGRID emissions factors.	Good
	Purchased Goods: Wood (Scope 3)	15	Average Data Method	Primary	Purchased logs and sold products	PCH internal accounting.	Very Good
				Secondary	Regional emissions factors from CORRIM/USLCI.	CORRIM/USLCI.	Fair
	Purchased Goods and Services: Non- fiber non-fuel raw material (Scope 3)	15	Average Data Method	Primary	Sold products	PCH internal accounting.	Very Good
				Secondary	CORRIM/USLCI emissions factors.	CORRIM/USLCI.	Fair
ons					FICAT emissions factors.	FICAT.	Fair
3 Jissi	Energy Related (Scope 3)	15	Average Data Method	Primary	Electricity purchase records.	PCH internal accounting. US EPA eGRID emissions factors.	Very Good Good
Scope 3 Upstream Em				Secondary	Transportation and distribution loss based on US Grid from EGRID. Upstream Power Generation: average factor for GHG emissions associated with acquiring and transporting fossil fuels for electricity generation in the US from USLCI data.	USLCI data.	Fair
ے ا	Fuel Related (Scope 3)		15 Average Data Method	Primary	Fossil fuel purchase records.	PCH internal accounting.	Very Good
		15		Secondary	FICAT emissions factors.	FICAT.	Fair
				Secondary	LHV HHV conversion from IPCC.	IPCC.	Good
	Upstream Transportation (Scope 3)	15	Weight-based Method	Primary	Purchased logs.	PCH internal accounting.	Very Good
		13		Secondary	USLCI emissions factors.	USLCI.	Fair
ά	Downstream Transportation (Scope 3)	15	Weight-based Method	Primary	Sold products.	PCH internal accounting.	Very Good
Ë E E	,		theight based method	Secondary	USLCI emissions factors.	USLCI.	Fair
Scope 3 Downstream Emis- sions	Processing of Sold Products (Scope 3)	15	Average Data Method	Primary	Sold products.	PCH internal accounting.	Very Good
Scop stre sio				Secondary –	CORRIM emissions factors.	CORRIM.	Fair Fair
, ž	End-of-Life Sold Products (Scope 3)			Primary	NCASI benchmarking, average paper product.	NCASI emissions factors.	
ă		15	Waste-type-specific Method	Secondary	Sold products. EPA emissions factors.	PCH internal accounting. EPA emissions factors.	Very Good Fair
			mounou	Secondary			1 dli

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Carbon Record

Greenhouse Gas Emissions

Physical **Climate Impacts** 

## **Forward-Looking Statements**

As used in this Report, the term "PotlatchDeltic" and such terms as "the Company," "the corporation," "our," "its," "we," "management," and "us" may refer to one or more of PotlatchDeltic's consolidated subsidiaries or affiliates or to all of them taken as a whole. All of these terms are used for convenience only and are not intended as a precise description of any of the separate companies, each of which manages its own affairs.

### CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This Report contains, in addition to historical information, certain forward-looking statements within the meaning of the federal securities laws. Words such as "develop," "expect," "will," "intend," "goal," "plan," "target," "project," "believe," "continue," "achieve," "seek," "estimate," "could," "can," "may," "typically," "unlikely," "potential," "would," "future," "initiatives," and similar expressions are intended to identify such forward-looking statements. Statements and assumptions with respect to achievement of goals and objectives; anticipated actions to meet goals and objectives; allocation of resources; planned, encouraged, or anticipated actions; expectations relating to natural climate solutions; planned performance of technology; or other efforts are also examples of forward-looking statements. Among the forward-looking statements in this Report are statements about our strategies regarding planned annual harvests, replanting, and forest management; future environmental management and compliance; wildlife conservation; energy consumption and reduction; estimates and management of air emissions, estimates of the amount of CO<sub>2</sub>e removed and sequestered by our forests; estimated GHG emissions; estimated carbon stored in wood products; anticipated climate risks and opportunities; and similar matters.

These forward-looking statements reflect management's current views regarding future events based on estimates and assumptions and are therefore subject to known and unknown risks, uncertainties, and other factors, some of which are beyond our control, and are not guarantees of future conduct or policy. The actual conduct of our activities, including the development, implementation or continuation of any program, policy or initiative, or our progress toward the achievement of any goal or target discussed in this Report may differ materially in the

future. Many of the standards, protocols, methodologies, and metrics used in preparing this Report continue to evolve and are based on management assumptions believed to be reasonable at the time of preparation but should not be considered guarantees.

Actual results could differ materially from our historical results or those expressed or implied by forward-looking statements contained in this Report due to factors such as: the development of measurement standards, accounting protocols, and mitigation techniques; the availability of funding for the programs described in this report; our ability to achieve our goals and objectives; changes in our priorities as well as changes in the priorities of our customers and suppliers; the amount of our future investments; the accuracy of our estimates and assumptions; acquisitions and divestitures; the future effect of legislation, rulemaking and changes in policy or best management practices; scientific discoveries and innovations; changes in production and production capacity in the forest products industry; the competitive environment; the ability to attract and retain personnel and suppliers with technical and other skills; technological developments; the willingness of suppliers to adopt and comply with our programs; the impact of cyber or other security threats or other disruptions to our business; changes in requirements for third-party certification of our timberlands, logs, and lumber; the potential disruption or interruption of the Company's operations due to accidents, political events, civil unrest, severe weather, floods, fires, cyber threats, pandemics, infestations, or other natural or human causes beyond the Company's control; and global economic, business, political, and climate conditions.

These are only some of the factors that may affect the forward-looking statements contained in this Report. For further information regarding risks and uncertainties associated with our business, please refer to our U.S. Securities and Exchange Commission (SEC) filings, including our Annual Report on Form 10-K for the year ended December 31, 2022, our 2023 Proxy Statement, and our 2023 Quarterly Reports on Form 10-Q, which can be obtained at the Company's website, www. potlatchdeltic.com. The forward-looking statements in this report are intended to be subject to the safe harbor protection provided by federal securities laws.

## CONTACT INFORMATION

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Stock Listing PotlatchDeltic's stock is listed on Nasdag under the symbol "PCH"







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Forward-looking statements contained in this Report present our views only as of the date of this report. Except as required under applicable law, we do not intend to issue updates concerning any future revisions of our views to reflect events or circumstances occurring after the date of this Report. Nothing in this Report is incorporated by reference or shall be deemed to be incorporated by reference into the documents that we have filed or will file with the SEC.



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