
IRVING

J.D. IRVING, LIMITED

# J.D. Irving, Limited Forest Supply Chain

## *Climate, Conservation & Community Impact Report*

Annual Environment, Social and Governance Report – JULY 2024

2023

*Proud to be the*

# HOME TEAM

"I work and play in the forest. Ensuring it is healthy and productive is job one."

Caleb Waite
Team Leader, Production,
Sussex Sawmill
UNB/JDI Scholarship Recipient

Bruce Goddard
47 years of service
Sussex Sawmill


"JDI is actively working to keep and grow the next generation of NB talent. There is no better example of a company always willing to step up."

Mary Butler, CEO
New Brunswick Community College

"Canadian nature and forests are beautiful. My work ensures their resilience."

Jesus Jimenez, Laboratory Supervisor,
Maritime Innovation Lab

"The drive and energy of the JDI team is a real stand out."

Cliff Gilson
Operations Manager
Sussex Woodlands

Erin Popika
Silviculture Supervisor
Sussex Woodlands

"Forestry and forest products have been key drivers of our local economy for more than 50 years."

Marc Thorne, Mayor of Sussex,
New Brunswick

Chelsey Troke
Grand Lake Timber
New Brunswick



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*From left to right: Robert Irving - Co-CEO, J.K. Irving - Chairman, Jim Irving - Co-CEO*

# A MESSAGE FROM OUR CO-CEOS

***For more than 140 years, the working forest has worked for current and future generations.***

This is reflected in our approach. It's in the more than one billion trees we've planted and the capital investments we've made in our mills. It's in the steps we've taken to achieve carbon neutrality in our Forest Supply Chain for the fourth year running. It's in our investments in research to ensure diverse and resilient working forests for years to come, and it's in our commitments to our employees and to the communities where we live and work.

Our approach to sustainable forest management has remained consistent. We work to maintain a high-quality, secure and growing wood supply while keeping our forests in good health by protecting their diversity, water and wildlife.

This 2023 Climate, Conservation & Community Impact Report represents our ongoing efforts related to environment, social and governance – a way of business for us.

Last year, we celebrated milestones throughout our operations, marking 50 years at both Lake Utopia Paper and our Sussex Sawmill and 25 years of operations in Dixfield, Maine.

We continued to maintain carbon neutrality in our Forest Supply Chain through 2023. By capturing more carbon in the growing forest and storing more carbon long-term in wood products than we emit, our Supply Chain goes beyond carbon neutral.

We were also pleased in 2023 to see the federal government acknowledge biofuel as a clean energy source – something we've long recognized and used to reduce fossil fuel consumption at our mills for many years. Work also continued in 2023 on our capital investment to reduce environmental impact at our Irving Pulp & Paper mill in Saint John, New Brunswick.

Looking ahead, we undertook work in 2023 on two potential major projects that will help to decarbonize the electrical grid in New Brunswick.

The Brighton Mountain Wind Farm in western New Brunswick proposes a 56-turbine, 350-megawatt wind farm over two phases. Project NextGen, which involves the construction of a new recovery boiler at the Irving Pulp & Paper mill in west Saint John, New Brunswick, will not only increase the mill's capacity to be among the top producing kraft pulp mills in the world, but the project will also generate green energy. We look forward to seeing these projects realized in the years ahead.

When we plant a tree today, it's with a long-term year outlook. The care we place now in our working forests will continue to work for years to come.

Jim Irving
Co-CEO

Robert Irving
Co-CEO

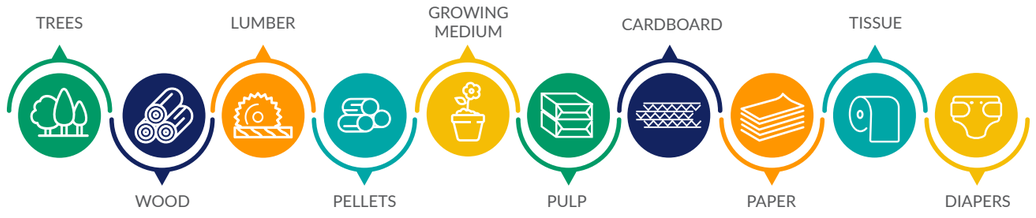
# ABOUT US

Since 1882, J.D. Irving, Limited has been committed to developing and delivering quality products and services. With head offices in Saint John and Moncton, New Brunswick and more than 19,000 employees across the company's diverse, family-owned operations in both Canada and the United States, JDI contributes to eight business sectors:

- Forestry and Forest Products
- Shipbuilding and Industrial Manufacturing
- Transportation and Logistics
- Retail and Distribution
- Construction and Equipment
- Consumer Products
- Food
- Agriculture

The JDI Forest Supply Chain (Supply Chain)[1] is made up of businesses in the Forestry and Forest Products and Consumer Products sectors, encompassing all of our activities in our lumber, pulp and tissue businesses. The Supply Chain includes the land, forests, wood supply, tree nurseries, silviculture (tree planting and tending), logging operations, sawmills, peat and gardening products, pulp, paper, corrugated medium, consumer tissue and diaper manufacturing facilities. We transport many of our products by road, rail and sea through our affiliated transportation businesses. Investments in our environment and clean technology are also linked to our Industrial and Technological Benefit (ITB) commitments to Canada as part of the National Shipbuilding Strategy through Irving Shipbuilding.

Our operations in New Brunswick, Maine and Nova Scotia are rooted in an abundance of forest lands. As the second largest private timberland owner in North America, we own and manage 1.3 million hectares (3.2 million acres) of freehold (private) timberland and manage 1.1 million hectares (2.6 million acres) of government-owned Crown (public) land in New Brunswick (Crown Licence 7). We have a 25-year evergreen forest management and wood supply agreement with the Province of New Brunswick and receive additional wood supply from other Crown lands with long-term tenure associated with our manufacturing operations. We also purchase wood supply from large and small private landowners.




1]Includes operations wholly or partially in various Irving entities, including J.D. Irving, Limited; Irving Pulp & Paper, Limited; Irving Paper Limited; Irving Consumer Products Limited; Irving Consumer Products, Inc.; The New Brunswick Railway Company; Grand River Pellets Limited; Juniper Organics Limited; Rothesay Paper Holdings Ltd.; St. George Pulp & Paper Limited; Charlotte Pulp and Paper Co. Ltd.; Irving Forest Services Limited; Miramichi Timber Holdings Limited; Allagash Timberlands LP; Aroostook Timberlands LLC; Maine Woodlands Realty Company; Maritime Innovation Limited; Irving Forest Products, Inc. and Forest Patrol Ltd.



# ABOUT THIS REPORT

This is the Forest Supply Chain's fourth annual Climate, Conservation & Community Impact Report (CCC), formerly called the ESG Report, which details environmental, social and governance performance from Jan. 1, 2023 to Dec. 31, 2023 across JDI's Forest Supply Chain operations in Canada and the United States.

In 2023, three major topics drove our ESG-related discussions:

*1. The value and contribution of working forests* - The working forest brings value to our customers by ensuring a continuous, long-term supply of the products they want and need. To our employees and contractors, it provides well-paying, safe and secure employment. These jobs and capital investments support local communities, people and community events. Finally, the working forest contributes to conservation and biodiversity by providing a variety of forest conditions that support a diversity of species as well as recreation opportunities to communities.

*2. Climate impact and carbon neutrality* - Our Forest Supply Chain has been verified carbon neutral since 2020 under the PAS2060:2014 international reporting standard and in 2023, we became the first premium tissue products company whose products achieved carbon neutral status by The Carbon Trust. Finding opportunities to reduce our emissions and increase removals across the Forest Supply Chain requires an understanding of greenhouse gas (GHG) emissions from operations, $CO_2$ removals from forest lands and transfer of $CO_2$ to wood products.

Our investments in green biomass energy have been key to reducing GHG emissions. Since 2008, we've had biomass boilers installed in our sawmills. These generate power by burning bark that makes steam to dry lumber. We have invested in biogas at Lake Utopia to turn wood waste into green fuel, and we use both waste bark and pulping liquor at Irving Pulp & Paper to produce steam to dry pulp and tissue and create enough electricity to support most of the mill's needs.

*3. Openness and transparency* - Sharing our CCC story provides an opportunity to communicate with our customers, local stakeholders and future employees. Policies and operating approvals related to forestry, energy, environment, immigration and taxation are often informed at a local level. Inadequate or incorrect information can lead to poor public policy, which can impact the industry's ability to operate competitively. Furthermore, attracting and retaining talent for our largely rural forest operations remains important amid a labour market in flux due to shifting demographics and changing workforce interests. Recent research focused on students shows that ESG reporting and transparency is a top 10 decision point when it comes to choosing a future employer.

**Consistent with past reports, our reporting content is guided by:**

- Global Reporting Initiative (GRI)
- Sustainability Accounting Standards Board (SASB) Pulp and Paper Product and Forestry Management standards
- Task Force on Climate-Related Financial Disclosure (TCFD)
- United Nations Sustainable Development Goals (SDGs)

**We report on metrics associated with the following independent forest management system standards:**

- Sustainable Forestry Initiative® (SFI®)
- Forest Stewardship Council® (FSC® C041515)

**All currency is in US dollars and all measurements are metric unless otherwise stated.**

# REPORT KEY

Throughout this report, we have endeavoured to clearly link each topic with an area of focus or action. This includes describing how significant the topic is to stakeholders (materiality), as well as how the topic relates to ESG-related standards, internal policies and commitments, external assurance and long-term sustainability goals. Look for the following indicators:

The five topics identified as doubly material to stakeholders are marked with this badge in the top section of the analyst bar. Doubly material topics fall into three categories, identified by the following section colours and bars on the right-hand page:

ENVIRONMENT

SOCIAL

GOVERNANCE

✓ Reporting standard

This topic has been subjected to LIMITED ASSURANCE by KPMG LLP.

This topic is associated with THIRD-PARTY CERTIFICATION under ISO/SFI® and/or FSC® standards. We adhere to these management systems and/or standards and receive independent certification outside of the scope of this report.

This topic is governed by INTERNAL POLICY.

**DOUBLE MATERIALITY:**
Topics that impact both society and the environment (external stakeholders) and enterprise value (internal stakeholders).

We have also identified several United Nations Strategic Sustainable Development Goals (SDG) aligned with our sustainability objectives in the communities where we operate.

In the Appendix you will find index tables referencing where disclosures are addressed in the report as they relate to the GRI, SASB and TCFD standards to which our reporting has been aligned.


*Doug Armsworthy, Fibre Logistics Manager, Nova Scotia Woodlands*

# OUR PERFORMANCE

We are committed to continuous improvement and transparency. Our sustainability targets fall into two categories: annual and forward-looking.

## ANNUAL TARGETS

| MATERIAL TOPIC | TARGET | PROGRESS |
|---|---|---|
| **Ethics, Values & Integrity** | Publish an annual Climate, Conservation & Community Impact report for the Forest Supply Chain. | ● |
| **Sustainable Forest Management** | Maintain a five-year average of forest growth at or above harvest. | ● |
| **Sustainable Forest Management** | Maintain third-party certification on all managed lands. | ● |
| **Forest Conservation & Biodiversity** | Maintain our conservation areas program. | ● |
| **Safety** | Continuous improvement towards Critical Incident Rate of zero. | ● |
| **Community Engagement** | Maintain community donations program. | ● |
| **Climate Action & Adaptation** | Maintain carbon neutrality in the Forest Supply Chain through 2023 per PAS 2060:2014. | ● |

## FORWARD-LOOKING TARGETS

| MATERIAL TOPIC | TARGET | PROGRESS |
|---|---|---|
| **Sustainable Forest Management** | Double the spruce fir wood supply on freehold land by 2050. | ● |
| **Air & Water Quality Management** | 50 per cent reduction in water consumption intensity at Irving Pulp & Paper by 2029.* | ○ |
| **Air & Water Quality Management** | 25 per cent water reduction from Irving Tissue operations by 2030. | ● |
| **Climate Action & Adaptation** | Increase tree planting levels on freehold to 16 million trees by 2027. | ● |
| **Climate Action & Adaptation** | Maintain carbon neutrality in the Forest Supply Chain through 2025 per PAS 2060:2014. | ● |
| **Consumer Packaging** | Reduce virgin plastic intensity by 25 per cent at Irving Consumer Products by 2030. | ● |
| **Waste Reduction & Management** | Reach a 90 per cent diversion rate of non-hazardous waste from landfills by 2030. | ● |

**Implementation delayed by one year from original target due to construction schedule.*

● **Achieved | On Track** ⓘ **Monitoring** ○ **Data Collection in Progress | Off Schedule**


**17,813,981 seedlings planted**
***(Freehold and Crown Licence 7)***

**100%** of lands SFI® or FSC® certified

**58%** of energy from renewable sources

# WORKING FORESTS WORK FOR *Our Climate*

by removing and storing carbon



The Irving Nature Park's Saints Rest Marsh is recognized as a Treasured Wetland by Ducks Unlimited

Ducks Unlimited Canada

# WORKING FORESTS WORK FOR *Conservation*

**167** newcomer employees and family members immigrated for Woodlands/Sawmills operations

Critical injury rate of **0.12**

# 1,200KM

of trails through land use agreements that allow access to JDI land

# 25%

of productive forest lands managed for the primary purpose of conservation


# $1M

in charitable donations (CAD)*

Our annual support of Girls STEM UP and the New Boots program at the New Brunswick Community College encourages young women to pursue non-traditional careers in STEM (Science, Technology, Engineering and Math) and skilled trades


*Photo Credit: Serge Duplessis*


# $269M

in capital improvements, including a $18-million expansion at Grand River Pellets**

** This includes donations related only to the Forest Supply Chain.*
***The total expansion project cost is $31.5 million.*

# 2023 PRODUCTION

***We take great pride in sustainably managing our Forest Supply Chain and exceeding the expectations of our customers in every facet of our business.***

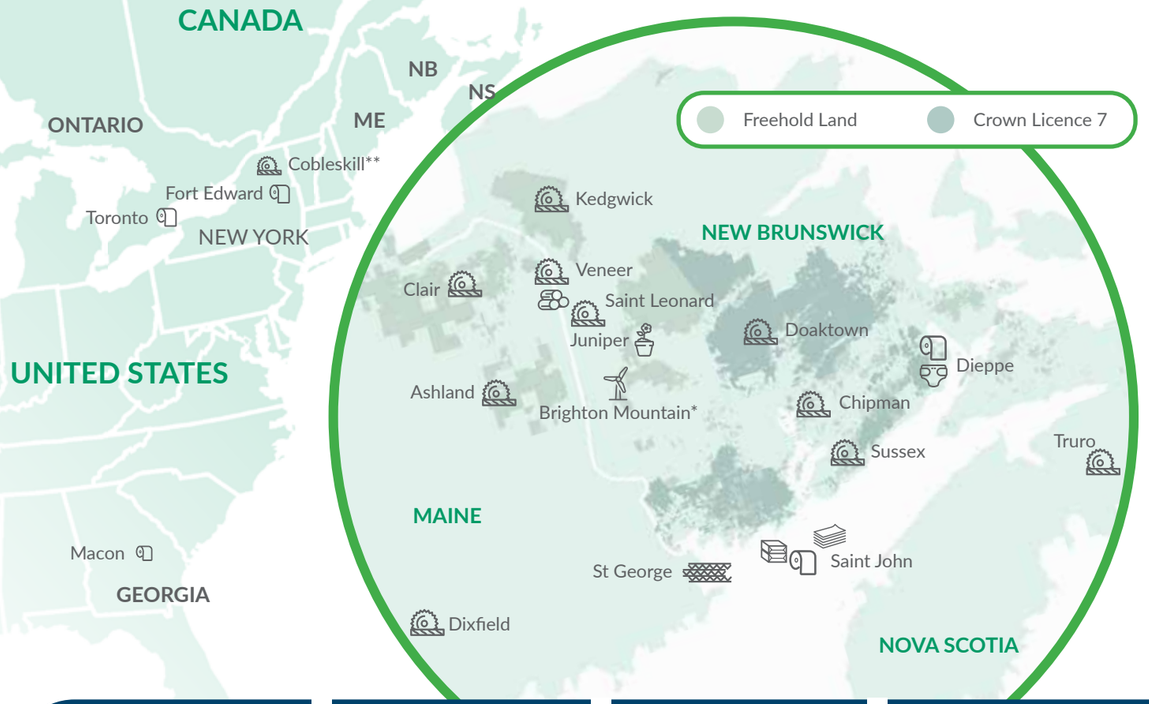
Our Supply Chain is designed to maximize the value from the naturally diverse forests where we operate. The figures below represent 2023 annual production from our Sawmills, Pulp and Paper, Tissue and Personal Care divisions.

LAND UNDER IRVING MANAGEMENT (HECTARES)
2,376,627

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

FSC www.fsc.org FSC® C041615 The mark of responsible forestry

FSC® applies to Maine Woodlands only.




## TISSUE

**369,007**
Tonnes Produced

**PRODUCTS**
Bath & Facial Tissue/ Paper Towel

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

CARBON TRUST CERTIFIED — The carbon footprint of this product has been certified carbon neutral

## DIAPERS

**12,024**
Tonnes Produced

**PRODUCTS**
Baby Diapers & Pants

PEFC — Promoting Sustainable Forest Management — www.pefccanada.org

## GROWING MEDIUM

**5,779**
Tonnes Produced

**PRODUCTS**
Peat Moss, Soils and Mulches

SUSTAINABLY GROWN CERTIFIED — SCS GLOBAL SERVICES — VERIFLORA® PROGRAM SCS-VER-000###

## PELLETS

**176,186**
Tonnes Produced

**PRODUCTS**
Industrial Wood Pellets For Fuel/Heat

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

sbp

## LUMBER

**1,102,568**
MFBM*** Produced

**PRODUCTS**
Structural & Appearance Grade Lumber

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

MLB — NeLMA

## PULP

**326,050**
Tonnes Produced

**PRODUCTS**
Northern Bleach Softwood & Hardwood Kraft Pulp

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

## PAPER

**389,623**
Tonnes Produced

**PRODUCTS**
Printing Paper

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

PEFC — Promoting Sustainable Forest Management — www.pefccanada.org

## CORRUGATED

**182,726**
Tonnes Produced

**PRODUCTS**
Corrugated Medium/ Linerboard

SUSTAINABLE FORESTRY INITIATIVE SFI-00032

*Environmental Impact Assessment for Brighton Mountain Wind Farm filed with the New Brunswick Department of Environment and Local Government in April 2024.
**Cobleskill Value-Added acquired in 2024.
***Thousands, foot-board measure.

# SUSTAINABLE FOREST MANAGEMENT

## *New Forest Management Agreement signed with the Government of New Brunswick*

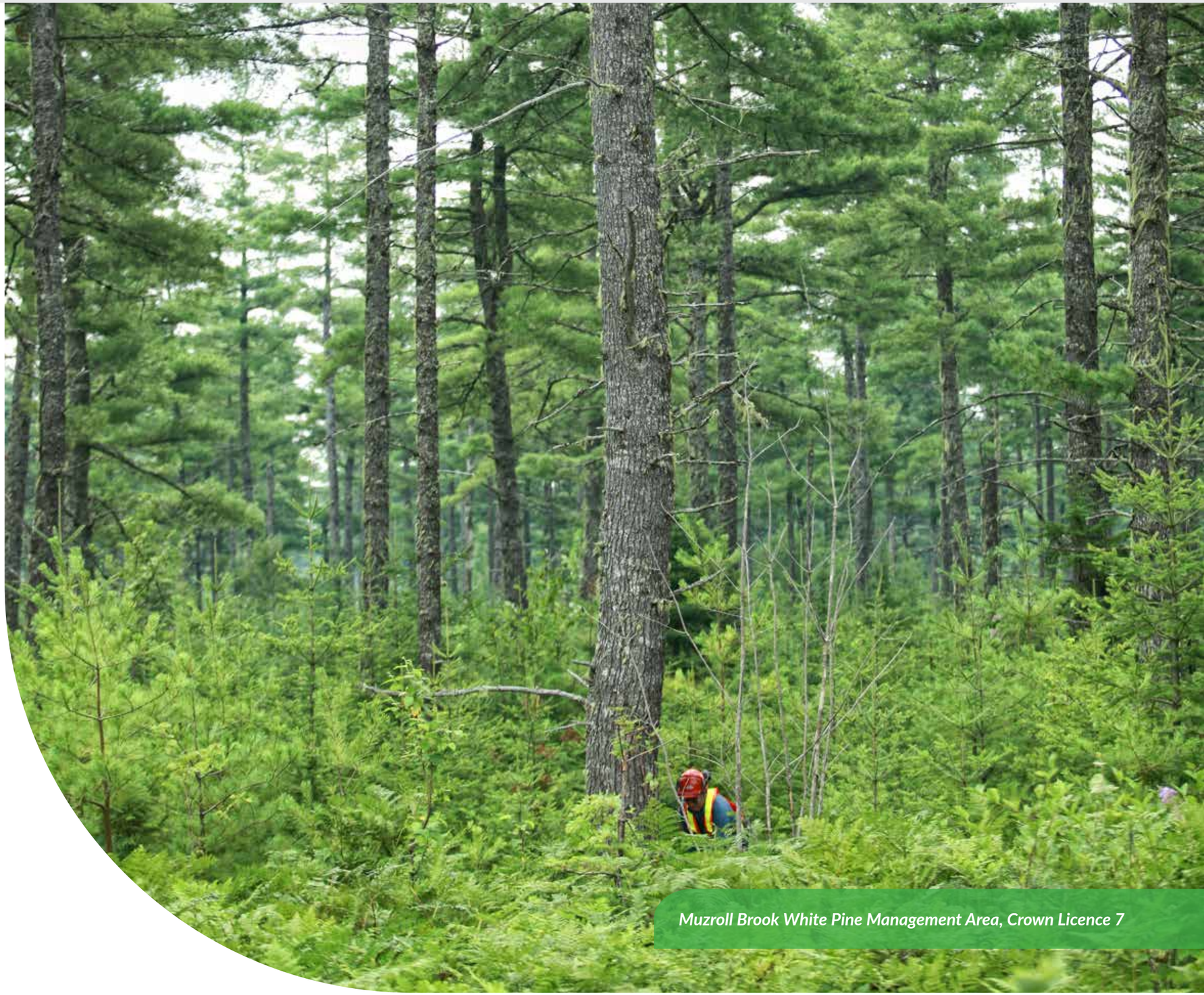
In 2023, we signed a new 25-year Forest Management Agreement with the Province of New Brunswick for Crown Licence 7. It renews the commitment between both parties and recognizes our strong tradition of forest management.

Crown land is land owned by the provincial government. We have been managing Crown Licence 7 since 1982 (see map on page 105). For over 40 years, our commitment to Crown land remains as strong as our commitment to our own private lands.

Setting out how much wood is available and establishing performance evaluation and goals for conservation, the new agreement gives stability to our mills' timber supply, which in turn allows us to invest in our mills and employees, bringing job security and confidence to communities, especially rural ones.

The wood supply is growing – a testament to our robust silviculture practices over the last number of decades. It also means there is an increased supply of wood that can be harvested sustainably. The growing forest also means more carbon removal and storage.

We're proud to continue our tradition of well-managed working forests.



*Muzroll Brook White Pine Management Area, Crown Licence 7*

DOUBLY MATERIAL TOPIC

### REPORTING STANDARD

- ✓ SASB RR-FM-000.A
- ✓ SASB RR-FM-000.B
- ✓ SASB RR-FM-160A.1

### GOVERNANCE

- Management Plans
- Indigenous Relations Policy
- Third Party Certifications: SFI, FSC®

### ASSURED SUBJECT MATTER

- Percentage of Forested Landbase Harvested
- Total Lands Under Irving Management

### STRATEGIC SDGS

15 LIFE ON LAND

# SUSTAINABLE FOREST MANAGEMENT

The working forest is at the heart of our approach to sustainability. It is a continuous cycle of harvest and renewal, balancing the needs of customers today while enabling a growing wood supply for the future.

Secure tenure: 1.3M ha of private timber lands

100% of harvest area regenerated

1.5% of forested land base harvested

Built-in resiliency to wildfires

17.8M trees planted

100% of forest lands independently certified

80-year forestry plan

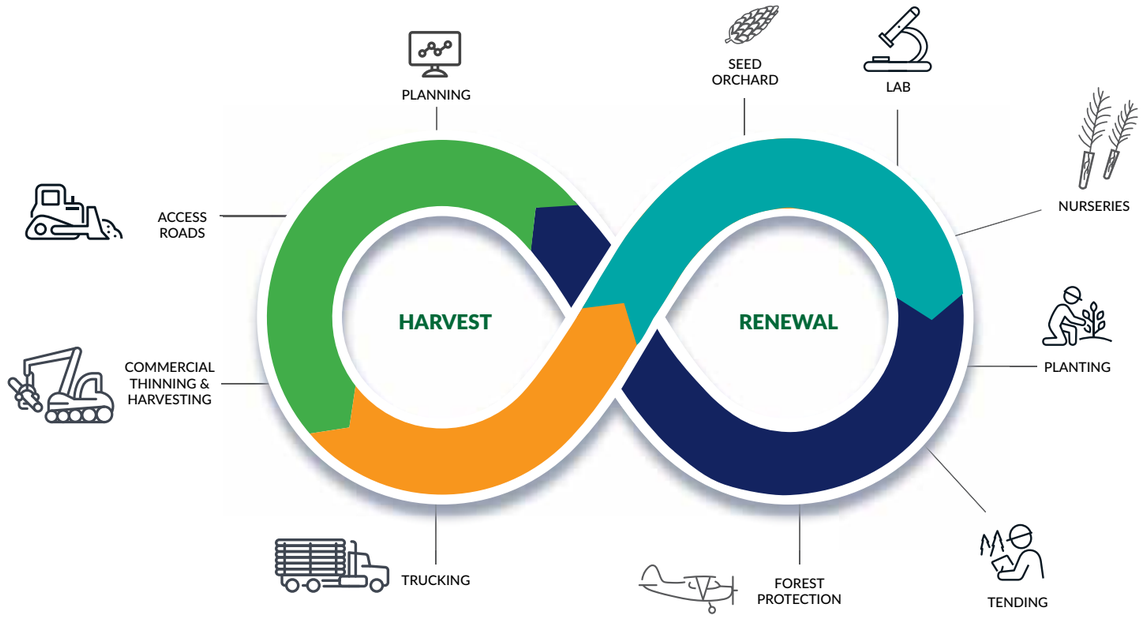
This continuous cycle is demonstrated through our commitment to growing more wood than we harvest. And when we do harvest, we ensure we optimize the value of each tree – using every part of every tree that we can and leaving as little to waste as possible.

1.5% of the forested land base harvested.

100% of harvested areas are regenerated across the landscape.

Six different species used in planted areas.

*The Working Forest – A Continuous Cycle of Harvest & Renewal*




*Sussex Tree Nursery, Sussex, New Brunswick*

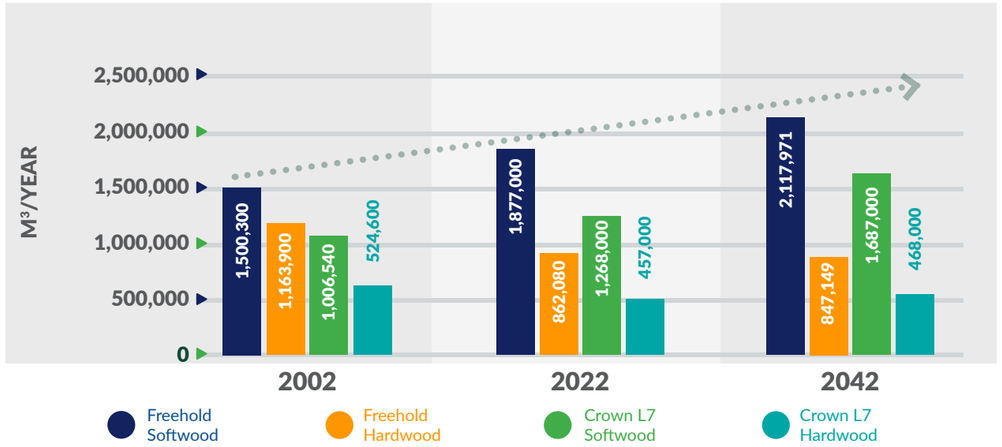
**100 per cent** of harvested areas are reforested either by tree planting or natural regeneration.

In 2023, we planted 17.8 million trees. Since 1957, we have planted more than one billion trees. To ensure we are growing the best trees, we rely on our 40 years of experience in tree improvement. We control seed production in our seed orchards and grow seedlings in our nurseries.

As we wait for regenerating forests to become mature again, we actively protect those forests from threats like wildfires and insects with a network of airstrips, aircraft and other firefighting resources.

The working forest supplies wood for our Forest Supply Chain customers. It also supports diverse species and habitat and enables conservation and resiliency to climate change, mitigating against pests and wildfire. Our 80-year planning cycle, reviewed every five years, considers harvest levels, reforestation, biodiversity, wildlife habitat, water quality and recreation. We incorporate new learning on climate change, natural disturbance patterns and shifting public values, ensuring our sustainable approach to forest management follows the most up-to-date research.

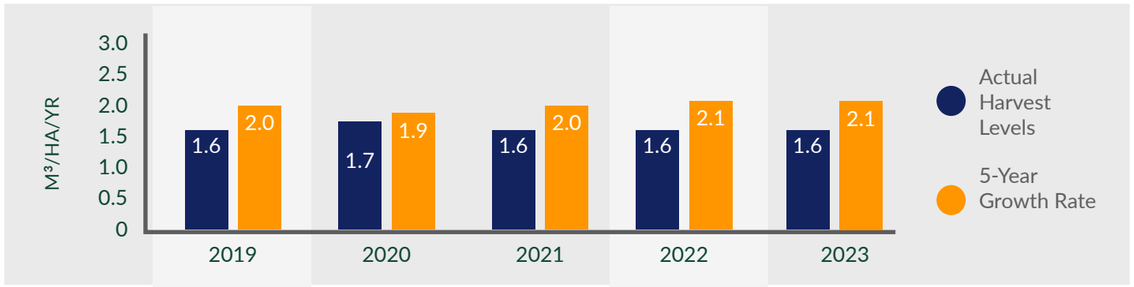
## A GROWING WOOD SUPPLY



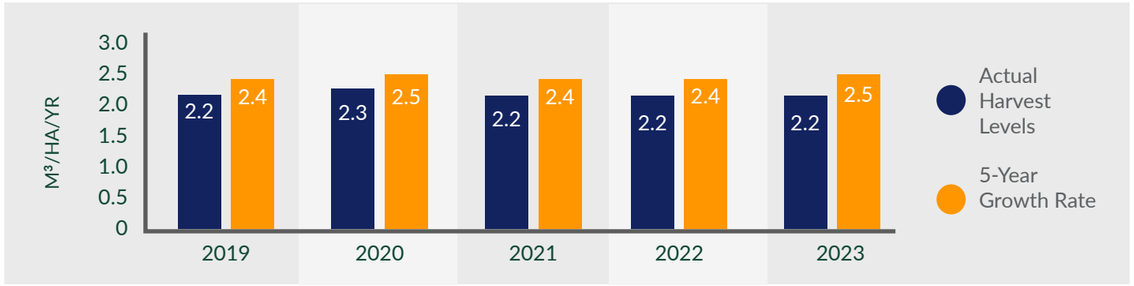

**MAINTAIN A 5-YEAR AVERAGE OF FOREST GROWTH AT OR ABOVE HARVEST.**

## FOREST GROWTH AND HARVEST RATES

### CROWN LICENCE 7

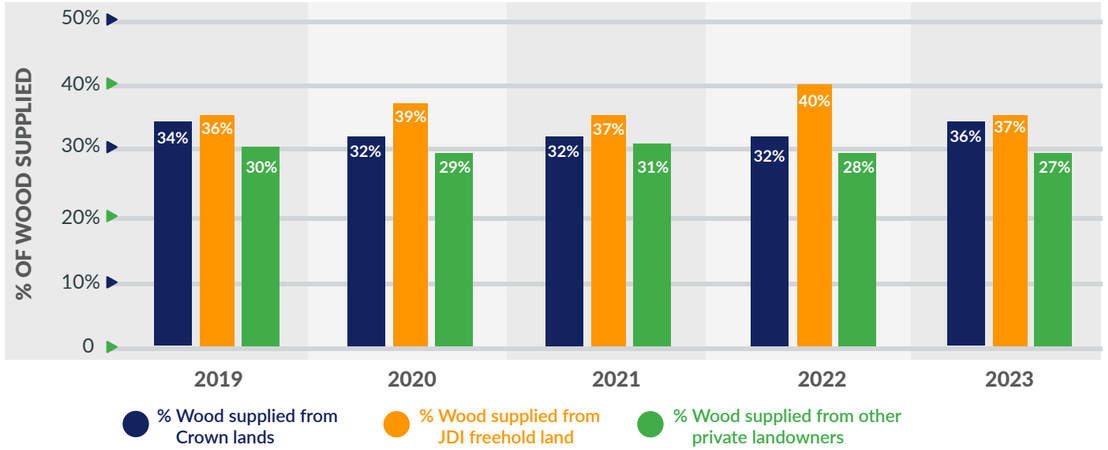



### FREEHOLD




*Tree Planters, Southern New Brunswick*

## WOOD SUPPLY SOURCES




## TOTAL LANDS UNDER IRVING MANAGEMENT

| HECTARES | ACRES | |
|---|---|---|
| **795,929** | **1,966,783** | NB & NS Freehold |
| **519,275** | **1,283,156** | Maine Freehold |
| **1,061,423** | **2,622,833** | NB Crown Licence 7 |
| **2,376,627** | **5,872,772** | **Total** |

*Juniper Tree Nursery, Juniper, New Brunswick*

## *Harvest*

In 2023, we harvested just 1.5 per cent of the forests we manage.

By understanding our forest inventory and how it changes over the long term, we develop responsible harvesting plans that ensure that we will never run out of trees for our supply chain customers.

Our foresters carefully choose from a variety of even-aged and uneven-aged harvesting techniques based on: species, age, soil type, forest regeneration plan, plants and wildlife, water protection, recreation, aesthetics and natural disturbance patterns.

Clearcutting is a forest harvesting and regeneration method in which most or all trees within a specified area or patch are harvested at the same time. The term itself can be contentious but the practice is often appropriate in the right forest conditions.

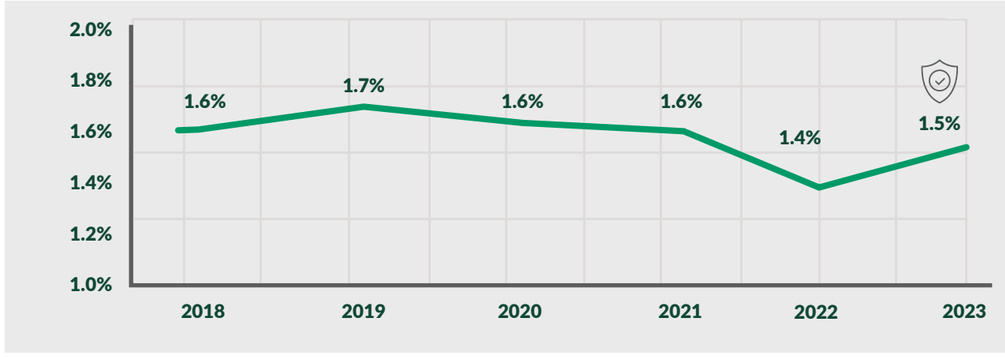
**Clearcutting: Myths vs. Reality**

**Myth:** Clearcutting results in deforestation, involves huge tracts of land where trees do not grow back for many years and is harmful to water and wildlife.

**Reality:** Clearcutting is a carefully planned even-aged harvest and regeneration method. The average size of a clearcut area in the forests we manage is about 15 hectares, which is only a fraction of the 100-hectare maximum allowable. Clearcut areas are fully regenerated, and we follow all required buffers to protect water. Regenerating clearcut areas contain an abundance of plants that are an available source of food for many different types of insects, birds and animals.

Even-age disturbance patterns do occur in nature and can be caused by forest fires, insect outbreaks or strong winds. While it is an oversimplification to say that natural disturbances and clearcuts are the same, the clearcutting method does produce the patches of even-aged disturbance that are a natural part of the Acadian Forest (see map on page 104). As such, tree species that naturally need the full sunlight conditions created by these large disturbance patterns to regenerate are found in clearcut patches. Species that require the shady conditions provided by growing beneath older trees can be regenerated by selection harvesting methods.

## PERCENTAGE OF FORESTED LAND BASE HARVESTED*




**Defined as the harvested area into the total lands under management.*

## *Optimizing the Use of Each Tree*

Part of responsible harvesting means optimizing the use of each tree. Our modern sawmill, pulp and paper and tissue manufacturing facilities are highly integrated and designed to match the mix of tree species and products that come from the Acadian Forest, maximizing the use and value of each tree and minimizing waste.

***We use every part of every tree that we can:***

- *Our harvesting machines are fed current market information to optimize the processing of each tree for customer orders and can cut wood products to millimetre precision.*
- *Our sawmill facilities use state-of-the-art scanning and imaging equipment to maximize the yield of every log.*
- *Residuals from the lumber making process, like woodchips, are used to produce tissue, while tree bark is burned in biomass boilers to produce clean energy that powers our sawmills.*

## *Renewal*

### Long-Term Planning

Ensuring that we are growing more wood than we harvest relies on a strong understanding of the state of our forest is today and where it is going.

Our foresters have access to some of the best technology in the world to produce an accurate forest inventory. This includes an airborne laser scan of the entire forest area, a network of ground plots and advanced machine learning algorithms.

With this inventory, our foresters model growth rates, harvest schedules and reforestation activities over an 80-year planning horizon using optimization software. This modeling approach allows us to set targets so that the wood supply never declines, balanced with a range of other forest values like conservation and recreation activities.

The 80-year planning process is repeated every five years, ensuring that we continually check the assumptions in our modeling and use the most up-to-date inventory, growth and harvest information to make sure we build adaptability into the plan.

*Harvester in Nova Scotia Woodlands*

### Silviculture

Our intensive approach to silviculture uses treatments like tree planting and thinning, so we can establish a forest that is healthy, more productive, better adapted to climate change and that has been demonstrated to provide a wide range of ecological values.

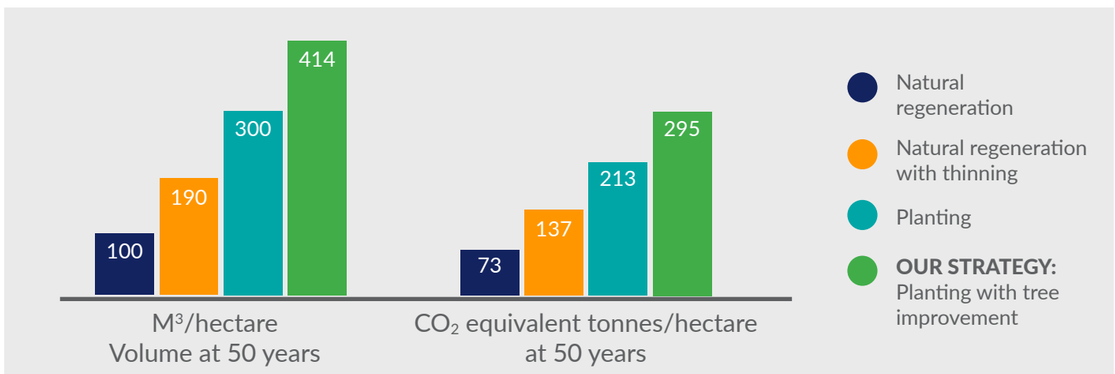
***Silviculture:*** *From the Latin word "silva," meaning forest. The art and science of growing trees.*

Sustainable intensification in planted areas improves wood product quality, supports the growing demand for forest products and also allows for more forest conservation. In fact, four times more wood grows on each hectare of planted land compared to naturally regenerated areas, meaning the amount of wood products, economic activity and carbon dioxide sequestration is increased fourfold.

**DOUBLE THE WOOD SUPPLY ON FREEHOLD LAND BY 2050.**

With our approach of sustainable intensification,
**we grow as much wood as we can** on a smaller footprint.
This provides more of the wood we need every day and more forest set aside for conservation and recreation while minimizing our carbon footprint.

PLANTING TREES: 4X THE VOLUME, 4X THE CARBON



*Mélanie Ringuette, Tree Planter in Northern New Brunswick*

Diversity in planted areas is achieved by planting six different spruce and pine species with broad genetic diversity. In addition, a diversity of naturally regenerated species is present in the planted areas throughout their life cycles.

Spruce and pine trees are **projected to be more adaptable** to warmer and/or dryer climates than naturally regenerating softwood species like Balsam fir.

As we increase our planted areas in the future, we will make conifer-dominant land more climate resilient by replanting spruce and pine trees in balsam fir-dominant areas.

**17.8M seedlings planted in 2023**
*(Freehold & Crown Licence 7)*

### Tree Improvement

Our forest renewal practices start long before the we plant a seedling.

As the demand for renewable forest products grows, it increases demand on our managed lands. However, the amount of working forest land is limited. As such, sustainable intensification requires that we focus on obtaining the highest performance on each hectare planted. That's where our tree improvement program comes in, by identifying and growing the best trees that support future climate change adaptability of forests.

## DID YOU KNOW?

*Our 45-year tree improvement program has demonstrated significant advancements in growth rates, timber quality and pest resistance.*

Our Maritime Innovation Limited lab in Sussex, New Brunswick produces world-class research to ensure we are identifying tree families with the best genetics. Our scientists use an advanced laboratory tissue culture method that efficiently produces elite tree varieties selected from our breeding program.

We grow millions of top-quality seedlings annually at our nursery facilities. All seedlings produced at our nurseries are grown from the seeds of superior, field-tested families at our seed orchard in Parkindale, New Brunswick.

Once trees are planted, planted stands receive follow-up competition control and thinning interventions throughout their lifetime, ensuring they have optimal conditions to grow. Thinned stands have the added benefit of mitigating the impact of pests and wildfires.

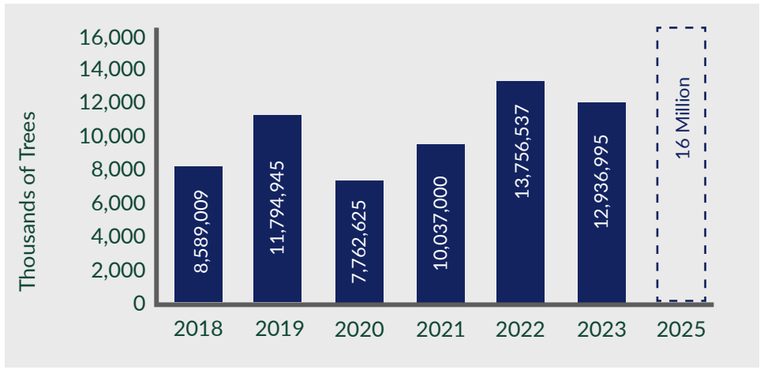
Tree planting continues to be critical to our strategy of growing more wood than we harvest. In the past few years, we have invested substantially in our nurseries to increase our seedling output.

**INCREASE TREE PLANTING LEVELS ON FREEHOLD TO 16 MILLION TREES BY 2027.**

*Thinned Tree Stand, Northern New Brunswick*

In 2023, our freehold tree planting increased to over **12.9 million seedlings,** on pace to achieve our 2025 goal.

FREEHOLD TREE PLANTING LEVELS




## *Forest Protection*

The risk of pests and forest fires is expected to increase amid a changing climate. That's why we've worked to make sure our planted forests have built-in climate change resiliency.

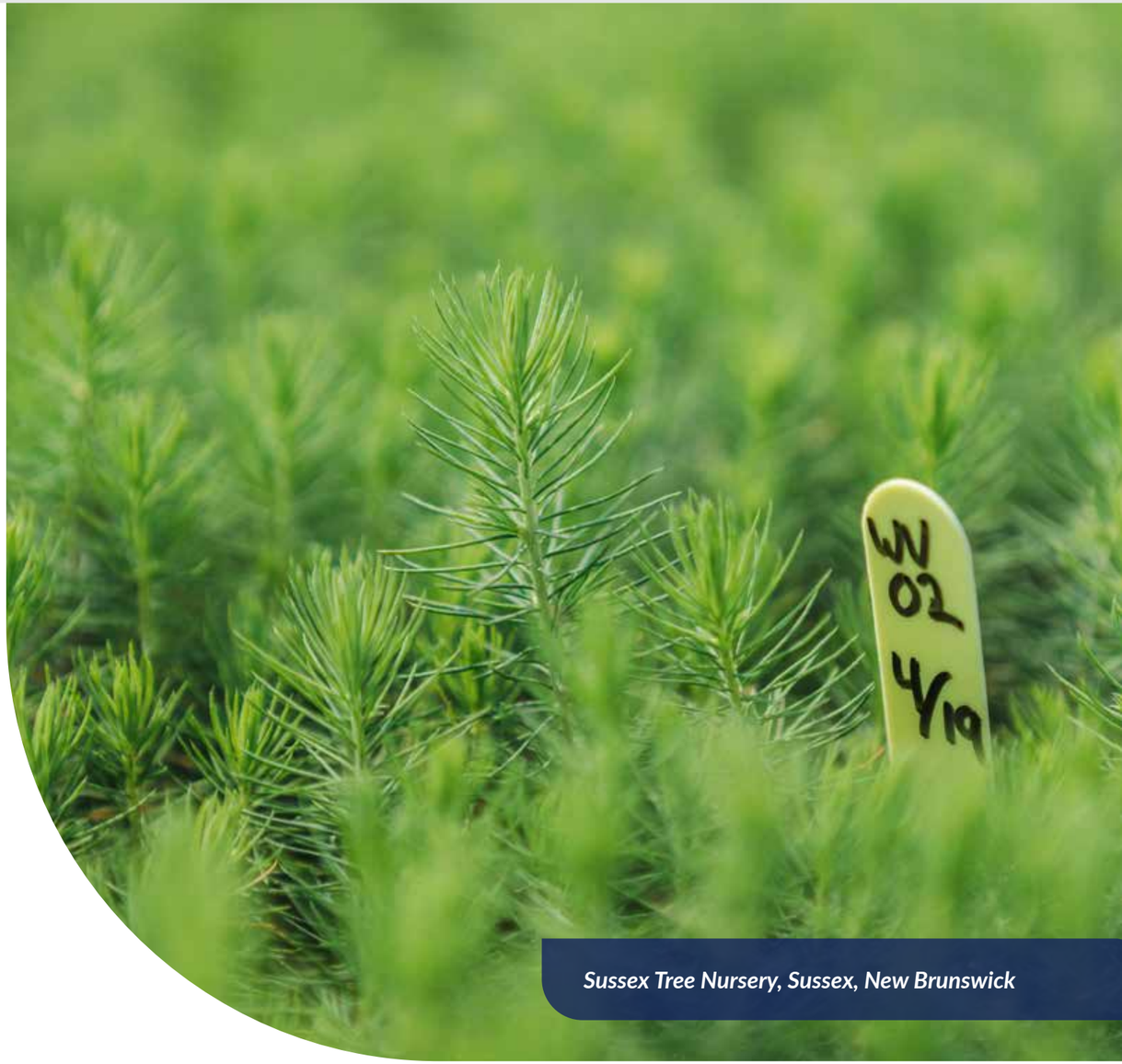
### Spruce Budworm

Eastern Spruce Budworm *(Choristoneura fumiferana)* is the most destructive threat to our region's forests. The insect feeds on fir and spruce trees, and outbreaks can devastate the softwood wood supply.

Planting locally adapted spruce and pine trees tested through our tree improvement program reduces susceptibility to eastern spruce budworm compared to naturally regenerating balsam fir.

We also collaborate with the Healthy Forest Partnership, which developed a new approach to outbreak control, lessening large-scale aerial treatment programs. Called the spruce budworm Early Intervention Strategy (EIS), it involves monitoring, early detection and targeted small area treatments.

The results of the Early Intervention Strategy are promising, with New Brunswick experiencing **virtually no defoliation** during a 2022 outbreak that caused 11 million hectares of defoliation in Quebec.




***Sussex Tree Nursery, Sussex, New Brunswick***

*We have identified a natural defence for spruce budworm and have patented the processes to improve tree tolerance to the pest. In collaboration with Carleton University's Dr. David Miller, research spanning more than two decades has revealed that some trees contain a specific endophyte (or fungus) that naturally produces anti-insect toxins, reducing defoliation. Using this knowledge, we have treated more than 250 million planted seedlings to date with these endophytes as part of an innovative, integrated pest management strategy to reduce the risk to the wood supply posed by spruce budworm.*

# WILDFIRE

Forest fires do occur in the Acadian Forest where we operate, but with less frequency and severity than in boreal or western North American forests.

## *Built-in Wildfire Resiliency*

Comprising forestland of New Brunswick, Nova Scotia and Maine, the Acadian Forest marks the transition zone between the hardwood-dominant forests of the south and the softwood-dominant boreal forests of the north (see map on page 104). This creates a patchwork effect of both pure softwood and pure hardwood-dominant areas and mixed forests.

While the boreal or mountain west forests in other parts of North America are vast, predominantly softwood and contain large patches of continuous fuel, the Acadian Forest, thanks to its mix of hardwood and softwood trees, is naturally more resilient to wildfires. Hardwoods do not burn as easily as softwoods, and the patchwork of hardwoods on the landscape act as natural fire breaks.

In addition, the climate in the Acadian Forest has higher rainfall and humidity than the boreal and mountain west forests. Higher moisture levels reduce wildfire risk.

Working forests are more resilient to fire risk as well. The continuous harvest and renewal cycle means there's less total fuel on the landscape in comparison to other forest regions in North America. Areas of older trees with higher fuel loads are harvested, leaving young and immature forests that have less fuel.

As forests age, the amount of more-flammable, dry, dead wood can increase. The practice of thinning, which removes smaller, less healthy trees to create space between trees so they are free to grow, helps "fireproof" areas by removing dead trees and "ladder fuels." This makes it harder for a fire to jump from the ground to tree tops (or crowns). Thinning also enables more sunlight to reach the ground, leading to new plant life that adds moisture, further reducing fire risk.

*Northern New Brunswick Woodlands*

***Ladder fuels**: The smaller and mid-sized trees, often unhealthy or dead, that move a fire from the ground to the treetops. Once a fire has reached the tree crowns, it can be very difficult to extinguish, so helping to prevent ground fires from climbing up works to mitigate the risk of large fires.*

## *Readiness*

To ensure that our staff and contractors are ready to immediately respond to wildfires that occur on managed lands, we participate in more than 1,000 hours of training annually. Training includes wildfire courses recognized by government regulators related to safety, equipment, tactics and fire behaviour. We also employ annual hands-on equipment training and "mock fires" to ensure that the entire system of initial response is tested and ready.

We monitor weather and fuel conditions daily throughout the fire season and advise all staff of the required level of readiness. This may include temporarily suspending forest operations during daytime periods when the risk of ignition is higher. We also maintain weekend standby resources to ensure that our response is ready whenever a wildfire occurs. In addition, extensive contingency plans are prepared and tested annually outlining additional equipment resources and logistics support, such as fuel, food, drinking water and accommodations in case a small fire turns into a multi-day event.

## *Response*

Our monitoring, detection and aggressive early fire suppression system helps protect the working forest and surrounding communities from losses. We maintain our own aircraft, airstrips and wildland firefighting equipment and are ready to respond to keep fires small. When a wildfire occurs, responding with all necessary resources becomes the number one priority of all staff and contractors in our Woodlands division.

# DID YOU KNOW?

*Our Woodlands staff receive a centrally dispatched "fire alarm" sent directly to their mobile phones when there is a potential or confirmed forest fire on managed lands. This alert is typically sent within minutes of a reported forest fire, allowing all staff to immediately respond. Each minute counts and a quick response is critical to keeping wildfires small.*





## *Forest protection by the numbers:*

**4** AIR TRACTOR AT-802 AIRCRAFT (800 GALLONS)

**1** KODIAK SPOTTER PLANE

**2** HELICOPTERS (300 GALLONS)

**7** AIRSTRIPS

**37** FIRE TRUCKS (1,000 GALLONS)

**47** PUMP UNITS

**360, 000+** FEET OF HOSE

**115** FIREFIGHTERS
**7** AIRPLANE PILOTS
**3** HELICOPTER PILOTS


*In 2023, we replaced our four older 500-gallon, single engine air tankers with four new 800-gallon Air Tractor 802 aircraft. These modern fire-fighting airplanes double our capacity to deliver long-term fire retardants or foam and can travel to wildfires at 60 per cent faster speeds. Aggressive initial and sustained attack from aircraft is critical to keeping wildfires small.*

## MAINTAIN THIRD PARTY CERTIFICATIONS ON ALL MANAGED LANDS.

### *Forest Certification*

Our commitment to accountability in sustainable forest management is supported by more than 20 years of third-party certification on the lands we own and manage. We were early adopters of several internationally recognized forest management and chain of custody standards.

**Our Certifiers**

- 100 per cent of our operations are annually and independently audited according to ISO 14001 environmental standards and certified under the Sustainable Forestry Initiative® (SFI) certification.
- 100 per cent of Maine woodlands are certified under the Forest Stewardship Council® (FSC®C041515) program.
- Third-party audits are performed by New Brunswick's Department of Natural Resources and Energy Development, the Maine Forest Service, KPMG and SCS Global Services.

Since 2003, we have held ourselves accountable to these forest management certification standards, undergoing independent third-party audits to verify our results.

External audits are audits of systems. A functioning system is one that identifies and addresses problems. Zero non-conformances indicates a system working as designed.

No operation is perfect; forest management certification standards ensure that internal systems identify non-conformance and that corrective actions are taken. These systems enable continuous improvement, which is monitored by the third-party audits.

As standards evolve, so do our operations. Since 2015, we have had zero external audit non-conformances in Woodlands, demonstrating our commitment to responsible forestry practices. We prioritize meeting all regulatory requirements and go above and beyond certification standards to ensure we have effective implementation of our sustainable forest management strategy.

### MORE THAN 20 YEARS OF THIRD-PARTY FOREST CERTIFICATION

**100%** of land certified

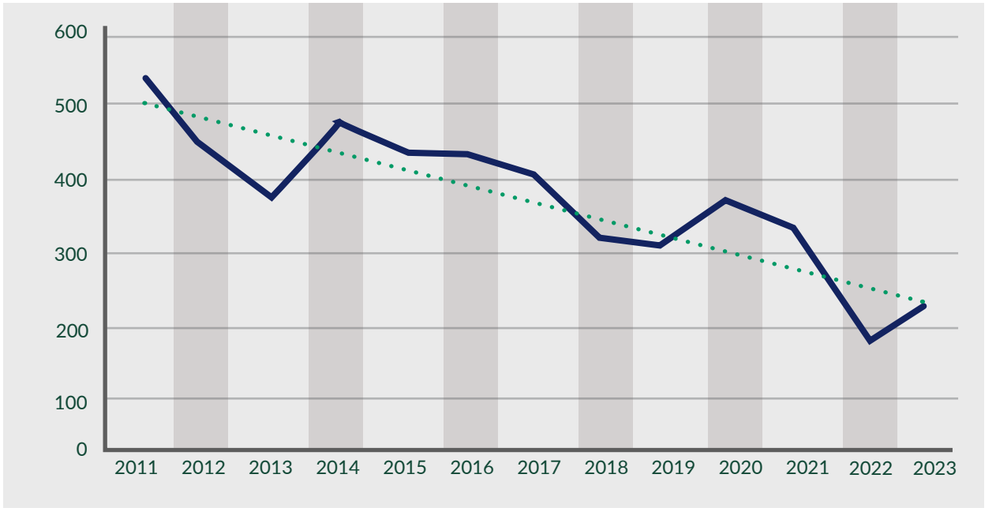
SUSTAINABLE FORESTRY INITIATIVE
SFI-00032

**100%** of land certified in Maine

FSC
www.fsc.org
FSC® C041515
The mark of responsible forestry

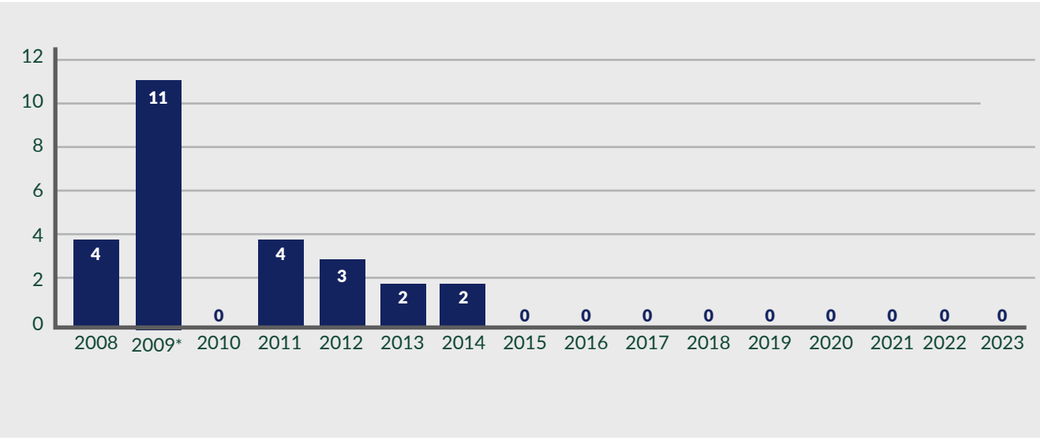
Environmental management systems certified for **100%** of our land management activities

### WOODLANDS INTERNAL AUDIT NON-CONFORMANCES




**ZERO** External Non-Conformances in 2023

### WOODLANDS EXTERNAL AUDIT NON-CONFORMANCES (SFI® & FSC®)




*2009 marked initial FSC® audit

# FOREST CONSERVATION & BIODIVERSITY

## *Songbird analysis in Black Brook*

Our approach to forest management supports wildlife diversity.

Songbird presence is indicative of how working forests impact ecosystem health. To further our understanding of our forests in this context, we took part in a five-year research project with Natural Resources Canada, Carleton University, the Canadian Wildlife Service and Environment and Climate Change Canada. The study focused on three sites in northern New Brunswick and Maine: Black Brook, Quisibis and Debouille, all with varying degrees intensity of forest management.

Our Black Brook freehold in northern New Brunswick is the most intensively managed of the three areas studied, yet yielded evidence of the greatest species diversity.

The project used sound monitoring devices to capture bird calls. Recordings were then analyzed by experts to identify bird species.

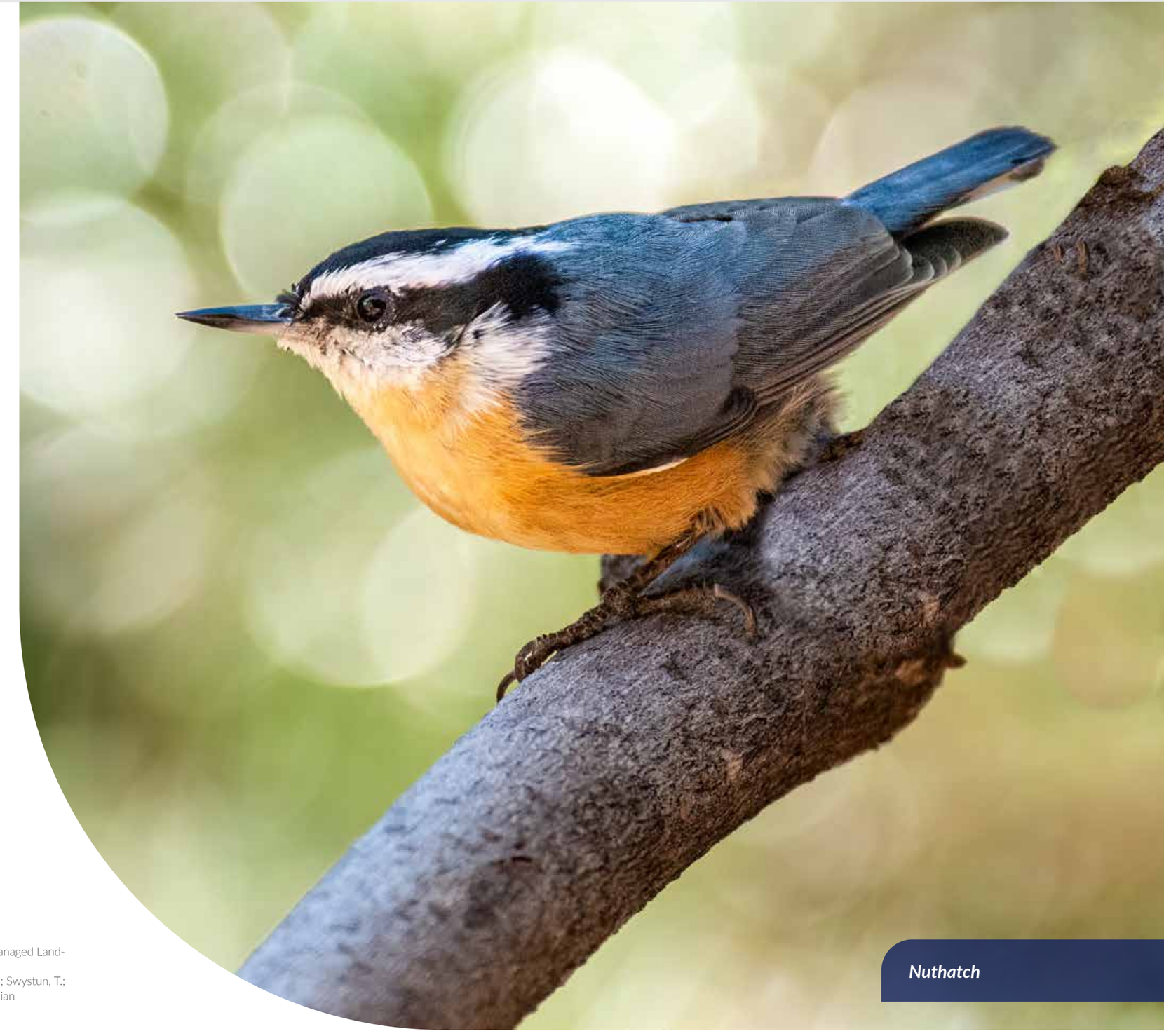
The paper, “Response of Forest Bird Communities to Managed Landscapes in the Acadian Forest,” was published in the journal *Forests* in January 2024, with the study finding “no obvious negative effects of greater management intensity of the (Black Brook) landscapes at the stand scale.” [1]

The research project found 95 unique songbird species at the Black Brook site. Two of the species include the Canada Warbler and Olive-Sided Flycatcher, both considered to be species of conservation concern.

Another paper, also published in January 2024, collected occupancy data on the Canada Warbler and Olive-Sided Flycatcher and found there are sufficient habitat options for these species in the Black Brook area.[2]

The results of this research will inform our forecasting when it comes to forest management planning in consideration of climate change.

1] Venier, L.A.; Porter, K.; Adams, G.; McIlwrick, K.; Smenderovac, E. Response of Forest Bird Communities to Managed Landscapes in the Acadian Forest. Forests 2024, 15, 184.
2] James, R.; Bennett, J.R.; Wilson, S.; Adams, G.; McIlwrick, K.; Mazerolle, M.J. ; Smenderovac, E.; Honeyman, K.; Swystun, T.; Hamel, B.; Venier, L.A. Modelling the occupancy of two bird species of conservation concern in a managed Acadian Forest landscape: Applications for forest management. Forest Ecology and Management 2024, 555, 121725.



*Nuthatch*

DOUBLY MATERIAL TOPIC

### REPORTING STANDARD

- ✓ SASB RR-FM160A.2
- ✓ GRI 304-4
- ✓ GRI 304-3

### GOVERNANCE

- Site specific conservation policies
- Landscape level conservation policies
- Species specific guidelines

### ASSURED SUBJECT MATTER

- Percentage of conservation forest
- Conservation forest area

### STRATEGIC SDGS

6 CLEAN WATER AND SANITATION

15 LIFE ON LAND

# FOREST CONSERVATION & BIODIVERSITY

Working forests contribute to biodiversity by their very nature. The continuous cycle of harvest and renewal means there's a mix of younger, middle and mature age classes across the landscape that support a variety of wildlife species. The working forest produces a range of tree species, tree structure, patch sizes and arrangements distributed across the landscape, leading to a high level of diversity at the landscape scale. In addition, the diverse forest types are connected with streams, lakes and wetlands.

- Diversity of tree ages and species
- Connectivity between the working & conservation forests
- Long term research program
- 2,100+ sites Conservation Program
- 25% of productive forest lands managed for conservation

A direct accounting of biodiversity would be impossible to achieve. We approach biodiversity conservation indirectly by ensuring we maintain a broad variety of complimentary conditions across the working and conservation forests. The outcome of these diverse forest conditions is intended to provide the habitats to support a diversity of flora and fauna.

***Our strategy to maintain biodiversity conservation includes the following three pillars:***

Manage the working forest for a diversity of tree species, plants and wildlife while maintaining water and habitats.

Commit approximately 25 per cent of productive forest lands for the primary purpose of conservation across the lands we manage.

**2,100+**

Continue our Conservation Areas Program that currently recognizes and conserves more than 2,100 unique areas.

**CONTINUE OUR CONSERVATION AREAS PROGRAM.**

***Canada Warbler***

*Another study on bird species in southern New Brunswick clearly demonstrates the complementary nature of working forests and conservation forests. Researchers identified 79 bird species on managed land and 65 species in Fundy National Park in southern New Brunswick. Combined across the landscape, 85 unique species were identified. This shows that having a mixture of younger and middle age tree classes in the working forest provides habitat for bird species that prefer those conditions, while the older forest in the national park provides for bird species that prefer older age tree classes. Having both the working forest and the conserved older forest enhances the diversity of bird species at the landscape level.*

No deforestation on owned or managed lands

No harvesting in primary or intact forests

No harvesting in old growth forests

No conversion of natural forest to plantations

## No Forest Degradation

Forest degradation is an emerging topic of concern. Currently, there is a lack of consensus on what forest degradation means or how it is measured. Our approach to managing working forests at the landscape scale ensures we are positively contributing to forest landscape diversity and minimizing risks associated with forest degradation.

***Deforestation:*** *"The conversion of forest to other land use independently of whether human-induced or not." – Food and Agriculture Organization of the United Nations (FAO)*[1]

It's important to note that more than 400 years of European settlement has heavily influenced the Acadian Forest (see map on page 104), which covers New Brunswick, Nova Scotia and Maine. As a result, our operations are not found in areas of either intact, primary or old growth forests.

Tree planting is used to promptly regenerate some harvested areas. Under the FAO definition, JDI tree planting activities result in "Planted Forests,"[1] meaning simply a "forest predominantly composed of trees established through planting and/or deliberate seeding."[1]

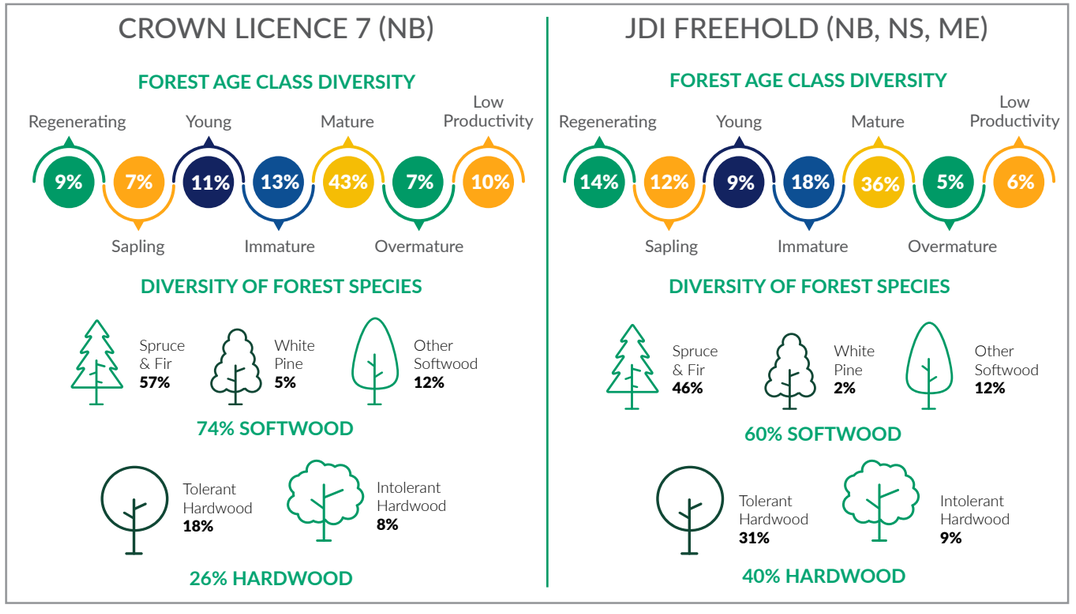
Our activities do not result in a "Plantation Forest,"[1] which the FAO defines as having "one or two species, even age class and regular spacing," [1] and which "specifically excludes forest established through planting or seeding which at stand maturity resembles or will resemble naturally regenerating forest."[1]

Our planted areas are not monocultures. Research shows planted areas contain an abundance of naturally regenerated trees, while our follow-up treatment activities like manual cleaning and commercial thinning create irregular spacing. Together these ensure planted areas resemble naturally regenerating forests at stand maturity.

A recent peer reviewed study analyzed the forest land we manage and found no difference in tree diversity between planted conifer and naturally regenerated conifer areas. In fact, there was slightly more species diversity in planted areas than in naturally regenerated conifer areas.[2] This study, which looked at 1,600 sample plots across 21 forest types, found 31 species present on the land we manage. Both planted and naturally regenerating conifer areas typically contained between 8 and 10 different species. While in planted areas the planted species is the dominant tree species, naturally regenerating conifer areas also contain one dominant tree species, most often Balsam fir.

1] United Nations Food and Agriculture Organization. 2020. Terms and Definitions. Global Forest Resources Assessment.
2] White, TL., Adams, GW., Taylor, AR., Gagnon, R., Sherrill, JR., McCartney, AW. 2024. Tree species diversity in managed Acadian forests of eastern Canada, Canadian Journal of Forest Research, In Press.




**It is estimated there are 7.17 billion trees on JDI managed land in New Brunswick.**

# DID YOU KNOW?

*Different flora and fauna species require a mix of tree species, ages, patch sizes and structures.*

### Managing Diversity

We maintain species diversity by ensuring there is a mix of habitats and by having trees of varying ages across the landscape.

We achieve this through:

- **The working forest:** Maintains younger and middle age classes. Various stand structures and patch sizes created by a combination of harvesting methods provide habitats for wildlife and maintain large trees across the landscape.
- **The conservation forest:** Maintains older age classes and large trees.
- **Our conservation program:** Maintains the rare/special consideration areas.

We implement our conservation and biodiversity strategy down to the smallest unique site through several policies and guidelines. Two of our policies – the Policy to Control Invasive Woodland Species* and our Forest Species of Concern Guidelines – apply to all site classifications, while the others are site class-specific. Our commitment to funding research helps us understand landscape-level impacts of forest management, and we apply research outcomes to adapt our forest management strategy and operational plans.

*Tree Used By Pileated Woodpecker*

*Large Burl, 25 Mile Brook Area, Maine*

*Vernal Pool, Boiestown, New Brunswick*

** On JDI freehold land*



## OUR APPROACH TO MANAGING THE FOREST FOR CONSERVATION & BIODIVERSITY

| PILLAR | STRATEGY | TIMEFRAME | APPROACH |
|---|---|---|---|
| Working forest | • Maintain a diversity of forest communities of different tree species, ages, structure and patch sizes.<br>• Conserve all water and wetlands and site-specific habitats for rare plants and wildlife.<br>• Maintain connectivity between the working forest, conservation forest and protected areas. | Dynamic 80-year planning period with daily execution and annual monitoring following forest certification. | • Long-term management planning with precision inventory;<br>• Annual training on regulations and site-specific habitat identification;<br>• Policy for Maintaining Ecological Retention Areas;<br>• Internal Forest Species of Concern Guidelines to identify biodiversity concerns and ensure best practices;<br>• Norway Spruce Reforestation Policy;<br>• Indirectly maintaining features like islands, big trees and snags, horizontal dead wood and coarse and fine woody debris;<br>• Variety of harvesting and reforestation methods to support diversity to maintain a range of canopy cover and ground vegetation (mix of reforestation by planting native species or natural regeneration). |
| Conservation forest | • Maintain a diversity of forest communities of different tree species, ages, structure and patch sizes.<br>• Commit a significant portion of the forest to primary value of conservation (e.g. riparian buffers, deer wintering areas and old forest). | Dynamic 80-year planning period. Conservation areas may move over time to maintain their conservation value at the landscape scale. | • Maintaining at least 10 per cent of forest as “old”;<br>• Linking our conservation lands with provincial Protected Natural Areas to ensure connectivity for plants and wildlife;<br>• Policy for Maintaining Late-Successional Forests*;<br>• Harvesting only with intention to improve conservation outcomes;<br>• Uncommon or Sensitive Forest Community Conservation Policy;<br>• Deer Wintering Habitat Management*. |
| Conservation areas program | • Maintain a range of the most unique locations on the landscape (from hundreds of hectares to a few square metres).<br>• Maintain special habitats and ensure high-quality public recreation experiences in our parks. | Most often permanent. | • Continually adding unique sites when identified;<br>• Providing free public access to dedicated nature parks;<br>• Vernal Pool Policy;<br>• Policy on the Protection of Heron and Raptor Nests;<br>• Legacy Tree Policy;<br>• Policy for the Detection of Rare or Endangered Plant Habitats;<br>• Monitoring Procedures for Pileated Woodpeckers and Heron Species. |

** On JDI freehold land*

## *Research Program*

Since 1990, we have invested $39 million in peer-reviewed research to learn more about our region's fish, wildlife and plants and the impacts of forest management. This research informs our forest-wide conservation strategy and ensures we are taking all steps to avoid, minimize or mitigate impacts. We are a founding partner of many wildlife and forestry research projects and have collaborated with dozens of researchers and more than 100 graduate students.

We established our Forest Research Advisory Committee (FRAC) in 1998 to bring forest managers and researchers together. The committee is mandated to identify, advocate for and conduct research to address knowledge gaps. Our research partners' work is often peer-reviewed and published. We are currently focused on landscape-level impacts on water, birds, beetles, bryophytes, moose, deer and tree diversity.

Our research demonstrates a clear role for both forest management and conservation efforts, maintaining biodiversity on our managed lands while providing ample habitat needs of various species.

Canada · New Brunswick / Nouveau-Brunswick — New Brunswick Department of Energy and Resource Development · Québec · UNB — Est. 1785 University of New Brunswick · Université Laval · The University of Maine

McMaster University · Carleton University · University of Maine Fort Kent / Université du Maine · Université de Montréal · Maine Department of Inland Fisheries and Wildlife · Cooperative Forestry Research Unit (CFRU) · Canadian Wildlife Service

### *White-tailed Deer Habitat*

***Focus:*** To understand habitat selection by deer related to snow depth and winter severity versus food availability, forest cover and more. Uses GPS collars to track the impacts of intensive forestry on white-tailed deer.

***Partners:*** A cross border collaboration of six research and government organizations.

***Results:*** By using data from collared animals, we can predict white-tailed deer population growth and how white-tailed deer use the forest, informing appropriate areas to conserve for deer wintering.

*White-tailed Deer*

*In 2023, our team published "The Role of Managed Forests in Biodiversity Conservation in the Acadian Forest," a 50-plus paged compendium of forest-related research conducted by a collaboration of cross-border research partners and JDI foresters. Summarizing what has been learned over the last 30 years, the publication outlines key learnings in areas like forest health and growth, biodiversity and wildlife habitats, water quality, climate change and carbon sequestration. The publication also identifies questions for future research. Foresters will apply this learning to continuously improve our forestry practices and policies.*

### *Moose and Winter Tick Interactions*

***Focus:*** To better understand the impacts of winter ticks, climate change and predation on moose populations. Uses GPS collars to track movement and survival.

***Partners:*** Université de Laval, Université de Montréal, the University of New Brunswick and the governments of New Brunswick and Quebec.

***Results***: A total of 286 calves were equipped with GPS collars in five regions. Preliminary findings suggest ticks impact calf survival and moose abundance.

*Moose*

## *Conservation Forest Area*

A new 25-year Forest Management Agreement signed with the Government of New Brunswick in 2023 sets a conservation target of 30 per cent of the productive forest lands. Through New Brunswick's Crown land silviculture program, more wood can be harvested from intensively managed lands, enabling increased dedication of conservation and protected areas on other Crown lands without impacting wood supply.

## *Conservation Areas Program*

Our Conservation Areas Program and four nature parks feature some of the most rare and unique areas on our managed lands (see pages 86-87 for more on our parks). The program currently includes 2,149 identified, recorded and conserved site-specific habitats per our internal Forest Species of Concern Guidelines. Our parks play a critical role in wildlife habitat and ecosystem protection.

**25% of productive forest lands** managed for conservation*

*Red Fox*

* In 2023 presented as the conservation forest area as a percentage of the total productive forest area managed. In previous years the per cent conservation forest area was defined as the conservation forest area as a percentage of the total lands under management. The change in definition is to align with the definition used by the Province of New Brunswick.




# DID YOU KNOW?

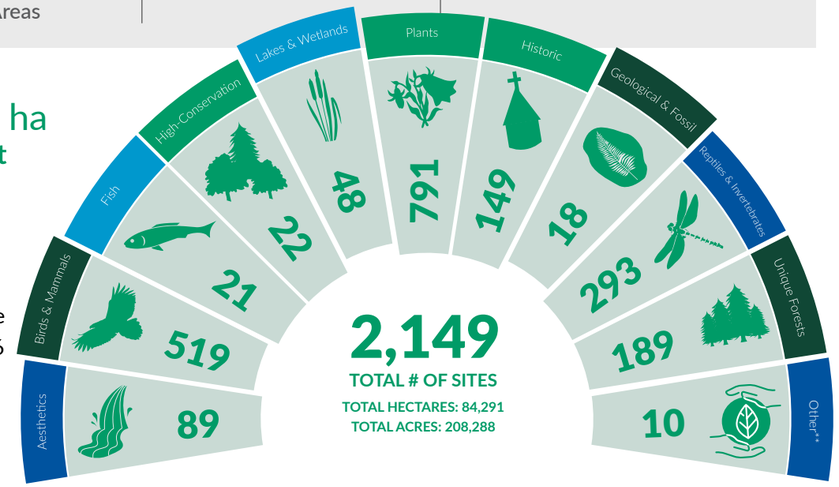
*Each year all field staff and contractors in our Woodlands division are trained in our practices and standard operating procedures. There are positive incentives in place to reward staff and contractors for identifying and conserving important biodiversity features outlined in our policies.*

**Total Conservation Area** on Lands Under Irving Management: **533,911 HAs / 1,319,323 ACs**

| CONSERVED LANDS | FREEHOLD | CROWN LICENCE 7 (NB) |
|---|---|---|
| • Unique Areas<br>• Water And Wetland Buffers<br>• Deer Wintering Areas<br>• Old Forest Habitats<br>• Protected Natural Areas | 22%<br>249,811 HAs*<br>617,033 ACs | 30%<br>284,100 HAs<br>701,727 ACs |

**68,803** ha
**Old Forest Sites**

We have set an objective to designate and maintain old forest within the working forest landscape. To date, more than 68,803 hectares (170,016 acres) have been designated toward meeting this objective.




* Includes 4,500 hectares of non-spatially identified conservation forest on recently acquired lands in Maine.

** *Other effective area-based conservation sites*

**We added an 11th site type in 2023.** "Other effective area-based conservation sites" is an official category under the International Union for Conservation of Nature and aims to maintain biodiversity in non-protected zones.

# AIR & WATER QUALITY MANAGEMENT

## *Construction continues on Irving Pulp & Paper Environmental Treatment Facility*

Work continued on our Environmental Treatment Facility at Irving Pulp & Paper in Saint John, New Brunswick through 2023, with a planned completion in 2024.

The $165-million (CAD) investment will have a major impact on water use and water quality. When in operation, the facility will release water from the mill that exceeds current and known future regulatory requirements.

The second year of the project saw workers erect more than 1,200 tonnes of structural steel and 1,406,352 kilograms of rebar, with 15,900 feet of underground pipe and 1,000 feet of process pipe laid and the installation of 4,788 feet of cable and 177 lights. Air flotation tanks have been installed and work on the exterior of the process building is underway.

Our engineering team searched the globe to find the best technology for Irving Pulp & Paper. This custom solution uses modernized technology and will result in the Saint John mill attaining a position among world leaders in environmental performance as it relates to water consumption and effluent treatment.

***Environmental Treatment Facility under construction at Irving Pulp & Paper in west Saint John, New Brunswick***

DOUBLY MATERIAL TOPIC

**REPORTING STANDARD**

- ✓ GRI 305-7
- ✓ GRI 303-1
- ✓ GRI 303-2
- ✓ GRI 303-3
- ✓ GRI 303-4
- ✓ GRI 303-5
- ✓ SASB RR-PP120A.1
- ✓ SASB RR-PP-140A.1

**GOVERNANCE**

- Best Practices for Establishing & Harvesting Buffers
- Watercourse & Wetland Alternation Certification (New Brunswick Department of Environment and Local Government)
- Soft Ground BMP
- JDI Environmental Policy

**STRATEGIC SDGS**



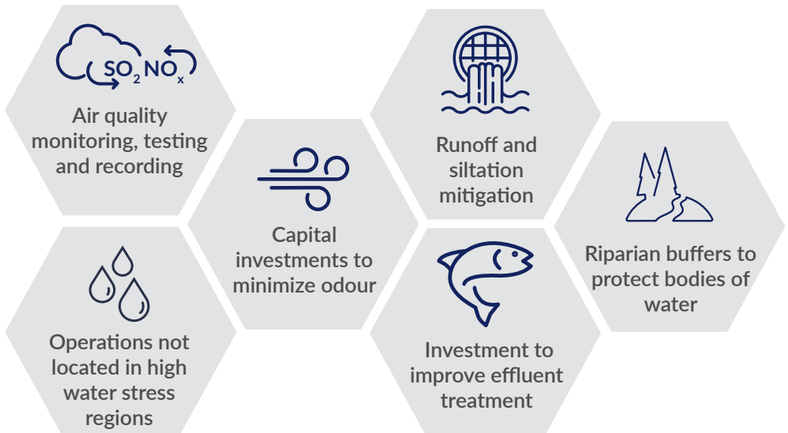
# AIR & WATER QUALITY MANAGEMENT

Activities like manufacturing, harvesting and building forest roads impact air and water quality, and we have a responsibility to meet and exceed regulations to protect these shared resources.

We are committed to continuously reducing the impact of our air and water emissions on ecosystems, fish, wildlife and communities through our environmental policy that's based on leading science and technology.

In fact, our operations meet and/or exceed a wide range of industry and site-specific regulations. These are applied at federal, state and provincial levels and come with requirements like annual reporting and limits on air and water emissions. There may also be site-specific approvals and permits to address additional requirements.

We continually re-evaluate our operations to assess and manage risks, ensuring ongoing compliance. Environmental management systems guide our divisions to enhance performance and outcomes.




| DIVISION | ENVIRONMENTAL MANAGEMENT SYSTEM |
|---|---|
| **Woodlands** | ISO 14001:2015 registered environmental management system, SFI® and FSC® certifications |
| **Sawmills** | Internally developed environmental management system |
| **Pulp and Paper**<br>Irving Pulp & Paper<br>Irving Paper Ltd.<br>Lake Utopia Paper | ISO 14001:2015 registered environmental management system, with third party auditing against the standard |
| **Irving Consumer Products** | Internally developed environmental management system, with guidance from U.S. Environmental Protection Agency |

**25% WATER REDUCTION FROM IRVING TISSUE OPERATIONS BY 2030**

## *Air Quality Management*

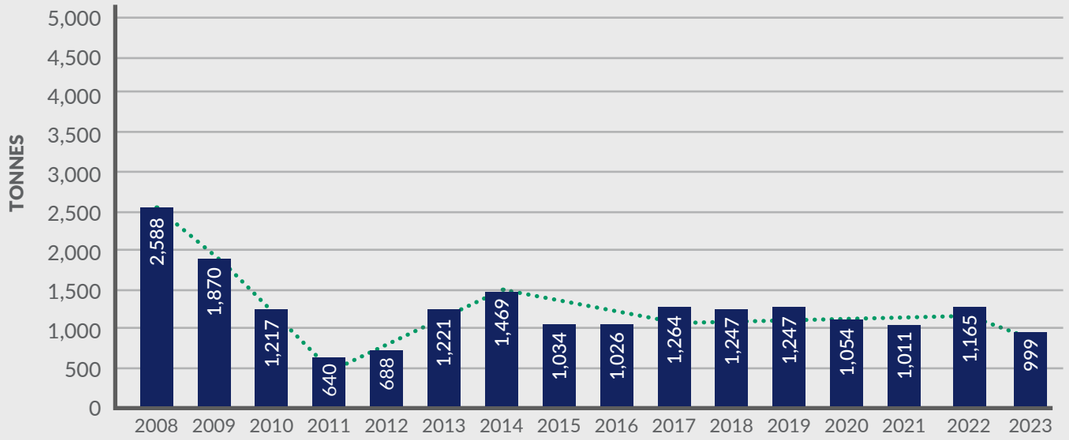
***Air Quality Management:*** *The monitoring, testing and recording of air quality markers, including Total Particulate Matter (TPM) emissions, Sulphur Oxides ($SO_x$), Nitrogen Oxides ($NO_x$) and Volatile Organic Compounds (VOCs).*

We are in **full compliance** with Canadian multi-sector pollutant regulations for $NO_x$ emission rates.

Our Pulp and Paper division is our most significant source of emissions. Its chemical pulping sites are most vulnerable to odour complaints, primarily caused by sulphur dioxide ($SO_2$) emissions. We are committed to minimizing odour. Capital investments at Irving Pulp & Paper have now virtually eliminated the potential for off-site odour detection during normal operation.

We log and share all odour complaints with regulators, regardless of whether substantiated or not. Our commitment to identifying areas to improve means we investigate all odour complaints or inquiries.

PULP & PAPER DIVISION AIR EMISSIONS – SOx (TONNES)




## *Water Quality Management*

Water use in the Pulp and Paper division and Irving Consumer Products operations exceeds 65 million m³ annually, sourced from local lakes and rivers. Strict environmental controls and regulations dictate how this process water is treated and released.

We protect watercourses as part of our Sawmills and Woodlands operations, mitigating against runoff and siltation in rivers from wood and lumber yards as well as forest roads that cross rivers and streams.

Our operations are not located in regions of high water stress. Nevertheless, to prepare for a changing climate, reducing water consumption is vital to long-term sustainability, and we are making investments in this area.

## *Pulp and Paper – Water Quality*

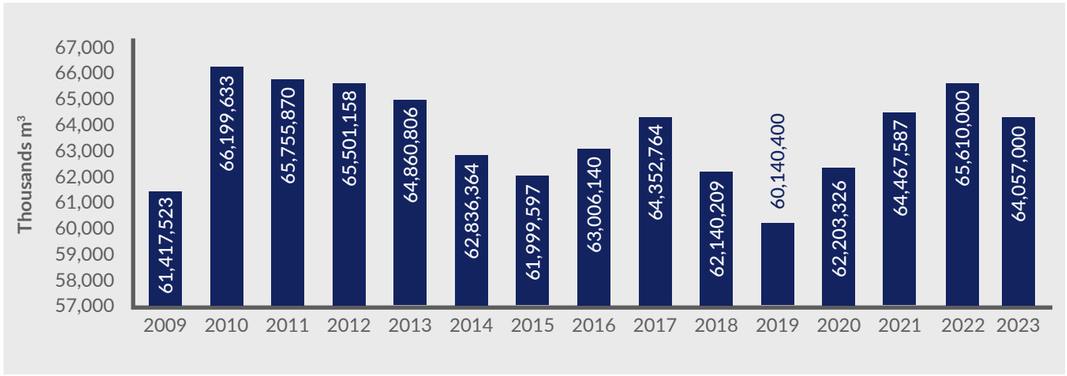
Proposed modernizations of the Canadian Pulp and Paper Effluent Regulations (PPER) have led to stricter water quality discharge limits in Canada. Irving Pulp & Paper is our largest facility with the highest water use, and we're making a significant investment to improve effluent quality.

**50% REDUCTION IN WATER CONSUMPTION INTENSITY AT IRVING PULP & PAPER BY 2029**

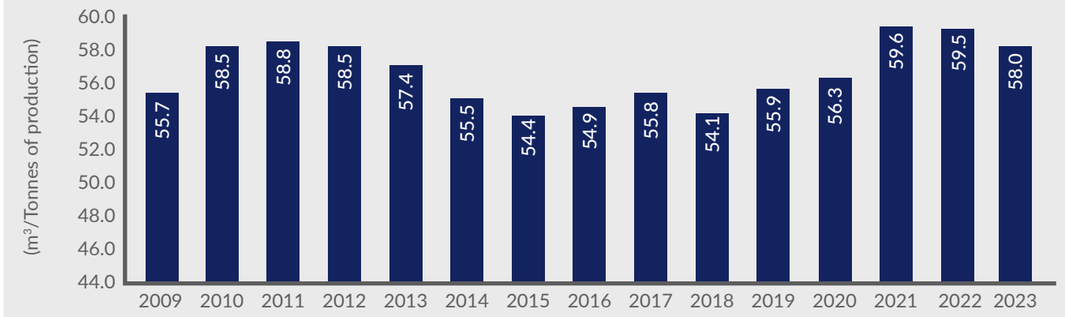
***Saint-Léonard, New Brunswick***

*Research conducted on 12 streams in Black Brook, New Brunswick tested the effectiveness of watercourse protection best practices in the working forest. The study found that more intensively-managed forests with higher road density have more impact on sedimentation in streams, directing our focus to prioritize high impact road and watercourse crossing maintenance projects.*

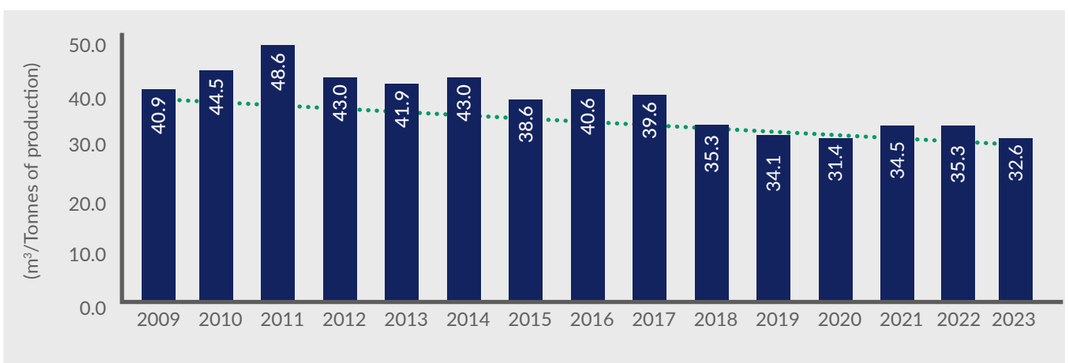
## PULP & PAPER DIVISION AND TISSUE WATER USAGE ($m^3$)




## PULP & PAPER DIVISION – WATER USE EFFICIENCY ($m^3$/Tonnes of production)




## TISSUE – WATER USE EFFICIENCY ($m^3$/Tonnes of production)




We will meet new discharge limits at Irving Pulp & Paper with our investment in a new environmental treatment facility. Scheduled for completion in 2024, the project will result in a **75 to 80 per cent reduction** in regulated emissions associated with water treatment, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS).

Environmental monitoring in the Pulp and Paper division requires participants to identify causes and solutions for affected environments, such as evaluating the potential impact of wastewater on local fish and fish habitat.

In 2023, we had five non-conformances on our aquatic environment related program.

## *Surface Water Management*

### Sawmills

The log and lumberyards surrounding our sawmill sites cover approximately 100 hectares (244 acres) of land and are home to various watercourses and wetlands. To protect these waters, we manage the levels of Total Suspended Solids through rigorous environmental standards. Before releasing water back into the environment, sediments are removed by settling, filtering or separating sediment in storm water.


*Justin Bowmaster, Veneer Sawmill, Saint-Léonard, New Brunswick*

*Southwest Miramichi River, Central New Brunswick*

### Woodlands

Forests are a significant source of our freshwater, from streams and rivers to ponds, lakes, wetlands and groundwater.

Forests collect rainfall and snowmelt, which then moves along the surface and underground to small streams, leading to large rivers across the landscape. More water is stored in ponds, lakes and wetlands and under the surface as groundwater.

Our woodlands operations interact with water every day and we have a responsibility to look after and care for the land.

***Riparian buffers:*** *Forest areas adjacent to bodies of water that are managed for conservation and water protection.*

Riparian buffers are important tools required by provincial and state regulations that mitigate the impacts of our operations by intercepting sediment before they enter the water.

Across the landscape, riparian buffers account for more than 10 per cent of the lands we manage.

We follow best practices and all watercourse and wetland alteration regulations to enhance our water-related performance. We report on performance through our forest certification and are proactively protecting our waters for generations to come.

**ZERO WATER QUALITY NON-CONFORMANCES AT ALL INDUSTRIAL SITES**

Research shows that building and maintenance associated with forest roads and water crossings have the largest impact on water quality. With more than 30,000 kilometres of forest roads on the lands we manage, we now use a woodlands road and watercourse crossing asset management database. This database helps us understand asset conditions and prioritize issues for replacement or repair.

**100% OF ALL NEW WATER CROSSINGS COMPLIANT**


*Taxis River Bridge Construction, Central New Brunswick*

*In 2023, we completed the Taxis River Bridge, the first stage of a strategic roads plan that will connect Chipman to Deersdale, New Brunswick. The project involved constructing a 130-metre modular bridge and 5 kilometres of road and was undertaken with water protection in mind. During construction, exposed soil was stabilized with hay to mitigate against siltation, and a silt fence was erected around the excavation area. The bridge allows us to avoid impacting the river bank, protecting the watercourse.*

# CLIMATE CHANGE ACTION & ADAPTATION

## *Biomass fuels clean energy*

We are always looking for ways to reduce our carbon footprint. In 2023, we finished the replacement of the biomass boiler at the Grand Lake Timber Sawmill in Chipman, New Brunswick, as part of a larger effort to reduce costs and greenhouse gas emissions in our lumber drying process.

The boiler replaces the need to burn heavy oil and converts biomass like wood waste and bark into steam that powers the mill using a 1.47-kilowatt turbine. The 2-megawatt boiler is powerful enough to supply 500 homes with electricity.

We were encouraged by the Government of Canada's decision in 2023 to recognize forest biomass as a clean energy source eligible for clean energy tax credits.

Bioenergy is something we have long recognized as a method to reach carbon reduction targets, and we have invested $37 million to install biomass boilers in our sawmills. We've replaced oil boilers with biomass boilers in our sawmills since 2008.

In 2023, 60 per cent of the direct energy used in our Forest Supply Chain was sourced from renewable biomass fuels. Using biomass like bark as fuel is one way we realize our commitment to use every part of every tree that we can.


***Biomass Boiler at Grand Lake Timber, Chipman, New Brunswick***

# CLIMATE CHANGE ACTION & ADAPTATION

**REPORTING STANDARD**

- ✓ SASB RR-PP-110A.1
- ✓ SASB RR-PP-110A.2
- ✓ GRI 305-1
- ✓ GRI 305-1
- ✓ GRI 305-2
- ✓ GRI 305-2
- ✓ GRI 305-4
- ✓ TCFD - Metrics and Targets
- ✓ PAS2060:2014

**GOVERNANCE**

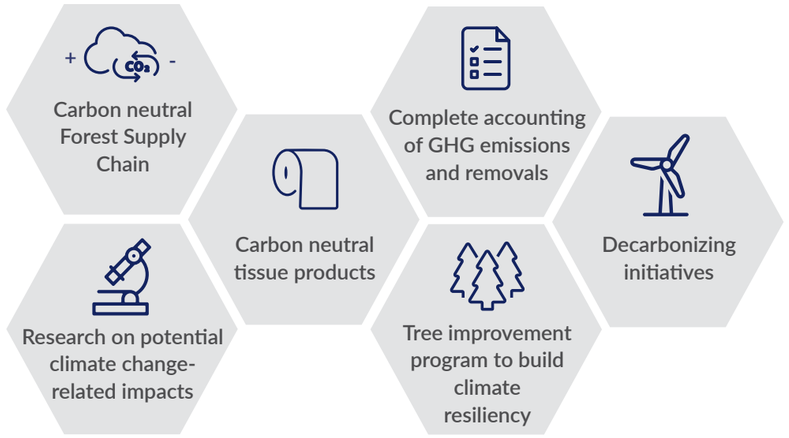
ESG Steering Committee

**ASSURED SUBJECT MATTER**

Net Forest Products Value

Chain Emissions / (Removals)

**STRATEGIC SDGS**


Change is constant in working forests. The anticipated pace of climate change means that the trees we plant in the working forests of today will be harvested in a much different future climate. Managing long-term assets like forests requires an understanding of how a changing climate potentially impacts our forests and our Forest Supply Chain.

Decades of experience and monitoring show we are experiencing shorter winters, changes in precipitation, new forest pests and shifts in species composition. These changes could present risks to the Supply Chain, with potential impacts to costs, future wood supply, operations and infrastructure. To hedge against uncertain outcomes, we work to identify risks and adaptive strategies so that the Forest Supply Chain remains competitive.

Where there are risks, there are also opportunities. The working forest is well-positioned to make a positive impact by removing more carbon dioxide from the atmosphere in growing forests and storing carbon in long-lived forest products then we emit, causing the forest supply chain to be beyond carbon neutral.

The inherent diversity of working forests ensures they can adapt to climate change with a focus on forest management and silviculture that promotes forest health and resiliency. Meanwhile, an increasing demand for renewable forest products and bioenergy, as well as other natural climate solutions derived from forests, will provide opportunities for the working forest.


*Royale®, Dieppe, New Brunswick*

Identifying, assessing and managing risks and opportunities is a continuous process guided by firsthand experience and engagement with external researchers.

We approach managing working forests with climate change resiliency in mind. Our 80-year forestry plan with its five-year review schedule enables flexibility to account for gradual changes in tree growth or composition or sudden changes due to events like wildfires.

## DID YOU KNOW?

*Our forest supply chain has been declared carbon neutral under the PAS2060:2014 standard since 2020 and Royale® tissue products were verified carbon neutral by The Carbon Trust in 2023.*

More than 45 years of tree improvement to understand which trees are genetically best suited to different climates

Investment in training and technology to ensure the best trees grow on the right sites

Maintaining tree growth with intensive silviculture practices to keep the best trees free from competition

## *Physical Risks with Climate Change in the Forest Supply Chain*

A change to forest composition or total wood supply poses the most significant climate change-driven risks to the Forest Supply Chain, whether caused gradually with species shifts or suddenly due to wildfire, pests or windthrow.

Researchers have recently analyzed various scenarios of temperature increases to gain insight into the impact of gradual species shifts on softwood supply. Looking at the best (RCP 2.6), most probable (RCP 4.5) and worst case (RCP 8.5) scenarios, the study found that both the best and worse cases "were not expected to result in significant impacts to timber supplies over time."[1] In the most probable scenario, any softwood timber supply decline can be mitigated by site-specific decisions around planted species.

| SCENARIO | TEMPERATURE INCREASE | COMMENT |
|---|---|---|
| RCP 2.6 | <2 ºC | Unlikely – best case scenario |
| RCP 4.5 | 2 – 3 ºC | Most probable scenario |
| RCP 8.5 | 4 – 5 ºC | Unlikely – worst case scenario |

## *Building Resiliency*

Balsam firs are a clear example of species shift. The most abundant tree in the Acadian Forest, the Balsam fir has been in a decades-long decline in southern New Brunswick and Nova Scotia. This species is also prone to multiple pests.

Today's adaptive forestry practices will rely less on natural Balsam fir to regenerate conifers in favour of planting the more resilient native spruce and pine species. This in turn will improve resiliency against climate change, insects and disease.

Our investments in tree improvement have led to a comprehensive understanding of the climate resilience of planted trees from our seed orchard.

Even in the worst-case scenario (RCP 8.5) of the above referenced report, drought resistant tree seedlings from our seed orchards should mitigate climate related species composition impacts, allowing us to maintain our northern softwood species.

In the modeled scenario, softwood declines are not expected until 2070, and are only projected to be 5 per cent between 2070 and 2095. We will continue to study the effectiveness of tree improvement practices in a changing climate and adapt our species and family selection approaches in response.

[1] Van Lantz, McMongale, Henniger, Sharma, Withey, Ochuodho. December 2021. DRAFT MANUSCRIPT - Forest Succession, management and the economy under a changing climate: coupling economic and forest management models to assess impacts and adaption options.



Long-term data from tree improvement test sites across multiple climatic zones shows that identifying the best tree families for tree growth also produces tree families that are **most resilient to climate change.**

***Representative Concentration Pathways (RCPs):*** *A greenhouse gas concentration trajectory developed by climate modellers to span a larger range of future global warming scenarios.*

# DID YOU KNOW?

*58 per cent of the energy measured in gigajoules required in our sawmilling and pulp and paper operations comes from renewable sources.*

## Selecting the right species for the right site is key.

We can modify planting techniques by deploying deeper rooted species on sites that are moisture-limited and subject to droughts. Our research shows that planting more Norway spruce, eastern white pine and Jack pine while reducing black spruce will improve the forest's adaptability to drier climates.

Maintaining forest health is critical to resiliency. We do this by managing the competition with silvicultural practices like thinning throughout all stages of the life cycle of trees. When trees are free from competition for sunlight, water or nutrients, more of nature's resources can be dedicated to growing stronger, healthier trees.

## *Climate Change Impacts*

Climate change related risks have the potential to disrupt operations and increase costs over the medium to long-term:

### Changing Precipitation

- Precipitation changes have the potential to impact water-dependent infrastructure at manufacturing sites, forest access roads and industrial processes.
- Too much precipitation could cause flooding, impacting forest roads or manufacturing sites.
- Too little precipitation increases the risk of wildfires, or makes drought stressed trees more susceptible to pests. Droughts could also impact papermaking operations that require significant surface water.

### Temperature Shifts

- Changes in temperature lead to stronger and more frequent winds and more Atlantic hurricanes.
- Higher temperatures could increase the risk of forest fires, if also associated with drought.
- Shorter and/or warmer winters could impact logging operations.

## PHYSICAL RISKS OF CLIMATE CHANGE AND MITIGATION STRATEGIES IN THE FOREST SUPPLY CHAIN

| PHYSICAL RISKS | RISK DESCRIPTION | STRATEGIES TO MITIGATE RISKS |
|---|---|---|
| **RISK**<br>Changes in precipitation and sea levels<br><br>**IMPACT**<br>Production disruption<br><br>Increased capital cost<br><br>**TIMEFRAME**<br>Medium to long-term | • Flooding will increase along rivers impacting sawmills and pulp and tissue mills that were traditionally located near rivers.<br><br>• Sea level rise could impact pulp mills (Irving Pulp & Paper) near the Bay of Fundy.<br><br>• Increase in intensity and frequency of rainfall events could impact stream crossings, cross drain culverts and drainage ditches on forest access roads.<br><br>• Increased droughts will impact the surface water supply for pulp, paper and tissue manufacturing operations, which are heavily reliant on an available supply of surface water. | • Assessment and upgrading of infrastructure to prevent flooding at manufacturing facilities. (Irving Pulp & Paper started the flood mitigation project in 2020 and it was completed in 2022). **(C)**<br><br>• Using technology to complete an inventory of stream crossings, culverts, and ditches to assess functionality and replacement schedule. **(P)**<br><br>• Designing new and replacement stream crossings are designed with 1.2 times the 100-year flood prediction since 2016. **(C)**<br><br>• Irving Pulp & Paper's construction of a new Environmental Treatment Facility that is estimated to reduce freshwater consumption by 50 per cent. Completion is expected in 2024. **(P)**<br><br>• Full water use assessment and conservation plan by Irving Pulp & Paper to reduce water consumption and water use intensity with each planned upgrade. **(C)** |
| **RISK**<br>Gradual changes to forest growth and species distribution<br><br>**IMPACT**<br>Reduced wood supply – volume or by species/ product<br><br>**TIMEFRAME**<br>Long-term | • This could impact the distribution of tree species in the Acadian Forest at the landscape scale; in particular, the conifer species like balsam fir and black spruce that are important to lumber and pulp and paper production.<br><br>• Potential drought periods will impact tree growth and species distribution on specific sites with higher water stress (excessively well-drained sites or shallow soils). | • Active monitoring and detection program for changes in growth and yield, or species shifts. **(P)**<br><br>• Following guidance of locally driven research on expected tree species distribution under a range of climate scenarios. **(P)**<br><br>• Maintenance of multiple age classes and species combinations across the landscape. **(P)**<br><br>• Tree improvement program allowing for the selection of resilient parents and individuals. **(P)**<br><br>• Shortened planted area rotations (40 years) to reduce the risk of longer-term changes to tree growth and yield. **(P)**<br><br>• Active research on drought resiliency by adapting densities and water use. **(P)**<br><br>• Species and site matching with intensive silviculture practices. **(P)**<br><br>• Adaptable 80-year management planning process reforecast every five years. **(P)**<br><br>• Shifting to deeper rooted species to increase drought tolerance and wind resistance. **(P)** |

| PHYSICAL RISKS | RISK DESCRIPTION | STRATEGIES TO MITIGATE RISKS |
|---|---|---|
| **RISK**<br>Increase in catastrophic events – wildfire, forest pests and windthrow<br><br>**IMPACT**<br>Reduced wood supply<br><br>**TIMEFRAME**<br>Medium to long-term | • An increase in frequency or severity of wildfires will impact short and long-term wood supply across all landowners (freehold, Crown and private). Planted conifers on freehold and Crown Land are highly susceptible to wildfire.<br><br>• Interface wildfires (meeting of woodlands and human developments) could impact infrastructure and homes in rural communities that support operations, sawmills, wood yards and remote logging camps.<br><br>• Changing temperature could impact the climate's suitability to new forest pests (insects or disease) or increased stress on trees could raise susceptibility to existing forest pests.<br><br>• Increased strength and frequency of winds raises the risk of landscape-scale catastrophic blowdown events where significant patches of forest are blown over in single events and/or the risk of single tree blowdown events over the course of multiple high-wind events. | • Investments in infrastructure, tools and training to ensure safe and aggressive wildfire response:<br>  • Airstrip upgrades completed in 2021. **(C)**<br>  • New fire trucks purchased and delivered in 2022. **(C)**<br>  • New single engine air tankers replaced existing fleet in 2023. **(C)**<br>  • New monitoring aircraft purchased in 2021. **(C)**<br>• 2020 MOU with New Brunswick Department of Natural Resources on fire response and enhancing JDI training to national standards. **(C)**<br>• Investments in mechanized firefighting to reduce reliance on human resources initiated in 2020. **(P)**<br>• Forest fuel mapping. **(P)**<br>• Maintaining awareness of new forest pests. **(P)**<br>• Species and site matching with intensive silviculture practices. **(P)**<br>• Participation in the Natural Resources Canada-led Spruce Budworm Early Intervention Strategy Program, with the potential to apply lessons learned to new forest pests. **(P)**<br>• Annual monitoring and detection of stressed trees and mortality, windthrow and blowdown. **(P)**<br>• Immediate salvage harvesting of catastrophic losses with an adaptable management plan. **(P)**<br>• 80-year management planning process re-forecasted every five years. **(P)** |

*Forest fire in Central New Brunswick*



**(C)**: Complete **(P)**: In Progress **(I)**: To Investigate

**(C)**: Complete **(P)**: In Progress **(I)**: To Investigate

# *Opportunities*

A changing climate, government policies and shifts in consumer behaviours associated with a concern for the environment could result in opportunities for the Supply Chain. Beginning with a healthy, diverse working forest as part of a well-capitalized, modern manufacturing base, our Supply Chain can respond the increasing demand for renewable forest products and bioenergy.

| OPPORTUNITY | DESCRIPTION OF OPPORTUNITY | STRATEGY TO EXECUTE |
|---|---|---|
| Increased demand for renewable building products | The demand for renewable and low carbon building products to replace concrete and steel will benefit lumber producers. This includes traditional lumber products in addition to mass timber, engineered wood products and panels for construction. | • Focus on silviculture practices that increase sawlog production, such as species site matching, aggressive early competition control techniques and commercial thinning. **(P)**<br>• Increase investments in sawmill technology focused on improving recovery. **(P)**<br>• Match future sawmill growth to the growing wood supply. **(P)**<br>• Investigate innovative building products such as cross-laminated timber. **(I)** |
| Increased demand for renewable packaging products | The demand for alternatives to single-use plastics will continue to grow. There is the opportunity to produce more renewable alternatives or to wrap finished consumer goods with paper. | • Increase Kraft pulp production. kraft pulp has many applications, including to produce renewable packaging. **(P)**<br>• Reduce plastic waste in consumer goods packaging by switching to paper packaging. **(P)**<br>• Increase the quality of corrugating medium products. **(P)** |
| Increased demand for renewable energy | With the growing wood supply and growth in forest products manufacturing opportunities, there will be an increase to the amount of residual biomass that could be converted to energy (e.g., more bark, lignin, sawdust, shavings, unused forest residues). | • Explore opportunities to produce more green electricity from waste steam at Irving Pulp & Paper. **(P)**<br>• Explore opportunities to use excess hot water from Irving Pulp & Paper. **(I)**<br>• Increase wood pellet production from sawmill residues. **(C)**<br>• Investigate opportunities for wind power on freehold lands. **(P)**<br>• Investigate the opportunity to use surplus bark (hog fuel) for new green energy production. **(P)** |

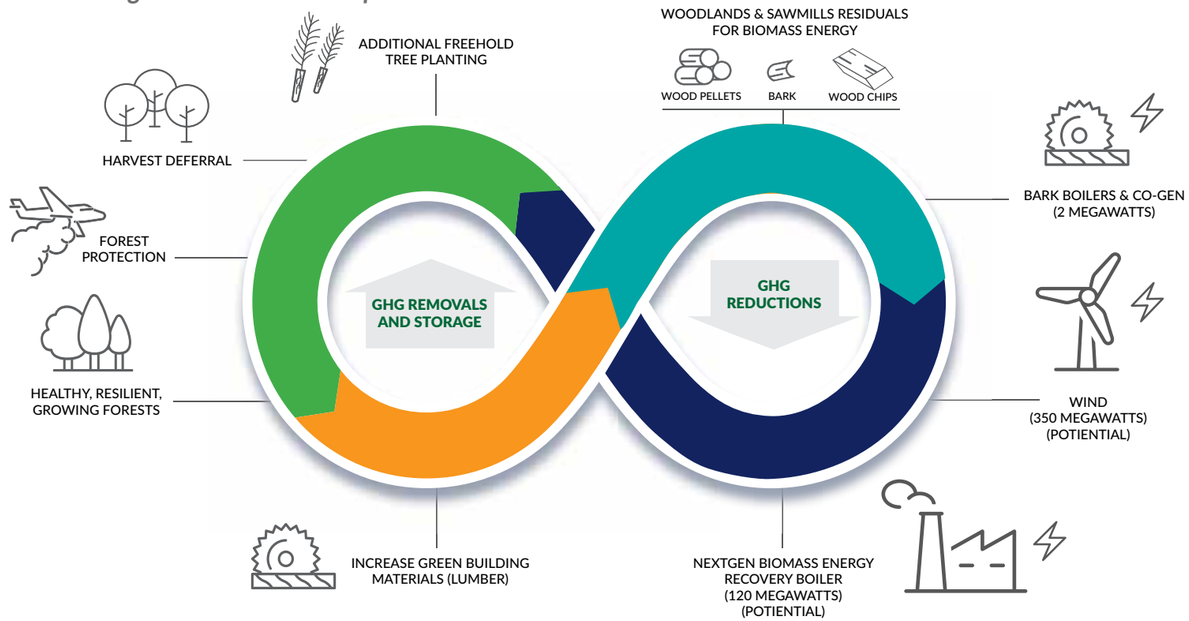
***Progress Highlight***

- *In summer 2023, Grand River Pellets in Saint-Léonard, New Brunswick, added a second pellet line to more than double capacity to 220,000 tonnes per year.*
- *In April and May 2024, we filed two separate Environmental Impact Assessments with the New Brunswick Department of Environment and Local Government for the Brighton Mountain Wind Farm, a 56-turbine, 350-megawatt project outside of Juniper, New Brunswick, and Project NextGen, which involves a new recovery boiler at the Irving Pulp & Paper mill in west Saint John, New Brunswick that will increase production and generate green energy.*

**(C)**: Complete **(P)**: In Progress **(I)**: To Investigate



*The Working Forests – Climate Impact*




## *GHG Emissions and Energy Use*

Understanding our greenhouse gas footprint is key to reducing it.

There's no question: forest products manufacturing is energy intensive and can release significant greenhouse gas emissions from manufacturing and transportation. Nevertheless, forests and wood products also remove significant quantities of carbon from the atmosphere and store it long term, balancing our footprint.

To do our part to mitigate climate change, our Forest Supply Chain is committed to increasing removals from healthy working forests, long-term storage in lumber products and capital investments that will reduce greenhouse gas emissions in our manufacturing and supply chain operations.

### Tracking Our Carbon Footprint

Our Forest Supply Chain operations are beyond carbon neutral. We have a negative carbon footprint, meaning we remove more carbon than we emit.

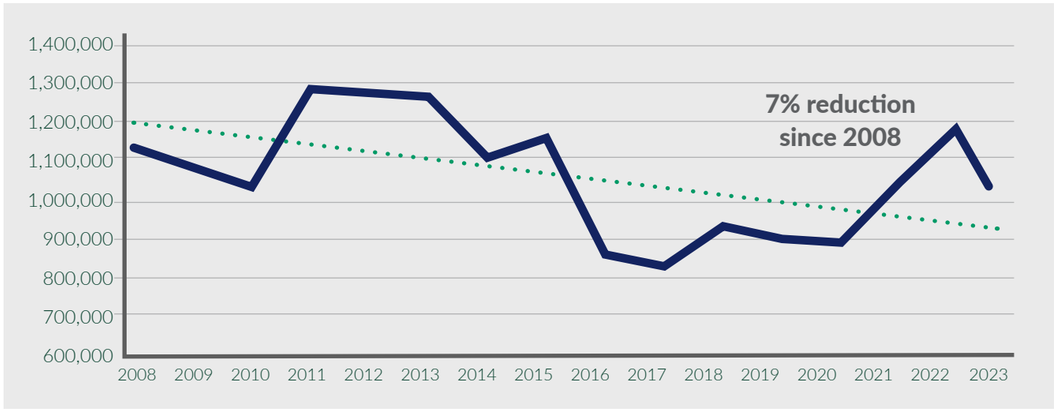
We can reduce our GHG footprint through fuel efficiency or fuel switching.

We can increase carbon removals across our Supply Chain by increasing forest growth and the production of solid wood products, which continue to store captured $CO_2$ as lumber.

We've been working to better understand and reduce our carbon footprint **for 15 years.**

We started internal measurements for Scope 1 and Scope 2 emissions in 2008 across the Supply Chain, focussing on fuel switching to biogenic fuels and electricity generation with waste steam to reduce emissions.

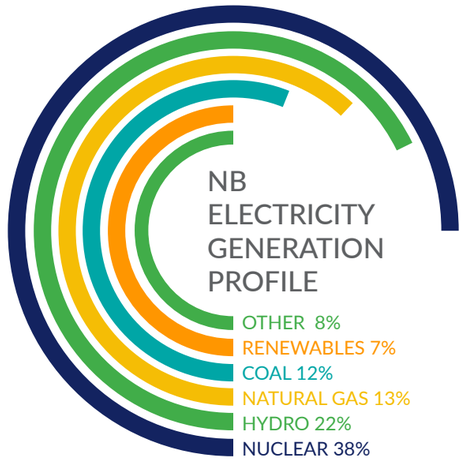
## FOREST SUPPLY CHAIN SCOPE 1 & 2 TOTAL GHG EMISSIONS (MTONS OF $CO_2e$)




[1] Emissions prior to 2020 were not independently reviewed.

Growth in our tissue business caused emissions to increase in 2020. However, Scope 1 and 2 emissions have still reduced overall by 7 per cent since 2008. Future capital investments and energy efficiency improvements will begin to reduce emissions in future years.

Irving Paper Limited, located in Saint John, New Brunswick, is a heavy user of electricity, and its Scope 2 emissions are our single largest source of GHG emissions. Because of this, our total Scope 1 and 2 emissions are sensitive to annual fluctuations in the electricity mix of the New Brunswick energy grid, which is generated by nuclear, hydro, coal and other fossil fuel assets. Investments in renewable electricity will be key to stabilizing and reducing our GHG footprint.




**MAINTAIN CARBON NEUTRALITY IN THE FOREST SUPPLY CHAIN THROUGH 2025 PER PAS2060:2014.**

### Inflationary Costs

As governments take measures to regulate GHG emissions, the Supply Chain faces transitional risks like inflationary costs.

Assessments by the ESG Steering Committee found that government policies regulating fossil fuels will increase both direct and indirect energy costs like electricity. The same was determined for the Supply Chain and fossil fuel-powered manufacturing and transportation costs.

It is not possible to pass all these costs on to customers. We track risks and opportunities by keeping a robust accounting of the Supply Chain's carbon footprint, and our Steering Committee has oversight into decarbonizing initiatives like fuel switching, fuel efficiency and green energy generation.

*New Sussex Garage, Sussex, New Brunswick*

*In consideration of increased flooding due to climate change, a new maintenance facility for our operations in Sussex, New Brunswick is being built one metre higher than normal. The project began construction in fall 2023 and is projecting a September 2024 completion date.*

## TRANSITION RISKS IN THE FOREST SUPPLY CHAIN

| TRANSITION RISK | RISK DESCRIPTION | STRATEGIES TO MITIGATE RISKS |
|---|---|---|
| **RISK**<br>Canadian Federal Carbon Tax Policy – Canada<br><br>**IMPACT**<br>Increased cost<br><br>**TIMEFRAME**<br>Short-term | • The Canadian federal price on carbon will move from $65 per tonne in 2023 to $170 per tonne in 2030, impacting large emitters under an Output Based Pricing System, and all other fossil fuels via a retail fuel tax.<br><br>• Cost increases are expected in the Supply Chain, small and medium manufacturing facilities and freight to customers (where there is no ability to offset emissions and no available alternative energy source available e.g., logging, transportation). These policies will have significant upward pressure on costs that cannot always be passed on to end users. | • Robust accounting of the Forest Supply Chain carbon footprint to identify sources of GHG emissions and prioritize risks and opportunities. **(C)**<br>• Fuel efficiency initiatives (short-term). **(P)**<br>• Reduction in equipment idling. **(P)**<br>• Switching to higher payload trucking configurations (tridem drive trucks). **(P)**<br>• Switching from energy-intensive full tree harvesting and in-woods chipping systems. **(P)**<br>• Increaseing the use of rail freight. **(P)**<br>• Tools, technology and best practices to improve productivity. **(I)**<br>• Fuel-switching (medium term).<br>• Hybrid or electrification of mill yard equipment. **(I)**<br>• Fuel efficiency initiatives at large industrial sites (short-term). **(P)**<br>• Energy efficiency audits in tissue mills to increase productivity and increase re-use of heat and steam. **(P)**<br>• Fuel switching at Irving Paper Limited to purchase steam from nearby electrical generation facility, rather than consuming natural gas to generate steam. **(I)**<br>• Increasing capacity at Irving Pulp & Paper to utilize more black liquor and other biomass sources. **(I)** |
| **RISK**<br>Canadian Federal Climate Policy – electricity generation<br><br>**IMPACT**<br>Increased cost<br><br>**TIMEFRAME**<br>Medium-term | • Federal climate policy mandating the closure of coal fired electricity generation creates significant uncertainty to the New Brunswick and Nova Scotia electricity supply and increased cost structure. Increasing electricity costs will have significant impact on high electricity users like Irving Paper.<br><br>• Significant debt loads at NB Power limit the ability to transition fossil fuel generating stations, add distribution associated with renewable energy and maintain existing hydro and nuclear facilities. Electricity costs are highly likely to rise. | • Using surplus electricity from Irving Pulp & Paper capacity improvements. **(P)**<br>• Exploration of wind power investments. **(P)** |



**(C)**: Complete **(P)**: In Progress **(I)**: To Investigate

### Reporting to the PAS2060:2014 Standard

To report our 2023 greenhouse gas footprint, we followed the internationally recognized PAS2060:2014 standard, the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting guidance and the Carbon Budget Model for the Canadian Forest Sector (CBM-CFS3).

We produced our first Qualifying Explanatory Statement (QES) for 2020 emissions and removals for the organizational boundary of the integrated Forest Supply Chain and this process was repeated to account for 2021, 2022 and 2023.

The QES for the organizational boundary was made public in 2022 with a Declaration of Achievement of Carbon Neutrality. Each of the 2020, 2021, and 2022 QES were verified to a limited level of assurance by KPMG Performance Registrar Inc.

The Declarations of Carbon Neutrality (Declaration) for 2020 to 2022 encompass activities within the financial control of JDI in three major categories in the Supply Chain:

- Scope 1 Direct GHG emissions,
- Scope 2 Indirect GHG emissions associated with purchased energy,
- Scope 3 Indirect GHG emissions (Category 1-8) from activities in the Supply Chain,
- Net Forest Growth from freehold forests
- Net transfer of carbon dioxide to harvested wood products.

In addition to the accounting of GHG emissions and removals, the QES describes the following:

- A detailed description of the activities that make up the Supply Chain,
- Disclosure of biogenic carbon emissions,
- Exclusions of non-material GHG emissions and rationale,
- Analysis and discussion of inherent uncertainty associated with estimating and accounting for GHG emissions,
- Planned short-term reductions in the carbon footprint.

The Supply Chain is committed to maintaining carbon neutrality within the boundary until the end of 2025.

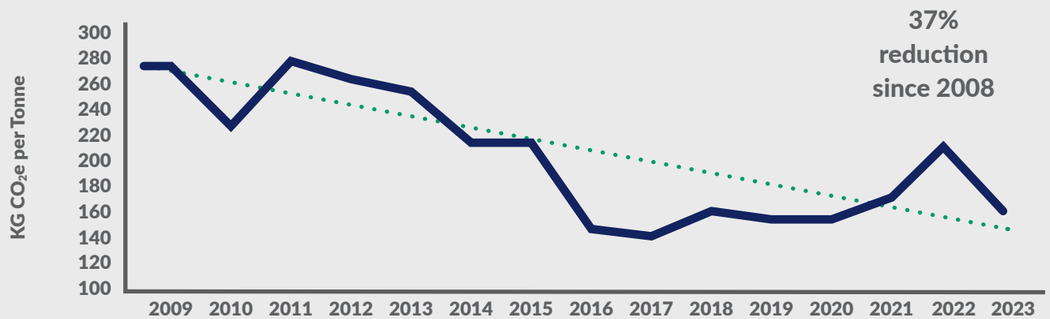
In 2024, we will repeat this process under PAS2060:2014 and disclose our 2023 carbon footprint in the Supply Chain in an updated QES.

*Northern New Brunswick Woodlands*

## Greenhouse Gas Emission Intensity

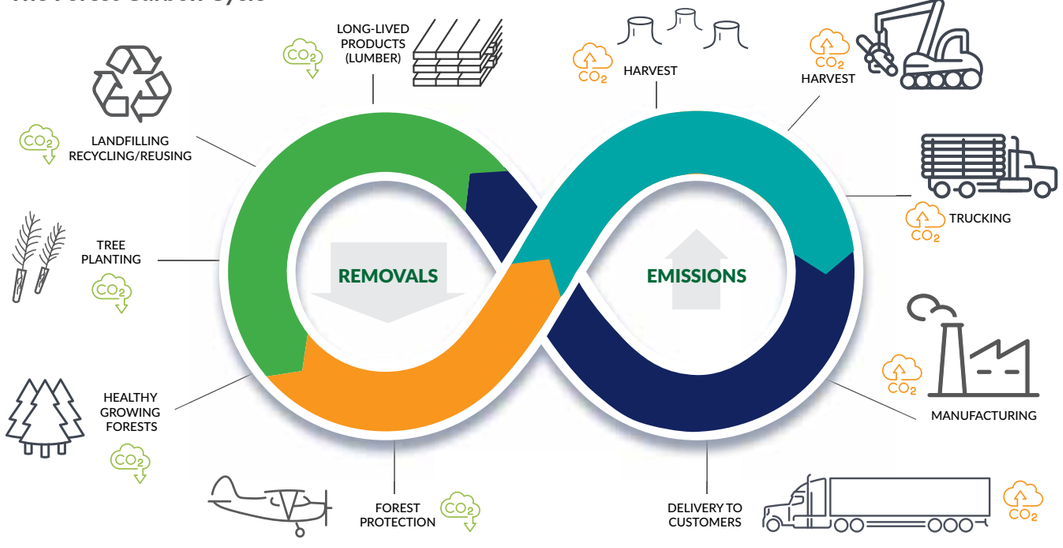
To support our customers and communities, our business continues to grow, so greenhouse gas emissions are also reported on an intensity basis. This measure speaks to the efficiency of how we use the energy we consume. The Forest Supply Chain has seen a 48 per cent increase in total production and a 7 per cent decrease in total Scope 1 and 2 GHG emissions since 2008, resulting in a 37 per cent reduction in GHG emissions intensity over 15 years. This stresses the importance of energy efficiency and productivity improvement initiatives in addition to fuel switching to mitigate the impact of our operations on the climate.

### FOREST SUPPLY CHAIN SCOPE 1 & 2 EMISSIONS INTENSITY SINCE 2008[1]




1] Emissions prior to 2020 were not independently reviewed.

### *The Forest Carbon Cycle*




## Greenhouse Gas Emissions and Removals

The Forest Supply Chain will continue to maintain carbon neutrality through the following actions:

- Reducing $CO_2$ emissions in Supply Chain manufacturing operations (i.e. sawmills, wood pellet, horticultural products, kraft pulp, paper, corrugating medium, tissue and diaper manufacturing facilities).
- Investing in Supply Chain manufacturing facilities, which increase $CO_2$ transferred and stored into harvested wood products (HWPs).
- Managing the working forest sustainably, resulting in improved forest growth and increased $CO_2$ removals on JDI-owned freehold lands in the provinces of New Brunswick and Nova Scotia and the state of Maine.

To read more about our carbon footprint, accounting methodology, biogenic carbon emissions, uncertainty analysis, exclusions and carbon footprint management plan, visit www.jdirvingsustainability.com.

## DID YOU KNOW?

*In 2023 60 per cent of the direct energy used in our Forest Supply Chain was sourced from renewable biomass fuels.*

### 2021-2023 GREENHOUSE GAS EMISSIONS AND REMOVALS

| Type | Detail- Emission/(Removal) | 2021 MTONS $CO_2e$ | 2022 MTONS $CO_2e$ | 2023 MTONS $CO_2e$ |
|---|---|---|---|---|
| Scope 1 | Direct Fuels | 453,000 | 553,000 | 516,000 |
| Scope 2 | Indirect Electricity | 586,000 | 663,000 | 551,000 |
| Scope 3 | Upstream and Downstream Supply Chain | 998,000 | 909,000 | 989,000 |
| **Sub-Total: Manufacturing and Supply Chain Emissions** | | **2,037,000** | **2,125,000** | **2,056,000** |
| Transfer | Net transfers (to) / from HWP | (1,048,000) | (976,000) | (1,048,000) |
| Removal | Net Forest Growth and Land Use – Freehold | (2,477,000) | (2,364,000) | (1,819,000)* |
| **Sub-Total: HWP Transfer plus Net Forest Growth (Removal)** | | **(3,524,000)** | **(3,340,000)** | **(2,867,000)** |
| **Total: Net Forest Products Value Chain Emissions/ (Removals)** | | **(1,488,000)** | **(1,216,000)** | **(811,000)** |

** 2023 results includes emissions from peat bog land use change.*

# SAFETY

## *New partnership in early intervention injury prevention strategies*

We can prevent long-lasting and painful musculo-skeletal injuries with timely assessment and treatment. The earlier injury intervention begins, the better the outcome.

Because of this, in 2023, we partnered with WorkSafeNB, New Brunswick's provincially-regulated workers' compensation board, to ensure that employees that experience work-related soft tissue injuries receive prompt identification of injury type and are provided with direct access to physiotherapy.

The program eliminates the need to wait in physicians' offices and for emergency room visits. Participating physiotherapists assess employees for their ability to return to work safely and quickly.

Musculo-skeletal injuries make up the largest percentage of injuries across our operations. This strategy identifies the areas where these injuries occur, so that we may implement interventions and provide quick treatment for employees before the onset of injuries.


***Adam Tobias, Irving Tissue, Fort Edward, New York***

DOUBLY MATERIAL TOPIC

**REPORTING STANDARD**

GRI 403-1
GRI 403-2
GRI 403-4
GRI 403-5
GRI 403-7
GRI 403-9

**GOVERNANCE**

Health & Safety Policy
Safety Orientation

**ASSURED SUBJECT MATTER**

CIR, RIR, LTIR

**STRATEGIC SDGS**

8 DECENT WORK AND ECONOMIC GROWTH

# SAFETY

Our goal is to eliminate workplace injuries and illnesses with a target of zero critical injuries. We are working towards this goal through proactive safety management and by sharing best practices. In order to maintain a safe environment for every person working on our sites, we are continually improving our health and safety management system, leveraging technology and analytics and using leading indicators to make sure we are on track.


## *Our Injury Performance*

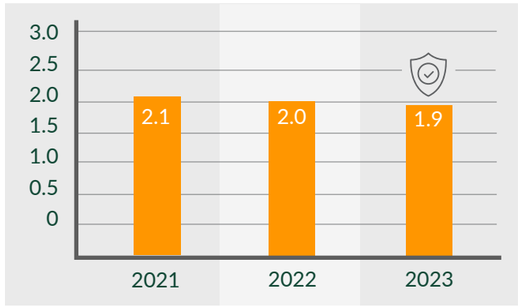
Our standard safety definitions across the organization are based on the United States Occupational Safety and Health Administration (OSHA) criteria for injury recording, allowing us to measure, evaluate and compare our injury statistics.

***Recordable Incident Rate (RIR):*** The industry standard for safety performance. It measures the number of recorded injuries per 200,000 hours and includes injuries requiring medical attention beyond first aid, ranging in severity from minor to severe.

**CRITICAL INJURY RATE OF ZERO**

1] Recordable Incident Rate
2] Lost-Time Injury Rate

### RECORDABLE INCIDENT RATE*

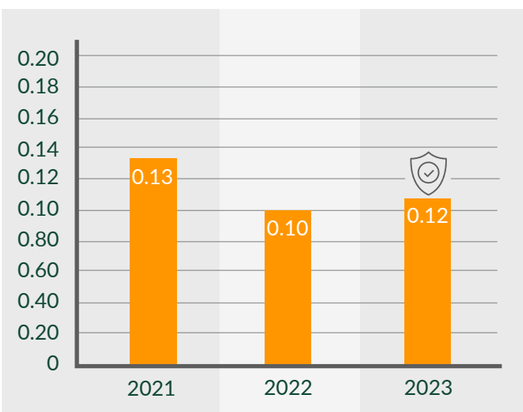



We also review Lost-Time Injury Rates (LTIR) and Critical Injury Rates (CIR) as key safety metrics to provide better context to the type and severity of injuries. Both are subsets of the Recordable Incident Rate.

***Lost-Time Injury Rate:*** Measures workplace-related injuries that cause employees to lose time working or miss their next regularly scheduled shifts.

The **Critical Injury Rate has decreased** by 7.7 per cent since 2021.

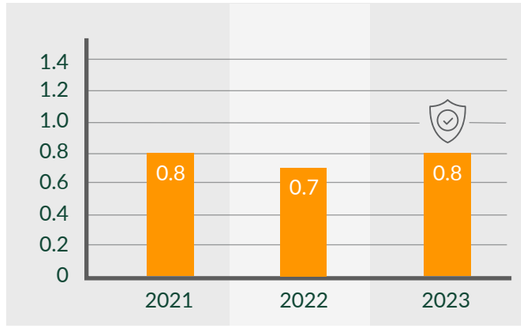
### CRITICAL INJURY RATE*




***Management Analysis -*** Since 2021, we continue to make progress in our injury prevention activities with a decrease in overall recordable incident rate of 9.5 per cent.

**Decrease in overall recordable incident rate** of 9.5 per cent since 2021

### LOST-TIME INJURY RATE*




***Critical Injury Rate:*** Identifies injuries that are more severe and/or have the potential to result in a more serious injury like concussions, fractures and deep lacerations.

The only acceptable target number of injuries is zero. Although a difficult metric to accomplish, our goal is to achieve a rate of zero critical injuries because they have the most serious outcomes. We will continue to take preventative action to mitigate risk and hazards with high injury potential.

** For 2023, the injury statistics were assessed as of Feb. 14, 2024 for the calculation of RIR, LTIR and CIR.*

## *Continuous Improvement*

### Improving the Quality of Safety Data

As part of our evolution in safety management, we now combine multiple data sources. This includes information about medical treatment and wage loss for injured employees from the worker's compensation boards and our own internal incident and injury reporting processes. With this new standard of reporting, we have implemented an enterprise-wide review of injury data, allowing us to create a process for reconciling and reviewing data as well as a data quality dashboard to correct potential errors. This provides an added assurance to the injury data reported across the organization.

### Technology Enhancements to Assess Risk

To support our organizational focus on identifying hazards and assessing risk, we configured an application in our Health and Safety Management System platform to identify the level of risk associated with tasks that individuals are performing. Individuals are involved in the process of identifying critical risk areas and identifying the hazards associated with those tasks. The hazards are ranked by their potential for harm so we can implement the appropriate prevention controls to avoid injury.

### Maintaining Compliance to Legal and Other Requirements

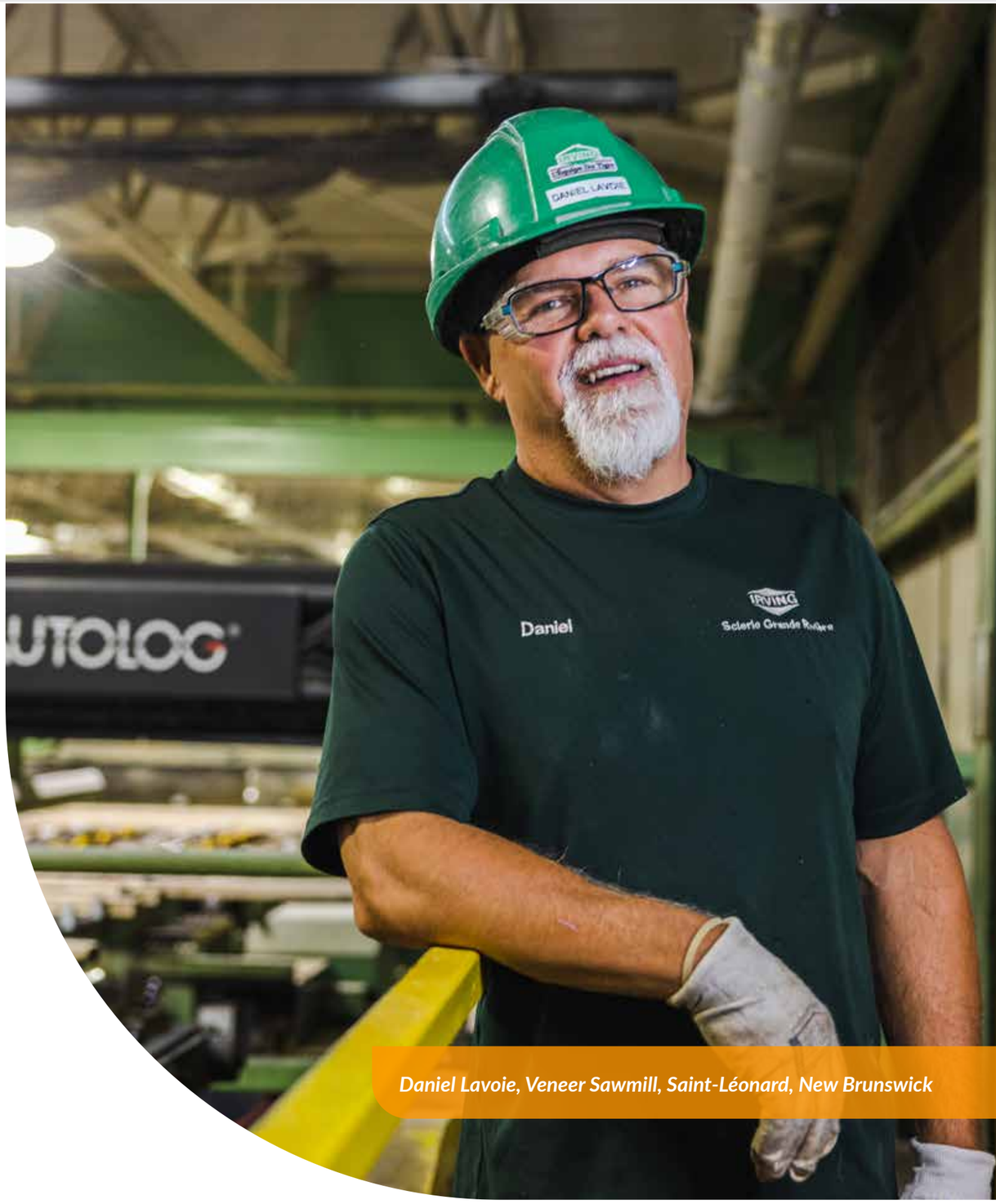
Adhering to the legislative and regulatory requirements is an essential component of our health and safety management system. We use a software to identify the legislative safety requirements applicable to the jurisdictions in which we operate. This system also ensures our requirements are up to date. Our sites are expanding the use of this software and are evaluating and auditing our operational activities to make sure we are compliant. Legislative requirements include procedures for working at heights, working in confined spaces and combustible dust management and explosion prevention, among others.

Across the JDI enterprise in 2023, employees identified 142,134 hazards, which were then entered into the safety management system technology. This identifies a **high level of proactive engagement and action** to make a safer workplace.

### Hazard Identification and Risk Assessment – Employees Actively Participating

When employees and their supervisors participate in the safety system, they take responsibility and ownership for health and safety, which in turn makes workplaces safer.

We encourage our employees to identify workplace hazards and unsafe or dangerous conditions that could cause injuries and to report observations and near misses. We track this using the hazard identification rate, which calculates the percentage of employees that communicate a condition to their supervisor each period. The goal is to increase employee participation and proactively identify and correct conditions with injury-potential.




*Daniel Lavoie, Veneer Sawmill, Saint-Léonard, New Brunswick*

# COMMUNITY ENGAGEMENT

## *Lake Utopia Paper celebrates 50 years*

With a 140-year history, we've established deep roots in the communities where we live and work. In summer 2023, we marked 50 years of operating Lake Utopia Paper in Eastern Charlotte, New Brunswick.

Lake Utopia Paper supports the local rural community through employment and small business opportunities – and has been doing so since 1973. More than 120 people work on the site and the mill supports hundreds of jobs indirectly.

The mill itself dates to 1969 and was constructed by Fundy Forest Industries Limited. J.D. Irving, Limited acquired the facility four years later, and over the succeeding decades replaced or upgraded every section of the mill site itself as well as its processes, with $125 million in capital investments in the last five years alone.

The high-quality corrugating medium produced at the mill is used in cardboard boxes supplied to 25 countries worldwide. The material is made using prime hardwood and is stronger than other grades and uses 30 per cent recycled content.

As demand grows for renewable paper-based packaging in sectors like food and beverage, consumer goods, agriculture and electronics, we're here to meet those needs, helping our communities thrive for generations to come.

*Jim Irving, Dale Chaffey, J.K. Irving*


*Lake Utopia Paper, Eastern Charlotte, New Brunswick*

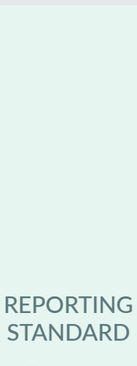
REPORTING STANDARD

✓ GRI 2-29

ASSURED SUBJECT MATTER

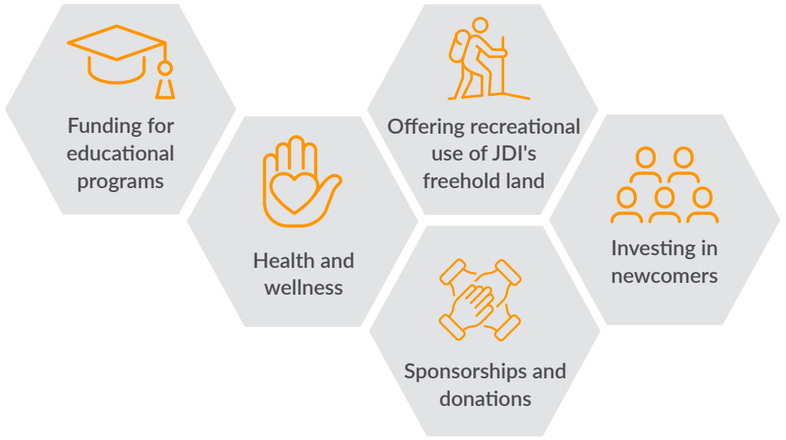
Community Engagement Spend

Strategic SDGs




# COMMUNITY ENGAGEMENT

A well-managed working forest works for customers and communities. Not only do working forests create jobs and produce a consistent supply of renewable materials for the forest products we need, but they also help build community and local economies thanks to population growth, taxes, recreational activities and tourism. Through our community support and engagement, we are committed to making our communities even greater places to live, work and play.




**MAINTAIN OUR COMMUNITY DONATIONS PROGRAM.**

**$176,747 (CAD)** in scholarships granted **+** **$1,004,913 (CAD)*** in charitable donations

**$1,181,660 (CAD) total**
Community Engagement spend in 2023

*This includes donations only related to the Forest Supply Chain.


JDI Helps
Rooted in community!

## *JDI Helps*

In 2023, our companies that make up the Forest Supply Chain donated more than $1 million (CAD) to charitable causes, enabling everything from community service to youth sports. We sponsored events like the Can-Am Crown International Sled Dog Race, the Atlantic Balloon Fiesta in Sussex, New Brunswick and the Tri-Lake Ice Fishing Tournament in Grand Lake, New Brunswick. We believe in giving back to the communities where we operate. Our employees contribute many volunteer hours each year through initiatives like Habitat for Humanity in Macon, Georgia and planting trees with Mission Green Toronto.

## *Growing the Next Generation*

We believe education opens the door to a lifetime of opportunity and helps build strong communities and a robust economy. Investing in the talent of the next generation is important to us. That's why we seek to reach thousands of students of all ages through the educational initiatives we support each year.

Our education initiatives include:

***Investing in local universities and colleges*** – We support local universities and colleges through capital fundraising campaigns, donations and by providing scholarships and supporting education and skilled trade training programs.

***Scholarships*** – Each year we award scholarships to students pursuing post-secondary education whose parents are valued employees.

***PALS (Partners Assisting Local Schools)*** – Our annual support of Partners Assisting Local Schools, the Boys and Girls Club and other similar initiatives goes toward encouraging and inspiring young people to consider continuing their education and growing their careers within their own community. Hundreds of JDI volunteers are now working with students and schools to make a positive impact in the lives of young people. To date, more than 65,000 hours of JDI employee volunteer time have been dedicated to PALS.

*Hired Before Grad: Raymond Hazell, Nova Scotia Woodlands*

## *Discover the Gift of Nature in our Parks*

We welcomed 600,000 visitors to our Irving Nature Park in Saint John, New Brunswick and Irving Eco-Centre at La Dune de Bouctouche, New Brunswick in 2023, with both parks collectively seeing more than 10 million visitors since opening 31 and 26 years ago, respectively. These parks, alongside two other nature parks and many conservation areas, offer free public access. They play a vital role in wildlife habitat and ecosystem protection while providing recreation space for their communities.

The parks are also instrumental in environmental and ecosystem protection. The Irving Nature Park and the Irving Eco-Centre at La Dune de Bouctouche are equipped to offer hands-on lessons in outdoor classrooms as well as park-coordinated tours and outdoor activities.

*Wolastoq Park, Saint John, NB*

*Irving Arboretum, Bouctouche, NB*

*Katherine Langlais became the first woman to win the three-day, 250-mile Can-Am Crown International Sled Dog Race in Fort Kent, Maine in March 2023.*

*Irving Nature Park, Saint John, NB*

*Irving Eco-Centre, La Dune de Bouctouche, NB*

## *Supporting Immigration*

Recognizing the need for skilled workers in key roles, we've invested in newcomer attraction and supports since 2017. In 2023, we brought 167 newcomers plus their families to join our operations in our Sawmills and Woodlands divisions, boosting growth and adding vibrancy to rural communities.

We welcomed **167 newcomers** to in our Sawmills and Woodlands divisions in 2023 alone.

To support newcomers as they settle in our region, we invest in language training, education and transportation alongside New Brunswick settlement agencies. In Chipman, New Brunswick, we've partnered with the Chipman Housing Authority and a local developer to boost the housing supply and provide a place for newcomers to call home. This initiative has yielded the construction of 12 mini homes and six triplex town homes so far, for 30 homes total.

Our efforts to support community growth through immigration continues. Through a partnership with the Government of New Brunswick and the Government of Canada, we expect to settle more than 900 new immigrants with their families by 2025.

*Townhouses built for newcomers in Chipman, New Brunswick.*


*Cameron Giglio, Kevin Bigelow and Ethan Katz at Weston Community Day, Toronto, Ontario*

## *Community Engagement*

We are proud to support events in the communities where we operate, be it through sponsorships, charitable donations, in-kind donations or employee volunteer time and fundraising.

As an active member of the community, we also invite communities to our businesses through tours of our operations and stakeholder meetings and by participating in local events. Our goal is to build relationships with stakeholders, community members and employees to achieve mutual understanding of our operations and impact.

Social media continues to be an essential tool to engage with several key audiences. In 2023, we saw growth across our Irving Woodlands social platforms (Facebook, Instagram and LinkedIn), with total followers reaching more than 54,100.

Our presence on social media grants us the chance to deepen relationships with select communities and stakeholders by sharing engaging and educational content about the working forest and offering the opportunity to connect with us directly.

## *Economic Impact*

We are proud to support the viability of communities by offering diverse employment opportunities and competitive wages and benefits to people who live and work in them. Our investments in capital infrastructure, technology and housing demonstrate a commitment to the long term.

# ETHICS, VALUES & INTEGRITY

## *Networking group promotes women's representation*

We believe our operations are strengthened by diversity and we are always seeking ways to bring more women into fields that have traditionally been male-dominated.

Growing Women Leaders is a cross-divisional, employee-led networking group that grew out of conversations by women in our operations in fall 2022 about a need for more female mentorship in our Sawmills and Woodlands divisions. In 2023, the group held multiple gatherings to facilitate building connections and learning opportunities as well as to highlight women who are working across our operations.

A field day in summer 2023 brought this group out to see a women-led tree planting operation and a mechanical-planting operation, among other activities. The experience provided an invaluable opportunity to observe diverse leadership styles, meet new leaders and learn from different perspectives from women working in the forestry field.

Looking ahead, Growing Women Leaders plans to represent the company at external events and engage with schools to show women and girls the opportunities available to them in forestry and sawmill careers.

As a company, we invest in multiple initiatives that encourage women to seek areas in STEM (science, technology, engineering and math) jobs and skilled trades each year. We partner annually on Girls STEM UP and we support Women in the Woods and New Boots with the MAP Strategic Workforce Series to cultivate awareness and inspire women and girls to pursue careers they might not otherwise consider.


*Girls STEM Up, Fredericton, New Brunswick*

DOUBLY MATERIAL TOPIC

**REPORTING STANDARD**

- ✓ GRI 2-7
- ✓ GRI 2-15
- ✓ GRI 2-27
- ✓ GRI 205-2
- ✓ GRI 205-3
- ✓ GRI 206-1
- ✓ GRI 418-1

**GOVERNANCE**

- Code of Business Conduct
- IT Policy
- Safe & Respectful Workplace
- Drug & Alcohol Policy
- Supplier Social Responsibility Code of Conduct

**ASSURED SUBJECT MATTER**

- Code of Business Conduct Compliance

**STRATEGIC SDGS**

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

# ETHICS, VALUES & INTEGRITY

Our comprehensive approach to ethical business practices and integrity is applied to governance and how we conduct ourselves. We require every employee to complete all training related to their job function and to comply with our governance policies.

Responsibility for our governance and legal compliance is administered by our Vice President Legal in coordination with digital tracking by JDI IT.


### Code of Business Conduct

The Code of Business Conduct is a company policy that applies to all employees. Compliance to the Code of Business Conduct is a condition of employment for all employees whose position empowers them, or may reasonably be perceived as empowering them, to influence company decisions.

## Key topics in our Code of Business Conduct:

Conflicts of Interest • Gifts and Gratuities • Insider and Other Trading • Relationships with Competitors • Business Records • Anti-Corruption and Bribes • Confidentiality • Information Security • Company Property Resources • Whistleblowing

In 2023, **99.5 per cent of all new employees in the Compliance group**[1] within the Forest Supply Chain signed off on the Code of Business Conduct policy as part of their orientation process.[2]

After hiring, all employees with regular JDI network access must reconfirm annually their compliance of the Code of Business Conduct, including any updates to the policy.

### Whistleblowing and Grievance System

We encourage all employees who witness unethical behaviour or harassment at work to report it to their supervisor or management. Those who wish to remain anonymous can report directly to our anonymous JDI Tips Line, See Something – Say Something, which is staffed 24/7 by trained security officers from our in-house security monitoring centre. Contact Information for the Tip Line is contained within the Code of Business Conduct.

All anonymous tips are reviewed and actioned by an independent investigator. Physical security of all buildings and assets is also managed by our professional internal security team, including a team of investigators.

### Maintaining Public Integrity

Keeping integrity and ethical behaviour at the forefront, we are mindful of transparency and remain committed to sharing information with stakeholders.

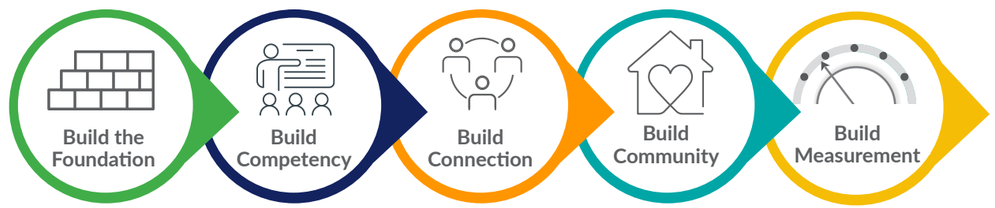
Our approach:

- The Forest Supply Chain will continue to publish a CCC Report annually.
- We regularly meet with stakeholder groups, host open houses and offer tours with our staff.
- We continue to enhance our social media presence to communicate and build relationships with a new, wider audience.
- Our interactions with federal, provincial and state governments are in full compliance with lobbying activity regulations and are reported as required in the applicable lobbyist registry.

## *Diversity, Equity and Inclusion*

We focus on creating an inclusive environment where everyone feels welcomed, appreciated and encouraged to contribute. Our values are rooted in working together and ensuring everyone is treated with fairness and respect, while belonging and inclusion are key components to delivering on our employee experience strategy.

**ROAD MAP TO INCLUSION**




1] This compliance group includes management roles, professional roles and generally includes all the company's salaried (non-hourly) workforce. The compliance group does not include employees whose employment is governed by a collective agreement.
2] In 2022, we reported compliance with signing the Code of Business Conduct based on total new employees in the Forest Supply Chain. These two metrics cannot be compared because of the change in definition.

### Progress in 2023

In 2023, we saw a significant increase in engagement in building organizational competency and measurement of Diversity, Equity and Inclusion (DEI):

- Employees across the Forest Supply Chain completed 1,425 courses towards the DEI Certificate program. A total of 186 certificates were handed out in 2023, triple the number of the year before.
- A newly launched dashboard measures how gender is represented throughout the organization. This provides better data for us to understand what is happening with respect to gender representation across the company.
- We continue to host educational panels on DEI topics such as gender identity and bias, disability awareness, mental health and neurodiversity.

We are committed to expanding the diversity of our workforce, which is why we invest in programs to attract newcomers and underrepresented groups to our organization. Our emphasis on education in the DEI area helps us continue to evolve our work environment so that these groups are engaged and retained in our organization.

**PUBLISH AN ANNUAL CCC REPORT FOR THE FOREST SUPPLY CHAIN.**

*JDI Head Office, Saint John, New Brunswick*

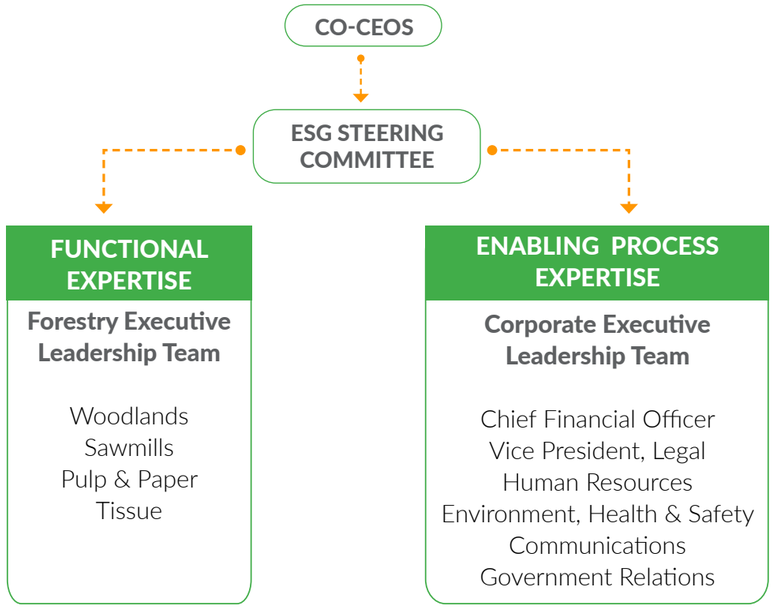

*Gabrion Zellner, Irving Tissue, Macon, Georgia*

# GOVERNANCE & MATERIALITY

Our ESG Steering Committee provides enhanced and formalized oversight over our sustainability strategy and disclosure. Composed of senior corporate leaders and operating executives from each business in the Forest Supply Chain, the committee meets three times annually and reports its progress directly to the co-CEOs.

**Roles and responsibilities of the ESG steering committee**

Executives bring forward the expertise of their divisional management teams. Together, they are responsible for sharing ESG-related information with their management teams to ensure information is communicated to all employees and linked to operating plans for execution.




## Topics Important to ESG Discussions:

Sustainable forest management • Manufacturing • Customer needs • Energy use • Air and water impact • Waste • Operations • Stakeholder expectations • Community partners

Working with the divisional management teams, executives continually identify risks and opportunities in each business, including those associated with climate change. Topics like costs, products, markets, capital projects and the workforce are reviewed annually and quarterly with the co-CEOs. ESG-related risks and opportunities identified in each division are advanced to ESG Steering Committee members and are also reviewed with the co-CEOs during annual budgeting sessions and quarterly performance reviews.

Risks and opportunities in the Supply Chain are identified internally through first-hand experience and engagement with external researchers in various disciplines, such as: forest management, hydrology, genetics, silviculture, pest and wildfire management and engineering disciplines. Guided by internal assessments and the best available science and engineering advice, the members of the executive leadership teams across our Forest Supply Chain direct the investment of capital and human resources into tools and technologies to mitigate the impacts of climate change and react to opportunities.

We are currently in the process of developing both divisional and enterprise-wide risk assessment frameworks to better identify and assess all risks based on the likelihood of occurrence and the scale of financial impact, among other factors that could impact the company.

The Steering Committee is responsible for producing this CCC report annually to ensure our sustainability approach is communicated to our internal and external stakeholders. This reporting process will continue to improve as it evolves and matures.


*Alan Kennedy, Irving Tissue, Saint John, New Brunswick*

## *Materiality and Stakeholders*

The five material topics that make up this report are tied to one of the three pillars: Environment, Social and Governance.

These were identified by internal and external stakeholders and partners during a comprehensive materiality assessment conducted in 2021 by independent, third-party Nanos Research. During this process, a diverse range of individuals and organizations gave input through online surveys and interviews on 18 standard topics.

**The five doubly material topics are:**

1. Sustainable Forest Management
2. Ethics, Integrity & Values
3. Safety
4. Air & Water Quality Management
5. Forest Conservation & Biodiversity

To align with the Task Force on Climate-Related Financial Disclosure (TCFD), we report on climate action, adaptation, greenhouse gas emissions and energy use. We also share highlights from the year across the range of ESG topics and report additional information in the appendix of this report.

The 2021 materiality assessment results continue to guide us, and we monitor all 18 ESG topics. We are committed to refreshing the assessment periodically to ensure our disclosure is aligned with shifting stakeholder priorities. In 2024, we will refresh our materiality assessment to learn if there are changes in priorities within our internal and external stakeholder groups.

**IMPACT ON SOCIETY & THE ENVIRONMENT – EXTERNAL STAKEHOLDERS**

- Customers
- Local Communities
- Banking & Insurance
- Government Regulators
- Academia
- NGOs & ENGOs
- Indigenous Rightsholders
- Suppliers & Contractors

**IMPACT ON ENTERPRISE VALUE – INTERNAL STAKEHOLDERS**

- Divisional Leadership & Finance
- Human Resources
- Woodlands Leadership
- Sawmills Leadership
- Pulp & Paper Leadership
- Consumer Products Leadership

| JDI FOREST SUPPLY CHAIN ESG TOPICS | INDEPENDENT STANDARD GRI* | SASB* | TCFD* |
|---|---|---|---|
| Energy Use & GHG Emissions | ✓ | ✓ | ✓ |
| Air & Water Quality Management | ✓ | ✓ | ✓ |
| Sustainable Forest Management | N/A** | ✓ | ✓ |
| Forest Conservation & Biodiversity | ✓ | ✓ | ✓ |
| Chemical Use | N/A | N/A | N/A |
| Climate Change & Adaptation | ✓ | ✓ | ✓ |
| Waste Reduction & Management | ✓ | N/A | N/A |
| Consumer Packaging | ✓ | ✓ | N/A |
| Safety | ✓ | N/A | N/A |
| Health & Wellness | ✓ | N/A | N/A |
| Diversity, Equity & Inclusion | ✓ | N/A | N/A |
| Attracting, Developing & Retaining Talent | ✓ | N/A | N/A |
| Indigenous Awareness & Inclusion | ✓ | ✓ | N/A |
| Economic Impact, Competitiveness & Innovation | ✓ | N/A | N/A |
| Community Engagement | ✓ | N/A | N/A |
| Ethics, Integrity & Values | ✓ | N/A | N/A |
| Data Privacy & Cybersecurity | ✓ | N/A | N/A |
| Supply Chain & Sourcing Policies | ✓ | ✓ | N/A |

* GRI = Global Reporting Initiative | SASB = Sustainability Accounting Standards Board | TCFD = Task Force on Climate-Related Financial Disclosure
** N/A = not applicable to relevant standard

## Importance of the ESG Topics Map

This chart shows the average importance of ESG topics for internal and external stakeholders. The line represents equal importance among both groups. ESG topics over the line are more important to external stakeholders, while data points under the line are more important to internal stakeholders. Data points further away from the middle line indicate a greater difference of opinion between external and internal stakeholders.


*For both internal and external stakeholders, Sustainable Forest Management (9.4 each); Safety (9.4 and 8.9 respectively); Ethics, Integrity & Values (9.3 each); Air & Water Quality Management (9.1 and 8.9 respectively) and Forest Conservation & Biodiversity (8.9 each) are the most important ESG topics related to the JDI Forest Supply Chain.*


***Maddison Dockum and Jennifer Skerker, Irving Tissue, Fort Edward, New York***

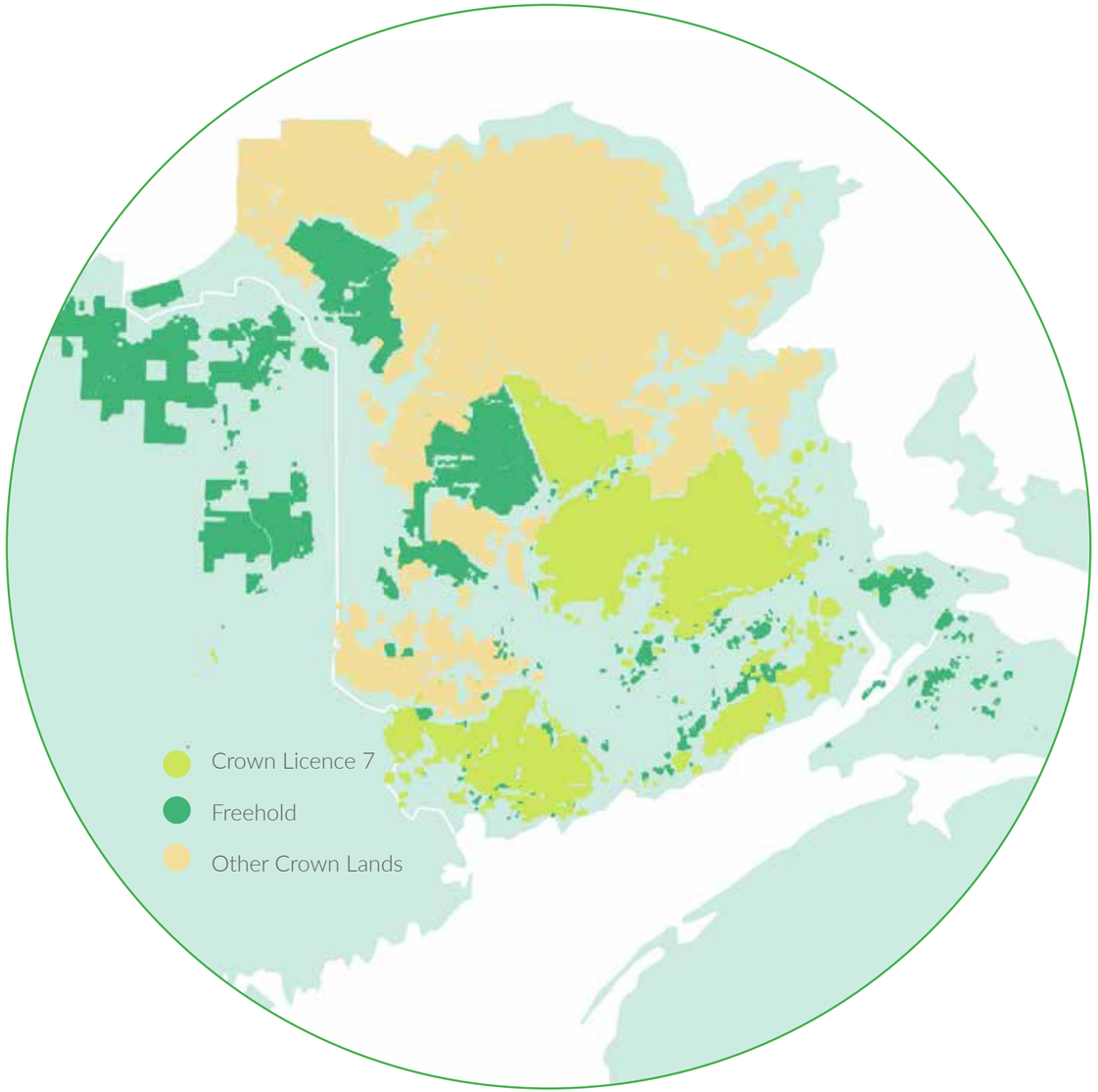
# APPENDIX

*In this appendix you will find the following:*

## ACADIAN FOREST


The forestry operations of J.D. Irving, Limited take place in the Acadian Forest, which is composed of the forests of New Brunswick, Nova Scotia and Maine. The Acadian Forest is characterized by its mix of softwood-dominant, hardwood-dominant and mixed stands.

## FREEHOLD AND NEW BRUNSWICK CROWN LANDS




Freehold lands are privately held lands owned by J.D. Irving, Limited and it affiliates. Crown lands are owned by the Government of New Brunswick and are licenced to forest product companies for 25 years. Crown Licence 7 is managed by J.D. Irving, Limited.

## Task Force On Climate-Related Financial Disclosure Reference Table

Alignment to the disclosure required by the TCFD is incorporated throughout the report. The table below references the disclosure required by the TCFD and where this information is located.

### TCFD REFERENCE GUIDE

| TCFD CATEGORY | Guidance | Report Section | Page |
|---|---|---|---|
| Governance | a. Describe the board's oversight of climate-related risks and opportunities. | Sustainability Governance | 96-97 |
| | b. Describe management's role in assessing and managing climate-related risks and opportunities. | Sustainability Governance | 96-97 |
| Strategy | a. Describe climate-related risks and opportunities the organization has identified over the short term, medium term and long term. | Climate Change & Adaptation<br>GHG Emissions & Energy Use | 66-68, 72 |
| | b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning. | Climate Change & Adaptation<br>GHG Emissions & Energy Use | 66-68, 72 |
| | c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including at 2 °C or lower scenario. | Climate Change & Adaptation | 64-65 |
| Risk Management | a. Describe the organization's processes for identifying and assessing climate related risks. | Sustainability Governance | 97 |
| | b. Describe the organization's processes for managing climate related risks. | Sustainability Governance | 97 |
| | c. Describe how processes for identifying and managing climate-related risks are integrated into the organization's overall risk management. | Sustainability Governance<br>Climate Change & Adaptation | 96-97 |
| Metrics and Targets | a. Disclose the metrics used by the organization to assess climate-related risk and opportunity in line with its strategy and risk management process. | Data Tables:<br>Environment –<br>GHG Emissions<br>Biogenic CO2 Emissions<br>GHG Emission Intensity<br>Energy<br>Energy Intensity<br>Water<br>Water Intensity<br>Trees Planted<br>Forest Harvest & Growth Rates | 117-119,<br>122-125,<br>127-130,<br>132-133 |
| | b. Disclose Scope 1, Scope 2 and if appropriate Scope 3 greenhouse gas emissions and the related risks. | GHG Emissions & Energy Use:<br>2020-2022 GHG Emissions and Removals, GHG Intensity | 69-70,<br>74-75,<br>119-125 |
| | c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets. | GHG Emissions & Energy Use:<br>Reporting to the PAS2060:2014 Standard | 73 |



## GRI Content Index

J.D. Irving, Limited has reported the information cited in this Global Reporting Index (GRI) content index for the period from 1 January 2023 to 31 December 2023 with reference to the GRI Standards. This means that our reporting has referenced selected General Disclosures, as well as selected Topic-Specific Standards we have deemed material. In this GRI Context Index, we list our disclosures with reference to the applicable GRI Standards and the location within the report where the disclosures are addressed. The GRI 1 used for this report is GRI 1: Foundation 2021.

| GRI STANDARD # | INDICATOR NAME | LOCATION (page) |
|---|---|---|
| **GRI 2: GENERAL DISCLOSURES 2021** | | |
| The organization and its sustainability reporting practices | | |
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| GRI 2-2 | Entities included in the organization's sustainability reporting | 6 |
| GRI 2-3 | Reporting period, frequency and contact point | 7 |
| GRI 2-4 | Restatements of information | 143 |
| GRI 2-5 | External assurance | 8, 112-116 |
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| GRI 2-11 | Chair of the highest governing body | 96-97 |
| GRI 2-12 | Role of the highest governance body in overseeing the management of impacts | 96-97 |
| GRI 2-13 | Delegation of responsibility for managing impacts | 96-97 |
| GRI 2-14 | Role of the highest governance body in sustainability reporting | 96-97 |
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| **STAKEHOLDER ENGAGEMENT** | | |
| GRI 2-29 | Approach to stakeholder engagement | 98 |
| GRI 2-30 | Collective bargaining agreements | 141 |
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| GRI 3-1 | Process to determine material topics | 98 |
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| GRI STANDARD # | INDICATOR NAME | LOCATION (page) |
|---|---|---|
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| GRI 206-1 | Legal actions for anti-competitive behaviour, anti-trust and monopoly practices | 141 |
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| **GRI 302: ENERGY 2016** | | |
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| **GRI 303: WATER AND EFFLUENTS 2016** | | |
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| GRI 305-7 | Nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions | 53-54, 120 |
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| **GRI 413: LOCAL COMMUNITIES 2016** | | |
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| GRI 418-1 | Substantial complaints concerning breaches of customer privacy and losses of customer data | 141 |
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| SASB | ACCOUNTING METRIC | LOCATION (page) |
|---|---|---|
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| **GREENHOUSE GAS EMISSIONS** | | |
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| RR-PP-110a.2 | Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets and an analysis of performance against those targets | 69-71, 73 |
| **AIR QUALITY** | | |
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| **WATER MANAGEMENT** | | |
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| RR-PP-140a.2 | Description of water management risks and discussion of strategies and practices to mitigate those risks | 54-59 |
| **SUPPLY CHAIN MANAGEMENT** | | |
| RR-PP-430a.1 | Percentage of wood fibre sourced from: | |
| | 1) third-party certified forestlands and percentage to each standard | 132 |
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| **PULP & PAPER INDUSTRY ACTIVITY METRICS** | | |
| RR-PP-000.A | Pulp production | 133 |
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|---|---|---|
| **FORESTRY MANAGEMENT** | | |
| **ECOSYSTEM SERVICES & IMPACTS** | | |
| RR-FM-160a.1 | Area of forestland certified to a third-party forest management standard, percentage certified to each standard | 132 |
| RR-FM-160a.2 | Area of forestland with protected conservation status | 132-133 |
| RR-FM-160a.3 | Area of forestland in endangered species habitat | 133 |
| RR-FM-160a.4 | Description of approach to optimizing opportunities from ecosystem services provided by forestlands | 40,42,44-45 |
| **RIGHTS OF INDIGENOUS PEOPLES** | | |
| RR-FM-210a.2 | Description of engagement processes and due diligence practices with respect to human rights, indigenous rights and the local community | 84-89, 97-98 |
| **CLIMATE CHANGE ADAPTATION** | | |
| RR-FM-450a.1 | Description of strategy to manage opportunities for and risks to forest management and timber production presented by climate change | 63-68, 71-72 |
| **FORESTRY MANAGEMENT ACTIVITY METRICS** | | |
| RR-FM-000.A | Area of forestland owned, leased and/or managed by the entity | 6, 132 |
| RR-FM-000.B | Aggregate standing timber inventory | 133 |
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## INDEPENDENT PRACTITIONER'S LIMITED ASSURANCE REPORT

To Management of J.D. Irving, Limited.

We have undertaken a limited assurance engagement on certain performance metrics of J.D. Irving, Limited (the "Entity"), included in the accompanying 2023 J.D. Irving, Limited Climate, Conversation & Community Impact Report (the "Report"), for the year ended December 31, 2023.

The scope of our limited assurance engagement, as agreed with management, comprises the following performance metrics (collectively, the "subject matter information") and criteria:

| Subject matter information | Reported amounts and units | Page number in the Report | Applicable criteria and basis of presentation |
|---|---|---|---|
| Net Forest Products Value Chain Emissions / (Removals) | (811,000) tCO2e | Page 75 | • The World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol – Corporate Accounting and Reporting Standard Revised Edition;<br>• GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard;<br>• The Corporate Value Chain (Scope 3) Accounting and Reporting Standard as applicable to Scope 3 emission categories 1-8; and,<br>• Internally developed criteria<br><br>Presented as:<br>• Manufacturing and Supply Chain Emissions for the year ended December 31, 2023 (scope 1, 2 and 3).<br>• Harvested Wood Product (HWP) Transfer plus Net Forest Growth (removal) for the year ended December 31, 2023.<br>• Net Forest Products Value Chain Emissions / (Removals) for the year ended December 31, 2023. |
| Lands under Irving management | 2,376,627 Ha | Page 24 | Internally developed criteria.<br><br>Presented as the sum of freehold land and Crown land, managed by the Entity as at December 31, 2023. |
| Percentage of the forested landbase harvested | 1.5% | Page 25 | Internally developed criteria.<br><br>Presented as the area harvested during 2023 as a percentage of total forested lands under management by the Entity as at December 31, 2023. |





| Subject matter information | Reported amounts and units | Page number in the Report | Applicable criteria and basis of presentation |
|---|---|---|---|
| Conservation forest area | 533,911 Ha | Page 49 | Internally developed criteria.<br><br>Presented as the area of freehold land and Crown land managed by the Entity which is maintained for the primary purpose of conservation as at December 31, 2023. |
| Percentage of conservation forest | 25% | Page 48 | Internally developed criteria.<br><br>Presented as the conservation forest area as a percentage of total productive forest managed by the Entity as at December 31, 2023. |
| Recordable incident rate | 1.9 per 200,000 hours | Page 79 | Internally developed criteria.<br><br>Presented as the total number of employee recordable injuries during 2023 per 200,000 hours worked. |
| Lost-time injury rate | 0.8 per 200,000 hours | Page 79 | Internally developed criteria.<br><br>Presented as the total number of employee lost time injuries during 2023 per 200,000 hours worked. |
| Critical injury rate | 0.12 per 200,000 hours | Page 79 | Internally developed criteria.<br><br>Presented as the total number of employee critical injuries during 2023 per 200,000 hours worked. |
| Percentage of new employees in the Compliance Group who have signed the Code of Conduct | 99.5% | Page 93 | Internally developed criteria.<br><br>Presented as the number of new employees in the Forest Supply Chain Compliance Group, who have signed the Code of Conduct divided by the total number of new employees in the Forest Supply Chain Compliance Group. |
| Community engagement (spend $) | $1,181,660 | Page 84 | Internally developed criteria.<br><br>Presented as the total Entity spend ($) on scholarships and donations for the year ended December 31, 2023. |

Other than as described in the preceding table, we did not perform assurance procedures on the remaining information included in the Report, and accordingly, we do not express a conclusion on this information.

There are no mandatory requirements for the preparation or presentation of the subject matter information. As such, the Entity has applied the Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard (Revised Edition) in relation to greenhouse gas emissions, and internally developed criteria for the remaining subject matter information. The criteria are further described in the Report ("applicable criteria").

**Management's Responsibility**

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

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. This responsibility includes determining the Entity's objectives in respect of sustainability performance and reporting, identifying stakeholders and material issues, and selecting or developing appropriate criteria.

**Our Responsibility**

Our responsibility is to express a limited assurance conclusion on the subject matter information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with Canadian Standard on Assurance Engagements ("CSAE") 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information* and CSAE 3410, *Assurance Engagements on Greenhouse Gas Statements*. These standards require that we plan and perform our engagement to obtain limited assurance about whether the subject matter information is free from material misstatement.

A limited assurance engagement involves assessing the suitability of the criteria used by the Entity in preparing the subject matter information in the circumstances of the engagement, assessing the risks of material misstatement, whether due to fraud or error, and responding to the assessed risks as necessary in the circumstances.

We exercised professional judgment and maintained professional skepticism throughout the engagement. Our procedures were designed and performed to obtain evidence that is sufficient and appropriate to provide a basis for our conclusion. In carrying out our engagement, we:

- Evaluated the suitability of the Entity's use of the criteria, as the basis for preparing the subject matter information in the circumstances;
- Through inquiries, obtained an understanding of the Entity's control environment, processes and systems relevant to the preparation of the subject matter information, but did not evaluate the design of particular control activities, obtain evidence about their implementation or test their operating effectiveness;
- Inquired with relevant staff at the corporate and site level to understand the data collection and reporting processes for the subject matter information;



J.D. Irving, Limited
Limited Assurance Report
June 26, 2024

- Evaluated whether the Entity's methods for developing estimates are appropriate and had been consistently applied, but our procedures did not include testing the data on which the estimates are based or separately developing our own estimates against which to evaluate the Entity's estimates;
- Inquired of management regarding key assumptions and, where relevant, the re-performance of calculations on a sample basis;
- Inspected a limited number of items to, or from, supporting records, as appropriate; and,
- Considered the presentation and disclosure of the subject matter information.

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.

**Our Independence and Quality Management**

We have complied with the independence and other ethical requirements of 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. It is important to read the Entity's reporting methodology disclosed in 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 Entity's subject matter information for the year ended December 31, 2023, is not prepared, in all material respects, in accordance with the applicable criteria.

Our conclusion on the subject matter information does not extend to any other information, reports or documents that accompany, are presented with, or contain the subject matter information and our assurance report.

J.D. Irving, Limited
Limited Assurance Report
June 26, 2024

**Restriction on Use**

Our report is intended solely for use by J.D. Irving, Limited for the purpose(s) set out in our engagement agreement. Our report may not be suitable for any other purpose(s) and is not intended for use or reliance by any third parties. While KPMG LLP acknowledges that disclosure of our report may be made, in full, by J.D. Irving, Limited in the 2023 J.D. Irving, Limited Climate, Conversation and Community Impact Report, KPMG LLP does not assume or accept any responsibility or liability to any third party in connection with the disclosure of our report.

KPMG LLP

Chartered Professional Accountants

June 26, 2024

Vancouver, Canada

# DATA TABLES

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| ENVIRONMENT | | | | | |
| **GREENHOUSE GAS EMISSIONS** | | | | | |
| **Scope 1 emissions, Total** | **t $CO_2e$** | **453,067** | **553,157** | **516,296** | |
| *by division* | | | | | |
| Woodlands | t $CO_2e$ | 9,932 | 11,532 | 12,218 | |
| Sawmills | t $CO_2e$ | 37,702 | 68,387 | 32,787 | a |
| Pulp and paper | t $CO_2e$ | 171,776 | 208,862 | 196,374 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 66,769 | 77,768 | 73,589 | |
| Irving Paper Limited | t $CO_2e$ | 84,647 | 105,807 | 98,581 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 20,360 | 25,287 | 23,894 | |
| Irving Personal Care | t $CO_2e$ | 76 | 77 | 134 | b |
| Irving Tissue | t $CO_2e$ | 233,581 | 264,300 | 274,784 | c |
| **Scope 2 emissions (location-based), Total** | **t $CO_2e$** | **585,656** | **662,719** | **551,078** | |
| *by division* | | | | | |
| Woodlands | t $CO_2e$ | 979 | 1,187 | 1,023 | |
| Sawmills | t $CO_2e$ | 60,946 | 64,315 | 56,471 | a |
| Pulp and paper | t $CO_2e$ | 379,049 | 406,649 | 308,875 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 18,088 | 20,984 | 13,480 | |
| Irving Paper Limited | t $CO_2e$ | 322,883 | 344,043 | 261,141 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 38,078 | 41,622 | 33,785 | |
| Irving Personal Care | t $CO_2e$ | 5,653 | 4,788 | 3,402 | b |
| Irving Tissue | t $CO_2e$ | 139,028 | 185,781 | 181,307 | c |
| **Scope 3 emissions, Total** | **t $CO_2e$** | **998,229** | **908,838** | **988,605** | |
| *by division* | | | | | |
| Woodlands | t CO2e | 150,753 | 139,110 | 149,316 | |
| Sawmills | t $CO_2e$ | 140,292 | 132,913 | 124,113 | |
| Pulp and paper | t $CO_2e$ | 242,926 | 223,571 | 338,829 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 79,216 | 71,901 | 116,958 | |
| Irving Paper Limited | t $CO_2e$ | 127,917 | 117,663 | 182,019 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 35,318 | 33,424 | 39,133 | |
| Irving Personal Care | t $CO_2e$ | 101,029 | 61,781 | 45,510 | b |
| Irving Tissue | t $CO_2e$ | 363,228 | 351,462 | 330,835 | c |
| **Scope 1, 2 and 3 emissions, Total** | **t $CO_2e$** | **2,036,952** | **2,124,715** | **2,055,979** | |
| *by division* | | | | | |
| Woodlands | t $CO_2e$ | 161,664 | 151,829 | 162,557 | |
| Sawmills | t $CO_2e$ | 238,941 | 265,615 | 213,371 | a |
| Pulp and paper | t $CO_2e$ | 793,752 | 839,082 | 844,079 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 164,073 | 170,654 | 204,027 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| Irving Paper Limited | t $CO_2e$ | 535,447 | 567,513 | 541,741 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 93,756 | 100,333 | 96,811 | |
| Irving Personal Care | t $CO_2e$ | 106,758 | 66,646 | 49,046 | b |
| Irving Tissue | t $CO_2e$ | 735,837 | 801,543 | 786,926 | c |
| **Scope 1 and 2 emissions, Total** | **t CO2e** | **1,038,723** | **1,215,877** | **1,067,374** | |
| *by division* | | | | | |
| Woodlands | t $CO_2e$ | 10,911 | 12,719 | 13,241 | |
| Sawmills | t $CO_2e$ | 98,649 | 132,701 | 89,258 | a |
| Pulp and paper | t $CO_2e$ | 550,825 | 615,511 | 505,249 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 84,857 | 98,752 | 87,069 | |
| Irving Paper Limited | t $CO_2e$ | 407,530 | 449,850 | 359,722 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 58,438 | 66,909 | 57,678 | |
| Irving Personal Care | t $CO_2e$ | 5,729 | 4,865 | 3,535 | b |
| Irving Tissue | t $CO_2e$ | 372,609 | 450,081 | 456,091 | c |
| **(REMOVAL)/EMISSION FROM HARVESTED WOOD PRODUCTS** | | | | | |
| **(Removal)/Emission from harvested wood products, Total** | **t $CO_2e$** | **(1,047,604)** | **(976,358)** | **(1,048,441)** | |
| (Removal)/Emission from lumber | t $CO_2e$ | (929,423) | (883,750) | (894,457) | |
| (Removal)/Emission from paper | t $CO_2e$ | (15,751) | 13,006 | 22,815 | |
| (Removal)/Emission from pulp | t $CO_2e$ | (12,846) | 35,367 | (54,362) | |
| (Removal)/Emission from tissue | t $CO_2e$ | (105,020) | (144,119) | (117,416) | |
| (Removal)/Emission from corrugating medium | t $CO_2e$ | 15,436 | 3,138 | (5,021) | |
| **FOREST CARBON EMISSIONS AND (REMOVAL)** | | | | | |
| (Removal)/Emission from freehold | t $CO_2e$ | (2,476,710) | (2,364,100) | (1,822,800) | d |
| (Removal)/Emission from Crown Licence 7 | t $CO_2e$ | (1,556,092) | (2,547,400) | (2,351,800) | |
| (Removal)/Emission from peat bog land use change | t $CO_2e$ | 0 | 0 | 3,727 | e |
| **NET CARBON FOOTPRINT** | | | | | |
| Net carbon footprint | t $CO_2e$ | (1,488,292) | (1,215,743) | (811,535) | d |
| **BIOGENIC $CO_2$ EMISSIONS** | | | | | |
| **Biogenic $CO_2$ emissions, Total** | | **1,340,174** | **1,244,178** | **1,343,178** | |
| *by division* | t $CO_2e$ | | | | |
| Woodlands | t $CO_2e$ | 0 | 0 | 0 | |
| Sawmills | t $CO_2e$ | 237,911 | 209,736 | 297,868 | |
| Pulp and paper | t $CO_2e$ | 1,102,263 | 1,034,442 | 1,045,310 | |
| Irving Pulp & Paper, Limited | t $CO_2e$ | 1,018,250 | 954,805 | 965,553 | |
| Irving Paper Limited | t $CO_2e$ | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | t $CO_2e$ | 84,013 | 79,636 | 79,757 | |
| Irving Personal Care | t $CO_2e$ | 0 | 0 | 0 | |
| Irving Tissue | t $CO_2e$ | 0 | 0 | 0 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **GREENHOUSE GAS EMISSIONS INTENSITY** | | | | | |
| **Scope 1 emissions intensity, Total** | **kg $CO_2e$ / t product** | **35.9** | **48.1** | **40.7** | |
| *by divison* | | | | | |
| Woodlands | kg $CO_2e$ / t product | 1.5 | 2.1 | 1.9 | |
| Sawmills | kg $CO_2e$ / t product | 7.9 | 14.8 | 6.8 | |
| Pulp and paper | kg $CO_2e$ / t product | 191.4 | 234.0 | 218.6 | |
| Irving Personal Care | kg $CO_2e$ / t product | 3.7 | 5.5 | 11.1 | |
| Irving Tissue | kg $CO_2e$ / t product | 715.8 | 723.2 | 744.7 | |
| **Scope 2 emissions intensity, Total** | **kg $CO_2e$ / t product** | **46.4** | **57.6** | **43.5** | |
| *by division* | | | | | |
| Woodlands | kg $CO_2e$ / t product | 0.1 | 0.2 | 0.2 | |
| Sawmills | kg $CO_2e$ / t product | 12.7 | 13.9 | 11.7 | |
| Pulp and paper | kg $CO_2e$ / t product | 422.4 | 455.6 | 343.8 | |
| Irving Personal Care | kg $CO_2e$ / t product | 272.7 | 342.2 | 282.9 | |
| Irving Tissue | kg $CO_2e$ / t product | 426.0 | 508.4 | 491.3 | |
| **Scope 3 emissions intensity, Total** | **kg $CO_2e$ / t product** | **79.1** | **79.0** | **78.0** | |
| *by division* | kg $CO_2e$ / t product | | | | |
| Woodlands | kg $CO_2e$ / t product | 23.0 | 24.8 | 22.8 | |
| Sawmills | kg $CO_2e$ / t product | 29.2 | 28.8 | 25.6 | |
| Pulp and paper | kg $CO_2e$ / t product | 270.7 | 250.5 | 377.1 | |
| Irving Personal Care | kg $CO_2e$ / t product | 4,828.1 | 4,415.3 | 3,784.9 | |
| Irving Tissue | kg $CO_2e$ / t product | 1,113.1 | 961.8 | 896.6 | |
| **Scope 1 and 2 emissions intensity, Total** | **kg $CO_2e$ / t product** | **82.4** | **105.7** | **84.2** | |
| *by division* | | | | | |
| Woodlands | kg $CO_2e$ / t product | 1.7 | 2.3 | 2.0 | |
| Sawmills | kg $CO_2e$ / t product | 20.6 | 28.7 | 18.4 | |
| Pulp and paper | kg $CO_2e$ / t product | 613.8 | 689.7 | 562.4 | |
| Irving Personal Care | kg $CO_2e$ / t product | 276.3 | 347.7 | 294.0 | |
| Irving Tissue | kg $CO_2e$ / t product | 1,141.8 | 1,231.6 | 1,236.0 | |
| **Scope 1, 2 and 3 emissions intensity, Total** | **kg $CO_2e$ / t product** | **161.5** | **184.7** | **162.2** | |
| *by division* | | | | | |
| Woodlands | kg $CO_2e$ / t product | 24.6 | 27.0 | 24.8 | |
| Sawmills | kg $CO_2e$ / t product | 49.8 | 57.5 | 44.1 | |
| Pulp and paper | kg $CO_2e$ / t product | 884.5 | 940.2 | 939.5 | |
| Irving Personal Care | kg $CO_2e$ / t product | 5,104.5 | 4,762.9 | 4,078.9 | |
| Irving Tissue | kg $CO_2e$ / t product | 2,254.9 | 2,193.4 | 2,132.6 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| OTHER AIR EMISSIONS | | | | | |
| **Nitrous oxide (NOx), Total** | **Tonnes** | **1,774** | **1,779** | **1,985** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 300 | 288 | 375 | |
| Pulp and paper | Tonnes | 1,292 | 1,283 | 1,393 | |
| Irving Pulp & Paper, Limited | Tonnes | 963 | 927 | 1,031 | |
| Irving Paper Limited | Tonnes | 180 | 200 | 207 | |
| Lake Utopia Paper Limited | Tonnes | 149 | 157 | 155 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | |
| Irving Tissue | Tonnes | 182 | 208 | 216 | |
| **Sulphur dioxide (SOx), Total** | **Tonnes** | **1,259** | **1,623** | **1,218** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 247 | 457 | 218 | |
| Pulp and paper | Tonnes | 1,011 | 1,165 | 999 | |
| Irving Pulp & Paper, Limited | Tonnes | 465 | 491 | 457 | |
| Irving Paper Limited | Tonnes | 23 | 53 | 22 | |
| Lake Utopia Paper Limited | Tonnes | 523 | 620 | 520 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | |
| Irving Tissue | Tonnes | 1 | 1 | 1 | |
| **Particulate matter (PM), Total** | **Tonnes** | **2,145** | **1,928** | **2,140** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 1,923 | 1,786 | 1,951 | |
| Pulp and paper | Tonnes | 209 | 126 | 172 | |
| Irving Pulp & Paper, Limited | Tonnes | 184 | 99 | 145 | |
| Irving Paper Limited | Tonnes | 6 | 7 | 6 | |
| Lake Utopia Paper Limited | Tonnes | 20 | 20 | 20 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | |
| Irving Tissue | Tonnes | 13 | 16 | 17 | |
| **Volitile Organic Compounds (VOCs), Total** | **Tonnes** | **1,033** | **1,074** | **1,064** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 546 | 549 | 578 | |
| Pulp and paper | Tonnes | 310 | 301 | 296 | |
| Irving Pulp & Paper, Limited | Tonnes | 209 | 200 | 202 | |
| Irving Paper Limited | Tonnes | 45 | 46 | 46 | |
| Lake Utopia Paper Limited | Tonnes | 55 | 55 | 48 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | |
| Irving Tissue | Tonnes | 178 | 224 | 190 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| ENVIRONMENTAL COMPLIANCE | | | | | |
| **Odour complaints, Total** | **#** | **22** | **7** | **3** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 22 | 7 | 3 | |
| Irving Pulp & Paper, Limited | # | 5 | 3 | 3 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 17 | 4 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| **Environmental fines/convictions, Total** | **#** | **0** | **0** | **0** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 0 | 0 | 0 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 0 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| **BOD non-compliances, Total** | **#** | **0** | **0** | **0** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 0 | 0 | 0 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 0 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| **TSS non-compliances, Total** | **#** | **0** | **0** | **0** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 0 | 0 | 0 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 0 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Trout toxicity failiures, Total** | **#** | **2** | **1** | **5** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 2 | 1 | 5 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 4 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 2 | 1 | 1 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| **Water discharge non-compliances, Total** | **#** | **2** | **1** | **5** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 2 | 1 | 5 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 4 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 2 | 1 | 1 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| **ENERGY** | | | | | |
| **Direct and indirect energy consumption, Total** | **Gigajoules** | **30,483,182** | **32,319,497** | **34,296,243** | f |
| *by division* | | | | | |
| Woodlands | Gigajoules | 158,630 | 184,518 | 196,004 | |
| Sawmills | Gigajoules | 4,098,614 | 4,172,716 | 4,819,615 | f |
| Pulp and paper | Gigajoules | 19,064,711 | 19,810,697 | 20,445,302 | f |
| Irving Pulp & Paper, Limited | Gigajoules | 11,560,501 | 11,896,896 | 12,664,917 | f |
| Irving Paper Limited | Gigajoules | 5,638,266 | 5,957,346 | 5,805,059 | |
| Lake Utopia Paper Limited | Gigajoules | 1,864,726 | 1,954,374 | 1,963,758 | f |
| Irving Personal Care | Gigajoules | 71,740 | 57,165 | 53,604 | b,f |
| Irving Tissue | Gigajoules | 7,089,488 | 8,094,401 | 8,781,717 | f |
| **Direct energy consumption, Total** | **Gigajoules** | **23,271,620** | **24,604,015** | **25,340,678** | f |
| *by division* | | | | | |
| Woodlands | Gigajoules | 146,435 | 170,689 | 180,702 | |
| Sawmills | Gigajoules | 3,416,670 | 3,475,858 | 4,077,827 | f |
| Pulp and paper | Gigajoules | 14,375,341 | 15,088,642 | 14,952,012 | f |
| Irving Pulp & Paper, Limited | Gigajoules | 11,335,958 | 11,653,216 | 11,602,592 | f |
| Irving Paper Limited | Gigajoules | 1,630,380 | 1,962,325 | 1,887,949 | |
| Lake Utopia Paper Limited | Gigajoules | 1,407,785 | 1,471,020 | 1,456,990 | f |
| Irving Personal Care | Gigajoules | 1,565 | 1,562 | 2,581 | b,f |
| Irving Tissue | Gigajoules | 5,331,610 | 5,867,264 | 6,127,556 | f |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Direct energy consumption - biomass, Total** | **Gigajoules** | **14,238,095** | **13,994,754** | **15,149,652** | g |
| *by division* | | | | | |
| Woodlands | Gigajoules | 0 | 0 | 0 | |
| Sawmills | Gigajoules | 2,942,418 | 2,591,133 | 3,680,329 | |
| Pulp and paper | Gigajoules | 11,295,677 | 11,403,621 | 11,469,323 | |
| Irving Pulp & Paper, Limited | Gigajoules | 10,249,605 | 10,349,247 | 10,404,666 | |
| Irving Paper Limited | Gigajoules | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | Gigajoules | 1,046,072 | 1,054,374 | 1,064,657 | |
| Irving Personal Care | Gigajoules | 0 | 0 | 0 | |
| Irving Tissue | Gigajoules | 0 | 0 | 0 | |
| **Indirect energy consumption, Total** | **Gigajoules** | **7,211,562** | **7,715,482** | **8,955,564** | |
| *by division* | | | | | |
| Woodlands | Gigajoules | 12,195 | 13,829 | 15,303 | |
| Sawmills | Gigajoules | 681,944 | 696,858 | 741,788 | |
| Pulp and paper | Gigajoules | 4,689,370 | 4,722,055 | 5,493,290 | |
| Irving Pulp & Paper, Limited | Gigajoules | 224,543 | 243,680 | 1,062,325 | |
| Irving Paper Limited | Gigajoules | 4,007,886 | 3,995,021 | 3,917,110 | |
| Lake Utopia Paper Limited | Gigajoules | 456,941 | 483,354 | 506,768 | |
| Irving Personal Care | Gigajoules | 70,175 | 55,603 | 51,023 | b |
| Irving Tissue | Gigajoules | 1,757,878 | 2,227,137 | 2,654,161 | |
| **Electrical energy produced on site, Total** | **Gigajoules** | **1,192,200** | **1,151,868** | **1,321,312** | |
| *by division* | | | | | |
| Woodlands | Gigajoules | 0 | 0 | 0 | |
| Sawmills | Gigajoules | 26,560 | 9,025 | 13,041 | |
| Pulp and paper | Gigajoules | 735,359 | 739,218 | 860,127 | |
| Irving Pulp & Paper, Limited | Gigajoules | 735,359 | 739,218 | 860,127 | |
| Irving Paper Limited | Gigajoules | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | Gigajoules | 0 | 0 | 0 | |
| Irving Personal Care | Gigajoules | 0 | 0 | 0 | b |
| Irving Tissue | Gigajoules | 430,281 | 403,625 | 448,144 | |
| **Percentage of energy from electric grid, Total** | **%** | **23.7** | **23.9** | **22.3** | |
| *by division* | | | | | |
| Woodlands | % | 7.7 | 7.5 | 7.8 | |
| Sawmills | % | 16.9 | 16.7 | 15.1 | |
| Pulp and paper | % | 24.7 | 23.9 | 22.7 | |
| Irving Pulp & Paper, Limited | % | 2.0 | 2.1 | 1.6 | |
| Irving Paper Limited | % | 71.1 | 67.1 | 67.5 | |
| Lake Utopia Paper Limited | % | 24.5 | 24.7 | 25.8 | |
| Irving Personal Care | % | 97.8 | 97.3 | 95.2 | b |
| Irving Tissue | % | 24.8 | 27.5 | 25.1 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Percentage of energy from renewable sources, Total** | **%** | **54.8** | **55.8** | **57.9** | |
| *by division* | | | | | |
| Woodlands | % | 2.0 | 2.3 | 2.5 | |
| Sawmills | % | 76.9 | 67.9 | 81.4 | |
| Pulp and paper | % | 65.7 | 64.9 | 66.9 | |
| Irving Pulp & Paper, Limited | % | 89.2 | 88.0 | 88.7 | |
| Irving Paper Limited | % | 19.0 | 20.1 | 21.1 | |
| Lake Utopia Paper Limited | % | 62.0 | 61.0 | 62.0 | |
| Irving Personal Care | % | 25.2 | 29.5 | 29.8 | b |
| Irving Tissue Saint John Mill | % | 54.7 | 50.8 | 31.3 | |
| **Percentage of energy from own electrical generation, Total** | **%** | **3.9** | **3.6** | **3.9** | |
| *by division* | | | | | |
| Woodlands | % | 0.0 | 0.0 | 0.0 | |
| Sawmills | % | 0.7 | 0.2 | 0.3 | |
| Pulp and paper | % | 3.9 | 3.7 | 4.2 | |
| Irving Pulp & Paper, Limited | % | 6.4 | 6.2 | 6.8 | |
| Irving Paper Limited | % | 0.0 | 0.0 | 0.0 | |
| Lake Utopia Paper Limited | % | 0.0 | 0.0 | 0.0 | |
| Irving Personal Care | % | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue Saint John Mill | % | 0.0 | 0.0 | 0.0 | |
| **ENERGY INTENSITY** | | | | | |
| **Direct energy consumption intensity, Total** | | | | | |
| *by divison* | | | | | |
| Woodlands | Gigajoules / t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | Gigajoules / t product | 0.7 | 0.8 | 0.8 | |
| Pulp and paper | Gigajoules / t product | 16.0 | 16.9 | 16.6 | |
| Irving Personal Care | Gigajoules / t product | 0.1 | 0.1 | 0.2 | b |
| Irving Tissue | Gigajoules / t product | 18.1 | 16.8 | 16.8 | |
| **Indirect energy consumption intensity, Total** | | | | | |
| *by divison* | | | | | |
| Woodlands | Gigajoules / t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | Gigajoules / t product | 0.1 | 0.2 | 0.2 | |
| Pulp and paper | Gigajoules / t product | 5.2 | 5.3 | 6.1 | |
| Irving Personal Care | Gigajoules / t product | 3.4 | 4.0 | 4.2 | b |
| Irving Tissue | Gigajoules / t product | 6.0 | 6.4 | 7.3 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Direct and indirect energy consumption intensity, Total** | | | | | |
| *by divison* | | | | | |
| Woodlands | Gigajoules / t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | Gigajoules / t product | 0.8 | 0.9 | 1.0 | |
| Pulp and paper | Gigajoules / t product | 21.2 | 22.2 | 22.8 | |
| Irving Personal Care | Gigajoules / t product | 3.5 | 4.1 | 4.5 | b |
| Irving Tissue | Gigajoules / t product | 24.1 | 23.1 | 24.0 | |
| **WASTE** | | | | | |
| **Weight of waste generated, Total** | **Tonnes** | **253,505** | **279,831** | **321,985** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 125,246 | 132,154 | 168,771 | |
| Pulp and paper | Tonnes | 107,887 | 119,104 | 119,021 | |
| Irving Pulp & Paper, Limited | Tonnes | 22,276 | 25,369 | 25,843 | |
| Irving Paper Limited | Tonnes | 52,656 | 55,626 | 55,095 | |
| Lake Utopia Paper Limited | Tonnes | 32,954 | 38,109 | 38,083 | |
| Irving Personal Care | Tonnes | 1,153 | 791 | 571 | b |
| Irving Tissue | Tonnes | 19,219 | 27,782 | 33,622 | |
| **Hazardous waste generated, Total** | **Tonnes** | **474** | **821** | **335** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 49 | 59 | 49 | |
| Pulp and paper | Tonnes | 1 | 161 | 22 | |
| Irving Pulp & Paper, Limited | Tonnes | 1 | 161 | 19 | |
| Irving Paper Limited | Tonnes | 0 | 0 | 3 | |
| Lake Utopia Paper Limited | Tonnes | 0 | 0 | 0 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | b |
| Irving Tissue | Tonnes | 421 | 439 | 244 | |
| **Non-hazardous waste generated, Total** | **Tonnes** | **253,033** | **279,172** | **321,669** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 125,197 | 132,095 | 168,722 | |
| Pulp and paper | Tonnes | 107,885 | 118,942 | 118,998 | |
| Irving Pulp & Paper, Limited | Tonnes | 22,275 | 25,207 | 25,824 | |
| Irving Paper Limited | Tonnes | 52,656 | 55,626 | 55,092 | |
| Lake Utopia Paper Limited | Tonnes | 32,954 | 38,109 | 38,083 | |
| Irving Personal Care | Tonnes | 1,153 | 791 | 571 | b |
| Irving Tissue | Tonnes | 18,798 | 27,344 | 33,378 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Weight of waste sent to landfill, Total** | **Tonnes** | **104,266** | **104,239** | **140,387** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 90,805 | 93,773 | 128,925 | |
| Pulp and paper | Tonnes | 3,785 | 4,056 | 5,960 | |
| Irving Pulp & Paper, Limited | Tonnes | 1,001 | 1,041 | 2,463 | |
| Irving Paper Limited | Tonnes | 279 | 427 | 424 | |
| Lake Utopia Paper Limited | Tonnes | 2,506 | 2,587 | 3,073 | |
| Irving Personal Care | Tonnes | 841 | 545 | 389 | b |
| Irving Tissue | Tonnes | 8,834 | 5,866 | 5,113 | |
| **Weight of waste diverted from disposal, Total** | **Tonnes** | **148,767** | **174,933** | **181,282** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 34,391 | 38,322 | 39,796 | |
| Pulp and paper | Tonnes | 104,099 | 114,887 | 113,039 | |
| Irving Pulp & Paper, Limited | Tonnes | 21,274 | 24,166 | 23,361 | |
| Irving Paper Limited | Tonnes | 52,377 | 55,199 | 54,668 | |
| Lake Utopia Paper Limited | Tonnes | 30,448 | 35,522 | 35,010 | |
| Irving Personal Care | Tonnes | 312 | 246 | 182 | b |
| Irving Tissue | Tonnes | 9,964 | 21,478 | 28,265 | |
| **Percentage of non-hazardous sent to landfill, Total** | **%** | **41.21** | **37.34** | **43.64** | |
| *by division* | | | | | |
| Woodlands | % | 0.0 | 0.0 | 0.0 | |
| Sawmills | % | 72.5 | 71.0 | 76.4 | |
| Pulp and paper | % | 3.5 | 3.4 | 5.0 | |
| Irving Pulp & Paper, Limited | % | 4.5 | 4.1 | 9.5 | |
| Irving Paper Limited | % | 0.5 | 0.8 | 0.8 | |
| Lake Utopia Paper Limited | % | 7.6 | 6.8 | 8.1 | |
| Irving Personal Care | % | 72.9 | 68.8 | 68.1 | b |
| Irving Tissue | % | 47.0 | 21.5 | 15.3 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Percentage of non-hazardous waste diverted from disposal, Total** | **%** | **58.8** | **62.7** | **56.4** | |
| *by division* | | | | | |
| Woodlands | % | 0.0 | 0.0 | 0.0 | |
| Sawmills | % | 27.5 | 29.0 | 23.6 | |
| Pulp and paper | % | 96.5 | 96.6 | 95.0 | |
| Irving Pulp & Paper, Limited | % | 95.5 | 95.9 | 90.5 | |
| Irving Paper Limited | % | 99.5 | 99.2 | 99.2 | |
| Lake Utopia Paper Limited | % | 92.4 | 93.2 | 91.9 | |
| Irving Personal Care | % | 27.1 | 31.2 | 31.9 | b |
| Irving Tissue | % | 53.0 | 78.5 | 84.7 | |
| **WASTE INTENSITY** | | | | | |
| **Waste weight intensity Total** | | | | | |
| *by divison* | | | | | |
| Woodlands | kgs / t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | kgs / t product | 26.1 | 28.6 | 34.9 | |
| Pulp and paper | kgs / t product | 120.2 | 133.5 | 132.5 | |
| Irving Personal Care | kgs / t product | 55.6 | 56.5 | 47.5 | b |
| Irving Tissue | kgs / t product | 65.2 | 79.5 | 91.9 | |
| **WATER** | | | | | |
| **Water withdrawn, surface water, Total** | **Thousand $m^3$** | **64,468** | **65,610** | **64,057** | |
| **Water consumption, Total** | **Thousand $m^3$** | **64,468** | **65,610** | **64,057** | |
| *by division* | | | | | |
| Woodlands | Thousand $m^3$ | 0 | 0 | 0 | |
| Sawmills | Thousand $m^3$ | 0 | 0 | 0 | |
| Pulp and paper | Thousand $m^3$ | 53,523 | 53,074 | 52,127 | |
| Irving Pulp & Paper, Limited | Thousand $m^3$ | 35,005 | 33,748 | 33,281 | |
| Irving Paper Limited | Thousand $m^3$ | 12,302 | 12,402 | 12,354 | |
| Lake Utopia Paper Limited | Thousand $m^3$ | 6,217 | 6,924 | 6,493 | |
| Irving Personal Care | Thousand $m^3$ | 0 | 0 | 0 | b |
| Irving Tissue | Thousand $m^3$ | 10,944 | 12,536 | 11,930 | |
| **Water discharge, Total** | **Thousand $m^3$** | **66,920** | **69,369** | **67,894** | |
| *by division* | | | | | |
| Woodlands | Thousand $m^3$ | 0 | 0 | 0 | |
| Sawmills | Thousand $m^3$ | 0 | 0 | 0 | |
| Pulp and paper | Thousand $m^3$ | 56,718 | 57,675 | 56,661 | |
| Irving Pulp & Paper, Limited | Thousand $m^3$ | 38,332 | 38,453 | 38,012 | |
| Irving Paper Limited | Thousand $m^3$ | 11,910 | 12,010 | 11,886 | |
| Lake Utopia Paper Limited | Thousand $m^3$ | 6,476 | 7,213 | 6,763 | |
| Irving Personal Care | Thousand $m^3$ | 0 | 0 | 0 | b |
| Irving Tissue | Thousand $m^3$ | 10,202 | 11,694 | 11,233 | |

*$m^3$ = cubic meters*

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Percent of product that is elemental chlorine-free** | **%** | **100%** | **100%** | **100%** | |
| *by division* | | | | | |
| Pulp and paper | % | 100% | 100% | 100% | |
| Irving Tissue | % | 100% | 100% | 100% | |
| **Water discharges BOD, Total** | **Tonnes** | **3,421** | **3,856** | **3,677** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 0 | 0 | 0 | |
| Pulp and paper | Tonnes | 2,848 | 2,942 | 2,953 | |
| Irving Pulp & Paper, Limited | Tonnes | 1,850 | 1,959 | 2,139 | |
| Irving Paper Limited | Tonnes | 675 | 689 | 671 | |
| Lake Utopia Paper Limited | Tonnes | 323 | 295 | 142 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | b |
| Irving Tissue | Tonnes | 572 | 914 | 725 | |
| **Water discharges COD, Total** | **Tonnes** | **20,851** | **22,806** | **22,571** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 0 | 0 | 0 | |
| Pulp and paper | Tonnes | 19,385 | 21,747 | 21,567 | |
| Irving Pulp & Paper, Limited | Tonnes | 8,344 | 8,774 | 10,081 | |
| Irving Paper Limited | Tonnes | 1,865 | 2,338 | 2,248 | |
| Lake Utopia Paper Limited | Tonnes | 9,176 | 10,635 | 9,238 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | b |
| Irving Tissue | Tonnes | 1,466 | 1,058 | 1,004 | |
| **Water discharges TSS, Total** | **Tonnes** | **7,132** | **7,312** | **7,047** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 0 | 0 | 0 | |
| Pulp and paper | Tonnes | 5,932 | 5,804 | 5,570 | |
| Irving Pulp & Paper, Limited | Tonnes | 2,186 | 2,175 | 2,049 | |
| Irving Paper Limited | Tonnes | 3,350 | 3,251 | 3,234 | |
| Lake Utopia Paper Limited | Tonnes | 395 | 378 | 287 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | b |
| Irving Tissue | Tonnes | 1,200 | 1,508 | 1,477 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **AOX emissions, Total** | **Kg** | **56,601** | **53,880** | **65,387** | |
| *by division* | | | | | |
| Woodlands | Kg | 0 | 0 | 0 | |
| Sawmills | Kg | 0 | 0 | 0 | |
| Pulp and paper | Kg | 56,601 | 53,880 | 65,387 | |
| Irving Pulp & Paper, Limited | Kg | 56,601 | 53,880 | 65,387 | |
| Irving Paper Limited | Kg | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | Kg | 0 | 0 | 0 | |
| Irving Personal Care | Kg | 0 | 0 | 0 | b |
| Irving Tissue | Kg | 0 | 0 | 0 | |
| **Significant spills, Total** | **#** | **0** | **0** | **2** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 0 | 0 | 2 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 2 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | b |
| Irving Tissue | # | 0 | 0 | 0 | |
| **WATER INTENSITY** | | | | | |
| **Water consumption intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | $m^3$/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | $m^3$/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | $m^3$/t product | 59.6 | 59.5 | 58.0 | |
| Irving Pulp & Paper, Limited | $m^3$/t product | 103.5 | 105.4 | 102.1 | |
| Irving Paper Limited | $m^3$/t product | 31.6 | 31.3 | 31.7 | |
| Lake Utopia Paper Limited | $m^3$/t product | 36.5 | 39.4 | 35.5 | |
| Irving Personal Care | $m^3$/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | $m^3$/t product | 37.1 | 35.9 | 32.6 | |
| **Water discharge intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | $m^3$/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | $m^3$/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | $m^3$/t product | 63.2 | 64.6 | 63.1 | |
| Irving Pulp & Paper, Limited | $m^3$/t product | 113.3 | 120.0 | 116.6 | |
| Irving Paper Limited | $m^3$/t product | 30.6 | 30.3 | 30.5 | |
| Lake Utopia Paper Limited | $m^3$/t product | 38.0 | 41.1 | 37.0 | |
| Irving Personal Care | $m^3$/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | $m^3$/t product | 34.6 | 33.5 | 30.7 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Water discharges BOD intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | kg/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | kg/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | kg/t product | 3.2 | 3.3 | 3.3 | |
| Irving Pulp & Paper, Limited | kg/t product | 5.5 | 6.1 | 6.6 | |
| Irving Paper Limited | kg/t product | 1.7 | 1.7 | 1.7 | |
| Lake Utopia Paper Limited | kg/t product | 1.9 | 1.7 | 0.8 | |
| Irving Personal Care | kg/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | kg/t product | 1.9 | 2.6 | 2.0 | |
| **Water discharges COD intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | kg/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | kg/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | kg/t product | 21.6 | 24.4 | 24.0 | |
| Irving Pulp & Paper, Limited | kg/t product | 24.7 | 27.4 | 30.9 | |
| Irving Paper Limited | kg/t product | 4.8 | 5.9 | 5.8 | |
| Lake Utopia Paper Limited | kg/t product | 53.9 | 60.6 | 50.6 | |
| Irving Personal Care | kg/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | kg/t product | 5.0 | 3.0 | 2.7 | |
| **Water discharges TSS intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | kg/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | kg/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | kg/t product | 6.6 | 6.5 | 6.2 | |
| Irving Pulp & Paper, Limited | kg/t product | 6.5 | 6.8 | 6.3 | |
| Irving Paper Limited | kg/t product | 8.6 | 8.2 | 8.3 | |
| Lake Utopia Paper Limited | kg/t product | 2.3 | 2.2 | 1.6 | |
| Irving Personal Care | kg/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | kg/t product | 4.1 | 4.3 | 4.0 | |
| **AOX emissions intensity, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | g/t product | 0.0 | 0.0 | 0.0 | |
| Sawmills | g/t product | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | g/t product | 63.1 | 60.4 | 72.8 | |
| Irving Pulp & Paper, Limited | g/t product | 167.4 | 168.2 | 200.5 | |
| Irving Paper Limited | g/t product | 0.0 | 0.0 | 0.0 | |
| Lake Utopia Paper Limited | g/t product | 0.0 | 0.0 | 0.0 | |
| Irving Personal Care | g/t product | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | g/t product | 0.0 | 0.0 | 0.0 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| MATERIAL | | | | | |
| **Volume of input materials, Total** | **Tonnes** | **6,542,883** | **6,471,238** | **6,751,061** | |
| *by division* | | | | | |
| Sawmills | Tonnes | 4,732,064 | 4,623,411 | 4,894,514 | |
| Pulp and paper | Tonnes | 1,394,676 | 1,377,436 | 1,389,999 | |
| Irving Pulp & Paper, Limited | Tonnes | 758,480 | 715,734 | 736,856 | |
| Irving Paper Limited | Tonnes | 437,182 | 455,170 | 437,644 | |
| Lake Utopia Paper Limited | Tonnes | 199,014 | 206,532 | 215,499 | |
| Irving Personal Care | Tonnes | 20,732 | 13,993 | 12,024 | b |
| Irving Tissue | Tonnes | 395,411 | 456,398 | 454,524 | |
| **Volume of input materials intensity, Total** | **T materials/T product** | **0.5** | **0.6** | **0.5** | |
| *by division* | | | | | |
| Sawmills | T materials/T product | 1.0 | 1.0 | 1.0 | |
| Pulp and paper | T materials/T product | 1.6 | 1.5 | 1.5 | |
| Irving Pulp & Paper, Limited | T materials/T product | 2.2 | 2.2 | 2.3 | |
| Irving Paper Limited | T materials/T product | 1.1 | 1.1 | 1.1 | |
| Lake Utopia Paper Limited | T materials/T product | 1.2 | 1.2 | 1.2 | |
| Irving Personal Care | T materials/T product | 1.0 | 1.0 | 1.0 | b |
| Irving Tissue | T materials/T product | 1.2 | 1.2 | 1.2 | |
| **Volume of recycled input materials, Total** | **Tonnes** | **49,648** | **51,735** | **57,129** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 0 | 0 | 0 | |
| Sawmills | Tonnes | 0 | 0 | 0 | |
| Pulp and paper | Tonnes | 49,648 | 51,735 | 57,129 | |
| Irving Pulp & Paper, Limited | Tonnes | 0 | 0 | 0 | |
| Irving Paper Limited | Tonnes | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | Tonnes | 49,648 | 51,735 | 57,129 | |
| Irving Personal Care | Tonnes | 0 | 0 | 0 | b |
| Irving Tissue | Tonnes | 0 | 0 | 0 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Product with at least 25% post-consumer recycled content, Total** | | | | | |
| *by division* | | | | | |
| Woodlands | % | 0.0 | 0.0 | 0.0 | |
| Sawmills | % | 0.0 | 0.0 | 0.0 | |
| Pulp and paper | % | 0.0 | 0.0 | 0.0 | |
| Irving Pulp & Paper, Limited | % | 0.0 | 0.0 | 0.0 | |
| Irving Paper Limited | % | 0.0 | 0.0 | 0.0 | |
| Lake Utopia Paper Limited | % | 67.5 | 64.0 | 62.0 | |
| Irving Personal Care | % | 0.0 | 0.0 | 0.0 | b |
| Irving Tissue | % | 0.0 | 0.0 | 0.0 | |
| **Wood fiber sourced and harvested** | | | | | |
| Wood fiber harvested & procured, Total | Tonnes | 6,566,093 | 5,612,930 | 6,556,294 | |
| Trees planted | # of Seedlings | 14,898,021 | 18,754,777 | 17,813,981 | |
| Recycled input materials/fibre procured | tonnes | 49,648 | 51,735 | 57,129 | |
| **LAND CERTIFICATIONS** | | | | | |
| Percentage of resource holdings SFI® certified | % | 100 | 100 | 100 | |
| Percentage of resource holdings ISO14001 certified | % | 100 | 100 | 100 | |
| Percentage of resource holdings FSC® certified | % | 20 | 20 | 20 | |
| **BIODIVERSITY CONSERVATION** | | | | | |
| **Land under Irving management, Total** | **Hectares** | **2,377,048** | **2,377,640** | **2,376,627** | |
| **Area of freehold land, Total** | **Hectares** | **1,314,577** | **1,315,303** | **1,315,204** | |
| Area of JDI freehold land CAN, Total | Hectares | 796,321 | 796,095 | 795,929 | |
| Area of JDI freehold land US, Total | Hectares | 518,256 | 519,208 | 519,275 | |
| Area of JDI freehold land, Productive | Hectares | 1,141,555 | 1,142,185 | 1,142,099 | h |
| **Area of Crown land, Total** | **Hectares** | **1,062,471** | **1,062,337** | **1,061,423** | |
| Area of Crown land, Productive | Hectares | 952,971 | 952,851 | 952,031 | h |
| Conservation areas on JDI land | Hectares | 242,643 | 247,913 | 249,811 | |
| % Conservation areas on JDI land, Total | % | 18 | 19 | 19 | |
| % Conservation area on JDI land, Productive | % | 21 | 22 | 22 | h |
| Conservation areas on Crown land | Hectares | 314,680 | 281,339 | 284,100 | |
| % Conservation areas on Crown land, Total | % | 30 | 26 | 27 | |
| % Conservation area on Crown land, Productive | % | 33 | 30 | 30 | h |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Total conservation area managed** | **Hectares** | **557,323** | **529,252** | **533,911** | |
| % Conservation area managed, Total | % | 23 | 22 | 22 | |
| % Conservation area managed, Productive | % | 27 | 25 | 25 | |
| Total unique areas managed | # of unique areas | 1,894 | 2,001 | 2,149 | |
| Number of species at risk within operational areas | # | 35 | 36 | 38 | |
| **SILVICULTURE AND OTHER FORESTRY METRICS** | | | | | |
| % Area harvested of total lands under management | % | 1.6 | 1.4 | 1.5 | i |
| Average harvest opening size freehold | Hectares | 19 | 16 | 15 | |
| Average harvest opening size crown | Hectares | 29 | 20 | 23 | |
| Actual harvest level freehold | m3/ha | 2.2 | 2.2 | 2.2 | |
| Actual harvest level crown | m3/ha | 1.6 | 1.6 | 1.6 | |
| Sustainable harvest level freehold | m3/ha | 2.4 | 2.4 | 2.5 | |
| Sustainable harvest level crown | m3/ha | 2.0 | 2.1 | 2.1 | |
| Number of regulatory watercourse crossing violations | # | 0 | 0 | 0 | |
| Internal non-conformances (less safety and public complaints) | # | 318 | 261 | 223 | |
| DNR non-conformances | # | 0 | 0 | 0 | |
| FSC® non-conformances | # | 0 | 0 | 0 | |
| SFI® non-conformances | # | 0 | 0 | 0 | |
| **SOCIAL** | | | | | |
| **PRODUCTION** | | | | | |
| **Production, Total** | **Tonnes** | **12,607,832** | **11,505,905** | **12,676,836** | |
| *by division* | | | | | |
| Woodlands | Tonnes | 6,566,093 | 5,612,930 | 6,556,294 | |
| Woodlands harvested | Tonnes | 4,815,992 | 4,329,590 | 5,032,279 | |
| Woodlands purchased | Tonnes | 1,750,101 | 1,283,340 | 1,524,015 | |
| Sawmills | Tonnes | 4,797,260 | 4,621,070 | 4,841,112 | |
| Sawmills, Lumber | Tonnes | 1,488,878 | 1,388,040 | 1,432,190 | |
| Sawmills, Lumber | Mfbm | 1,068,477 | 1,064,677 | 1,102,568 | |
| Sawmills, Residuals | Tonnes | 3,156,864 | 3,072,946 | 3,226,957 | |
| Sawmills, Pellets | Tonnes | 130,201 | 138,850 | 176,186 | |
| Sawmills, Peat moss and soils production | Tonnes | 21,316 | 21,234 | 5,779 | |
| Pulp and paper | Tonnes | 897,420 | 892,478 | 898,399 | |
| Irving Pulp & Paper, Limited | Tonnes | 338,210 | 320,328 | 326,050 | |
| Irving Paper Limited | Tonnes | 388,974 | 396,564 | 389,623 | |
| Lake Utopia Paper | Tonnes | 170,236 | 175,586 | 182,726 | |
| Irving Personal Care | Tonnes | 20,732 | 13,993 | 12,024 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| Irving Tissue - Converted | tonnes | 326,327 | 365,435 | 369,007 | |
| Irving Tissue - Paper | tonnes | 294,667 | 349,579 | 365,815 | |
| **ECONOMIC PERFORMANCE** | | | | | |
| **Capital investment, USD, Total** | **$ millions USD** | **501** | **270** | **269** | |
| *by division* | | | | | |
| Woodlands | $ millions USD | 25 | 41 | 40 | |
| Sawmills | $ millions USD | 66 | 80 | 53 | |
| Pulp and Paper | $ millions USD | 149 | 121 | 152 | |
| Irving Tissue & Irving Personal Care | $ millions USD | 259 | 24 | 23 | |
| Head Office | $ millions USD | 2 | 2 | 2 | |
| **Spend on local suppliers, USD, Total** | **$ millions USD** | **1,532** | **1,667** | **1,649** | |
| *by division* | | | | | |
| Woodlands | $ millions USD | 394 | 389 | 431 | |
| Sawmills | $ millions USD | 280 | 342 | 287 | |
| Pulp and Paper | $ millions USD | 422 | 424 | 415 | |
| Irving Tissue & Irving Personal Care | $ millions USD | 392 | 481 | 478 | |
| Head Office | $ millions USD | 44 | 32 | 39 | |
| **EMPLOYMENT** | | | | | |
| **Full-time equivalent employees, Total** | **FTE** | **4,631** | **4,849** | **5,435** | |
| *by division* | | | | | |
| Woodlands | FTE | 447 | 554 | 783 | |
| Sawmills | FTE | 1,578 | 1,657 | 1,847 | |
| Pulp and paper | FTE | 916 | 924 | 1,011 | |
| Irving Personal Care | FTE | 173 | 155 | 155 | |
| Irving Tissue | FTE | 1,517 | 1,559 | 1,639 | |
| **Permanent employees by gender, Total** | **#** | **4,574** | **4,781** | **4,931** | |
| Number of female permanent employees, Total | # | 612 | 659 | 680 | |
| Number of male permanent employees, Total | # | 3,859 | 3,968 | 4,085 | |
| Number of permanent employees with an unspecified gender, Total | # | 103 | 154 | 166 | |
| **Temporary employees by gender, Total** | **#** | **37** | **30** | **215** | |
| Temporary employees, Female | # | 9 | 4 | 47 | |
| Temporary employees, Male | # | 26 | 25 | 150 | |
| Temporary employees, Gender unspecified | # | 2 | 1 | 18 | |
| *by region* | | | | | |
| Permanent employees, CAN | # | 3,478 | 3,614 | 3,750 | |
| Temporary employees, CAN | # | 33 | 28 | 199 | |
| Permanent employees, US | # | 1,095 | 1,166 | 1,178 | |
| Temporary employees, US | # | 4 | 2 | 15 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Full-time employees by gender, Total** | **#** | **4,561** | **4,767** | **5,069** | |
| Number of female full-time employees, Total | # | 610 | 656 | 714 | |
| Number of male full-time employees, Total | # | 3,847 | 3,957 | 4,172 | |
| Number of full-time employees with an unspecified gender, Total | # | 104 | 154 | 183 | |
| **Part-time employees by gender, Total** | **#** | **50** | **44** | **77** | |
| Number of female part-time employees, Total | # | 11 | 7 | 13 | |
| Number of male part-time employees, Total | # | 38 | 36 | 63 | |
| Number of part-time employees with an unspecified gender, Total | # | 1 | 1 | 1 | |
| **Employee engagement, Total** | **%** | **80** | **80** | **79** | |
| *by division* | | | | | |
| Woodlands | % | 88 | 86 | 85 | |
| Sawmills | % | 78 | 80 | 79 | |
| Pulp and paper | % | 78 | 75 | 69 | |
| Irving Pulp & Paper, Limited | % | 73 | 68 | 60 | |
| Irving Paper Limited | % | 83 | 78 | 67 | |
| Lake Utopia Paper Limited | % | 72 | 75 | 74 | |
| Irving Forest Services | % | 87 | 89 | 91 | |
| Irving Personal Care | % | 82 | 83 | 68 | |
| Irving Tissue | % | 81 | 82 | 82 | |
| Total number of new employee hires | # | 1,124 | 1,252 | 1,195 | |
| Total rate of new employee hires | % | 24 | 26 | 23 | |
| Total employee turnover number | # | 850 | 943 | 952 | |
| Total employee turnover rate | % | 18 | 20 | 19 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **OCCUPATIONAL HEALTH & SAFETY** | | | | | |
| **Number of fatalities that occurred in a location, Total** | **#** | **0** | **0** | **0** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 0 | 0 | 0 | |
| Pulp and paper | # | 0 | 0 | 0 | |
| Irving Pulp & Paper, Limited | # | 0 | 0 | 0 | |
| Irving Paper Limited | # | 0 | 0 | 0 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Forest Services | # | 0 | 0 | 0 | |
| Irving Personal Care | | 0 | 0 | 0 | |
| Irving Tissue | # | 0 | 0 | 0 | |
| Head office | # | 0 | 0 | 0 | |
| Plant Sites | # | 0 | 0 | 0 | |
| **Number of critical injuries that occurred in a location, Total** | **#** | **7** | **5** | **7** | |
| *by division* | | | | | |
| Woodlands | # | 1 | 0 | 2 | |
| Sawmills | # | 3 | 3 | 2 | |
| Pulp and paper | # | 1 | 0 | 2 | |
| Irving Pulp & Paper, Limited | # | 1 | 0 | 1 | |
| Irving Paper Limited | # | 0 | 0 | 1 | |
| Lake Utopia Paper Limited | # | 0 | 0 | 0 | |
| Irving Forest Services | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 0 | 0 | |
| Irving Tissue | # | 2 | 2 | 1 | |
| Head office | # | 0 | 0 | 0 | |
| Plant Sites | # | 2 | 2 | 1 | |
| **Rate of critical injuries that occurred in a location, Total** | **Rate** | **0.13** | **0.10** | **0.12** | |
| *by division* | | | | | |
| Woodlands | Rate | 0.15 | 0.00 | 0.24 | |
| Sawmills | Rate | 0.17 | 0.16 | 0.10 | |
| Pulp and paper | Rate | 0.10 | 0.00 | 0.20 | |
| Irving Pulp & Paper, Limited | Rate | 0.26 | 0.00 | 0.25 | |
| Irving Paper Limited | Rate | 0.00 | 0.00 | 0.31 | |
| Lake Utopia Paper Limited | Rate | 0.00 | 0.00 | 0.00 | |
| Irving Forest Services | Rate | 0.00 | 0.00 | 0.00 | |
| Irving Personal Care | Rate | 0.00 | 0.00 | 0.00 | |
| Irving Tissue | Rate | 0.13 | 0.13 | 0.06 | |
| Head office | Rate | 0.00 | 0.00 | 0.00 | |
| Plant Sites | Rate | 0.14 | 0.14 | 0.07 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Number of recordable injuries that occurred in a location, Total** | **#** | **109** | **107** | **107** | |
| *by division* | | | | | |
| Woodlands | # | 7 | 9 | 23 | |
| Sawmills | # | 67 | 59 | 41 | |
| Pulp and paper | # | 11 | 12 | 17 | |
| Irving Pulp & Paper, Limited | # | 3 | 4 | 6 | |
| Irving Paper Limited | # | 5 | 7 | 9 | |
| Lake Utopia Paper Limited | # | 3 | 1 | 2 | |
| Irving Forest Services | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 3 | 1 | 3 | |
| Irving Tissue | # | 21 | 26 | 23 | |
| Head office | # | 0 | 1 | 0 | |
| Plant Sites | # | 21 | 25 | 23 | |
| **Rate of recordable injuries that occurred in a location, Total** | **Rate** | **2.1** | **2.0** | **1.9** | |
| *by division* | | | | | |
| Woodlands | Rate | 1.1 | 1.2 | 2.7 | |
| Sawmills | Rate | 3.7 | 3.2 | 2.1 | |
| Pulp and paper | Rate | 1.2 | 1.2 | 1.7 | |
| Irving Pulp & Paper, Limited | Rate | 0.8 | 1.0 | 1.5 | |
| Irving Paper Limited | Rate | 1.6 | 2.2 | 2.8 | |
| Lake Utopia Paper Limited | Rate | 1.9 | 0.7 | 1.3 | |
| Irving Forest Services | Rate | 0.0 | 0.0 | 0.0 | |
| Irving Personal Care | Rate | 1.6 | 0.6 | 1.8 | |
| Irving Tissue | Rate | 1.3 | 1.6 | 1.4 | |
| Head office | Rate | 0.0 | 0.5 | 0.0 | |
| Plant Sites | Rate | 1.5 | 1.8 | 1.6 | |
| **Number of lost time injuries that occurred in a location (students are included), Total** | **#** | **42** | **36** | **47** | |
| *by division* | | | | | |
| Woodlands | # | 2 | 3 | 13 | |
| Sawmills | # | 24 | 26 | 19 | |
| Pulp and paper | # | 7 | 4 | 9 | |
| Irving Pulp & Paper, Limited | # | 1 | 2 | 3 | |
| Irving Paper Limited | # | 3 | 2 | 5 | |
| Lake Utopia Paper Limited | # | 3 | 0 | 1 | |
| Irving Forest Services | # | 0 | 0 | 0 | |
| Irving Personal Care | # | 0 | 1 | 2 | |
| Irving Tissue | # | 9 | 2 | 4 | |
| Head office | # | 0 | 1 | 0 | |
| Plant Sites | # | 9 | 1 | 4 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Rate of lost time injuries that occurred in a location (students are included), Totals** | **Rate** | **0.8** | **0.7** | **0.8** | |
| *by division* | | | | | |
| Woodlands | Rate | 0.3 | 0.4 | 1.5 | |
| Sawmills | Rate | 1.3 | 1.4 | 1.0 | |
| Pulp and paper | Rate | 0.7 | 0.4 | 0.9 | |
| Irving Pulp & Paper, Limited | Rate | 0.3 | 0.5 | 0.7 | |
| Irving Paper Limited | Rate | 1.0 | 0.6 | 1.5 | |
| Lake Utopia Paper Limited | Rate | 1.9 | 0.0 | 0.7 | |
| Irving Forest Services | Rate | 0.0 | 0.0 | 0.0 | |
| Irving Personal Care | Rate | 0.0 | 0.6 | 1.2 | |
| Irving Tissue | Rate | 0.6 | 0.1 | 0.2 | |
| Head office | Rate | 0.0 | 0.5 | 0.0 | |
| Plant Sites | Rate | 0.6 | 0.0 | 0.3 | |
| **Average percentage of employees reporting a hazard ID in a financial period, Total** | **Rate** | **44.5** | **54.9** | **42.5** | |
| *by division* | | | | | |
| Woodlands | Rate | 76.9 | 93.3 | 58.9 | |
| Sawmills | Rate | 85.1 | 100.0 | 81.0 | |
| Pulp and paper | Rate | 4.3 | 6.9 | 6.1 | |
| Irving Pulp & Paper, Limited | Rate | 2.5 | 6.5 | 6.5 | |
| Irving Paper Limited | Rate | 1.2 | 1.5 | 2.5 | |
| Lake Utopia Paper Limited | Rate | 17.0 | 17.9 | 11.9 | |
| Irving Forest Services | Rate | 2.8 | 8.5 | 7.1 | |
| Irving Personal Care | Rate | 16.7 | 21.8 | 18.5 | |
| Irving Tissue | Rate | 20.0 | 25.1 | 15.7 | |
| Head office | Rate | 0.1 | 0.0 | 0.2 | |
| Plant Sites | Rate | 23.6 | 29.7 | 18.5 | |
| **TRAINING AND EDUCATION** | | | | | |
| Number of employees participating in the leadership development training | # | 944 | 789 | 829 | |
| Hours of leadership development training | hours | 4,949 | 6,681 | 11,524 | |
| Spend on leadership development training | $ CAD | 188,293 | 328,200 | 453,171 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **DIVERSITY & INCLUSION** | | | | | |
| *by gender* | | | | | |
| Percentage of women in executive positions | % | 7.3 | 11.6 | 11.4 | |
| Proportion of female employees, Total | % | 13.0 | 13.8 | 14.1 | |
| Proportion of male employees, Total | % | 84.0 | 83.0 | 82.4 | |
| Proportion of employees with an unspecified gender, Total | % | 2.0 | 3.2 | 3.6 | |
| *by age group* | | | | | |
| Proportion of employees that are less than 30 years old, Total | % | 19.0 | 18.5 | 18.6 | |
| Proportion of employees that are 30-50 years old, Total | % | 32.0 | 50.8 | 49.6 | |
| Proportion of employees that are over 50 years old, Total | % | 49.0 | 30.7 | 31.8 | |
| **WAGES AND EMPLOYEE BENEFIT** | | | | | |
| **Spend on employee wages and benefits Total** | **$ millions USD** | **345** | **362** | **377** | |
| Direct, indirect and induced jobs | FTE | 17,814 | 18,005 | 19,850 | |
| Employment income from direct, indirect and induced jobs, including the impact of payments to forestry contractors | $ millions USD | 969 | 1,025 | 1,087 | |
| Median total compensation for female employees, CAN | CAD/year | 60,000 | 60,881 | 65,394 | I |
| Median total compensation for male employees, CAN | CAD/year | 74,420 | 75,422 | 87,385 | I |
| Median total compensation for employees with an unspecified gender, CAN | CAD/year | 65,000 | 66,421 | 64,838 | I |
| Median total compensation for female employees, US | USD/year | 49,887 | 57,013 | 61,944 | I |
| Median total compensation for male employees, US | USD/year | 58,793 | 62,686 | 75,498 | I |
| Median total compensation for employees with an unspecified gender, US | USD/year | 0 | 64,740 | 75,560 | I |
| Ratio of median salary women to men, CAN | - | 0.81 | 0.81 | 0.75 | I |
| Ratio of median salary women to men, us | - | 0.85 | 0.91 | 0.82 | I |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **Defined contribution plan percentage of compenstation contributed by employee, Total** | **%** | **5.1** | **5.1** | **5.1** | |
| *by division* | | | | | |
| Woodlands | % | 5.0 | 5.0 | 5.0 | |
| Sawmills | % | 5.0 | 5.0 | 5.0 | |
| Pulp and paper | % | 5.5 | 5.5 | 5.5 | |
| Irving Personal Care | % | 5.0 | 5.0 | 5.0 | |
| Irving Tissue | % | 5.0 | 5.0 | 5.0 | |
| **Defined contribution plan percentage of compensation contributed by employer, Total** | **%** | **5.1** | **5.1** | **5.1** | |
| *by division* | | | | | |
| Woodlands | % | 5.0 | 5.0 | 5 | |
| Sawmills | % | 5.0 | 5.0 | 5 | |
| Pulp and paper | % | 5.5 | 5.5 | 5.5 | |
| Irving Personal Care | % | 5.0 | 5.0 | 5 | |
| Irving Tissue | % | 5.0 | 5.0 | 5 | |
| Median entry level wage ratio for female employees, Total, CAN | - | 1.7 | 1.5 | 1.4 | |
| Median entry level wage ratio for male employees, Total, CAN | - | 1.7 | 1.5 | 1.4 | |
| Median entry level wage ratio for employees with an unspecified gender, Total, CAN | - | 2.1 | 1.6 | 1.6 | |
| Median entry level wage ratio for female employees, Total, US | - | 2.5 | 3.1 | 3.4 | |
| Median entry level wage ratio for male employees, Total, US | - | 2.5 | 2.8 | 2.2 | |
| Median entry level wage ratio for employees with an unspecified gender, Total, US | - | 0.0 | 2.0 | 1.7 | |



| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **GOVERNANCE** | | | | | |
| Number of countries | # | 2 | 2 | 2 | |
| **Number of facilities, Total** | **#** | **23** | **23** | **23** | |
| *by division* | | | | | |
| Woodlands | # | 0 | 0 | 0 | |
| Sawmills | # | 12 | 12 | 12 | |
| Pulp and paper | # | 3 | 3 | 3 | |
| Irving Personal Care | # | 1 | 1 | 1 | |
| Irving Tissue | # | 5 | 5 | 5 | |
| Corporate administration | # | 2 | 2 | 2 | |
| Percentage of total employees covered by collective bargaining agreements | % | 40 | 37 | 36 | |
| Substantiated complaints from outside parties regarding breach of customer privacy and loss of customer data | # | 0 | 0 | 0 | |
| Complaints from regulatory bodies regarding breach of customer privacy and loss of customer data | # | 0 | 0 | 0 | |
| Number of identified leaks, thefts, or losses of customer data, Total | # | 0 | 0 | 0 | |
| **Corporate directors that received communication on the organization's anti-corruption policies and procedures, Total** | **%** | **100** | **100** | **100** | |
| Number of legal actions pending or completed during the reporting period regarding anti-competitive behavior and violations of anti-trust and monopoly legislation or corruption in which the organization has been identified as a participant | # | 0 | 0 | 0 | |

| Data | Measurement | 2021 | 2022 | 2023 | Endnote |
|---|---|---|---|---|---|
| **OTHER** | | | | | |
| University and college partnerships | # | 21 | 19 | 19 | |
| Community based partnerships | # | 119 | 136 | 148 | |
| Outdoor associations | # | 12 | 12 | 12 | |
| Motorized Recreation | # | 3 | 4 | 4 | |
| Stakeholder based group partnerships | # | 55 | 54 | 54 | |
| Non Government Organizations | # | 13 | 13 | 13 | |
| Government organizations | # | 5 | 5 | 5 | |
| Fishing and hunting clubs | # | 9 | 9 | 9 | |
| Industry Associations | # | 26 | 27 | 27 | |
| Number of partner meetings | # | 520 | 365 | 342 | |
| New Partners | # | 5 | 4 | 3 | |
| Scholarships | CAD/year | 95,250 | 147,442 | 176,747 | |
| Charitable donations | CAD/year | 3,047,821 | 1,683,558 | 1,004,913 | |
| Stakeholder/Social media presence | # of followers | 16,000 | 35,850 | 54,131 | k |
| Stakeholder/Social media - Facebook, Engagement | Engagement rate (%) | 0.92 | 0.54 | 3.26 | k |
| Stakeholder/Social media - Instagram, Engagement | Engagement rate (%) | 12.22 | 4.76 | 4.31 | k |
| Stakeholder/Social media - LinkedIn, Engagement | Engagement rate (%) | 7.58 | 0.25 | 3.08 | k |
| Employee time volunteered | hours | 1,484 | 2,436 | 2,483 | |



# ENDNOTES
## and 2023 Restatements

a. Chipman bark boiler re-commissioned in June 2023. In 2022, and until the bark boiler was recommissioned, an oil boiler was used in its place.

b. Irving Personal Care (IPC) added to scope of Forest Supply Chain in 2021.

c. Second tissue machine in Macon, Georgia had full year of operations in 2022 and 2023. Second machine commissioned in Q3 2021.

d. Net carbon footprint includes freehold land removals only.

e. Peat bog land use change was not included in 2022. In 2021, it was reported as part of Forest Carbon (Removal)/Emission from freehold.

f. Methodology, conversion or correction from 2021 and 2022. For direct energy consumption.

g. This is reported for the first time in 2023 to provide additional information on the sources of our direct energy consumption.

h. % Conservation Forest is presented as the area in conservation as a percentage of productive forest area to align with the reporting of the Province of New Brunswick. Previously this was reported as a percentage of total forest area. There is no change to the definition of conservation area.

i. This measure previously not included in data table but highlighted within the report.

j. Calculation of Full Time Equivalent (FTE) was updated in 2023 to better reflect the seasonality of the Forest Supply Chain workforce. Standard Definition of Full Time Equivalent (FTE) was defined in 2021.

k. The reported measure is Woodlands-only for all years presented.

l. Median wage information is an aggregate of multiple factors, including gender and job type. This metric is not intended for inference of wages paid to different genders in the same job type.

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