

# Sustainable investing

Timberland 2022

All information in this report is as of December 31, 2022,  
unless otherwise indicated. Report published September 2023.

A small yellow and black bird, possibly a flycatcher, is perched on a thin tree branch. The bird has a black head and back with a white patch on its throat. It is surrounded by green foliage, and the background is softly blurred.

# Who we are

## About Manulife Investment Management

Manulife Investment Management is the brand for the global wealth and asset management segment of Manulife Financial Corporation (Manulife). Our mission is to make decisions easier and lives better by empowering investors for a better tomorrow. Serving more than 17 million individuals, institutions, and retirement plan members, we believe our global reach, complementary businesses, and the strength of our parent company position us to help investors capitalize on today's emerging global trends. We provide our clients access to public and private investment solutions across equities, fixed income, multi-asset, alternative, and sustainability-linked strategies, such as natural capital, to help them make more informed financial decisions and achieve their investment objectives. Not all offerings are available in all jurisdictions. For additional information, please visit [manulifeim.com](https://manulifeim.com).

## Our natural capital business

Founded in 1985 and with our headquarters in Boston, Manulife Investment Management's timberland and agriculture businesses exist to create value through the sustainable management of natural resource investments. With over \$15.2 billion in assets under management, we're the world's largest natural capital investment manager,<sup>1</sup> and we're committed to investing sustainably across our global portfolio of timberland and agriculture assets.

## Our timberland investments

As of year-end 2022, our \$11.1 billion timberland investment portfolio spans 5.4 million acres in the United States, Canada, Australia, New Zealand, Chile, and Brazil. One hundred percent of our portfolio is certified sustainable by independent third-party forest certification standards.<sup>2</sup> Sustainable forestry practices allow us to actively manage and protect our clients' timberlands in ways that maintain and enhance economic, social, and environmental values. We provide an extensive range of on-the-ground forest management services through our forestry personnel, who have expertise in sustainable forest management and are skilled in customizing management activities to reflect the investment objectives of each client and the unique characteristics of each property.

<sup>1</sup> IPE research, as of February 5, 2023. Ranking is based on total natural capital assets under management (AUM), which includes forestry/timberland and agriculture/farmland AUM. Firms were asked to provide AUM, and the as of dates vary from December 31, 2021, to December 31, 2022. Assets shown in U.S. dollars. <sup>2</sup> As of December 31, 2022 100% of our forests were certified under either Sustainable Forestry Initiative® (SFI®) (3.2 million acres in the United States and Canada) or Forest Stewardship Council® (FSC®) (2.2 million acres in Australia, New Zealand, Brazil, and Chile). Most current data shown. Some properties carry dual certification.

## A message from Tom Sarno

To me and for our timberland business, these are the key themes of 2022: Wood is good. Carbon is complex. Sustainability will withstand scrutiny. And it's time to deliver on decarbonization.

**Wood is good.** We often say that sustainability in real assets isn't just about how you manage investments, but about what those investments produce. While I'm tremendously excited about the capital markets' new appreciation of forests as natural capital investments, we always do well to remember that wood—a low-carbon, renewable, and recyclable building material that locks carbon out of the atmosphere—is good. Especially as we remain significantly underbuilt in housing across the United States and many other OECD economies, and even more so as we see mass timber take off in the commercial and industrial construction sectors.

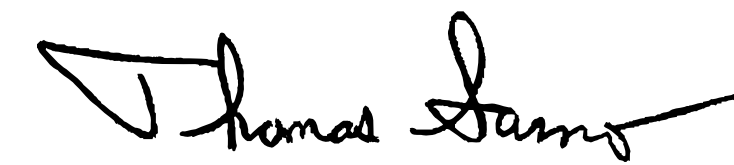
**Carbon is complex.** Even as demand grows for trees to produce wood, we're also seeing growing demand for something else provided by trees: carbon sequestration. While recent timberland values suggest that traditional timberland investing is as (or more) competitive than it ever has been in our nearly 40-year history, the investable universe of forests continues to expand. Having sold over 6 million carbon credits and with five active or pending carbon projects as well as the launch of our forest climate strategy in 2022, we're considering new types of opportunities (afforestation, for example) as well as new geographies that we believe will only grow in importance in the new carbon economy.

**Sustainability will withstand scrutiny.** Where there's market excitement (think environmental, social, and governance (ESG) investing), there's froth; where there's froth, there will be missteps; where there are missteps, there will be scrutiny. Amid criticism of the integrity of certain carbon emission reductions standards and claims of over-crediting, ESG product label backpedaling in 2022, and the level of political polarization, the rise of the so-called anti-ESG movement has come as no surprise. In this environment, it's important to dig beneath the surface rhetoric and consider how investments are being managed, regardless of the terminology.

We consider ESG factors not because it makes us (or our investors) feel good, but because it's our fiduciary duty to consider all factors that may be financially material to the performance of your investment. Both academic research and experience are more than sufficient for demonstrating the ESG factors that meet this requirement, and we firmly believe that, in the long run, sustainable investing will withstand scrutiny.

**Decarbonization.** It's time to deliver. If there's one thing sustainable investing cannot ignore, it's the imperative to decarbonize. Climate change poses threats and opportunities for many types of investments, and timberland investments are no exception. But to the extent that we can reduce our contribution to climate change, we—and everyone else—stand to benefit. The risks posed by emissions in particular, and pollution in general, have long been underpriced, and doing everything we can to reduce our emissions also reduces our exposure to regulation that would price them more accurately.

Thank you as always for your business and for traveling on this sustainability journey with us. It's not without its twists and turns, but we're excited about the road ahead, and we hope you are too. Stay tuned for more specific material on our commitments to climate and nature—we look forward to sharing them with you.

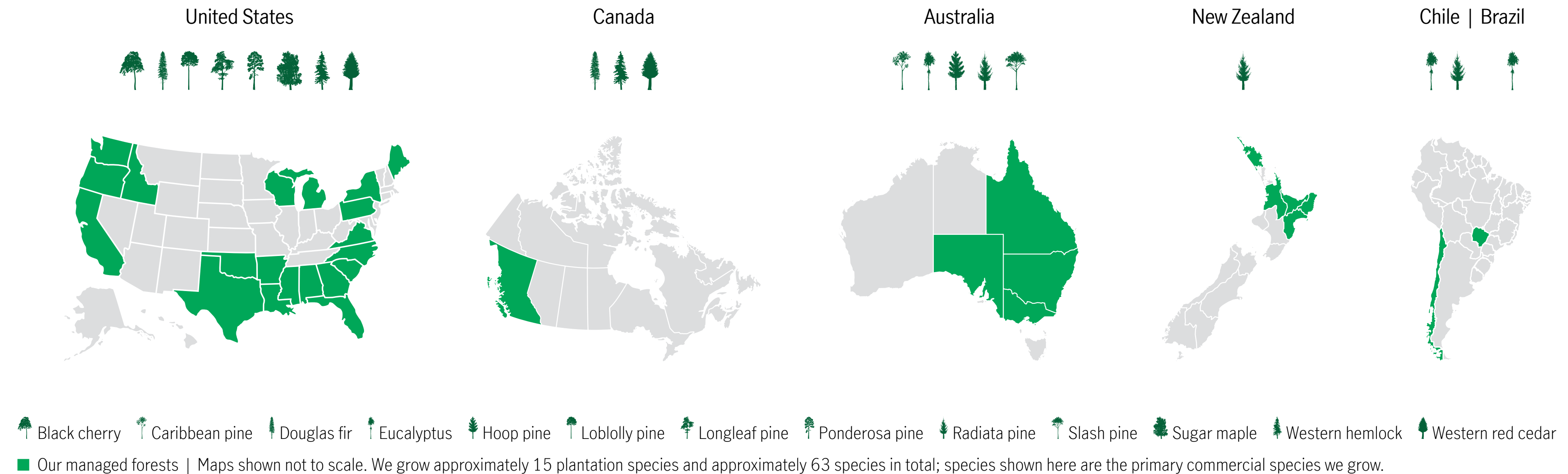
A handwritten signature in black ink that reads "Thomas Sarno".

**Tom Sarno**

Global Head of Timberland Investments, CIO

# Our approach

We manage forests around the globe in key institutional timberland investment regions



Category	United States	Canada	Australia	New Zealand	Chile	Brazil	Total
Assets under management (USD million)	\$6,118	\$57	\$2,323	\$2,181	\$310	\$80	<b>\$11,069</b>
Acres (thousands)	3,151	49	1,362	522	180	138	<b>5,402</b>

Source: Manulife Investment Management, 2022.



## Our foundational investment philosophy

Good stewardship is good business. Our clients' financial success directly depends on the health of our forests, and our vertically integrated global forest management team—from portfolio managers to professional foresters—gives us the ability to craft and execute long-term asset management plans that promote forest health and resilience, which are intrinsic to generating financial returns. From our investment process to our property management, sustainability—managing assets today in such a way that they can continue providing benefits long into the future—is fundamental to our investment philosophy.

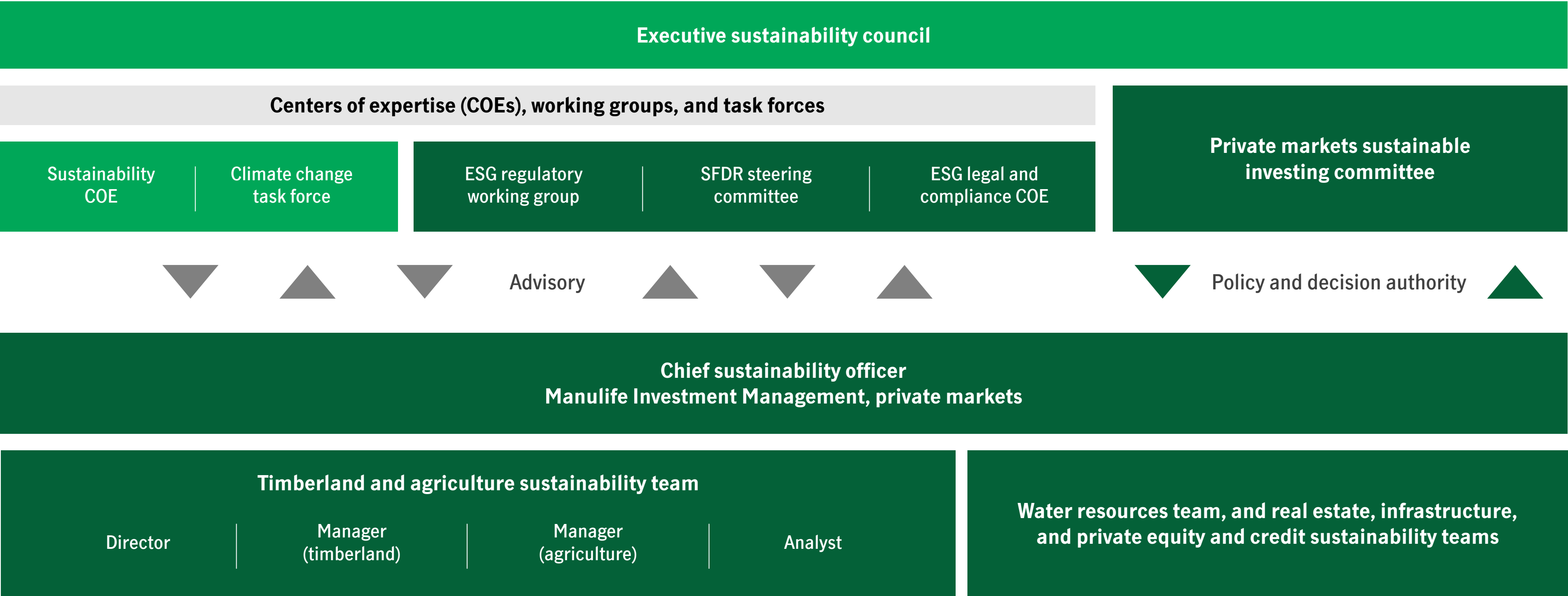
## Our sustainability governance

Even the best sustainability strategies can lie on shaky ground without good governance, which is why our governance of sustainability is both deliberate and comprehensive. There are three key principles interwoven throughout our governance structure:


- 1 Integration within business verticals**  
Integrating the sustainability team(s) with other relevant business verticals, including legal and regulatory, marketing and communications, risk management, and our operations team
- 2 Subject matter expertise**  
Channeling the subject matter expertise of sustainability professionals embedded within our business units to inform larger whole-of-company sustainability decisions
- 3 Global resources**  
Leveraging the resources of Manulife's global sustainability team to provide coherence to, and aid in the execution of, our sustainability strategy at an operational level

# Our governance of sustainability

Manulife Manulife Investment Management



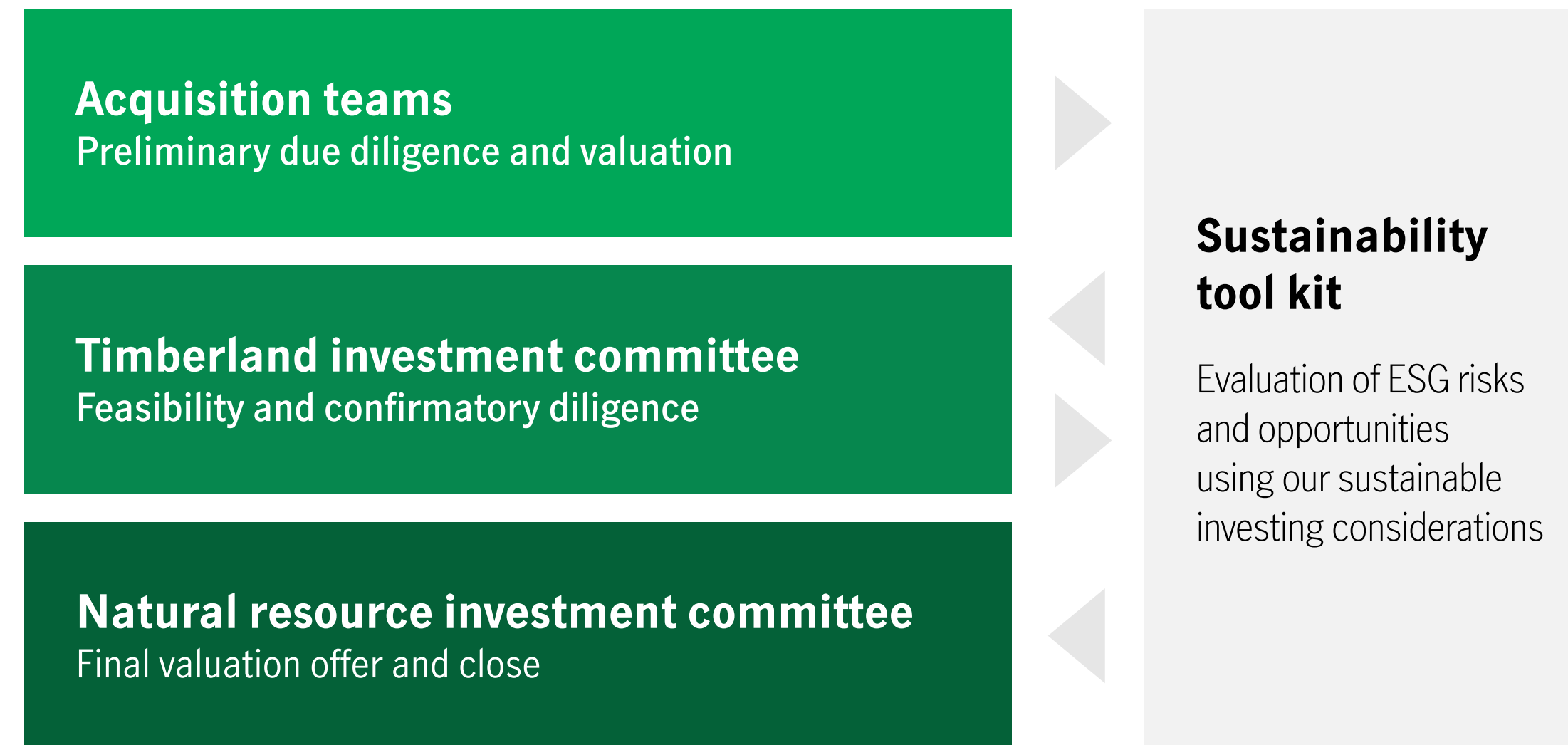
At the highest level, Manulife’s executive sustainability council, comprising C-suite representatives from across the company, including our global chief sustainability officer, makes decisions affecting the insurance and global wealth and asset management businesses globally. The council is informed by the work of various task forces, working groups, and centers of expertise, which are cross-functional collaborative efforts focused on knowledge sharing and strategy across sustainability themes, such as climate change, ESG regulations, or responding to the EU's Sustainable Finance Disclosure Regulation (SFDR). Governance of sustainability within individual timberland investment entities may include additional strategy and oversight responsibilities at board level.

A vertical photograph of a mountain landscape. In the foreground, there is a dirt path leading down towards a river. The river flows through a valley, surrounded by green fields and some trees. In the background, there are large, rugged mountains under a sky filled with white and grey clouds. The overall scene is a natural, scenic view of a mountainous region.

Within global wealth and asset management, our public markets and private markets businesses each have C-suite-level sustainable investing committees with policy and decision authority relevant to their respective businesses. Sustainability teams within each business vertical, and collectively led by a chief sustainability officer, advise the committees and develop and execute sustainability strategies for each asset class. In private markets, sustainability teams exist for timberland and agriculture, real estate and infrastructure, and private equity and credit.

Throughout our timberland and agriculture investment businesses, key sustainability decisions related to businesswide policy and commitments are taken by the private markets sustainable investing committee, with direction from the private markets chief sustainability officer and support from the timberland and agriculture sustainability team (within our agriculture business, a separate team of water professionals maintains close ties with the sustainability team). Sustainability decisions affecting individual areas of the business are taken collaboratively through the participation of sustainability team members in decision-making bodies (e.g., through investment committees or strategy working groups). The sustainability team provides due diligence tools to the timberland acquisitions team, which uses these tools to prepare investment memos that are voted on by the timberland investment and natural resource investment committees, which, in turn, may also consult the sustainability team for further input when relevant. Once the properties are brought into the portfolio, the sustainability team works alongside the portfolio managers and forestry operations team to deliver returns consistent with our commitments.

## Investment process



## Sustainability in our investment process

Sustainability begins where we begin—when we evaluate new investment opportunities. In our investment process, since 2021 we’ve used a proprietary question-based tool co-developed in house by our sustainability, acquisitions, and operations teams to identify, assess, and score ESG components of every deal we consider.

This tool kit highlights both potential risks and opportunities, and it enables us to quantify risk through stoplight indicators used to rate inherent risk, risk mitigation potential, and residual risk. We then aggregate these upward to produce an overall numerical sustainability score for the asset, which can be used in our underwriting. The completed tool kit is provided in every deal package presented to our natural resource investment committee to ensure that investment decisions explicitly consider relevant sustainability risks and opportunities.

Together with our [deforestation policy](#), carbon principles, and carbon tool kit, this approach ensures we systematically consider all identified material sustainability factors (see panel at right) in our investment process.

## Sustainable investing considerations

### Climate

- Climate change impacts
- Emissions
- Deforestation
- CO<sub>2</sub> sequestration



### Nature

- Sensitive lands
- Protected areas
- Biodiversity
- Threatened and endangered species
- Mitigation banking
- Water quantity/quality



### People

- Health and safety
- Training and development
- Labor practices
- Human rights
- Community relations
- Indigenous peoples
- Job creation
- Research, internships



For illustrative purposes only.

## Sustainability in our asset management

While sustainability is integral to our due diligence, it doesn't stop there. It continues into our asset management business where, as of year-end 2022, 100% of our forests were certified under either the [Sustainable Forestry Initiative](#) (SFI) or [Forest Stewardship Council](#) (FSC),<sup>1</sup> and some of our forests in Australia and New Zealand carry dual FSC and Programme for the Endorsement of Forest Certification (PEFC) accreditation. We were managing our forests to these rigorous programs—which are essentially ESG standards for forest management—long before the concept of sustainable or ESG investing became mainstream.

With the proliferation of ESG standards and regulations over the past few years, and in particular the advent of the EU's sustainability finance taxonomy and SFDR, forest certification continues to prove its relevance. Whether it's our three sustainability themes of climate, nature, and people or the three ESG themes of environmental, social, and governance issues, or the SFDR's Principal Adverse Impacts (PAIs), we believe that forest certification is a comprehensive mechanism for credibly demonstrating sustainable asset management and, critically, it provides independent assurance to our stakeholders that we are operating sustainably.

Program principles for SFI and FSC are shown in the panel at right, and the following page illustrates how the principles in each of these standards are aligned with the UN Sustainable Development Goals, the SFDR's principal adverse impact indicators, and more general sustainability themes in the broader market (e.g., environment, social, and governance) or in our own sustainability strategy (e.g., climate, nature, people).

<sup>1</sup> As of December 31, 2022, 100% of our forests were certified under either Sustainable Forestry Initiative® (SFI®) (3.2 million acres in the United States and Canada) or Forest Stewardship Council® (FSC®) (2.2 million acres in Australia, New Zealand, Brazil, and Chile). Most current data shown.

## Certification

### SFI principles

- 1 Sustainable forestry
- 2 Forest productivity and health
- 3 Protection of water resources
- 4 Protection of biological diversity
- 5 Aesthetics and recreation
- 6 Protection of special sites
- 7 Legal compliance
- 8 Research
- 9 Training and education
- 10 Community involvement and social responsibility and respect for indigenous rights
- 11 Transparency
- 12 Continual improvement
- 13 Responsible fiber sourcing



### FSC principles

- 1 Compliance with laws
- 2 Workers' rights and employment conditions
- 3 Indigenous peoples' rights
- 4 Community relations
- 5 Benefits from the forest
- 6 Environmental values and impacts
- 7 Management planning
- 8 Monitoring and assessment
- 9 High conservation values
- 10 Implementation of management activities



## Crosswalk of certification principles and sustainability themes with SFDR PAIs

■ MIM themes ■ ESG themes

	Climate	Nature	People	People
	Environment	Environment	Social	Governance
SFI certification principles	SFI 1—Sustainable forestry	SFI 2—Forest productivity and health	SFI 5—Aesthetics and recreation	SFI 7—Legal compliance
		SFI 3—Protection of water resources	SFI 8—Research	SFI 11—Transparency
		SFI 4—Protection of biological diversity	SFI 9—Training and education	SFI 12—Continual improvement
		SFI 6—Protection of special sites	SFI 10—Community involvement and social responsibility, and respect for indigenous rights	SFI 13—Responsible fiber sourcing
FSC certification principles		FSC 5—Benefits from the forest	FSC 2—Workers rights and employment conditions	FSC 1—Compliance with laws
		FSC 6—Environmental values and impacts	FSC 3—Indigenous peoples’ rights	FSC 8—Monitoring and assessment
		FSC 9—High conservation values	FSC 4—Community relations	FSC 10—Implementation of management activities
			FSC 7—Management planning	
Applicable SFDR PAIs (Table number.PAI)	1.1—Greenhouse gas (GHG) emissions	1.7—Activities negatively affecting biodiversity-sensitive areas	3.2—Rate of accidents	1.16—Investee countries subject to social violations
		2.8—Exposure to areas of high water stress		2.11—Investments in companies without sustainable land practices
		2.15—Deforestation		
UN SDGs	SDG 13—Climate action	SDG 6—Clean water and sanitation	SDG 11—Sustainable cities and communities	SDG 16—Peace, justice and strong institutions
		SDG 15—Life on land	SDG 12—Responsible consumption and production	

# *Climate*

## **Our approach to climate**

We take climate change seriously, as it presents material risks—and opportunities—for our forest investments. Our goal is to mitigate the risks to the extent we're able, adapt to the risks that cannot be fully mitigated, and realize as many of the opportunities as we can.

**Risks**—More specifically, relevant climate-related risk factors include hurricanes, floods, wildfires, droughts, and pest and disease outbreaks. Well-managed forests are more resilient forests, and so our foresters' focus on maintaining and enhancing forest health is critical for protecting against losses related to these hazards, which are projected to grow in frequency and magnitude as climate changes intensify. Since we began tracking financial losses related to fires, storms, pests/diseases, and other factors in 1991, our long-term average annual loss due to these hazards is approximately 11 basis points per year.

**Opportunities**—On the positive side, climate change also presents opportunities for forest investments, which have become well known in this context as natural climate solutions for the way they naturally remove CO<sub>2</sub> from the atmosphere. In addition to carbon sequestration, forests may also provide other ecosystem services, such as wildlife habitat, local cooling effects, and flood attenuation. Some of these can be monetized (in the form of carbon credits or payments for other ecosystem services) and some cannot (or haven't been to date), but all are beneficial to society and the environment. We manage our timberland investments so as to realize these opportunities wherever possible within the mandate of our fiduciary duty.

**Scenario analysis**—Finally, we recognize that despite these well-known risks and opportunities, the actual impacts of climate change are far from certain. That's why we do our best to plan for multiple possible futures through climate scenario analysis. In 2022, we acquired a tool that will enable us to conduct scenario analysis across our entire global portfolio, which we look forward to completing and updating over time.

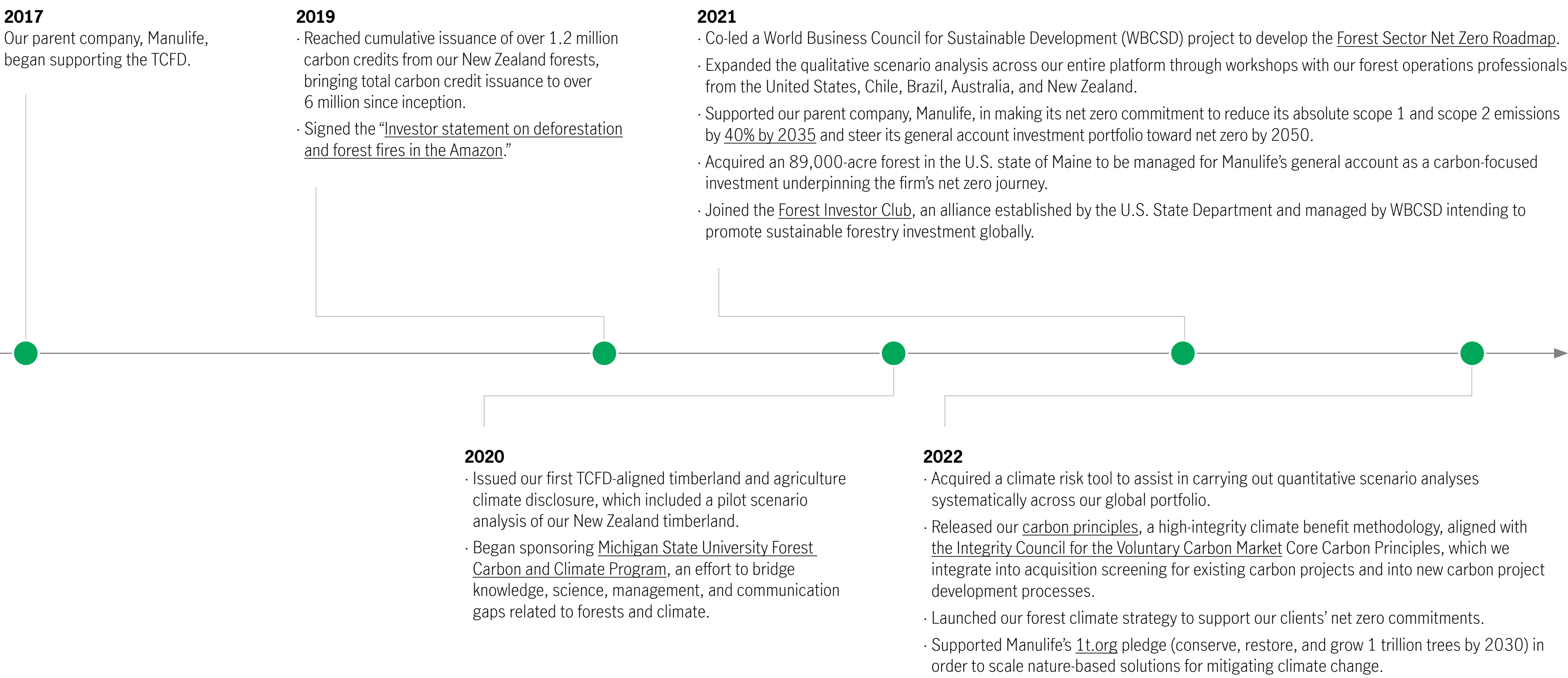
## **The importance of active forest management for climate adaptation**

While a changing climate can affect forest health, so can an experienced forester, and there are strategies for fostering an environment that's conducive to growing healthy and resilient trees. Our silviculture approach is adaptive to both current and future climate-related risks—and opportunities.

We belong to eight university cooperative research programs related to forest tree improvement, forest productivity, forest health, and growth and yield, all of which inform our management practices using current science. This enables us to tailor our species selection and management approach for each property in order to provide healthy forests, yielding the highest degree of adaptation and resilience. It also enables us to take advantage of some positive aspects of climate change: Evidence suggests that forests may benefit from higher CO<sub>2</sub> levels (carbon fertilization) and longer growing seasons.

# Our response to climate change over time

While we’ve always managed our forests adaptively to changing conditions, in the past few years we’ve adopted an increasingly explicit focus on responding to climate change. Since becoming a supporter of the [Task Force on Climate-related Financial Disclosures](#) (TCFD) in 2017, we’ve significantly scaled up our internal efforts and external partnerships to focus on mitigating and adapting to climate change.



Manulife has developed targets in accordance with the methodology for financial institutions outlined by the SBTi, in combination with Partnership for Carbon Accounting Financials methodologies for emissions accounting.



## Case study—launching our forest climate strategy

As an asset class, timberland provides investors with an opportunity to invest in a manner that contributes to sustainability goals, enables the pursuit of positive outcomes for the environment and local communities, and contributes to solutions to some of the greatest challenges facing the world over the long term, including climate change and nature loss. We launched our forest climate strategy to provide investors with the opportunity to promote climate change mitigation through sustainably managed forests, where carbon sequestration is prioritized over timber production. The strategy seeks to invest in a globally diversified portfolio of sustainably managed timberland assets with strong carbon sequestration potential and high conservation value in the United States, Canada, Australia, New Zealand, and select countries in Europe and South America. The main objectives of the strategy include sequestering carbon, ensuring long-term protection of sensitive habitats, creating additional environmental and social impact through non-timber activities, and providing attractive risk-adjusted returns to investors.

Specifically, the strategy seeks to:

- Generate a durable, high-integrity stream of carbon credits, in addition to implementing sustainable forest management plans
- Pursue conservation easement sales where appropriate
- Prioritize investment in contiguous tracts of land
- Implement sustainable forestry management and value-added services that support ecological and social benefits
- Maintain long-term climate and impact objectives on asset disposition

One of the core features that sets our climate strategy—and investment philosophy—apart is our focus on integrity, which is why the forest climate strategy also aligns with the principles of the [GHG Protocol](#), [International Carbon Reduction and Offset Alliance](#), the [Oxford Principles for Net Zero Aligned Carbon Offsetting](#), and our proprietary [Integrity Council for the Voluntary Carbon Market](#) Core Carbon Principles-aligned carbon principles.

# Metrics

We provide a comprehensive suite of metrics illustrating our timberland portfolio’s impact on the climate, including emissions, as well as carbon sequestration. For transparency, we also break down the individual components of the emissions and sequestration, as well as metrics relating to our tree planting and harvesting activities and the ultimate end uses of our harvested wood products.

Metric	2022	2021	GIIN
Total standing forest carbon stock (tCO <sub>2</sub> e)	638,506,302	615,204,003	N/A
Scope 1 GHG emissions (tCO <sub>2</sub> e) <sup>1</sup>	49,233	80,035	0I4112
of which: managed fire emissions (tCO <sub>2</sub> e)	37,489	52,318	0I4112
of which: fertilizer (N <sub>2</sub> O) emissions (tCO <sub>2</sub> e)	8,642	24,838	0I4112
of which: fuel combustion emissions	3,102	2,879	0I4112
Scope 2 GHG emissions (tCO <sub>2</sub> e) <sup>1</sup>	0	0	0I9604
Scope 3 GHG emissions (tCO <sub>2</sub> e) <sup>1</sup>	482,445	195,330	PD9427
Biogenic stock change (tCO <sub>2</sub> ; +ve = sequestration; -ve = emissions) <sup>2</sup>	-1,339,974	3,179,520	PI9878
Carbon stored in harvested wood products (tCO <sub>2</sub> e) <sup>3</sup>	2,557,633	2,979,656	PI9878
Net sequestration (tCO <sub>2</sub> ; +ve = sequestration; -ve = emissions) <sup>4</sup>	686,164	5,883,811	PI9878
5-year average sequestration (tCO <sub>2</sub> ; +ve = sequestration; -ve = emissions) <sup>5</sup>	1,791,934	2,747,187	PI9878
Percent net productive area <sup>6</sup>	82.3%	82.9%	N/A
Percent of net productive area harvested	2.8%	2.9%	PI3468
Percent of net productive area planted	2.7%	2.6%	N/A
Percent of harvest to solid wood	63.4%	59.2%	PD8494
Percent of harvest to fiber	35.6%	40.7%	PD8494
Percent of harvest to biomass	1.1%	0.0%	PD8494
37-year history number of trees planted	1,304,430,265	1,253,935,422	N/A

Source: Manulife Investment Management, 2022. GIIN refers to Global Impact Investing Network [IRIS+](#) metric codes.

**1** Scope 1: According to the [GHG Protocol](#), scope 1 emissions are all direct GHG emissions, which are “emissions from sources that are owned or controlled by the reporting entity.” Scope 2: According to the [GHG Protocol](#), scope 2 emissions are “indirect GHG emissions from consumption of purchased electricity, heat or steam.” Scope 3: According to the [GHG Protocol](#), scope 3 emissions are “other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.” **2** Net change in total forest carbon stocks over calendar year 2022. Positive values indicate more forest grew than was harvested (net sequestration); negative values indicate more forest was harvested than grew (net emission). **3** Quantity of carbon assumed to be stored in harvested wood products (from trees harvested over calendar year 2022) after 100 years. Represents long-term storage, and calculated using market-specific (geography/species) conversion factors. It is a fraction of biogenic stock change, as only some of the carbon transferred from forest carbon pool to wood products pool goes into long-lived wood products. **4** Biogenic stock change, plus carbon stored in harvested wood products, minus scope 1, 2, and 3 emissions. **5** The average net sequestration per year over the last five years. **6** Fractional area of timberland under management that is managed for commercial production of wood products. Area not managed for commercial production of wood products may include areas with high conservation value, old growth forest, buffer zones, conservation easements, threatened and endangered species habitat, or areas with historical or cultural significance.

## Targets

The table below shows our climate targets, and our progress against them, over time. While we’re tracking well on our 2021 commitments and have achieved what we set out to do, our work is just beginning. Our medium-term climate goals, documented in Manulife’s [1t.org](#) commitment, are designed to help us take the next steps toward reaching our climate ambitions.

Short-term target (set 2021)	2022 progress	Status (year-end 2022)
Decarbonization strategy launch	We began the process of mapping the decarbonization levers at our disposal and piloted new technologies designed to reduce emissions. We'll continue this process over the course of 2023 with the intent to begin to meaningfully reduce our timberland portfolio's emissions as soon as practicable.	Ongoing
Launch of forest climate strategy focused on carbon sequestration	On behalf of our Manulife general account, we acquired a contiguous 89,000-acre block of timberland in Maine with a diverse mix of naturally regenerated spruce fir and northern hardwood tree species. We launched our forest climate strategy centered primarily on storing carbon and generating high-integrity carbon credits, and aiming to offer carbon-focused investments for investors and corporates working toward net zero.	Complete
Net zero commitment partnerships	We partnered with Manulife’s five Australia and New Zealand timberland investment companies to support the net zero commitments that they made in 2021 on behalf of their investors.	Complete
	Manulife’s Australia and New Zealand timberland investment companies drafted TCFD-aligned climate disclosures, including analysis of any modifications to forest management required to achieve these net zero commitments.	Ongoing
Medium-term objectives (2023 to 2027)	Supporting actions	
Nature-based solutions	Building on Manulife’s existing US\$100 million commitment, we’ll continue to grow our investments in nature-based climate solutions over the next five years.	
Meeting investor's climate-related goals	Grow the scale of the Manulife Investment Management carbon-focused forestry investments we manage, offering innovative products that meet investors’ climate-related goals.	
Carbon sequestration	Increase our sequestration of CO <sub>2</sub> in the forests we manage in accordance with Manulife Investment Management’s carbon principles and leading sustainability certification standards, including the SFI, FSC, and PEFC.	
Partnerships and scale	<ul style="list-style-type: none"><li>• Create additional financial opportunities and incentives for conservation, restoration, and afforestation or reforestation (e.g., blended financing vehicles)</li><li>• Support scaling the market for sustainable timber in building construction</li><li>• Further the development of high-quality forest-based carbon credit standards</li><li>• Accelerate the development of sustainable investment strategies for companies interested in natural climate solutions to support their climate goals</li><li>• Partner to pilot new programs and technologies to promote nature-based climate solutions</li></ul>	

# Nature

## Our approach to nature

We view nature as our business. The forests we manage are ecosystems, and our job is to keep them healthy and productive over the long term. We aim to manage our forests so that they contribute to a nature-positive future. According to [naturepositive.org](https://naturepositive.org), nature positive means halting and reversing nature loss at a planetary level so that:

- From 2020 onward, there's zero net loss of nature, as measured in terms of “the health, abundance, diversity, and resilience of species, populations, and ecosystems.”
- By 2030, nature is “on the path to recovery,” with human activity benefiting nature rather than depleting it.
- By 2050, nature is fully recovered, with “thriving ecosystems and nature-based solutions continue to support future generations, the diversity of life, and play a critical role in halting runaway climate change.”

What that means in practice can be challenging to determine given the plethora of frameworks and initiatives that have evolved to spur companies toward action on nature (in collaboration with the Delphi Group, we produced a guide to these: the [“Nature-positive ecosystem”](#)).

## Key nature concepts

**Nature** is, quite simply, the natural world. It includes both abiotic (land, soil, water, air) and biotic realms. The biotic realm comprises ecosystems, species, and genes, which we refer to collectively as biodiversity.

**Biodiversity** is the variety of life on earth—typically a measure of the variation at the genetic, species, and ecosystem levels.

**Natural capital** is a way of referring to nature as a form of wealth with productive capacities that underpin value to society. All living things—our woodland, freshwater, farmland, coastal areas, oceans—are natural capital assets because they provide the services that make life possible. Biodiversity is a characteristic of healthy natural capital assets, and it underpins nature's capacity to generate flows of ecosystem services.

**Natural capital accounting** seeks to quantify (through traditional financial reporting methodology) the extent to which a company is contributing to, or detracting from, the natural capital assets under its management, as well as the extent to which such contributions may positively or negatively affect both the asset owner and society in general.



As members of the WBCSD, last year we co-led a project with other forest sector companies to develop the [Forest Sector Nature-Positive Roadmap](#), which details how the forest sector can contribute to a nature-positive future. While there are many potential avenues for doing so, at its heart, nature action is rooted in following the mitigation hierarchy.

## Toward nature positive: forest sector actions



### Avoid

Avoid deforestation and the conversion of areas of significant biodiversity value to intensively managed forests



### Reduce

- Reduce water use, waste, and pollution in nurseries and forests
- Preserve forest diversity when replanting after harvest
- Reduce need for land through land use optimization
- Protect water bodies, as well as areas of significant biodiversity and carbon value
- Reduce carbon emissions and biodiversity impacts related to harvesting
- Reduce impacts related to climate change and invasive species
- Reduce occurrence of poaching and illegal logging



### Restore/regenerate

- Reintroduce native or endangered tree species adapted to climatic conditions
- Enhance carbon in soils and forests
- Restore areas of significant biodiversity and carbon value
- Restore connectivity between habitats

## Toward nature positive: using the mitigation hierarchy

Principle	Definition	Our planned approach
<b>Avoid</b>	Avoid impacts on nature	<ul style="list-style-type: none"><li>• Following our deforestation policy</li><li>• Protecting sensitive lands through our sensitive lands program</li></ul>
<b>Reduce</b>	When it's not possible to avoid impacts, minimize them	<ul style="list-style-type: none"><li>• Managing high-conservation value forests for ecological value</li><li>• Developing species management plans to minimize the impact on and preserve habitat for threatened and endangered species</li></ul>
<b>Restore</b>	Restore affected ecosystems to their preimpacted state	Habitat conservation and restoration (see case studies)
<b>Regenerate</b>	Enable these ecosystems to regenerate themselves	Habitat conservation and restoration (see case studies)
<b>Transform</b>	Contribute to systemwide change	Environmental DNA (eDNA) biodiversity monitoring

Our approach may vary from time to time depending on the characteristics of the properties.

## Toward nature positive: natural capital accounting

One tool we believe to be invaluable for tracking progress on halting and reversing nature loss—as well as for informing decisions that will make this possible—it's natural capital accounting. And it's a key component of our evolving approach to nature.

In 2022, we worked with a specialist global consultancy in environmental economics to pilot a natural capital accounting approach for our timberland investments. The approach entails construction of a natural capital asset register and materiality assessment, followed by valuation of natural capital assets and liabilities using a combination of internal company data and publicly available research.

This approach culminates in a natural capital balance sheet and income statement, which, together, enables quantitative conclusions to be drawn about the extent to which a company is contributing to, or detracting from, the natural capital assets under its management, as well as the extent to which such contributions may positively or negatively affect both the asset owner and society in general.

We analyzed two pilot properties in 2022, and we plan to expand this approach across our timberland and agriculture portfolio in 2023 and beyond.

## Case study—eDNA sampling in New Zealand forests

Our foresters in New Zealand are using a new tool called environmental DNA (eDNA) to help us better understand the biodiversity in our forests. eDNA sampling is simple, noninvasive, and fast. It works using water samples, pushed through a filter to collect cellular material that's been shed by organisms in the vicinity of the sample site. The cellular material can be identified through laboratory analysis to give a list of species that are present. eDNA tests can detect thousands of organisms from less than one liter of water.

Manulife Forest Management New Zealand has only just started exploring how eDNA can inform its stewardship and operational activities. Currently, the technology is being used to confirm the presence of threatened species and to build up an understanding of biodiversity in forests.

The “Wheel of Life” graphic on this page shows the species diversity detected using eDNA sampling at three stream sites in Waituhi Forest. The Wheel of Life provides a snapshot of the ecosystem in and around the stream at the time the samples were taken. The presence of indicator species like koura (freshwater crayfish), mayflies, stoneflies, and caddisflies suggest that the sites are in good health. More sampling over time will build up a clearer picture of the long-term health of the stream and of the species living in and around it.

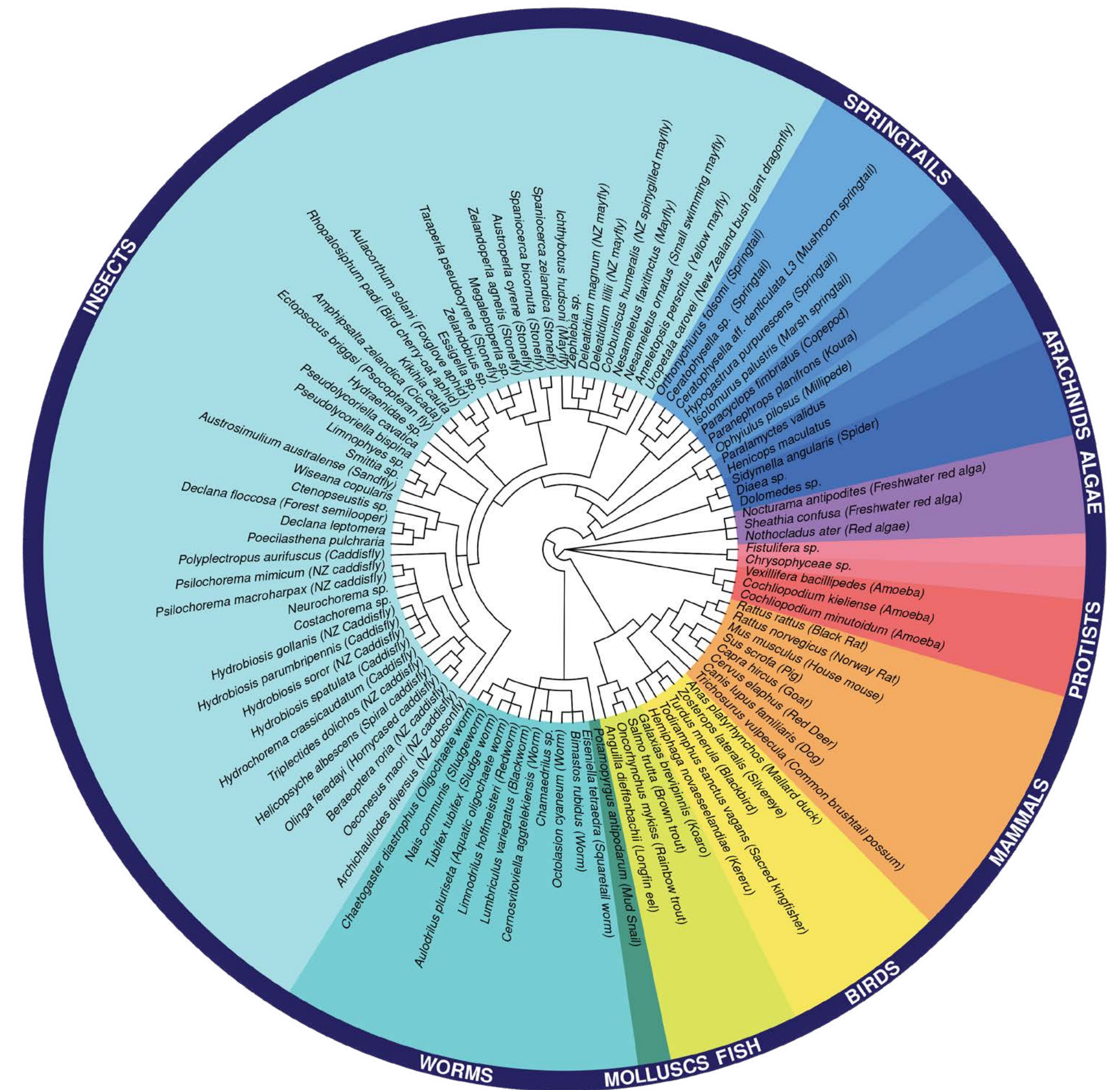


Image source: [Wilderlab](#).



## Case study—protecting native otters in Chile

One of our key responsibilities in consistently managing our forests toward a nature-positive future is protecting threatened species and their habitats.

The Huillín are otters native to Chile, where they live in rivers, shallows, and lakes. Huillín are classified as endangered by the International Union for Conservation of Nature (IUCN) and are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Migratory Species (CMS). In recent years, the geographic distribution of the Huillín has decreased drastically due to habitat loss.

Manulife Investment Management Forestal y Agrícola SpA (MFA (CL)) manages the San Fernando and Los Boldos properties in the Toltén and Quele river basins, where Huillín are present. These properties are close to the northern limit of the Huillín distribution in Chile.

Within these properties, MFA (CL) has defined areas of high conservation value forest to protect the natural habitat of the Huillín. MFA (CL) set up a monitoring program in these areas, with the aim of preserving their status, observing the existing population, and defining a work plan that allows the conservation of both the Huillín and their habitat. The latest monitoring shows that the Huillín are present in all monitored properties, through evidence of footprints, feces, and camera recordings. This has been the case since the first Huillín monitoring in 2013.

Prior to this work, the IUCN predicted that habitat loss would wipe out the Huillín present in the monitored area. This hasn't happened because MFA (CL) and other forestry companies included the Huillín in their conservation priorities and have been actively protecting riparian areas through the restoration of prioritized watercourses. This action is halting habitat loss and ensuring the Huillín stay in the northern limit of its distribution.

## Metrics

Measuring contributions to nature is challenging. While we’re working on developing natural capital accounts for our forests that will provide insight into those contributions, the following metrics reflect the broad range of efforts we make to positively affect nature.

Metric	2022	2021	GIIN
Number of tree species grown (plantation   total) <sup>1</sup>	15   63	15   63	PD9009
Forest third-party certified as sustainably managed <sup>2</sup>	100%	100%	PI1679
Forests with forest management plan	100%	100%	OI2622
Forests with biodiversity assessment	100%	100%	OD0660
Forests with conservation designation <sup>3</sup>	20.9%	20.0%	PD9009
37-year history sensitive lands program acres conserved <sup>4</sup>	479K	479K	PD9009
Number of stream miles protected by BMPs	19.2K	20.5K	OD4108

Source: Manulife Investment Management, 2022. GIIN refers to Global Impact Investing Network [IRIS+](#) metric codes. BMP refers to best management practice.

**1** Total includes 48 naturally regenerating species. **2** As of year-end 2022, 100% of our forests were certified under either the SFI or FSC, and some of our forests in Australia and New Zealand carry dual FSC and PEFC accreditation. As a condition of certification, forests must have management plans, including consideration of biodiversity. **3** Forests with conservation designation include land bearing one or more of the following designations: old growth forest, forest ecosystem of high conservation value, high-conservation value forest, conservation easements, areas with restricted management due to presence of threatened and endangered species, areas of culture or historical significance, and buffer areas such as stream management zones and riparian management zones. Year-on-year change may be affected by asset acquisitions and/or dispositions in addition to new conservation designations on the existing land base. **4** Sensitive lands are defined as lands whose attributes may lend themselves to management for purposes not related to timber production. They typically are deemed critical habitat for sensitive or endangered species or are lands with high scenic, historical, cultural, or recreational values. We actively seek out and work closely with public agencies and environmental groups to consummate conservation transactions and initiatives that will protect these lands. Land preservation transactions are conducted on behalf of clients in accordance with the terms of the investment mandate, and in seeking to generate overall risk-adjusted returns on their assets. Protection may include moving the land into public or conservation group ownership or placing permanent restrictions on how it can be managed, such as through a conservation easement.

# Targets

Setting targets around nature is challenging because it requires good baseline data and the ability to measure things, such as biodiversity, that have historically been difficult to quantify. For this reason, our current nature targets are process oriented and focus on establishing the measurement protocols required for monitoring current state and progress.

## Our nature targets

As signatories to the [Finance for Biodiversity Pledge](#), we’ve pledged to fulfill the five targets below by 2024 at the latest.

Nature targets (set 2021)	2022 progress	Status (year-end 2022)
Collaborate and share knowledge on assessment methodologies, metrics, targets, and financing approaches	In 2022, we launched our “ <a href="#">Nature-positive ecosystem</a> ,” a practical guide to major initiatives focused on protecting and restoring nature.	Complete
Engage with companies and incorporate criteria for biodiversity in our ESG policies	Incorporating biodiversity into our ESG policies is directly relevant to our real assets investments. We have policies on biodiversity and deforestation, and we incorporate multiple biodiversity-related considerations into both investment due diligence and asset management.	Complete
Assess the impact of our investments on biodiversity and identify drivers of its loss	We’re building a system of natural capital accounts across our global operations to capture, quantify, and potentially monetize the relationship between our operations and nature that will enable us to track how our timberland operations affect biodiversity, land, and water.	In progress
Set and disclose science-based targets to increase positive and reduce negative effects on biodiversity	We’re engaged in multiple external work streams focused on applying emerging guidance from the Taskforce on Nature-related Financial Disclosures and Science Based Targets for Nature, and we’ll leverage this work to inform our nature target-setting process.	In progress
Annual public reporting on the significant positive and negative contributions of our investments to global biodiversity goals	We publicly report on progress through our annual sustainable investing reports and in private regulatory disclosures to individual investors, where applicable.	Complete

As pledge signatories, we've taken these commitments, which are verbatim from the pledge, as our own, and will adapt them as needed. For example, because the investments we manage are real assets rather than companies, we could adapt "engaging with companies" to "engaging with value-chain partners," referring to contractors or purchasers of our products.



# People

## Our approach to people and communities

We value our people, employees, and contractors, and we work to ensure that we're offering not only safe and healthy working environments but the tools, training, and support they need to thrive. We're also committed to supporting and strengthening the local and indigenous communities in which we operate, providing rural employment opportunities, public use of our land, and support for local causes, as the following detailed description of our approach to different issues illustrates.

**Safety first**—The most important thing we can do on the job every day is to ensure our people make it home safely. We have a strong safety culture and our safety performance consistently exceeds forest products industry benchmarks.

**Rural employment**—In addition to our approximately 700 global timberland employees, approximately 4,300 contractors work on our timberland properties around the world. In some smaller rural communities, the scale of our operations makes us a key contributor to local economic activity. We prefer to buy locally, and maintain a preferred vendor list. Many of our foresters also participate in forestry education efforts such as [Project Learning Tree](#).

**DEI**—In 2021, we established a private markets diversity, equity, and inclusion (DEI) council to develop a strategy for DEI across private asset classes. The council includes representation from all private asset classes with a broad coverage of our major geographies and has four work streams: DEI best practices and opportunities, education and initiatives, communications, and data and metrics. Through this activity, we're seeking to create a culture that's more inclusive, better engages every employee, and provides opportunities for advancement regardless of race, ethnicity, age, gender, sexual orientation, religion, ability, economic status, and other aspects of diversity.



**Recreational access**—We allow public access to nearly all our global forest properties (with safety exceptions during active forest management operations), with opportunities for hunting, fishing, hiking, mountain biking, camping, and more. We extend hunting licenses to nearly 100 separate groups. We also maintain a special site protection program to safeguard areas of our property that are culturally, historically, or geologically unique.

**Indigenous communities**—We formally acknowledge the rights of indigenous peoples and employ many First Nations descendants as contractors in our operations. In our North American operations alone, over half of the forest properties we manage sit within 10 miles of a federally recognized tribal or First Nations landholding, and one in six intersects such landholdings. In some cases, indigenous communities contract with us to manage the forest on their behalf.

**Human rights**—We adhere to Manulife’s [global human rights statement](#), seeking to uphold human rights and affirming the UN’s “Guiding Principles on Business and Human Rights” as well as national legislation seeking to eradicate modern slavery. We extend these priorities into our contracting relationships. We require vendors to:

- Comply with all applicable antislavery and human trafficking laws, statutes, regulations, and codes
- Implement due diligence procedures for subcontractors, suppliers, and other participants in the supply chain to ensure no slavery or human trafficking
- Respect the dignity and human rights of all workers and be committed to fair employment and labor practices
- Provide protection against workplace harassment, abuse, discrimination, and violence



## Case study—fire safety awards in Victoria

Over 200 staff and contractors from Hancock Victorian Plantations (HVP), Hancock Queensland Plantations (HQP), and Manulife Forest Management New Zealand (MFM NZ) who were involved with the 2019/2020 bushfire response have been awarded the National Emergency Medal by the Australian government. The medal is awarded to those whose service protected life, property, or interests that weren't their own.

HVP was significantly affected by the fires, and the business, staff, and contractors contributed substantially to the emergency response. Within HVP alone, 193 staff and contractors were awarded the National Emergency Medal across four ceremonies in March 2023. The 2019/2020 bushfires burned for 98 days, and more than 1.5 million hectares were burned by over 3,500 fires. By the time the fires were out, HVP had deployed firefighters over 54 days and 29,000 hours. On the busiest day, HVP had 117 people, 25 pieces of plant machinery, and 38 operators and offsidiers fighting the fires. By the end of the fight, HVP lost 5,890 hectares of plantation but, critically, had saved many more.

The HVP team, including support from HQP and MFM NZ, was also involved in protecting people and assets from adjoining communities, including Cudgewa, Whorouly, and Buffalo River. The team worked alongside emergency service and community partners doing whatever it took to protect and care for lives and property. Everyone played their part in a myriad of ways throughout the fires, whether on the front line, in incident management teams, or at staging areas. During the award ceremony, recipients were recognized by Country Fire Authority representatives, HVP directors, and executive team members, who praised the medal recipients for their commitment to the community and their courage.

# Metrics

The table below documents our status and progress over time on core measures of our contributions to our people and our communities.

Metric	2022	2021	GIIN
Number of employees (timber) <sup>1</sup>	699	721	N/A
Number of employees (total) <sup>2</sup>	947	972	OI8869
Number of contractors (estimated) <sup>3</sup>	4,283	4,542	N/A
Percent women	29%	31%	OI2444
Percent racially and ethnically diverse individuals <sup>4</sup>	14%	6%	OI3236
Percent of leadership women <sup>5</sup>	15%	18%	OI1571
Percent of racially and ethnically diverse leadership <sup>5</sup>	11%	14%	OI3862
Number of new hires <sup>6</sup>	57	50	OI5479
Percent attrition <sup>7</sup>	18%	12%	OI1638
Lost time injury frequency rate <sup>8</sup>	4.4	2.9	OI3757
Percent employees responding to engagement survey <sup>7</sup>	89%	96%	N/A
Percentile employee engagement survey score <sup>7</sup>	60	57	N/A
Contributions to nonprofits <sup>9</sup>	\$585K	\$649K	FP3774
Lands with public access (acres) <sup>10</sup>	4,963,322	5,365,021	PD9009

Source: Manulife Investment Management, 2022.

**1** Includes 93 (2021) and 119 (2022) employees with timberland and agriculture responsibility. Employees of HVP and HQP are included. **2** Includes 251 (2021) and 248 (2022) agriculture-only employees. Employees of HVP and HQP are included. **3** Timberland contractors only; full-time equivalent, not individuals. **4** Includes North America staff as voluntarily reported in Workday only. **5** Leadership includes all timberland and agriculture staff at the level of director or higher (including AVP, VP). **6** Includes 9 (2021) employees with timberland and agriculture responsibility. **7** Combined result for timberland and agriculture in 2022 Gallup employee engagement survey. **8** Incidents per 1 million hours; timberland only. **9** Combined result for timberland and agriculture; does not include Australia timberland operations or South America operations. **10** Access of any type, including by permit, exclusive recreation lease, or unrestricted open public access.

# Our DEI progress

We’re committed to building a culture within our workplace where everyone thrives. Our holistic approach to DEI requires integration of DEI initiatives into every facet of our business—from outreach to education to employee engagement surveys. We use the power of data to track our DEI progress and the efficacy of our programs. Below we outline the targets we’ve set as we work toward meeting our goals.

People targets (set 2021)	Status (year-end 2022)
Employee engagement	
Achieve top quartile employee engagement scores	60%
Diversity	
Increase racially and ethnically diverse representation within our North American leadership by 60% by 2025 relative to 2021 (leadership is defined as those at VP, AVP, and director levels, approximately 10% to 15% of the company with leadership responsibilities)	-11% <sup>1</sup>
Achieve a sector-specific talent pool of 20% racially and ethnically diverse hiring over the next four years (U.S. agricultural and natural resources bachelor’s degrees at 21% racially and ethnically diverse)	14%
Increase the share of females in leadership roles to at least 20% by 2025	15%

Source: Manulife Investment Management, 2022.

<sup>1</sup> -11% represents a decrease from 12% to 11% overall in the proportion of racially and ethnically diverse individuals within our North American leadership relative to 2021. The decrease from 12% to 11% is a -11% change.

# The road ahead: an evolving regulatory landscape

Sustainable finance disclosure regulation—it's the name of EU legislation, but it's also an accurate description of one of the most important trends we see going forward.

In addition to driving private capital toward investments in sustainable economic activity, one expectation of such regulations is that they could enhance the rigor and comparability of disclosure. This could be of great import for an ESG investing industry that's grown more quickly than the ability to clearly define it. It's why sustainable finance taxonomies often develop in connection with the requirement for more regulation. Yet, there are now so many global sustainable finance taxonomies that, in 2021, the Bank for International Settlements released a paper with a plausibly tongue-in-cheek title, "A taxonomy of sustainable finance taxonomies." For better or worse, most geographies we operate in (and those of our investors) are now governed by such taxonomies and regulations. And it's not only regulation—voluntary initiatives continue to grow in importance as financial market participants seek guidance for how to direct capital flows toward solutions to the world's pressing problems. The GHG Protocol's work on Land Sector and Removals Guidance and the SBTi's guidance on setting forests, land, and agriculture targets are two examples with relevance to our timberland business.

We're tracking these developments closely as commercial and legal imperatives. And if history is any indicator, they'll continue to evolve. We'll stay on our toes to ensure we meet the regulatory and voluntary requirements our clients demand, and we support the global efforts of governments to set clear ground rules for markets around financing activities that affect the natural world on which we all depend.

And amid an ever-evolving and often confusing patchwork of initiatives, rules, and regulations, we'll continually return to our North Star—that good stewardship is good business. We're long-term investment managers with long-term investment horizons, and we've been around a long time. We offer a variety of sustainable financial products, and we strive to be as transparent and straightforward as we can about our strategy objectives, processes, and potential outcomes. We issue carbon credits, and we strive to maintain their high quality so that those purchasing them are paying for bona fide climate benefits. And we'll focus on continuous improvement, not relying on carbon removals as a one-size-fits-all solution to climate change but leveraging them as essential contributors to a solution.

That's what our investors—and our world—deserve.



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The case study/ies shown here are for illustrative purposes only, do not represent all of the investments made, sold, or recommended for client accounts, and should not be considered an indication of the ESG integration, performance, or characteristics of any current or future Manulife Investment Management product or investment strategy.

Manulife Investment Management conducts many ESG engagements each year but does not engage on all issues or with all issuers in our portfolios. We also frequently conduct collaborative engagements in which we do not set the terms of engagement but lend our support in order to achieve a desired outcome. Where we own and operate physical assets, we seek to weave sustainability into our operational strategies and execution. The case studies shown are illustrative of different types of engagements across our in-house investment teams, asset classes and geographies in which we operate. While we conduct outcome-based engagements to enhance long term-financial value for our clients, we recognize that our engagements may not necessarily result in outcomes which are significant or quantifiable. In addition, we acknowledge that any observed outcomes may be attributable to factors and influences independent of our engagement activities. The case studies shown are a sampling across issues and geographies. Our approach to ESG investing and incorporation of ESG principles into the investment process differs by investment strategy and investment team. It should not be assumed that an investment in the company discussed herein was or will be profitable. Actual investments will vary and there is no guarantee that a particular fund or client account will hold the investments or reflect the characteristics identified herein. Please see our ESG policies for details.

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