Forest Products Association of Canada Conservation Report

# **Conservation Forestry – Careful Use of Canada's Forest Resources**



FPAC.ca APFC.ca



# About

FPAC provides a voice for Canada's wood, pulp, and paper producers nationally and internationally in government, trade, and environmental affairs. As an industry with annual revenues exceeding \$75B, Canada's forest products sector is one of the country's largest employers operating in over 600 communities, providing 225,000 direct jobs, and over 600,000 indirect jobs across the country. Our members are committed to collaborating with Indigenous leaders, government bodies, and other key stakeholders to develop a cross-Canada action plan aimed at advancing forest health, while supporting workers, communities and our environment for the long term.

# **Table of Contents**

**EXECUTIVE SUMMARY** 4

**INTRODUCTION** 6

CANADA'S FORESTED LANDSCAPES 8

PROTECTED AREAS AND OFFICIALLY RECOGNIZED CONSERVED AREAS 12

CANADA'S SUSTAINABLY MANAGED FORESTS 17

SUSTAINABLE FOREST MANAGEMENT AND CLIMATE CHANGE 29

MONITORING AND REPORTING 32

CONCLUSION 36

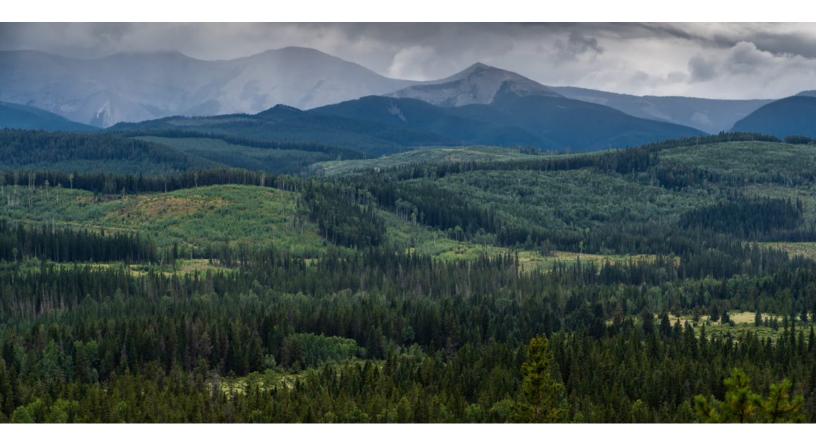
**ENDNOTES** 37

## **Executive Summary**

anadians rely on their forests to provide many benefits including clean air and water, food and medicine, carbon sequestration and storage, wildlife habitat and biodiversity, recreation, renewable and climate friendly products, and green jobs. This report highlights the many ways that conservation serves as a core principle of sustainable forest management in Canada, so that forests will remain healthy and resilient and continue to support and enrich the lives of Canadians for many generations.

Canada's forested landscapes are managed in three different ways. First, are the forests that are not actively managed. These areas do not undergo extensive planning and are typically considered unmanaged. In these unmanaged areas, natural disturbances such as insect infestations, diseases and wildfires are allowed to run their course unless communities or critical infrastructure are at risk. Commercial forestry operations do not take place in these areas. Second, are the network of formally protected areas. While these areas may involve extensive planning for multiple values such as wildlife or recreation, commercial forestry activities, such as harvesting and renewal, are typically prohibited. Third, is the sub-set of our forests that are actively managed for multiple benefits and values, including the removal of wood and wood fibre for the manufacture of wood-based products. These are referred to as sustainably managed forests. Natural disturbances, such as forest fires and insect outbreaks, are monitored and managed in these forests to protect infrastructure and communities, to avoid the release of large amounts of carbon into the atmosphere, to protect commercial and economic values, and to maintain the multiple ecosystem services provided through responsible, science-based management. Commercial operations, which strive to mirror natural disturbance processes and patterns, are a fundamental component of sustainably managed forests and are supported by strong regulatory frameworks as well as independent third-party forest management certification standards, which provide assurances that conservation objectives remain central to forest management activities.

This report highlights the many ways that conservation serves as a core principle of sustainable forest management in Canada, so that forests will remain healthy and resilient and continue to support and enrich the lives of Canadians for many generations.



Within the managed forest, only approximately half of the forest area (on a percentage basis) is eligible for commercial harvesting and renewal over time, while the other half that is subject to various conservation measures, is not. This is a direct outcome of a rigorous forest management planning process that incorporates the rights and views of Indigenous communities, as well as the perspectives of the public and various local stakeholders. It is also a result of federal, provincial and territorial regulatory regimes and voluntary practices (e.g., forest management certification) designed to provide for a wide array of values including wildlife habitat and the maintenance of ecosystem function across the land base.

Forests are dynamic. Many forest ecosystems rely on natural disturbances, often at the landscape scale, for renewal, providing heterogeneity across the landscape. In areas where natural disturbances are suppressed (e.g., the managed forest), actively managing the land base promotes structural diversity at the landscape scale, fostering the maintenance of habitat for a wide range of species. Managing forests also helps to mitigate, to an extent, the risks associated with natural disturbances, and improves carbon sequestration rates on the land base.

Canada is a world leader in sustainable forest management, and we are well-placed to ensure that our forests remain healthy and resilient while continuing to provide Canadians with the products and values we rely on, both now and in the future. Over half of Canada's managed forest area is subject to conservation measures and is off-limits to forestry operations.

# Introduction

orests are central to the long-term health of our planet and our sustainable future. They provide us with the basics of life, including oxygen, food, and clean air and water. They support biodiversity by providing habitat for thousands of species of flora and fauna. They provide traditional medicines and are intrinsically tied to Indigenous communities and cultures. They are also our best bet for a green, carbon-friendly economy that is based on renewable and increasingly innovative products that support our standard of living.

Canada's forests are also central to the realization of our national and international conservation commitments. For example, our forests contribute to all 17 of the United Nations Sustainable Development Goals<sup>1</sup> and are directly linked to a number of the Aichi Targets outlined in the international Convention on Biological Diversity (CBD)<sup>2</sup>, of which Canada is a signatory. Perhaps most notable among these targets is the promotion and implementation of sustainable forestry practices (Aichi Target 7).

At a global level, much of the world's forest resources are at risk due to deforestation, illegal logging activities, corruption, and poor management standards and practices. These risks are not present in any significant way in Canada.

Sustainable forestry activities in Canada are guided by a comprehensive and rigorous framework of laws and policies. This framework ensures that forestry operations are planned and carried out in accordance with the principles of conservation, forest resilience, and long-term forest health. Canada's standing as a responsible forest jurisdiction is well documented.<sup>34,5</sup>

This report outlines these practices and achievements and highlights the contributions of Canada's forest sector to the conservation of our forests and our planet.

This report outlines the contributions of Canada's forest sector to the conservation of our forests and our planet.



# Virtually No Deforestation in Canada

"FAO estimates that deforestation has robbed the world of roughly 420 million hectares since 1990, mainly in Africa and South America."

– United Nations – Deforestation Has Slowed but Still Remains a Concern

"Today, Canada's 348 million hectares of forest lands represent about 9% of the world's forest cover, but account for only 0.3% of global deforestation."

– Natural Resources Canada – Deforestation in Canada: Key myths and fact

"The forest area of Canada is relatively stable, with less than 0.5% deforested since 1990"

- State of Canada's Forests, 2021

"The dominant industrial sectors contributing to deforestation are agriculture, mining, oil and gas."

- State of Canada's Forests, 2021

# Canada is a World Leader in Sustainable Forest Management

"Our findings show that Canada, has some of the most stringent forest management legal and policy frameworks. While most other jurisdictions have only national and state level policies and a legislative framework to support sustainable forest management, Canada has comprehensive policies and a legislative framework in place at the national, provincial and local levels."

The State of Canada's Forests: A Global
 Comparison of the Performance on Montréal
 Process Criteria and Indicators

## **Defining Conservation**

"The protection, care, management and maintenance of ecosystems, habitats, wildlife species and populations, within or outside of their natural environments, in order to safeguard the natural conditions for their long-term permanence."

– International Union for Conservation of Nature - Definitions

SECTION 1. CANADA'S FORESTED LANDSCAPES

# Canada is home to a vast area of forest and many different forest regions.

Each forest region contributes to biodiversity in its own way and conservation objectives are achieved through a variety of different approaches.

8 Conservation Forestry – Careful Use of Canada's Forest Resources

# **Canada's Forested Landscapes**

anada is home to vast areas of forest, being the third most forested country in the world and housing nearly 30% of the world's boreal forest.<sup>6</sup> Our forests are an important part of Canada's cultures, livelihoods, lifestyles, and identities. Further, our forests and the benefits they provide are central to the well-being and standard of living of more than 600 forest-dependent communities across

Canada.7

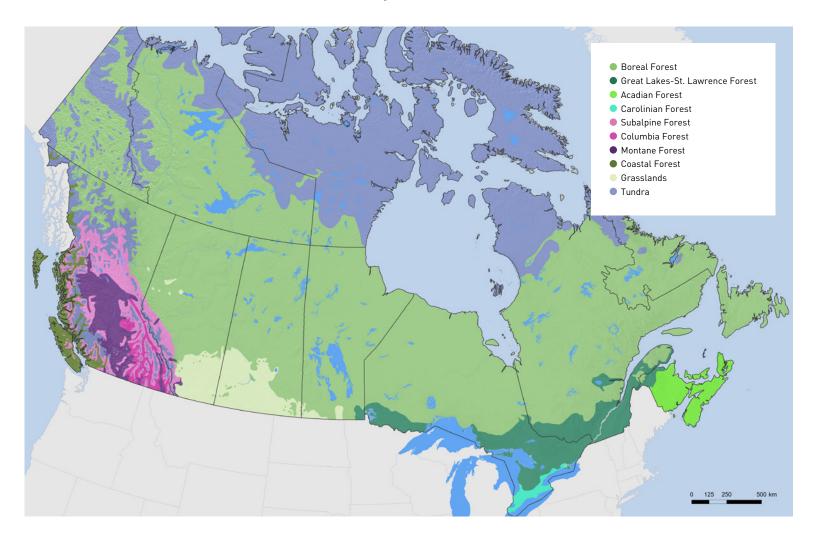
There are many different forest regions across the country (see Figure 1). These regions vary in species composition and their underlying ecological processes. For example, Canada's boreal forest, which makes up 75% of the total forest area8, represents a dynamic and disturbance-driven ecosystem that has been shaped by thousands of years of natural disturbances, primarily fire and periodic large-scale insect outbreaks. The plants and animals that reside within the boreal forest have adapted to these specific conditions. resulting in many flora and fauna species that are not found in other forest regions. Ultimately, each forest region contributes to Canada's biodiversity in its own unique way.

There are three primary classifications, or approaches, to forest conservation in Canada, each with different levels of human intervention. All three approaches share common core objectives (e.g., maintaining ecological processes and biodiversity, promoting forest health and resiliency) and contribute to forest conservation. These three classifications are unmanaged, protected, and sustainably managed (see Figure 2).9

Unmanaged forests are not associated with designated purposes or management plans and actions; however, they are significant to the lives of local people, biodiversity, and the global climate. Although these forests are referred to as unmanaged, they may still be subject to human interventions and activities, primarily by governments and local people. For example, fire suppression and fire smarting<sup>10</sup> are commonly used to help protect communities from wildland fire. Other activities that typically take place in these forests include hunting and fishing, collecting firewood, food and medicine, and recreation. While some sectors (e.g., mining) may be present, commercial forest operations do not occur in these forests. All other non-forestry sectors are governed by sector-specific laws and policies that have been developed by the federal, provincial, or territorial governments. In addition, despite the use of the term "unmanaged," it is recognized that Indigenous Peoples have been living in and managing these forests for millennia, and that these and other forests are fundamental to Indigenous Peoples' livelihood and culture.

Canada has 348 million hectares of forest. which represents 9% of the world's forest cover. With virtually no deforestation, Canada is committed to keeping our forests as forests.

#### Figure 1. Canada's forest regions.<sup>11</sup>



**Protected areas**, as described by the International Union for Conservation of Nature (IUCN), are clearly defined geographical spaces that are "recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".<sup>12</sup> Protected areas are managed primarily for the purpose of biodiversity conservation, often with allowances for some recreational activities. Forest conservation in these areas is achieved through a combination of hands-off approaches and more targeted strategies and actions that are developed and carried out in support of each area's specific objectives.

**Sustainably managed forests** serve multiple timber and non-timber values, including conservation, climate solutions, long-term timber production, and public safety. A wide range of activities in sustainably managed forests deliver many benefits to people, making these forest landscapes highly complex. As a result, these forests and subject to extensive planning and oversight requirements.

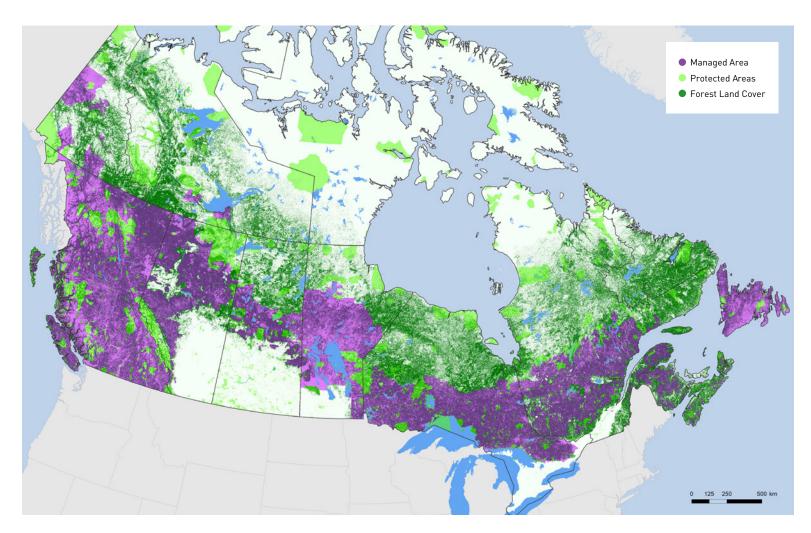
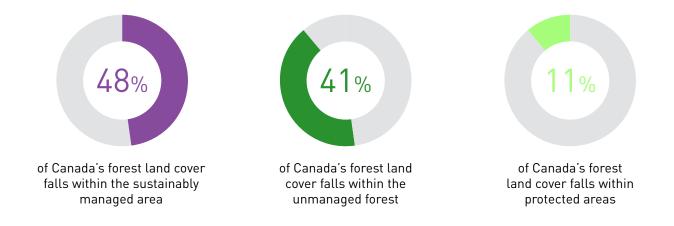


Figure 2. Protected areas, unmanaged forests, and sustainably managed forests in Canada.<sup>13</sup>

# Forests cover 38% of Canada's land area.<sup>14</sup>



SECTION 2. PROTECTED AREAS AND OFFICIALLY RECOGNIZED CONSERVED AREAS

# Canada's protected areas contribute to biodiversity conservation.

Additional mechanisms, including Indigenous Protected and Conserved Areas and Other Effective Area-Based Conservation Measures, are becoming increasingly recognized as important and complementary conservation tools.

# Protected Areas and Officially Recognized Conserved Areas

rotected areas have long been recognized as an essential component of Canada's efforts to conserve biodiversity and as important contributors to healthy, functioning ecosystems. While commercial activities are typically restricted within protected areas, recreational activities, including hiking, camping, and fishing, are common. In addition, factors such as climate change, invasive species, and increased susceptibility to wildfire (due in part to increased fuel loads resulting from decades of fire suppression) have resulted in greater utilization of management interventions and targeted strategies in some regions of the country. With ongoing planning, monitoring and management, protected areas will continue to provide a foundation for future conservation initiatives at the local, regional, and national levels. Protected areas, much like sustainable forest management practices, can play an important role in the prevention of deforestation and the realization of conservation objectives.<sup>15</sup>

## Mountain Pine Beetle and Jasper National Park

Over much of the past decade, Jasper National Park has succumbed to the mountain pine beetle outbreak that has impacted Canada's western forests, which has been attributed in part to decades of fire suppression, resulting in unnaturally large, continuous stands of older lodgepole pine—a preferred target of the beetle. To restore natural disturbance processes to the Park and to limit the overabundance of mature pine forest, Parks Canada recently developed a multi-pronged management strategy that incorporates the use of prescribed fire, targeted single, multiple and patch tree removal, community protection measures (e.g., FireSmart), and public education and awareness. Additional details can be found in the Jasper National Park Mountain Pine Beetle Management Plan.

+ MORE INFORMATION

Mountain Pine Beetle Management Plan – Jasper National Park, 2016

Currently, 12.6% of Canada's terrestrial area is contained within protected areas, most of which are considered Category I-IV, which represent areas with minimal human presence or influence on the landscape.<sup>16</sup> From 1990 to 2016, the forest area contained in protected areas more than doubled nationwide<sup>17</sup>, a trend that reflects several provincial-level initiatives to promote the conservation of our forest resources.

As part of its international commitments, Canada has pledged to officially conserve 25% of its terrestrial areas and inland water by 2025, and 30% by 2030. While creating new protected areas is expected to play a role in achieving this milestone, additional mechanisms

## **International Perspectives on Protected Areas**

The International Union for the Conservation of Nature (IUCN) has a long history of providing guidance and recommendations to the international community about the conservation of nature. The IUCN recognizes that conservation objectives are best achieved by using a variety of different approaches across a landscape, some with more human activities occurring within them than others. The IUCN classifies lands that meet the definition of a protected area according to six management categories:

Category Ia (Strict Nature Reserve)

Category Ib (Wilderness Area)

Category II (National Park)

Category III (Natural Monument/Feature)

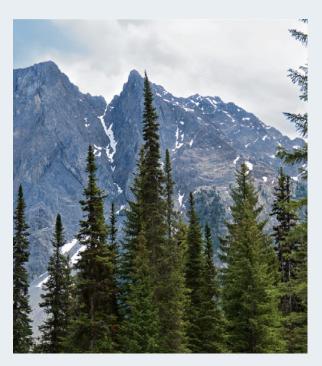
Category IV (Habitat/Species Management Area)

Category V (Protected Landscape/Seascape)

Category VI (Protected Area with Sustainable Use of Natural Resources)

Categories I and II represent very natural conditions with little human activity outside of conservation management, while categories V and VI recognize areas that are also being protected but where human influence and management activities are more significant and integral to their maintenance. Countries around the world make different decisions about how to apply these classifications within their own protected areas strategies.

In Canada, at the end of 2021, 12.6% of Canada's terrestrial and inland water areas were recognized as protected. Of these protected areas, approximately 95% were classified as Category I-IV. Canada has very few (<7%, n=674) protected areas identified in IUCN categories V and VI. In contrast, many other countries report higher overall proportions of protected areas than Canada,



with the majority of their protected areas falling into categories with greater human influence (e.g., Germany has approximately 60% of its protected areas designated as Category V). More specifically, in western European countries, protected areas include ancient rural villages and centuries-old managed forests. This comparison highlights not only Canada's traditional and rigorous approach to defining protected areas, but also the need to consider a wide range of methodologies when it comes to fostering broader action towards conservation.

+ MORE INFORMATION

Protected Areas and Other Effective Area-Based Conservation Measures for Terrestrial Areas and Inland Waters in Canada

Protected Planet – Discover the World's Protected Areas



are currently being recognized and discussed. Most notable to these discussions are Indigenous Protected and Conserved Areas (IPCAs) and Other Effective Area-Based Conservation Measures (OECMs). An OECM is a geographically defined area other than a protected area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem services.<sup>18</sup> IPCAs are defined as lands and waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems. Culture and language are the heart and soul of an IPCA.<sup>19</sup> While guidance on the establishment of IPCAs and OECMs continues to evolve, their contributions to Canada's international commitments are already being documented. For example, Canada currently has more than 9 million hectares of its terrestrial land base contained within formally recognized OECMs. When combined with protected areas, this brings Canada's conserved terrestrial area to 13.5%.<sup>20</sup>

As the discussions around IPCAs and OECMs continue, the role of conservation efforts within the sustainably managed forest (e.g., areas set aside for wildlife values during forest management planning), and their ability to contribute to Canada's international commitments, is expected to become increasingly recognized.

The ability of conservation efforts within the sustainably managed forest to contribute to Canada's international commitments is becoming increasingly recognized.

## **Canada's International Conservation Commitments**

In 2010, Canada committed to conserving 17% of its terrestrial areas and inland waters by 2020. Beyond 2020, Canada has pledged to increase its conserved areas to 25% by 2025 and then to 30% by 2030. Discussions are underway on how to define and identify these conserved areas beyond those formally recognized as protected areas; however, existing direction requires that eligible areas be governed and managed in ways that achieve positive and sustained long-term outcomes for biodiversity.

+ MORE INFORMATION

Canada's Nature Legacy - Protecting our Nature

World Commission on Protected Areas - OECMs

Indigenous Protected and Conserved Areas (IPCAs): Pathway to Achieving Target 11 in Canada Through Reconciliation

## **Emerging Conservation Designations**

Formally protected areas are a critical component of conservation; however, there is general agreement that achieving broad conservation outcomes requires a broad suite of approaches. This is recognized in Target 1 of the 2020 Biodiversity Goals and Targets for Canada by the inclusion of Other Effective Area-Based Conservation Measures (OECMs) and Indigenous Protected and Conservation Areas (IPCAs) in the overall strategy to meet conservation targets.

OECMs and IPCAs are geographically defined areas that contribute to conservation. They can be managed by Indigenous peoples, local communities, the private sector, and governments and may include initiatives such as natural areas managed for research and native rangelands. This permits a wider variety of stewardship activities, and a wider variety of players to be recognized for their conservation work and be members of the conservation community. For example, there are currently over 4.1 million hectares of land in British Columbia that have been officially designated as OECMs.

Recognizing OECMs and IPCAs also helps to recognize the many approaches that can support conservation outcomes, including those that involve active ecosystem management.

+ MORE INFORMATION

Pathway to Canada Target 1 World Commission on Protected Areas - OECMs Canadian Protected and Conserved Areas Database SECTION 3. CANADA'S SUSTAINABLY MANAGED FORESTS

有利的

# Canada's forest sector is governed by comprehensive and rigorous regulatory frameworks.

As part of the forest sectors commitment to conservation, forestry operations emulate natural disturbances, like fire, insects and disease.

# **Canada's Sustainably Managed Forests**

ustainable forest management, much like protected areas, represents an important and vital conservation tool.<sup>21,22,</sup>

Commercial operations within the managed forest are governed by comprehensive and rigorous regulatory frameworks (e.g., laws and policies) to ensure careful use of forest resources. In Canada, forest operations are planned

and implemented according to the core principles of conservation and long-term ecological health.

These frameworks are science-based and while they are primarily developed and administered at the provincial or territorial level to reflect local conditions and considerations, forest management in Canada is also informed through federal legislation and policy.

Sustainable forest management in Canada is comprised of four key elements:

- maintaining a natural forest condition
- managing for specific wildlife habitat features and ecosystem functions
- avoiding deforestation and ensuring sustainable harvest levels
- meaningfully incorporating public interests in forest management planning through public participation and specific consultation with Indigenous peoples

# Sustainable Resource Use as a Conservation Tool

"The sustainable use of biological resources and ecosystems is essential to the well-being of members of society and is necessary to conserve biodiversity."

- Canadian Biodiversity Strategy

"Forests presently cover 30 per cent of the Earth's land area, or nearly four billion hectares. Sustainably managed forests are healthy, productive, resilient and renewable ecosystems, which provide vital goods and ecosystem services to people worldwide."

– United Nations - Protection, Sustainable Management of Forests Fundamental to Security of Humanity's Place on this Planet

"Making forests and forest ecosystems more resilient to pests, diseases and invasive species requires coordination of national, regional and global activities for prevention, early detection, early action, implementation of phytosanitary measures and effective public awareness. It also requires sustainable forest management practices that both reduce the vulnerability of forests to the impacts of climate change and take biodiversity conservation and sustainable use into consideration."

- State of the World's Forests, 2020

Sustainable forest management reduces the vulnerability of forests to the impacts of climate change and represents a vital conservation tool.

# Provincial Leadership in Conservation and Forest Health

Across Canada, provincial governments have demonstrated a commitment to forest management systems that prioritize conservation and ecological health, an approach that is enshrined in forestry legislation and associated policies.

#### Saskatchewan

The Forest Resource Management Act the guiding legislation for forest management and associated activities in Saskatchewan. The purpose of the Act is "to promote the sustainable use of forest land for the benefit of current and future generations by balancing the need for economic, social and cultural opportunities with the need to maintain and enhance the health of forest land."

+ MORE INFORMATION

The Forest Resources Management Act

#### Ontario

In Ontario, commercial forestry activities, including harvesting and renewal, are governed by the Crown Forest Sustainability Act (CFSA). The stated purposes of the CFSA is "to provide for the sustainability of Crown forests and, in accordance with that objective, to manage Crown forests to meet social, economic and environmental needs of present and future generations." Under the CFSA, sustainability is defined as "long term Crown forest health."

+ MORE INFORMATION

#### Crown Forest Sustainability Act

#### Quebec

Quebec's Sustainable Forest Development Act provides direction on forestry related activities in the province. Central to the Act are the requirements that "Sustainable forest development must contribute, in particular, to

 the preservation of biological diversity;
 the maintenance and improvement of the condition and productivity of forest ecosystems;
 the conservation of soil and water;
 the maintenance of forest ecosystem contributions to major ecological cycles;
 the maintenance of the many socio-economic benefits society derives from forests; and
 the consideration, in making development choices, of the values and needs expressed by the populations concerned."

+ MORE INFORMATION

Sustainable Forest Development Act



## Science-Based Approaches in Forest Management

The science of forest management is one of the foundational expressions of applied ecology and has provided several different useful concepts, or paradigms to support policy and management decisions. Scientists look for ways to manage forest landscapes in a manner that maintains long-term ecological functions while providing more immediate social, economic, and environmental benefits. One concept used to help guide management plans at the landscape scale is Ecosystem Based Management, which seeks to manage in an integrated and holistic way relying on ecological principles. Other useful concepts include Natural Range of Variation, which requires understanding the historical variability and dynamics of forests and managing within those natural ranges, and Complex Adaptive Systems, which furthers these earlier concepts to also recognize the need for adaptation and resilience in the face of novel ecosystems driven by climate change and introduced species. As these science-based approaches are increasingly embraced and applied across Canada and the world, it is clear that sustainable forest management practices have an integral role to play in forest conservation.

#### + MORE INFORMATION

Implementing Ecosystem-based Management Approaches in Canada's Forests

#### An NRV Strategy Scorecard

From Management to Stewardship: Viewing Forests As Complex Adaptive Systems in an Uncertain World

#### Maintaining the Natural Forest Condition

Canada's forest ecosystems are dynamic in nature and have been shaped by thousands of years of disturbance from fire, insects and disease.<sup>23</sup> Certain areas may be disturbed frequently, while others may go undisturbed for prolonged periods of time, resulting in a heterogeneous mix of young and old forests dominated by different tree species. Over many millennia, forest-dependent species of plants and wildlife have adapted to these conditions and evolved to take advantage of the resulting patchwork of habitats, with some species relying on mature or older forests while others require young forests, or a mixture of young and old, to sustain their life cycles.

Forest management in Canada is designed to emulate these natural disturbance patterns and in doing so, maintains a natural forest. This means that Canada's managed forests continue to feature the same forest types, tree species, and age classes that would naturally occur on the landscape.

In areas where wildfire and other disturbances are actively suppressed (e.g., the managed forest), sustainable forestry can act as an effective surrogate and take on the ecological role that would normally be accomplished by natural events. Forestry operations are also able to do so in a much more predictable and controlled fashion than wildfire or other

dynamic in nature and have been shaped by thousands of years of disturbance from fire, insects and disease. Forest management in Canada is designed to emulate these natural disturbance patterns and in doing so, maintains a natural forest.

Canada's forest are



natural disturbance elements, providing for enhanced conservation related outcomes (e.g., protection of bird nests and shoreline reserves that might otherwise burn) while simultaneously promoting social (e.g., protection of roads and communities) and economic (e.g., protection of fibre supply that support jobs and a green economy) objectives.

Canada's approach to emulating natural disturbance includes careful planning and using strategies specific to each forest region and the underlying ecological processes that have shaped them. For example, in the boreal forest, this includes:

- using appropriately sized harvest blocks
- distributing harvest blocks appropriately across the landscape (e.g., proximity of individual harvest blocks to one another)
- retaining trees and leaving areas undisturbed within cut blocks
- supporting the growth of new healthy trees soon after harvesting

#### **Conservation Strategies and Actions**

In conjunction with sustainable harvesting and renewal practices, foresters and land managers use various techniques to manage specific forest attributes (see Figure 3). Many of these are used to conserve local or site-specific elements that are not renewable in the immediate term, limited in their availability, and/or are critical to the life cycles of various wildlife or plant species, including many species at risk. Examples include the application of



management strategies and actions, such as the establishment of buffer zones around key habitat features such as nests, dens, caves used by bats, and calving sites for moose and caribou. Measures are also applied to conserve critical ecosystem functions, such as buffer zones around water bodies to prevent erosion that might otherwise compromise water quality and associated aquatic habitats. As part of the forest management planning process (typically undertaken every five or 10 years), these strategies, or actions, are put in place for all known values in advance of any operations being initiated. If unmapped values are encountered during operations, the appropriate measures are applied before harvesting or renewal activities resume.

At a landscape level, areas with significant conservation value including wetlands, wildlife habitat, old-growth forests, and unique geological landforms are routinely identified and designated as off-limits to harvesting and renewal. Although the majority of these areas are specified through provincial and territorial laws and policies, others are set voluntarily, either through local engagement with stakeholders and Indigenous communities, or through the application of third-party forest management certification systems.

In addition, large areas of the managed forest are also commonly deferred or set aside for defined periods to ensure habitat availability for wide-ranging species such as caribou or marten. Harvest and renewal activities in these areas are scheduled over the long term (throughout the next 100+ years) to ensure that an appropriate amount of habitat is continuously regenerated and present on the land base. This approach recognizes the dynamic nature of Canadian forests and the role of active, sustainable management in ensuring the long-term provision of habitat.



## **Maintaining Wetland Habitat**

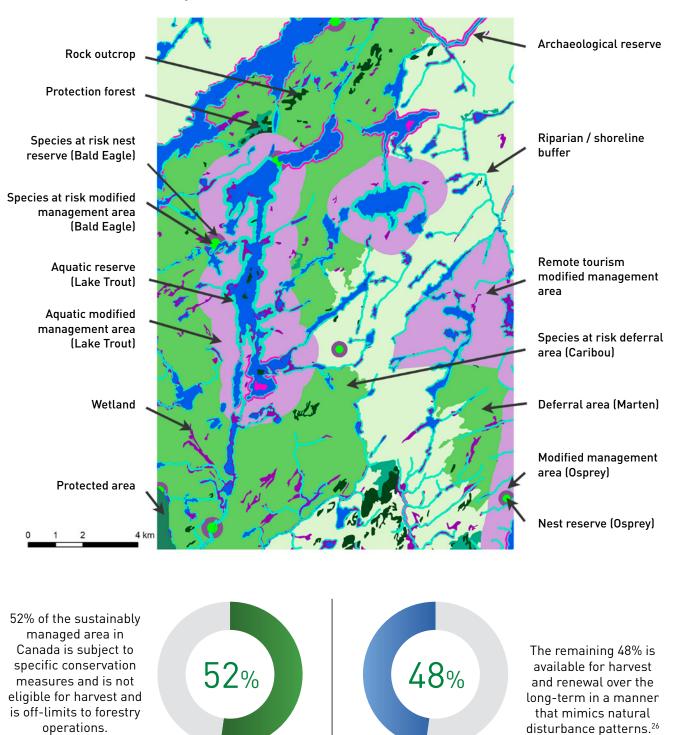
Louisiana Pacific Building Solutions (LP) and Ducks Unlimited Canada (DUC) are working together to conserve more than 2.5 million hectares (half the size of Nova Scotia) of waterfowl-supporting habitat in Manitoba. The project began in 2001 and uses DUC's Enhanced Wetland Classification (EWC) system to inventory habitat features across the landscape. The project has recently published information about the types of practices and measures that can be implemented to best support wetland habitat and has also estimated the soil organic carbon that is found within the Forest Management License Area.

#### + MORE INFORMATION

Boreal Wetlands and Waterfowl: A Commitment to Stewardship Activities in Manitoba

Collectively, these off-limits areas (both at the local and landscape level) account for approximately half of the managed forest across Canada. In 2020, FPAC completed an estimate of the managed forest area subject to conservation measures (e.g., buffer zones, wetlands, deferrals) and therefore not eligible for harvest and renewal operations. The results from this review showed that approximately 52% of the managed area in Canada was either actively or passively designated as off-limits. Harvest and renewal activities on the remaining 48% are conducted to mimic natural disturbance patterns and conserve biodiversity along with the forests' long-term ecological health.<sup>24</sup>

Many of the areas deemed off-limits contribute to the conservation of species and their habitat, and therefore have the potential to meet the criteria of, and be recognized as, OECMs.



**Figure 3.** Examples of areas associated with conservation strategies and actions on a forest management unit.<sup>25</sup>

## Wildlife Habitat Areas

Provinces play a leading role in designating forest areas to meet specific conservation objectives and in ensuring these areas are managed appropriately to achieve those outcomes. In British Columbia, the provincial government establishes wildlife habitat areas (WHAs) necessary to meet the habitat requirements of one or more species at risk or regionally important wildlife that are designated under British Columbia's Forest and Range Practices Act. These areas afford special protection above and beyond more general landscape conservation measures. In 2018, over 1.6 million hectares were established as WHAs to support various populations of species at risk, including caribou and grizzly bear.

#### + MORE INFORMATION

Ministry of Environment, British Columbia – Approved Wildlife Habitat Areas

#### Wildhay Glacial Cascades

West Fraser Hinton Wood Products identified a unique landscape within their forest management area with narrow, sharp-topped ridges running into and away from each other in striking and unusual ways. This geographical formation was developed 10,000 years ago when the glacier paused or slowed its retreat on the upland plateau, resulting in internal streams that burst out and modified the landscape with the movement of water and debris. In 1999, West Fraser Hinton Wood Products (at the time Weldwood of Canada Ltd.) nominated this unique landscape for protection and set it aside from any planned harvesting. In 2000, this area was recognized under legislation as the Wildhay Glacial Cascades Natural Area, covering 25 square kilometers of Alberta's Foothills Natural Region.

+ MORE INFORMATION

Facts on Wildhay Glacial Cascades Natural Area Alberta Government – Wildhay Glacial Cascades Natural Area

## Caribou Deferrals in the Prince Albert Forest Management Area

As part of their 2018 Forest Management Plan (FMP), Sakâw Askiy Management Inc. deferred 567,742 hectares of high-value caribou habitat on the Prince Albert Forest Management Area in Saskatchewan from harvest activities for 20 years (the full timeframe of the FMP). This deferral would be a key component of a broader caribou recovery strategy developed to minimize fragmentation and provide for sufficient caribou habitat over time.

+ MORE INFORMATION

Prince Albert Forest Management Plan

#### **Deforestation and Sustainable Harvest Levels**

Sustainable harvesting of trees, much like fire or insect infestations, does not result in deforestation. Post-disturbance, new trees grow back. In fact, sustainable forestry is viewed as an important tool in the fight against deforestation.<sup>27</sup> By providing a broad range of benefits from the forest – social, economic and ecological – sustainable forestry creates an incentive to maintain forests as forests and to allow for the continuation of these benefits in perpetuity. Canada maintains over 90% of its original forest cover, in large part owing to its commitment to sustainable forestry practices.<sup>28</sup>

Further, forestry laws and policies ensure that harvest levels never exceed forest growth, or what our forest can sustainably produce. This allows for a sustainable supply of wood to be available over generations (see Figure 4). Sustainable wood supply refers to the volume of wood that can be harvested each year while simultaneously ensuring that environmental, economic and social values and objectives are achieved.<sup>29</sup> In total, less than half of one percent of Canada's total forest area is harvested each year, which is significantly less than areas affected by natural disturbance (see Figure 5).

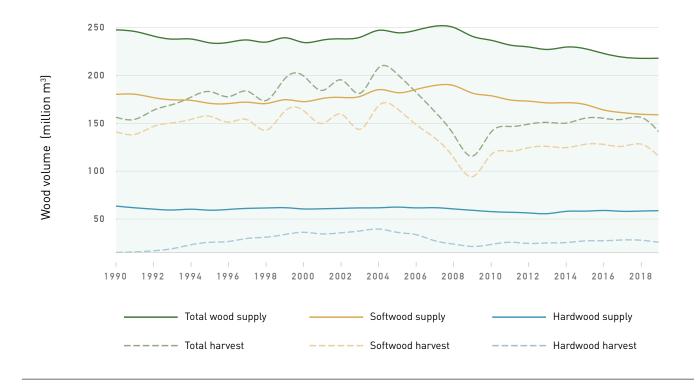
#### **Indigenous-Led Forest Management**

Over 70% of Indigenous communities in Canada are located in forested areas.<sup>30</sup> Not surprisingly, these forests have played a central role in meeting the cultural, spiritual and material needs of Indigenous peoples.

Indigenous and treaty rights are protected by Canada's constitution, and this is increasingly reflected in forest policy and forest management practices. It is widely recognized that Indigenous peoples have an integral role in furthering sustainable forest management objectives through the application of Indigenous knowledge and an intrinsic awareness of community values on the land base.

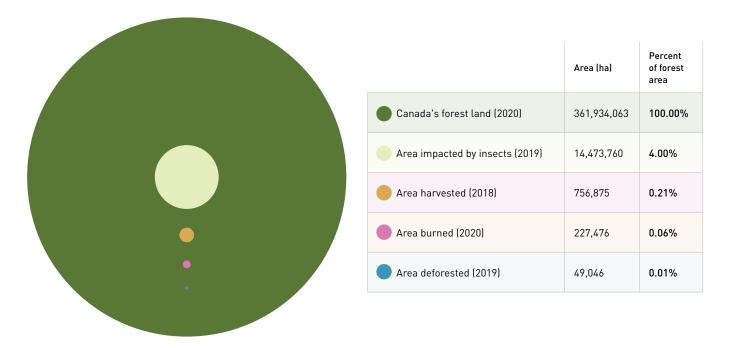
Recent decades have seen a steadily expanding role for Indigenous peoples in managing Canada's forests through a wide variety of approaches.<sup>31</sup> Notably, in recent years, Canada has seen an increase in the forest land and resources under Indigenous management, both in terms of fibre volume allocations and area-based tenures. Currently, Indigenous-held fibre allocations account for over 19 million m<sup>3</sup>, or 9.1% of the total available wood fibre from Canada's managed forests. This represents an increase of over 11 million m<sup>3</sup>, or 135%, since 2003. On an area basis, the portion of the managed forest under Indigenous-held tenure totals 17 million hectares, or approximately 7.5% of the total managed forest area.<sup>32</sup>

Forestry laws and policies ensure that harvest levels never exceed forest growth, or what our forests can sustainably produce. This allows for a sustainable supply of wood to be available over generations.



#### Figure 4. Volume harvested relative to the sustainable wood supply.<sup>33</sup>

Figure 5. Comparison of forest area impacted by harvest, insect, and fire, and area of deforestation.<sup>34</sup>





In addition to these direct, Indigenous-held volume and area-based tenures, new approaches to forest tenure are creating opportunities for greater co-management of the forest through Indigenous-private sector partnerships.<sup>35</sup>

The extent to which Indigenous peoples and communities are directly involved in the management of Canada's forests is expected to increase in the coming years. The Indigenous Forestry Initiative (IFI) is a recent example of programs supporting the growth of Indigenous involvement in the forest sector. The IFI provides financial support to Indigenous-led economic development projects, businesses, careers and governance, notably in forest stewardship and participation in the forest bioeconomy.<sup>36</sup>

Indigenous heldfibre allocation have increased 135% since 2003.

# The Importance of Indigenous Knowledge and Involvement in Forest Management

"Given than most Indigenous communities are located in or near forested lands (over 70 per cent of First Nations) and have a long history of forest management, encouraging increased Indigenous involvement in decisionmaking and in the forest sector will strengthen Indigenous communities and provide significant contributions to Canada's forest-based economy and sustainable forest management objectives."

- Canadian Council of Forest Ministers - Indigenous Peoples and Forests

SECTION 4.
SUSTAINABLE FOREST MANAGEMENT AND CLIMATE CHANGE

# Sustainable forest management is a key to Canada's low-carbon economy.

The carbon storage potential of Canada's forests and wood-based products have long been recognized as one of the most important climate change mitigation toolsets we possess.

of Canada's Forest Resources 29

# Sustainable Forest Management and Climate Change

s Canada looks to move to a net-zero carbon emission economy by 2050, governments at all levels will need to support and embrace those economic sectors that can continue to provide us with the goods and services we rely on in a sustainable and carbon-friendly manner. Sustainable forestry is a powerful, nature-based way to address climate change.

The carbon storage potential of our forests and wood-based products have long been recognized as one of the most important climate change mitigation toolsets we possess, a sentiment that has been subsequently endorsed by governments and scientific institutions around the world.<sup>37,38,39</sup> Through photosynthesis, trees convert water and atmospheric carbon dioxide into oxygen and carbon-based sugars, or carbohydrates. While the oxygen is released back into the atmosphere, the sugars are retained and used to support tree growth. When trees are converted to wood products, the carbon is retained in the products for decades or even centuries. As new trees become established and grow, additional carbon dioxide is removed from the atmosphere, increasing the overall net carbon benefit. In addition, wood-based products can be used to displace more carbon-intensive materials (e.g., concrete) and energy sources (e.g., fossil fuels), creating a beneficial substitution effect.<sup>40,41</sup>

While protected areas can act as carbon sinks, this is not always the case. A recent study by Parks Canada and the Canadian Forest Service<sup>42</sup> indicates that some parks, particularly those impacted by major wildfires, act as net carbon sources. A key finding of the study is that climate change, and the associated increase in insect infestations and wildfires, are reducing the ability of Canada's protected area networks to store and sequester carbon.

Sustainable forest management is a logical choice when it comes to achieving a low-carbon economy and should be recognized as a central platform for any future climate change action plans.

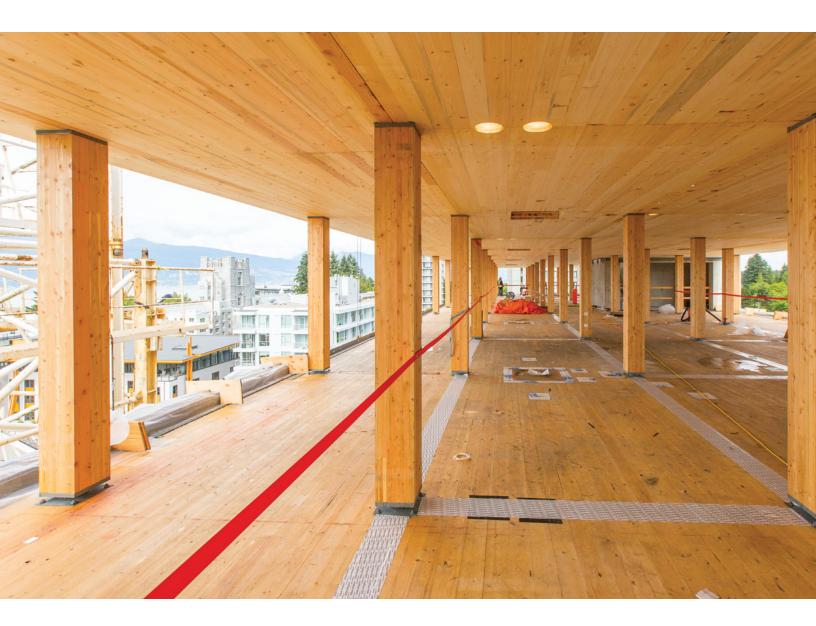
# Canada's Commitment to Net-Zero Emissions

In 2021, the Canadian government announced its objective of Net-Zero Emissions by 2050. More specifically, this endeavour will require Canada to transition to an economy that either emits no greenhouse gas emissions or offsets its emission through other activities.

+ MORE INFORMATION

Government of Canada – Net-Zero Emissions by 2050

Sustainable forest management is a logical choice when it comes to achieving a low-carbon economy and should be recognized as a central platform for any future climate change action plans.



# United Nations Statement on Sustainable Forest Management and Wood-Based Products

"Sustainable forest management aimed at providing timber, fibre, biomass, non-timber resources and other ecosystem functions and services, can lower GHG emissions and can contribute to adaptation."

- Climate Change and Land - An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems MONITORING AND REPORTING

Canada uses an international framework of criteria and indicators to track trends and demonstrate progress on sustainability

Canada regularly provides updates on its achievements, including through its annual State of Canada's Forests reports.

# **Monitoring and Reporting**

#### **International and National Level Reporting**

s part of its ongoing commitment to sustainable forest management, Canada regularly reports on forestry-related activities and outcomes (e.g., area harvested, natural disturbance levels, deforestation and afforestation, carbon emissions and removals, employment) using an internationally agreed upon framework of criteria and indicators. This framework consists of seven criteria and 54 indicators. It was developed as part of the Montreal Process<sup>43</sup> and agreed to by 11 other forest nations. These countries represent 90% of the world's temperate and boreal forests. The framework provides each country with a common methodology for tracking trends and demonstrating their progress towards, and achievement of, sustainable forestry. One of the key criteria established under this process is the conservation of biological diversity (see Figure 6).

Canada provides publicly available updates on its achievements against the Montreal Process criteria and indicators in its annual State of Canada's Forests reports.<sup>44</sup>

#### Figure 6. Montreal Process criteria.45

The seven criteria established through the Montreal Process criteria.	
1.	Conservation of biological diversity
2.	Maintenance of productive capacity of forest ecosystems
3.	Maintenance of forest ecosystem health and vitality
4.	Conservation and maintenance of soil and water resources
5.	Maintenance of forest contribution to global carbon cycles
6.	Maintenance and enhancement of long-term multiple social-economic benefits to meet the needs of societies
7.	Legal, institutional and economic framework for forest conservation and sustainable management

#### **Forest Certification**

Another way Canada's forest sector provides assurances that forests are being managed sustainably is through third-party certification. Forest management certification is a voluntary tool available to forestry organizations and forest managers who want to demonstrate corporate responsibility by having their forest management plans and practices independently certified against a sustainable forest management standard. These standards address social, economic, environmental, and technical parameters and set thresholds that forest companies must meet—above and beyond Canada's rigorous regulatory requirements.<sup>46</sup>

Compliance with a certification standard is determined through third-party audits, assuring independence throughout the certification process. Certification plays an important role in providing the public, Indigenous communities, and forest stakeholders with confirmation that forest operations are being carried out in a sustainable manner.

#### A Canadian Perspective on Certification

"Third-party forest management certification complements our comprehensive and rigorous forest management laws and regulations. It provides assurance that a forest company is operating legally, sustainably and in compliance with world-recognized standards."

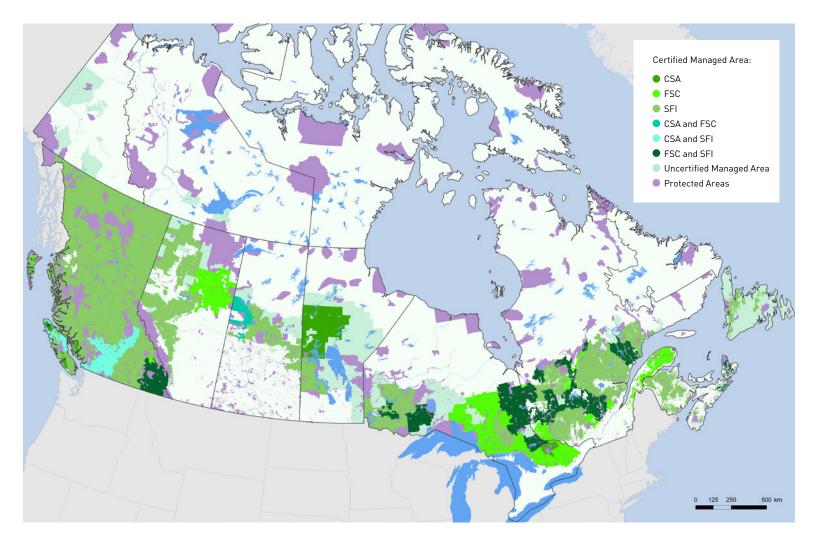
- Natural Resources Canada - Forest Certification in Canada

Certification provides numerous advantages to forest managers and forestry companies, most notably increased access to global markets and direct assurances to customers and the public that the products they purchase are sourced from sustainably managed forests. Once a company meets the requirements of a certification standard, they are permitted to label, or stamp their products with the corresponding logo. Certification standards are regularly updated to incorporate new knowledge and to reflect new and emerging interests and management practices.

Within Canada, there are three certification systems, all of which are internationally recognized and accepted—the Canadian Standards Association (CSA), the Forest Stewardship Council (FSC), and the Sustainable Forestry Initiative (SFI).

As of 2020, 74% of Canada's managed forest was certified (see Figure 7).<sup>47</sup> Canada is a forest management leader, accounting for 35% of the world's certified forests<sup>48</sup>, despite only having 9% of the world's forested land base.<sup>49</sup>

# Figure 7. Forest certification in Canada.<sup>50</sup>



# Conclusion

ustainable forest management is an important conservation tool and is integral to the long-term health of our forests. For more than a decade, the United Nations, along with governments around the world, has promoted sustainable forestry as one of our best approaches to developing and enhancing a low-carbon renewable economy.

In Canada, sustainable forest management is central to realizing our domestic and international goals and objectives regarding carbon and climate change and to developing solutions to support Canada's Net Zero Emissions objective. More specifically, a sustainable approach to forestry combined with wood products' carbon storage capacity represents one of our greatest climate change mitigation opportunities. Innovative wood-based products also have the potential to replace more carbon and energy-intensive materials and displace non-renewables such as single-use plastics.

When it comes to meeting international and national biodiversity targets, our sustainably managed forests have the potential to contribute to the objective of conserving 30% of our terrestrial areas by 2030. This will mainly come by establishing Indigenous Protected and Conserved Areas and through Other Effective Area-Based Conservation Measures. There is also a significant opportunity to improve sustainable forest management strategies (e.g., fire risk management and tree planting) that can directly contribute to nature-based solutions.

Sustainable forestry also has a core role to play in promoting economic development in Indigenous communities, supporting good jobs in rural areas, and providing Canadians with the products we rely on in our daily lives.

Canada, along with individual provinces and territories, has long been held up as a model of sustainable forestry, in large part due to the rigorous and science-based regulatory frameworks that govern our forestry practices. On the world stage, we are viewed as leaders, a standing that has been verified through independent studies<sup>51.52</sup> as well as our achievements in forest certification.

The Forest Products Association of Canada looks forward to ongoing discussions with the federal, provincial and territorial governments, Indigenous communities and businesses, municipal leaders, organized labour, and other partners to ensure that the benefits of responsible forest management are widely recognized and documented, and to discuss forestry's ongoing role in securing a sustainable future.

Sustainable forest management is an important conservation tool and is integral to the longterm health of our forests.

# Endnotes

- 1 World Business Council for Sustainable Development. 2019. Forest Sector SDG Roadmap. https://docs.wbcsd.org/2019/07/ WBCSD\_Forest\_Sector\_SDG\_Roadmap.pdf
- 2 https://www.cbd.int/countries/targets/?country=ca Visited on June 24, 2022
- 3 Indufor. 2016. International Comparison of Forest Management Legal Frameworks and Certification Standards. Summary available at https://uploads-ssl.webflow. com/60ccb5b3bd077c10c67edcec/60ccb5b3bd077cac577edfbf\_ FPAC-Indufor-Summary-2017.pdf
- 4 Gilani, H. R. and J. L. Innes. 2020. The state of Canada's forests: A global comparison of the performance on Montréal Process Criteria and Indicators. Forest Policy and Economics, vol 118. https://doi.org/10.1016/j.forpol.2020.102234
- 5 Natural Resources Canada. 2016. Canadian Forest Products: A Legal and Sustainable Choice. https://cfs.nrcan.gc.ca/ pubwarehouse/pdfs/36712.pdf
- 6 https://www.nrcan.gc.ca/our-natural-resources/forests/ sustainable-forest-management/boreal-forest/8-facts-aboutcanadas-boreal-forest/17394 Visited on April 14, 2022
- 7 https://www.fpac.ca/about Visited on March 14, 2022
- 8 https://www.nrcan.gc.ca/our-natural-resources/forests/ sustainable-forest-management/boreal-forest/8-facts-aboutcanadas-boreal-forest/17394 Visited on April 14, 2022
- 9 For a more detailed breakdown of forests under different management and governance regimes including Indigenous treaty/settlement, private, and short- and long-term tenure, see Stinson, G., Thandi, G., Aitkin, D., Bailey, C., Boyd, J., Colley, M., Fraser, C., Gelhorn, L., Groenewegen, K., Hogg, A., Kapron, J., Leboeuf, A., Makar, M., Montigny, M., Pittman, B., Price, K., Salkeld, T., Smith, L., Viveiros, A. and D. Wilson. 2019. A new approach for mapping forest management areas in Canada. The Forestry Chronicle, vol 95(2). https://doi. org/10.5558/tfc2019-017
- 10 Fire smarting centres around the use of planning tools and associated actions to reduce the likelihood of wildfire near communities and to minimize wildfire impacts. For more information, see https://firesmartcanada.ca/
- 11 Modified from https://www.nrcan.gc.ca/our-natural-resources/ forests/sustainable-forest-management/measuring-andreporting/forest-classification/13179 Visited on August 24, 2021
- 12 Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. https://portals.iucn.org/library/sites/library/files/documents/ pag-021.pdf
- 13 Modified from Bélanger, E., Roddy, D. and D. Baldwin. 2020. Calculating the extent of conservation lands within Canada's managed forests. Forest Products Association of Canada.
- 14 Bélanger, E., Roddy, D. and D. Baldwin. 2020. Calculating the extent of conservation lands within Canada's managed forests. Forest Products Association of Canada.
- 15 http://www.fao.org/state-of-forests/en/ Visited on March 14, 2022

- 16 https://www.canada.ca/en/environment-climate-change/ services/national-wildlife-areas/protected-conserved-areasdatabase.html Visited on April 12, 2022
- 17 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/state-canadas-forests-report/how-much-forest-doescanada-have/indicator-forest-area-within-protected-areascanada/21892 Visited on March 14, 2022
- 18 https://www.iucn.org/our-union/commissions/group/iucnwcpa-other-effective-area-based-conservation-measuresspecialist Visited on March 14, 2022
- 19 The Indigenous Circle of Experts. 2018. We Rise Together: Achieving Pathway to Canada Target 1 through the creation of Indigenous Protected and Conserved Areas in the spirit and practice of reconciliation https://static1.squarespace.com/ static/57e007452e69cf9a7af0a033/t/5ab94aca6d2a7338ecb1d0 5e/1522092766605/PA234-ICE\_Report\_2018\_Mar\_22\_web.pdf
- 20 https://www.canada.ca/en/environment-climate-change/ services/national-wildlife-areas/protected-conserved-areasdatabase.html Visited on April 12, 2022
- 21 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/sustainable-forest-management/conservation-andprotection-canadas-forests/17501 Visited on March 14, 2022
- 22 http://www.fao.org/state-of-forests/en/ Visited on March 14, 2022
- 23 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/wildland-fires-insects-disturban/why-forests-needfires-insects-and-diseases/13081 Visited on March 14, 2022
- 24 Bélanger, E., Roddy, D. and D. Baldwin. 2020. Calculating the extent of conservation lands within Canada's managed forests. Forest Products Association of Canada.
- 25 Modified from Spatialworks. 2016. Mapping and Assessment of the Web of Conservation Lands in the Boreal Softwood Shield. Project report prepared for Canadian Wildlife Service, Environment Canada. 80 pages.
- 26 Bélanger, E., Roddy, D. and D. Baldwin. 2020. Calculating the extent of conservation lands within Canada's managed forests. Forest Products Association of Canada.
- 27 https://www.fao.org/sustainable-forest-management/toolbox/ modules/reducing-deforestation/basic-knowledge/zh/ Visited on March 14, 2022
- 28 Calculation by the Forest Products Association of Canada based on data from the UN Environment World Conservation Monitoring Centre and Natural Resources Canada.
- 29 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/state-canadas-forests-report/timber-beingharvested-sustainably/16494 Visited on March 14, 2022
- 30 https://www.ccfm.org/canadians-and-communities/ indigenous-peoples-and-forests/ Visited on June 24, 2022
- 31 Wyatt, S., Fortier, J.-F., Greskiw, G., Hébert, M., Nadeau, S., Natcher, D., Smith, P. and R. Trosper. 2010. Collaboration between Aboriginal peoples and the Canadian forestry industry: a dynamic relationship. A State of Knowledge report. Sustainable Forest Management Network, Edmonton, Alberta. 83 pp. https://cfs.nrcan.gc.ca/publications?id=32280

- 32 National Aboriginal Forestry Association. 2020. Fifth report on Indigenous-held forest tenures in Canada. http://www. nafaforestry.org/pdf/2020/NAFA%20Fifth%20Report%20on%20 Indigenous-Held%20Forest%20Tenures%20in%20Canada%20 2020.pdf
- 33 Modified from https://www.nrcan.gc.ca/our-natural-resources/ forests/state-canadas-forests-report/timber-being-harvestedsustainably/16494 Visited on May 5, 2022
- 34 Developed using data from https://cfs.nrcan.gc.ca/statsprofile/ Visited on May 5, 2022
- 35 National Aboriginal Forestry Association. 2020. Fifth report on Indigenous-held forest tenures in Canada. http://www. nafaforestry.org/pdf/2020/NAFA%20Fifth%20Report%20on%20 Indigenous-Held%20Forest%20Tenures%20in%20Canada%20 2020.pdf
- 36 https://www.nrcan.gc.ca/science-and-data/fundingpartnerships/funding-opportunities/forest-sector-fundingprograms/indigenous-forestry-initiative/13125 Visited on November 2, 2022
- 37 Intergovernmental Panel on Climate Change. 2019. IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. https:// www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM\_Approved\_ Microsite\_FINAL.pdf
- 38 https://www.nrcan.gc.ca/climate-change-adapting-impactsand-reducing-emissions/climate-change-impacts-forests/ mitigation/13097 Visited on March 15, 2022
- 39 The Ministerial Katowice Declaration on Forests for the Climate. 2018. https://www.politico.eu/wp-content/ uploads/2018/12/Ministerial-Katowice-Declaration-on-Forests-for-Climate\_OFFICIAL\_ENG.pdf
- 40 Smyth, C. E., Stinson, G., Neilson, E., Lemprière, T. C., Hafer, M., Rampley, G. J., and W. A. Kurz. 2014. Quantifying the biophysical climate change mitigation potential of Canada's forest sector. Biogeosciences, vol 11. https://bg.copernicus. org/articles/11/3515/2014/bg-11-3515-2014.pdf
- 41 Leskinen, P., Cardellini, G., González-García, S., Hurmekoski, E., Sathre, R., Seppälä, J., Smyth, C., Stern T. and P. J. Verkerk. 2018. Substitution effects of wood-based products in climate change mitigation. From Science to Policy 7. European Forest Institute. https://doi.org/10.36333/fs07
- 42 https://www.pc.gc.ca/en/nature/science/climat-climate/atlas Visited on March 14, 2022
- 43 https://www.montreal-process.org/ Visited on March 14, 2022
- 44 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/state-canadas-forests-report/16496 Visited on March 14, 2022
- 45 As outlined in The Montreal Process Working Group. 2015. The Montréal Process: Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. https://www.montreal-process.org/documents/ publications/techreports/MontrealProcessSeptember2015.pdf
- 46 https://certificationcanada.org/en/certification/forestmanagement-certification/ Visited on March 14, 2022
- 47 Natural Resources Canada. 2022. Finding solutions within Canada's forests. https://www.nrcan.gc.ca/sites/nrcan/files/ forest/sof2021/Finding%20solutions%20within%20Canada%20 s%20forests\_EN\_web\_accessible.pdf

- 48 https://certificationcanada.org/en/certification/forestmanagement-certification/ Visited on June 24, 2022
- 49 https://www.nrcan.gc.ca/our-natural-resources/forestsforestry/state-canadas-forests-report/how-much-forest-doescanada-have/17601 Visited on March 14, 2022
- 50 Modified from https://certificationcanada.org/en/certification/ certification-maps/ Visited on August 24, 2021
- 51 Gilani, H. R. and J. L. Innes. 2020. The state of Canada's forests: A global comparison of the performance on Montréal Process Criteria and Indicators. Forest Policy and Economics, vol 118. https://doi.org/10.1016/j.forpol.2020.102234
- 52 Indufor. 2016. International Comparison of Forest Management Legal Frameworks and Certification Standards. Summary available at https://uploads-ssl.webflow. com/60ccb5b3bd077c10c67edcec/60ccb5b3bd077cac577edfbf\_ FPAC-Indufor-Summary-2017.pdf



