Canada's Boreal Forest

Canadian Council of Forest Ministers

Conseil canadien des ministres des forêts

CANADA'S BOREAL FOREST

Ecozone	Area (M ha*)	% Ecozone
Taiga Plains	63	100
Taiga Shield	134	100
Boreal Shield	163	84
Atlantic Maritime	3	12
Boreal Plains	73	100
Taiga Cordillera	26	100
Boreal Cordillera	46	98
Hudson Plains	37	100
Total	545	

* Forest and other wooded land as defined by Canada's Forest Inventory 2001.
This map will be updated as the results of further research into the boreal become known.

Canada's Boreal Forest

Canada is custodian to approximately 30% of the world's boreal forest. This forest region has always been important to Canada. Its resources have provided environmental, social and economic benefits to Canadians for generations. As a forest nation, Canada is a world leader in sustainable forest management. As a home to part of the planet's boreal ecosystem, it is also a leader in the efforts to ensure the boreal remains intact and healthy.

What is the boreal?

Encircling the earth's Northern Hemisphere just south of the Arctic Circle, this green mantle of mainly coniferous forest comprises about 16.6 million square kilometres, or roughly one-third of the planet's forested area. Russia is the custodian of the largest portion of the boreal, containing just under 60 per cent of this woodland, while Canada's share is close to 30 per cent. The Scandinavian countries account for nearly 10 per cent, with the remainder existing in China, the United States (Alaska) and some other northern countries.

The Canadian portion of the boreal region stretches from the Yukon and northeastern British Columbia across the northern parts of the Prairie provinces, Quebec and Ontario to Labrador and Newfoundland. It forms a band more than 1000 kilometres wide between the frozen tundra of the Arctic to the north and the more temperate forests and grasslands to the south. This area is primarily publicly owned and is rich in natural resources such as the forest, fresh water, minerals, oil, and gas.

The Canadian boreal forest began to form after the retreat of the glaciers approximately 10,000 years ago. Natural disturbances such as fire and insects have played, and continue to play, a major role in the boreal forest's development and renewal. Human beings have lived in the Canadian boreal forest since its beginning. They too have had a major influence on its development.

The word "boreal" is derived from Boreas, the Greek god of the north wind. To Canadians, this reference to an ancient deity has taken on the modern connotation of a sacred trust — a legacy that must, and will, be sustainably managed for the benefit of present and future generations.

Why is the boreal important?

The boreal region is one of the three global forest types. Accounting for 33% of the Earth's forests, the boreal covers 11% of its surface. Environmentally, the boreal is very rich. In Canada, the boreal forest region contains vast freshwater resources — including an estimated 1.5 million lakes. Some 20 species of trees are found here — the most common being spruce, fir, tamarack, aspen and birch. It also provides habitat for a wide range of mammals, such as moose, wolves, caribou, bears, rodents, rabbits, lynx and mink. It is home to the largest mammal on the North American continent — the wood bison — and the smallest, the pygmy shrew.

Bird populations are the most dynamic of boreal wildlife. While some species, such as finches, chickadees, crows, owls, ravens and woodpeckers, remain year-round, most migrate. About half of Canada's 450 avian species use the boreal forest, and up to five billion birds fly south and return north each year. The boreal forest and its wetlands are an important breeding and nesting habitat for these birds.

Forests play an important role in the global carbon cycle, exchanging carbon with the atmosphere through photosynthesis and respiration, and storing a large amount of carbon in vegetation and soil. Canada is taking steps to adapt to the impacts of climate change on its forests. It is developing new technologies and experimenting with innovative approaches to regeneration, among other things. Much of this research involves the boreal forest, which makes up three-quarters of Canada's forests and could be affected by climate change more than forests to the south.

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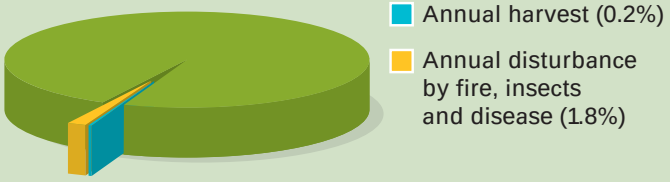
Canada's boreal forest also adds immensely to the economic and social well-being of all Canadians, but especially those who live and work in or near this vast expanse. It is estimated that 2.5 million Canadians reside in 522 boreal-forest-dependent communities across Canada, where at least 20 per cent of a community's economy comes from this resource. Approximately half of the country's annual cut comes from the boreal. As well, there are other resource activities in the boreal such as oil and gas exploration, mining and hydro electricity generation.

In 2004, the forest industry accounted for $35.9 billion, or three per cent of Canada's gross domestic product. It exported $44.6 billion in wood, pulp and paper products and employed over 900,000 individuals in direct and indirect jobs.

Many Aboriginal peoples in Canada have lived in the boreal region for thousands of years, relying on these woodlands for timber, wildlife, herbs and medicinal plants. Non-timber forest products such as maple syrup, mushrooms, berries and other food found growing in the wild, as well as other products like resins and craftmaking materials, are harvested by the people of the boreal communities and other entrepreneurs. Aboriginal communities are increasingly becoming involved in the forest sector and there has been an emergence of partnership arrangements between Aboriginal peoples and the private sector, as well as with federal, provincial and territorial governments.

Annual Levels of Disturbance and Harvesting in the Boreal Forest



About 750,000 hectares — or 0.2 per cent of Canada's 310 million hectares of boreal forest — are harvested annually. This number represents about half of the country's annual cut. Another five million to six million hectares are disturbed by fire, insects and disease each year.

Sustainably managing the boreal forest

About 93% of Canada's forest — 71% provincial/territorial and 22% federal — is publicly owned, with about 80% of the harvest coming from public lands. Under Canada's Constitution, the federal government, the provinces and the territories have specific roles in the care and governance of public forests. They also share responsibility for matters such as environmental regulation and science and technology. Public forest ownership is one of the key reasons Canada consistently ranks among the world's best forest managers. Through various public participation mechanisms, Canadians have the ability to say how their forests should be managed.

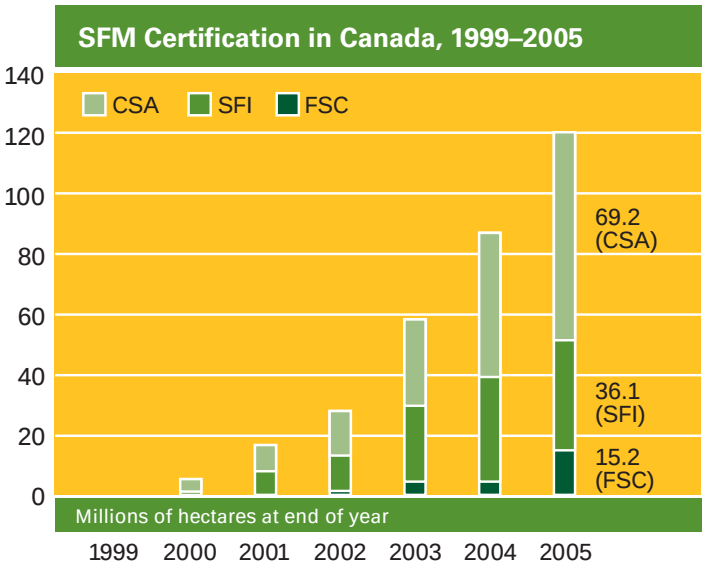
The 10 provinces and three territories have legislative authority over the conservation and management of forest resources. They develop and enforce policies, legislation and regulations, allocate timber licences, collect forest management fees and gather data. While the laws may differ in each province or territory, the outcome is the same — sustainable management of forests that considers all values, including wildlife, fisheries, soils, biodiversity, community watersheds and scenery.

The federal government is responsible for issues related to the national economy, trade and international investments, federal lands and parks and Aboriginal peoples. Most federally owned forest land is not subject to harvesting activities.

Canada's federal, provincial and territorial governments recognize the importance of protecting lands for wildlife and for conservation purposes. A growing network of national and provincial parks, and other protected areas and special management areas can be found in the boreal forest. Approximately eight per cent (28 million hectares) is legally protected from resource development. Many other lands, such as those found around lakes and rivers, are protected as well.

Forest companies share in the responsibility for forest management. Companies with long-term forest licences pay harvesting fees to provincial or territorial governments, and produce plans to carry out sustainable management in return for their access to timber resources. These management plans must be submitted to the government for approval before harvesting can take place. The plans detail how forest values such as biodiversity, and wildlife habitat will be conserved, and identify, on a map, the areas to be harvested. The plans are updated regularly.

Certification is a tool that governments in Canada strongly support as a demonstration of sustainable forest management. There are three certification systems in use in Canada. Governments do not endorse any one in particular. It is generally recognized that the Canadian Standards Association's Sustainable Forest Management Standard (CSA), the Forest Stewardship Council Standards (FSC) and the Sustainable Forestry Initiative (SFI), all demonstrate sustainable forest management. Canada now leads the world in third party certification with approximately 120 million hectares of forest certified under one of these three systems which is equivalent to an area twice the size of France or the combined area of the states of Texas and California.



Forest certification also reinforces Canada's forest practices. It recognizes basic forest management, which means ensuring good forest management planning and renewal, that laws are obeyed and that no unauthorized or illegal logging takes place. The systems used in Canada all go beyond timber production by certifying the conservation of biological diversity, the maintenance of wildlife habitat, soils and water resources, and the sustainability of timber harvesting — all of which promote sustainable forest management.

Canada has an extensive science community dedicated to understanding the complexity of forest ecosystems. Governments, universities, research institutes and networks, as well as the forest industry are conducting world-class research on key forest sector challenges, including the boreal.

The key to unlocking the secrets of the boreal forest and its riches, while protecting its environmental integrity, lies in a knowledge-centred, innovation-based approach. Forest practitioners have expanded the parameters of forest science research to embrace a wider range of environmental, social and economic considerations. Forest managers are also working to integrate natural and social sciences, and the traditional scientific knowledge held by Aboriginal and other boreal communities.

Centre for Northern Forest Ecosystem Research

Ontario's Centre for Northern Forest Ecosystem Research (CNFER) in Thunder Bay is an applied research unit focusing on the effects of forestry practices on boreal ecosystems. Initiated in 1990, CNFER conducts long-term research on the impacts of full-tree harvesting and on the effects and effectiveness of guidelines designed to protect moose and other wildlife habitat, fish habitat and tourism values. CNFER is now evolving to meet new issues and priorities in forest, fish and wildlife, and water science, with an emphasis on cross-disciplinary approaches.

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Challenges in the boreal

The challenge for forest managers is to prove that Canada's forests, including the boreal, are managed sustainably, with the forest industry continuing to provide products and economic benefits for Canadians while, at the same time, maintaining the environmental benefits of the woodlands and the social and other values they offer. For industry, this means finding ways to meet the rising global demand for products and remaining competitive in the global market, while accommodating the need for increased forest protection and conservation.

As stewards of the boreal, the various levels of government are charged with balancing the economic benefits of timber harvesting and mineral extraction with the equally important contributions to be derived from tourism, recreational pursuits such as hunting and fishing and the traditions of the Aboriginal peoples in Canada. In addition, the boreal forests, both domestic and global, are an irreplaceable resource contributing greatly to the health of the planet.

There are many examples of the need for integrated land-use planning in the boreal forest, but, to focus on just one, the plight of the woodland caribou serves as a good illustration of the cooperative efforts of stakeholders to sustainably manage this vital resource. The woodland caribou relies on relatively large and healthy areas of mature and old-forest habitat, making it sensitive to fragmentation and habitat loss. Provincial, territorial, and national efforts to protect significant populations of this mammal have been ongoing for over a decade. Many provinces and territories have developed, or are in the process of developing, recovery and conservation strategies for this species. Finding the right balance between environmental and socio-economic factors is key to this animal's survival.

Canada and the World

An independent study by Yale University released in July 2004, found Canada's forest policy regulation and compliance regime to be among the most progressive and stringent in the world. Yet, like the rest of the world's forested nations, how to meet current and future challenges is a learning process that continues to evolve. By working with other boreal nations, Canada can export leading-edge tools and technology to assist the sustainable forest management process while learning from the best practices of others.

An important coordinating instrument is the Canadian Council of Forest Ministers (CCFM), which is composed of the forest ministers from the ten provinces, the three territories and the federal government. It was created in 1985 to provide leadership on national and international issues. Through the CCFM, Canada is developing plans to engage its counterparts in other boreal nations in a meaningful dialogue about sustainable development.

A major step forward is the recently-signed Statement of Cooperation between the Canadian Forest Service (CFS) of Natural Resources Canada (NRCan) and the Federal Forest Agency of the Ministry of Natural Resources of the Russian Federation. The Statement recognizes a mutual interest between the two countries in forest resources management, and also suggests a need for wider and deeper long-term cooperation in the field of forestry, which the two parties intend to develop in a number of areas including the boreal forest.

In addition, Canada and its provinces continue to develop and share with other countries solutions to the many sustainable forest management challenges, such as the detection and appropriate handling of wildland fires, insect infestations and climate change.

During the Rio Earth Summit of 1992, Canada demonstrated international leadership in environmental stewardship by launching the National Forest Strategy. One element of the strategy was Canada's Model Forest Program which is now one of the world's largest experiments in sustainable forest management. The Canadian Model Forest Network (CMFN), links together the 11 Model Forests in Canada. The network allows them to share ideas and combine their expertise and resources to address the challenges of balancing the extensive range of demands placed on forests today with the needs of future generations. The CMFN led to the development of the International Model Forest Network which now includes 19 countries around the world.

Model forests have been described as giant, hands-on laboratories where innovative ideas are researched, developed, applied in practice, and monitored for their long-term effect on forest ecosystems. They include among their partners the forest industry, environmental groups, woodlot owners, academics, Aboriginal communities, parks, government agencies, recreational groups, trappers and anyone who has an interest in sustainable forest management. Seven of Canada's 11 model forests are located in the boreal region and are involved in a wide array of science and knowledge projects that are being shared with other jurisdictions.

The Natural Disturbance Program is a collaborative program between industry and government, and was developed to understand and describe how natural forces like fire, insects, disease, flooding, wind, and plant-eating animals have created historical patterns in the 2.75 million hectare Foothills Model Forest land base. It is an extensive effort that entails many studies, some of which extend well beyond the Foothills Model Forest's borders.

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