

Canada's Boreal Forest: Tradition and Transition

These are important times for Earth's boreal forest. Global awareness of the human impact on the environment is growing, and so is the recognition of the importance of the boreal forest in terms of its unique diversity of species and habitats, and the wealth of natural resources it contains.

Canada's boreal forest is increasingly being recognized nationally and internationally as one of the last opportunities on the planet to carefully manage large-scale ecosystems in a truly sustainable way. Both protected areas and best practices for the development of the forest landscape can make important conservation contributions. In 2004, the World Conservation Union called for greater protection of the boreal forest, while recognizing that governments, Aboriginal communities, local communities and environmental organizations have contributed significantly to global boreal forest conservation. They cited examples such as the Canadian and International Model Forest Networks, national forestry programs, sustainable forest management policies and practices, park expansion and protected area strategies, often developed with, and sometimes prompted by, the participation of Aboriginal people. Another example is the Boreal Forest Conservation Framework, which aims to protect at least half of the region in large interconnected protected areas, and which supports world-class sustainable development in the remaining areas.

A balance must be struck between the interests of many, including conservation organizations, Aboriginal and other communities whose culture and livelihood are reliant on extraction and processing of natural resources, industry stakeholders in the mining, oil and gas, tourism, agriculture and forestry sectors, those who rely on the products made from boreal resources (all Canadians), and the multitude of non-human species (birds, animals, insects, plants, etc.) that call the boreal forest home.

Why is the Boreal Forest Important?

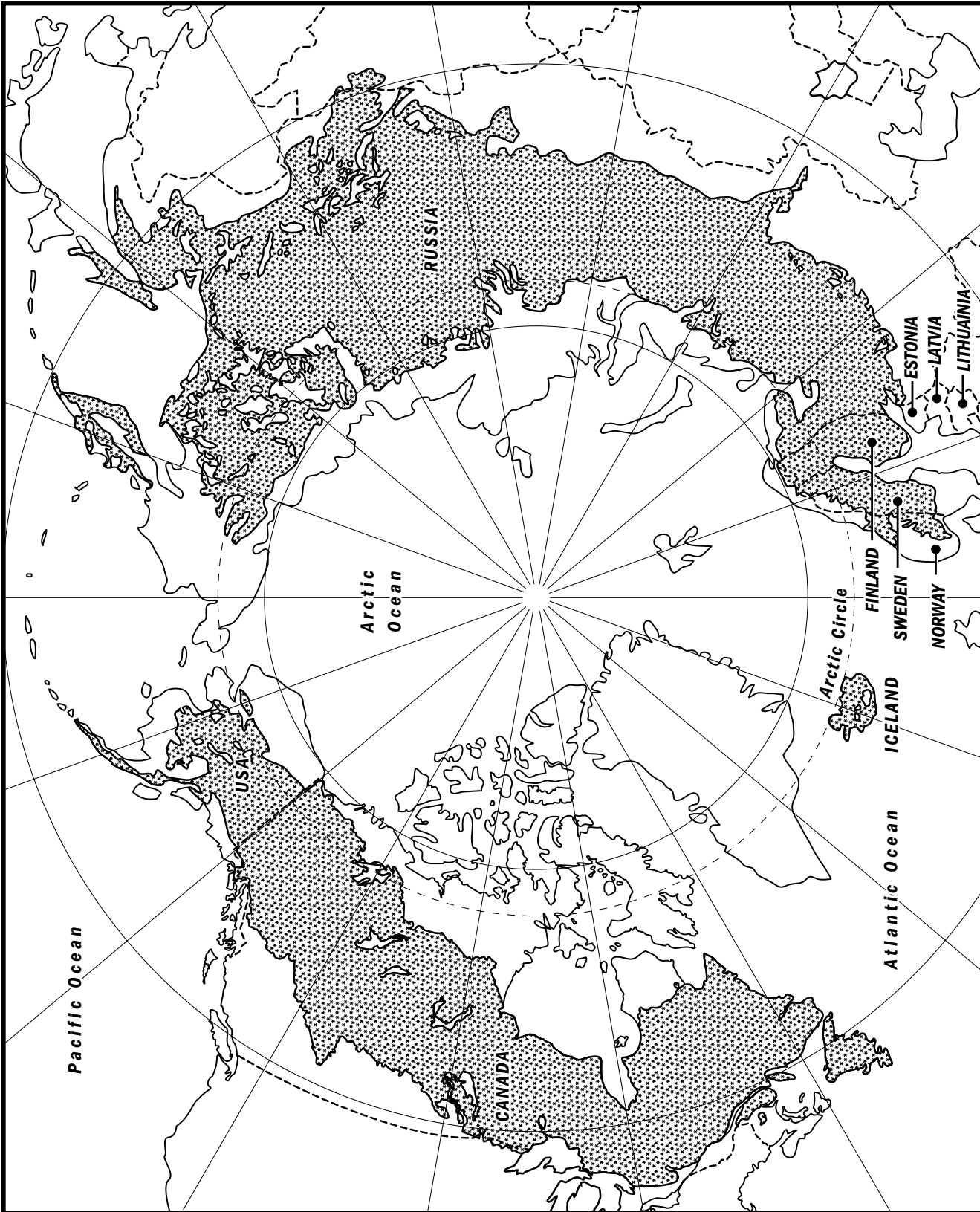
The boreal forest is highly valued worldwide for its economic potential, extensive recreational opportunities, wildlife habitat and breathtaking natural beauty. In Canada alone, the boreal region provides petroleum products, peat, hydro-electricity, tourism dollars, and sustains over 7000 forestry-related businesses and more than 400 000 forestry-related jobs. Twenty-five percent of Canada's forests, including the boreal, are managed for commercial use, and only one-quarter of one percent is harvested annually. As mandated by law, all harvested areas are regenerated.

For centuries, people from all walks of life have lived and worked in Canada's boreal communities. The natural wealth of this region continues to help sustain the traditional lifestyle and to provide income for many of Canada's Aboriginal people.

In terms of wildlife, the size, remoteness and variety of landscapes in Canada's boreal forest provides habitat to abundant numbers of some of the continent's largest species, including caribou, moose, bears and wolves, and billions of its smallest, such as migratory birds and butterflies.

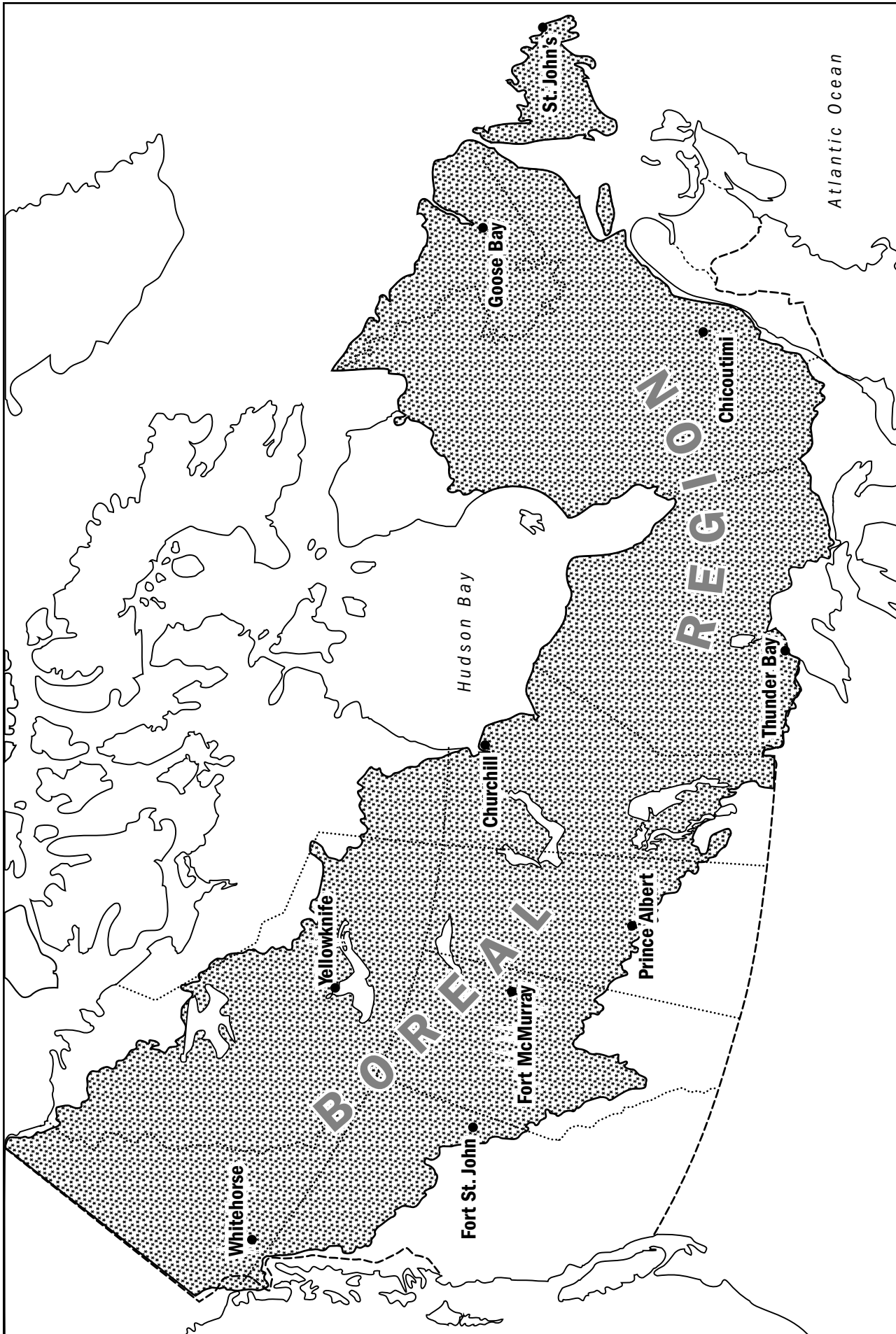
The lakes, rivers and wetlands within Canada's boreal forest hold more fresh water than any other place on Earth, and is critical habitat for tens of millions of breeding waterfowl and shorebirds. Up to three billion warblers, thrushes, sparrows, hawks and other land birds migrate to Canada's boreal region to nest each spring. As well, during dry years on the southern prairie breeding grounds, the boreal wetlands also act as a refugium for waterfowl populations displaced by drought.

The boreal forest plays a vital role in the regeneration of natural resources and in helping to mitigate climate change; benefits to both wildlife and humans. It filters millions of litres of water daily, stores massive amounts of carbon, produces oxygen, rebuilds soils, and restores nutrients.



The Global Boreal Forest





Canada's Boreal Forest

The Boreal Forest: Nursery of the North

The boreal forest region provides critical breeding habitat for enormous numbers of waterfowl, shorebirds, waterbirds and landbirds. Of all the North American waterfowl species, 75 percent rely on Canada's boreal wetlands and forests for breeding, staging or moulting, and about 50 percent of the breeding populations of at least 96 species occur within this area.

Nearly 100 percent of the global populations of the tree-nesting Bonaparte's Gull, the bog-inhabiting Palm Warbler, and the elusive Short-billed Dowitcher nest within the boreal forest region. Over 80 percent of the populations of the coastal wintering White-winged Scoter, the rapidly disappearing Rusty Blackbird, and the massive Great Gray Owl nest there as well. About 300 species in all regularly use the boreal forest region, including loons, grebes, swans, ducks, hawks, sandpipers, gulls, owls, vireos, flycatchers, warblers, and sparrows.

In terms of total bird numbers, the Canadian Boreal Initiative estimates that between 1.65 and 3 billion birds breed each year in North America's boreal forest region, with landbirds accounting for 97 percent. Approximately 30 percent of all landbirds (1-3 billion) and 30 percent of all shorebirds (7 million) that breed in the United States and Canada, do so within the boreal forest region. An estimated 38 percent (26 million) of all of the waterfowl in Canada and the United States also breed in the boreal forest region.

There are several reasons why so many birds breed in the boreal forest, but simply put, it is because the boreal forest is vast and largely intact – one of the few remaining places where an entire ecosystem functions. Another reason is that the boreal forest contains more water in its lakes, wetlands and rivers than almost any other place on Earth.

Migration

Many species of songbirds, shorebirds, waterbirds and waterfowl migrate north each summer to the boreal forest region because of its excellent breeding habitat. The Canadian Boreal Initiative reports that nearly all species of boreal nesting birds also make use of parts of the boreal forest region during migration. However, some birds rely more on the boreal forest region for migratory stopover habitat than for breeding. Bird banding continues to be critical for providing information about migration routes and timing of migration.

Migration is a behavioural adaptation that boosts an individual's overall chance of survival and successful reproduction. Migration is useful because it provides access to new food sources and to favourable living and breeding conditions in certain areas, at certain times of the year.

However, migration also presents risks. It takes a great deal of energy to migrate, and animals must be able to find food and rest stops along the way in order to avoid exhaustion and complete the rigorous journey. Dangers such as storms and predators pose significant threats. Human-introduced obstacles such as roads, communities, mines, gas lines, and power corridors can further compound the challenges as they can contribute to fragmentation of natural habitat and habitat loss, increase the risk of vehicle collisions, disease and attack from domestic animals.

Some animals migrate longer distances than others, and some species (like the American robin) will decide to migrate or not each year, depending upon the abundance of available food as the season becomes colder.

In addition to birds, many other species migrate through or within the boreal region, including the Monarch butterfly, bighorn sheep and caribou. It is believed that migratory species use different methods, or a combination of methods, to navigate their way. These include the position of the sun, landmarks and the Earth's magnetic field.

Migratory birds are adapted to feed on different foods in the areas where they travel, which can be influenced by such things as foraging behaviour and beak shape. Bird feathering is also related to different migratory strategies. For example, warblers migrate vast distances and often have small, fragile feathers. They moult all of their feathers annually, with fresh re-growth to maximize their flight efficiency. Woodpeckers, on the other hand, are not required to migrate as far, so they moult their flight feathers slowly, often over the course of four years, and maintain their energy for other purposes.

Land Use Planning in Canada's Boreal Forest

Approximately 3.5 million people live in Canada's boreal forest, in communities that range from small villages such as Long Lac, Ontario and Leaf Rapids, Manitoba to large cities such as Prince Albert, Saskatchewan and Thunder Bay, Ontario and over 600 Aboriginal communities such as Poplar River, Manitoba and Pessamit, Quebec. Canada's boreal forest sustains over 400 000 forestry-related jobs, in addition to jobs in the mining, oil and gas, tourism, agriculture and other sectors.

All Canadians are the everyday end-users of products containing boreal forest resources. These include wood products such as paper, pencils, furniture and building materials, as well as products produced from oil and gas, minerals and metals, medicinal plants, animals and much more. Enjoyment of our modern lifestyles is possible because of the people who extract, gather, transport, process and market forest resources and associated products. Policies that promote wise decision-making with respect to the boreal forest are inextricably linked to our interdependence on each other, and on these forest resources.

Because over 90 percent of Canada's boreal forest is publicly owned, governments are the primary land use decision-makers. Provincial governments are primarily responsible for the southern boreal forest. In the Yukon, Nunavut and Northwest Territories, many Aboriginal land claim negotiations continue, along with negotiations over responsibilities held by the federal versus territorial governments. Responsibility for land use planning, industrial regulation and wildlife management in those regions will continue to be shared among territorial, Aboriginal and federal governments, and the role and influence of Aboriginal governments can be expected to grow.

Land use planning processes underway now and over the next few years in boreal provinces and territories will determine what will occur in the decades – and even centuries – to come. The collective wisdom of all citizens is needed to put sound long-term management plans in place, building on the regeneration policies and decision-making of the past. Canadians have the democratic right to provide their input to government on the management of the economic, environmental and cultural aspects of the boreal forest.

While there are many ways to carry out effective ecosystem-based land use planning and methods, and they vary widely among jurisdictions, some concepts are becoming more common. For example, the use of Traditional Knowledge (see Glossary) is being used increasingly in parallel with modern scientific forestry methods.

Traditional Knowledge is occurring as part of a larger shift in thinking about how land is used. Instead of proceeding with development in a given area (e.g., mining, timber harvest or oil extraction) and focusing on how much land can be conserved afterwards, there is a growing movement towards a planning process that takes into account information on ecology and geology, but also the historical, social, cultural and spiritual values of an intact area, with an eye to how much development should be permitted and in what context. With regards to forestry, current forest land management practices emphasize the use of harvesting and regeneration methods that emulate vital natural disturbances, such as forest fires.