INTERNATIONAL
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SCIENCE PANEL

Conserving the World's Last Great Forest Is Possible: Here's How

A science/policy briefing note issued under the auspices of the International Boreal Conservation Science Panel and associates

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The International Boreal Conservation Science Panel (IBCSP) is an interdisciplinary team of scientists from the United States and Canada. Its members have a wide range of expertise and experience gained from years of research, conservation, and writing about science issues related to North America and many other parts of the world. The panel is jointly concerned with the future of North America's boreal forest and in ensuring that the scientific issues related to the conservation of the boreal forest are clearly articulated to the public and decision makers in government and industry. The panel enlists its member specialists and invited expert associates in producing science/policy briefing notes for issues of major relevance to the future of the boreal forest.

EXECUTIVE SUMMARY

From Yukon and the Northwest Territories in the west, stretching across the northern expanses of Canada to Newfoundland and Labrador in the east, the governments and communities of Canada's boreal forest are facing and struggling with unprecedented decisions about the future of their lands and their peoples. **It is vital that all those involved in shaping these decisions understand fully the context, including the globally significant conservation and natural capital values of Canada's boreal forest.**

Some of the features of Canada's boreal forest that make it globally significant include its large primary forests, peatlands, taiga, lakes and rivers. These are among the world's last remaining examples of northern ecosystems that support healthy populations of large mammals, birds and fish, many of which are extinct or endangered in other regions. Canada's boreal forest is one of the world's most significant land-based storehouses of carbon—carbon that must be kept out of the atmosphere to prevent further and potentially catastrophic global warming.

Canada has a responsibility as steward of the boreal forest and its globally significant conservation values.

The region contains more surface freshwater than any other nation on earth and some of the world's most extensive wetlands, largest lakes and longest undammed rivers. Canada's boreal forest is also home to hundreds of Aboriginal communities who retain connections to and use of the land and its animals and plants.

These are among many of the globally significant conservation values that highlight Canada's global responsibility as steward of the boreal forest. At the same time, **there is rapidly escalating interest in the region from industries based on resource extraction. Yet rules and regulations for managing industrial extraction of resources in Canada's boreal forest have not kept pace** with the rapidly expanding footprint of industrial activities and plans.

Whether it is the extinction of species, the increase in costs from polluted water and air or the societal tragedy from collapse of an overused resource, history has shown

clearly the loss of conservation values when societies do not understand or react to the changes that they are imposing on natural systems. **Ultimately, we depend upon intact ecosystems and the services they provide more than the short-term profits of unsustainable resource extraction.**

Provincial, federal, territorial and Aboriginal governments are making decisions today that will decide the fate of the peoples and the ecology of Canada's boreal forest. Science provides clear guidance about what needs to be done to ensure that these decisions balance the maintenance of the natural heritage of Canada's boreal forest region with industrial development that extracts resources that other nations desire. **At the forefront of this scientific guidance is that no less than 50 percent of a region should be forever protected from development.** Industrial activities taking place in the remaining unprotected areas should be carried out with the highest global sustainability standards. A network of large protected areas should be established before industrial development proceeds. Furthermore, both protected areas and industrial activities should proceed only with free, prior and informed consent of affected Aboriginal communities.

Science provides clear guidance about how to balance conservation with development.

INTRODUCTION

Within Canada's national borders lies one of the world's greatest natural treasures: a 5.8 million km^2 (1.4 billion acre) region of forests, taiga, tundra, peatlands, saltmarshes, rivers and lakes that stretches from the Yukon to Newfoundland and Labrador. **This region—Canada's boreal forest—encompasses the largest blocks of intact forest and wetlands remaining on the planet.** Along with its northern and southern siblings, the Siberian boreal forest and the Amazon forest, it contains the bulk of the world's forests that have never been touched by the large-scale footprint of human industrial expansion. In fact, Canada's boreal forest contains over half of the world's intact boreal forest and the largest area of surface freshwater on earth.

Canada's intact boreal forest and freshwater systems currently support a vast array of conservation values, including:

- **A rich human cultural heritage** sustained over thousands of years by the Aboriginal peoples whose lives are intertwined within its ecological fabric (Karst 2010);
- **Vast forests and freshwater ecosystems** that provide more than $700 billion in ecological services annually, including carbon storage and sequestration, air and water filtration, ecotourism and others (Anielski and Wilson 2009);
- **The world's highest densities of terrestrial carbon stores,** with a minimum of 208 billion tonnes of carbon stored in the soils and plants of its forests, peatlands and wetlands (Bradshaw et al. 2009, Carlson et al. 2009, 2010);
- **The largest area of surface freshwater of any country**, with millions of pristine lakes and a large proportion of the world's last free-flowing large rivers, many of which support the remaining wild runs of economically and ecologically important migratory fish (Wells et al. 2011);
- **Between 1 and 3 billion nesting birds** of more than 300 species, including an estimated 26 million waterfowl and 7 million shorebirds (Blancher and Wells 2005, Wells and Blancher 2011);
- **Viable populations of large ungulates and large carnivorous mammals**, such as woodland and migratory tundra caribou, grizzly bear, wolverine, lynx and wolf—species lost from much of their original North American range south of the boreal forest boundary (Laliberte and Ripple 2004, Hummel and Ray 2008).

THE SHRINKING WILDERNESS

The intact nature of Canada's boreal forest presents an unprecedented opportunity for conservation, but its resources are also highly valued for industrial natural resource extraction (Far North Science Advisory Panel 2010). International forestry, mining, oil and gas, and hydropower corporations are all active in Canada's boreal forest and the current extent of boreal forest land already affected by these industries

and their infrastructure is 730,000 km^2 (180 million acres)—an area larger than Texas (Wells et al. 2011). **These impacts have moved from the south progressively northward as roads and other infrastructure are built that allow access to formerly remote and intact regions.** Less than 15 percent of the 710,000 km^2 (175 million acres) Boreal Plains ecozone (the portion of the southern boreal extending from the eastern foothills of the Canadian Rockies to south-central Manitoba) remains in large, intact forest landscapes (Lee et al. 2006). Between 1990 and 2000 more than 4,000 km^2 (988,000 acres) of the southern boreal forest region of Saskatchewan and Manitoba and more than 24,000 km^2 (5.9 million acres) of the boreal forest region of Quebec were disturbed by forestry, mining, hydropower production, road-building, and other infrastructure developments (Stanojevic et al. 2006a,b).

Canada's boreal forest presents an unprecedented opportunity for conservation, but its resources are also valued for extraction.

Since 1975 more than 310,000 km^2 (77 million acres) of Canadian forest have been cut (Canadian Council of Forest Ministers 2010). Between 1990 and 2008 the total area harvested in Canada was 184,000 km^2 (46 million acres) (Canadian Council of Forest Ministers 2010). **Assuming the same rate of harvest and that 65 percent of the Canada's timber harvest occurs in the boreal forest region, about 60,000 km^2 (15 million acres)—roughly twice the area of Vancouver Island—will be harvested in Canada's boreal region over the next 10 years.**

Many other kinds of industrial disturbances are taking place within the boreal forest region. Oil and gas exploration and extraction activities, especially in the western boreal forest region, are rapidly increasing. More than 155,000 active and 117,000 abandoned oil and gas wells exist in Canada's boreal forest, with 87 percent of them falling within 5 km (3.1 miles) of a river or lake. Approximately 10,000 new oil and gas wells were drilled annually in Canada from 1999 to 2009. There are approximately 7,000 abandoned mines requiring varying degrees of rehabilitation and 105 active mines within Canada's boreal forest (Wells et al. 2011). **The mining exploration and staking process can also be highly disruptive to land-use planning**

and conservation efforts and often opens previously inaccessible lands for other industrial uses. As of 2007, staked mineral claims occupied 583,000 km^2 (144 million acres) within Canada's boreal forest (CBI 2008). **Large hydropower projects in Canada's boreal forest region are estimated to have inundated an area twice the size of Lake Erie—52,000 km^2 (12.9 million acres) of land in the reservoirs behind dams—and they have disrupted seasonal flows over thousands of miles of rivers and streams**, while infrastructure including transmission lines and roads has fragmented vast expanses of terrestrial habitat (Wells et al. 2011). There are many more large hydroelectric projects under construction or under consideration (Lee et al. 2011, Far North Science Advisory Panel 2010).

TIME IS OF THE ESSENCE

The wave of development pushing north through Canada's boreal forest leaves, in its wake, an expanding list of impacted species and widespread degradation of ecosystem services. Woodland caribou have disappeared from the southern tier of the boreal forest and are federally listed in Canada as a threatened species (IBCSP 2011, Festa-Blanchet et al. 2009, Hummel and Ray 2008). Wood bison, wolverine, grizzly bear, eastern wolf, and Newfoundland pine marten are among other boreal forest species that are now federally listed in Canada as endangered, threatened or of special concern (COSEWIC 2011, Noss et al. 2001). Boreal forest-dependent bird species such as the Olive-sided Flycatcher, Canada Warbler and Rusty Blackbird are federally listed in Canada as well (Cheskey et al. 2011). Most healthy Atlantic salmon populations now occur only in the undammed boreal rivers of Quebec and Newfoundland and Labrador, with more southerly populations either locally extinct or federally listed as endangered, threatened or special concern (Wells et al. 2011). Most boreal lake sturgeon populations are now federally listed as endangered, threatened or special concern (COSEWIC 2011). On the broader ecosystem scale, **in the eastern portion of Canada's boreal forest there is evidence that the scale and**

Loss of habitat diversity makes forests vulnerable to insect pest outbreaks and makes it harder for boreal-dependent species to sustain their populations.

pace of logging activity has dramatically transformed large forest landscapes to a more even-aged and younger forest than occurred naturally (Cyr et al. 2009). Such loss of habitat diversity makes the forests more vulnerable to insect pest outbreaks and makes it more difficult for many other species to find the habitats they need to sustain their populations.

CONSERVATION FIRST

It is imperative that conservation be given top priority in planning for the future of Canada's boreal forest. Industrial use of the region is expected to increase. Investments in mining exploration in Canada (with much of it within the boreal forest region) have reached all-time highs in the last ten years with a peak of $4.2 billion in 2011 and $3.9 billion in 2012. In 2011 Canada had the largest share of world mining exploration spending and though slowed in recent years, Canada remains one of the top five producers of uranium, potash, nickel, platinum, aluminum, diamonds, zinc and steel-making coal (Mining Association of Canada 2013). The forestry industry holds more than 2.3 million km^2 (568 million acres) of land tenures (leases) within Canada and there are more than 1,000 mills processing wood products currently in operation in Canada. In the hydropower sector there are at least 12 new large-scale hydro dams and hundreds of potential new hydro facilities under consideration (Lee et al. 2011, Wells et al. 2011). In Quebec alone, there are plans for an investment of $47 billion in hydropower development over the next 25 years.

Without broad-scale land-use planning before development, the boreal forest's unique natural assets will be impaired and lost.

Without careful planning before development, the unique, last-of-their-kind natural assets of Canada's boreal forest will be impaired and lost—a reiteration of the pattern in much of the rest of the world. Planning for the long term is key. This means **broad-scale land-use planning is needed that embraces a "conservation first" principle, so that large protected areas are established first and foremost and resource extraction activities planned in remaining areas are undertaken according to the strictest possible standards of sustainability** (Berteaux 2013).

THE SCALE OF PROTECTION

Habitat loss and degradation reduces populations and increases extinction risk for many species and also impairs vital ecosystem processes. This poses an important question for society: **how much habitat should be protected to maintain abundant wildlife and achieve an acceptably low risk of species extinction and loss of ecological processes?** Early efforts to answer this question focused on the amount of habitat that might be needed to maintain populations of single endangered or threatened species.

Planning must consider not just rare species, but entire plant and animal communities as well as ecological processes.

From this beginning grew efforts to estimate habitat needs for a number of species inhabiting the same landscape. Such efforts have culminated in planning that considers not only the needs of a handful of rare species but, ultimately, the needs of entire plant and animal communities. Far-ranging and migratory species must be included as well as the continuation of ecological processes. We also need to find ways to ensure that animal and plant communities are resilient to stressors and can adapt effectively to climate change. **As conservation planning has evolved to consider these broader conservation values and to limit ecological risk, it has become apparent that substantially more habitat protection than previously recognized is needed** (Noss et al. 2012, Svancara et al. 2005, Gaston 2003, Solomon et al. 2003). Older recommendations—that setting aside 10-12 percent of a region's land base would be sufficient to maintain a region's biodiversity and ecological processes—are now known to reflect major underestimates (Justus et al. 2008, Gaston 2003). It is expected that if approximately 10 percent of an ecological landscape were maintained in a natural state while the remainder was heavily impacted, as much as half of the original species of an area could be lost (Svancara et al. 2005, Soulé and Sanjayan 1998). Protection targets that are based in conservation science have been found to be nearly three times higher than those motivated by political

Previous habitat conservation recommendations have underestimated the actual need.

expediency (Svancara et al. 2005). **Modern, comprehensive conservation plans typically identify protection targets of 25-75 percent of the landscape (Noss and Cooperrider 1994) with a median protection objective above 50 percent** (Noss et al. 2012, Schmiegelow et al. 2006). Maintaining the full complement of species, communities and ecosystem services in the Canadian boreal forest requires that at least half of the area be protected from industrial disturbance.

KEEPING CARIBOU…AND EVERYTHING ELSE

The protection of biodiversity requires extensive reserve networks capable of supporting abundant and persistent populations of native species (Possingham et al. 2006). Although consideration of each species' needs is impractical, **conservation planning can focus on a subset of species that exhibit life histories or population dynamics that make them particularly vulnerable to threats**, and therefore at risk of decline or extinction.

The woodland caribou is a species highly vulnerable to forest disturbance. Long-term persistence of this iconic species will require protecting large, intact landscapes with sufficient areas of old forest (Environment Canada 2011). Achieving the objective of caribou recovery is made more challenging by the species' sensitivity to extensive industrial activity. Research suggests that for this species to survive, intact landscapes of 10,000-20,000 km^2 (2.5-5 million acres) in size are likely required (IBCSP 2011).

In order to protect biodiversity, abundant and persistent populations of native species, such as woodland caribou, must be supported.

To maintain woodland caribou, therefore, the reserve network should contain multiple protected areas that are at least 10,000-20,000 km^2 (2.5-5 million acres) in size, ideally distributed across the species' range in order to maintain the species' natural distribution (IBCSP 2011). Caribou conservation may also enhance the persistence of other species with smaller range requirements, but a wider suite of species should be considered during planning to ensure the broader goal of protecting biodiversity.

MAINTAINING THE DYNAMIC FUNCTIONING OF ECOSYSTEMS

Ecological processes such as natural disturbance regimes, forest succession and hydrologic and nutrient cycles maintain the dynamic functioning of ecosystems (Schindler and Lee 2010). Ecological processes in northern environments, such as fire and the hydrologic cycle, operate at large spatial scales (Far North Science Advisory Panel 2010). **Given the immense scale of these processes and their potential sensitivity to industrial development, maintaining naturally functioning ecosystems requires large intact landscapes.** Such landscapes characterized by well-functioning ecological processes are far more likely to support the natural complement of species and can therefore anchor a conservation areas network (Soule and Terborgh 1999). To incorporate natural fire regimes, protected areas should be large enough to contain the largest expected fire while still maintaining examples of all habitat types so as to provide the sources for recolonization of populations detrimentally affected by the disturbance (Leroux et al. 2007). Conservation areas also need to be large enough to accommodate shifts in species' ranges in response to climate change (Lawler and Hepinstall-Cymerman 2010, Carlson et al. 2009, Kharouba et al. 2009).

Conservation areas must be large enough to accommodate range shifts due to climate change and natural fires while maintaining all habitat types.

Clearly, maintaining the conservation values that make Canada's boreal forest region unique will require the establishment of large, connected and representative protected areas distributed across the region (Slattery et al. 2011, Wiersma and Nudds 2009). In addition to strengthening the conservation areas network, these intact landscapes will act as experimental controls to inform the development of sustainable management practices that are vital to the success of these conservation initiatives (Far North Science Advisory Panel 2010, Schmiegelow et al. 2006).

SOCIALLY AND ECOLOGICALLY SENSITIVE DEVELOPMENT

For northern communities to survive and thrive they need to maintain long-term economic opportunities with carefully considered industry partners that respect the authority of local people to make decisions about current and future activities. Industry partners should also be committed to ensuring that economic prosperity benefits the local community over the long term. **Conservation science research has demonstrated that without consideration of land-use activities in the matrix of lands outside of protected areas it is impossible to maintain the full complement of biodiversity features and ecosystem functions required for true ecosystem sustainability** (Far North Science Advisory Panel 2010).

Some core elements and precepts of ecologically sensitive boreal development include:

- **Planning should be integrated across industrial sectors** to minimize habitat loss and ensure that cumulative impacts do not lead to long-term biodiversity losses and ecosystem impairment. For example, woodland caribou populations tend to decline when more than one-third of a herd's range is disturbed.
- Because native biota are adapted to natural processes, **industries like forestry and hydropower production should manage resource use and development in ways that strive to mimic patterns imposed by natural regimes** (e.g. natural disturbance, seasonality and rates of water flow).
- **Industrial activities should not sacrifice the connectivity of aquatic and terrestrial habitats** so that animal movements, plant dispersal and flows of water and nutrients are not impeded.
- **Pollution must not degrade ecosystem processes or threaten wildlife populations.** Production of mine waste, transportation systems and use of pesticides must be carefully controlled and monitored. Clean-up and control of toxins, including associated costs, must be included in long-term business plans.

- **Ecological impacts must be monitored by independent entities** and reviewed by independent scientists and traditional knowledge holders whose management recommendations are implemented quickly. There must be agreements or regulations that require industry to follow such recommendations.
- **Research by independent scientists into ecological processes, industrial impacts and ways to mitigate impacts should be financially supported** as part of long-term business plans.

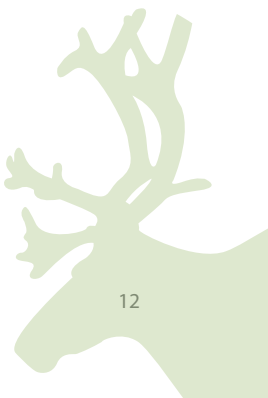
ABORIGINAL COMMUNITIES LEADING THE WAY

Aboriginal cultural practices have been integral to boreal forest landscapes for thousands of years. Today, hundreds of Aboriginal and Metis communities, made up of tens of thousands of individuals, continue to live in and near Canada's boreal forest. As these communities adapt and change, there continues to be important recognition of their responsibilities as stewards of the land and the cultural values of their heritage. **Many Aboriginal communities have developed world-leading comprehensive land-use plans that show a remarkable balance of maintenance of cultural and ecological values and opportunities for long-term economic development** to sustain viable futures for their communities. Outcomes dramatically improve when Aboriginal peoples maintain their leadership in decision-making, providing many benefits in terms of preserving cultural integrity and heritage.

Outcomes dramatically improve when Aboriginal peoples maintain their leadership in decision-making.

To incorporate cultural values and local knowledge as well as the appropriate balance between development and protection, land-use decisions should be driven by comprehensive land-use planning processes at both community and regional scales.

Recent land-use planning efforts led by Aboriginal communities in Canada's boreal forest provide evidence that such recommendations are feasible:



- The Broadback Watershed Conservation Plan prepared by the **Cree Nation of Quebec** has proposed the conservation of more than 20,000 km^2 (5 million acres), half of which will consist of parks and protected areas, while the other half will consist of a special management zone.
- **The Poplar River First Nation** in Manitoba finalized its land-use plan with 90% of its traditional territory in conservation areas encompassing over 8,000 km^2 (two million acres), with official endorsement from the Government of Manitoba.
- **The Bloodvein First Nation** in Manitoba finalized its land-use plan with more than 50% of its traditional territory included in conservation areas—an area of over 2,400 km^2 (590,000 acres), with official endorsement from the Government of Manitoba.
- **The Peel River Watershed Planning Commission** with representation from a number of First Nations has proposed that 80% of the Peel River Watershed in the Yukon—an area of 53,789 km^2 (13 million acres) —be protected, but the Government of Yukon has expressed opposition to the plan.
- **The Deh Cho First Nation** in the Northwest Territories completed its land-use plan, calling for 50% of its traditional territory—an area of over 100,000 km^2 (24.7 million acres)—to be in protected areas, though the area included was decreased under pressure from the federal government.
- **The Taku River Tlingit First Nation** in British Columbia identified 55% of their lands for conservation status in their land-use plan, an area of over 5,600 km^2 (1.4 million acres), though their recent compromise agreement with the Government of British Columbia provides for protection of only about 25% of their lands.
- **The Innu Nation** in Labrador created a Forest Ecosystem Strategy Plan that calls for over 50% of the 71,000 km^2 agreement area to be protected for ecological or cultural values—an area of 35,000 km^2 (8.6 million acres).
- **The Nunatsiavut Government** endorsed the Labrador Inuit Settlement Area proposed land-use plan, which calls for 40% of the 72,599 km^2 area (17.9

million acres) to be off-limits to large-scale industrial development—an area of 29,000 km^2 (7 million acres)—but is now facing opposition to the plan from the Government of Newfoundland and Labrador.

GENERAL CONSERVATION PLANNING GUIDANCE

- **Land-use planning must be led by the communities**, especially Aboriginal communities, which are inseparable from these landscapes.
- **Conservation of lands should accommodate Aboriginal traditional uses of the land** and should be managed or co-managed by Aboriginal governments. In all cases there should be protection of traditional values and uses, including hunting, trapping, gathering plants for food, materials, medicines and spiritual and ceremonial practices.
- **Land-use planning should precede decisions regarding industrial development** so that lands requiring conservation status can be identified based first and foremost on an understanding of what is required to maintain biodiversity and ecological processes rather than on what is least economically valuable.
- **To maintain ecological processes and the full complement of wildlife species, at least 50 percent of an ecosystem** or broad-scale landscape should be incorporated into a network of conservation areas that are free of industrial disturbance, including forestry, mining and exploration activity, oil and gas extraction and exploration, agriculture and hydropower production.
- **The conservation areas network must include very large areas**—on the order of at least 10,000-20,000 km^2 (2.5-5 million acres) in size—to maintain large mammal and migratory bird populations, the required range of habitat diversity and ecosystem functions and to serve as biodiversity reservoirs in the face of climate change.
- **Conservation areas must consider the interconnectivity of aquatic and terrestrial ecosystems** and strive to ensure that animal movements, nutrient

cycling and hydrological processes are not impaired. Conservation areas that encompass entire catchments should be a priority.

- **Conservation of lands should be enshrined in civic institutions** that provide the highest measure of certainty that future uses and management will remain with conservation as a priority and cannot be changed to accommodate short-term political pressures and sensitivities or swapped for less economically valuable land that has been impacted by past industrial activity.
- **Industrial activities on lands outside those where development is prohibited should be carried out with the lowest possible impacts** to biodiversity and ecosystem processes. Intensive developments such as mines should be managed in a way that impacts remain localized and regional biodiversity and ecological processes are not degraded.
- **The impacts of land use should be rigorously monitored** and regularly and meaningfully reviewed by independent experts. Necessary adaptations should be made quickly based on the recommendations of such reviews and there must be agreements or regulations that require industry to follow such recommendations. In addition, continued scientific research fundamental to understanding the ecological complexities and impacts of industrial development and ways to minimize impacts should be financially supported.
- **Planning should consider the cumulative impacts of development over meaningful time periods** (i.e. decades) to ensure that the full consequences of land use are understood and addressed. Planning should be regional in scale and seek to maintain large areas of intact habitat on the landscape. Given the unprecedented speed of climate change impacts to ecological systems, especially in northern regions, the viability of wildlife populations is increasingly contingent on managing land use so as to maintain large, intact habitat areas and landscape connectivity.

LAST-OF-OUR-TIME CONSERVATION OPPORTUNITIES

There are a number of immediate opportunities for maintaining the full complement of boreal forest biodiversity and ecosystem processes within current land-use planning initiatives and discussions. We outline here some of these opportunities in each province and territory within Canada's boreal forest and provide recommendations that are consistent with the scientific background described above:

- **The 283,000 km^2 (70 million acres) within the boreal woodland caribou range that the Forest Products Association of Canada member companies have deferred** from current logging operations under the recent Canadian Boreal Forest Agreement (CBFA) should be considered for long-term conservation status. Such an action can, of course, only be carried out under the direction and consent of Aboriginal governments and in partnership with provincial governments.
- **Ontario and Quebec**, where provincial governments have made pledges to protect 50 percent of their northern regions. Aboriginal-led land-use planning should commence immediately to identify areas in the range of 10,000-20,000 km^2 (2.5-5 million acres) in size that are ecologically most important. Areas retracted from ongoing forestry operations under the CBFA should be given highest priority for consideration as protected areas co-managed between Aboriginal and provincial governments.
- **Quebec,** where areas identified by the Cree between James Bay and Lac Mistassini, including in the Broadback Valley region, should be accepted for protected areas designation. Also, the Montagnes Blanches region within the Nitassinan of Mashteuiatsh and Pessamit should be a priority for the protection of its large intact forest blocks.

In the remaining boreal jurisdictions, provincial, territorial and federal governments should commit to protecting at least 50 percent of remaining intact boreal landscapes subject to Aboriginal free, prior and informed consent

and co-management. Priorities for expanding conservation area networks in these jurisdictions include:

- Proposed and interim protected areas in the **Northwest Territories** identified through the Northwest Territories Protected Areas Strategy in partnership with Aboriginal governments should be made permanent as quickly as possible.
- **The Yukon,** where recommendations of the Peel River Commission for protecting 80 percent of that region should be adopted by the Yukon government.
- **British Columbia**, where Aboriginal land-use planning should be supported, including conservation area proposals advanced by First Nations.
- **Alberta**, where protected areas should be identified through the Land Use Framework to balance economic development with ecological objectives, including the protection of entire caribou ranges. For example, the Lower Athabasca Regional Plan should be revised to increase protection of the Richardson herd, the most intact range in the planning region. Areas prioritized by First Nations, such as the Athabasca Chipewyan's homeland zones, should also be protected.
- **Manitoba,** where protection priorities should include already identified Areas of Special Interest as should areas identified through the provincial Boreal Peatlands Stewardship Strategy. The proposed Pimachiowin Aki World Heritage site is a world-class model that should be supported. The very large remaining blocks of intact forest within the tenures of CBFA company signatories in the northeastern part of the boreal Woodland Caribou range in Manitoba should be considered for protected areas in the range of 10,000-20,000 km^2 in size.
- **Saskatchewan**, where CBFA signatory company tenures within the Suggi-Amisk-Kississing woodland caribou herd range should be high priorities for consideration as protected areas in order to expand Nipawin Provincial Park. Large protected areas at least 10,000-20,000 km^2 (2.5-5 million acres) in size could be established in this area.

- **Nunavut**, where boreal regions along the border with Manitoba and the Northwest Territories should be considered for large protected areas as well as areas along major river systems that cross the Northwest Territories' border.
- **Labrador**, where the province should work in partnership with the Innu Nation and the Nunatsiavut Government to support conservation in community-led land-use planning such as within the 72,500-km^2 (17.9-million-acre) Labrador Inuit Settlement Area. On the **Island of Newfoundland**, the Natural Areas System Plan should be completed and low-conflict candidate areas prioritized for immediate protection.

SUMMARY

Aboriginal and provincial governments and the federal government of Canada have an opportunity to maintain the ecological integrity of one of the world's most globally vital ecosystems: Canada's boreal forest.

Without rapid and major changes in on-the-ground policy implementation, the opportunity to maintain the globally important values of this region will be lost. Such a loss would be a tragedy, not only for the Aboriginal peoples who have had a sustaining relationship with these lands for thousands of years but for all Canadians who understand that the legacy of a nation and so much of its prosperity is built on the long-term care of its renewable natural resources. **The boreal forest of Canada presents us with a compelling opportunity and a challenge to conserve a unique and critically important ecosystem while setting a global standard for others around the world to follow.**

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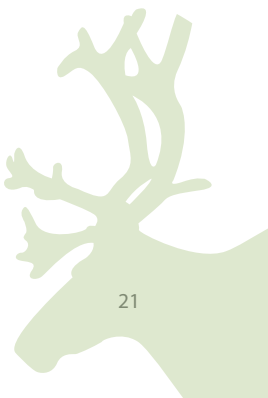

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