
Grey ghosts:



Can we save woodland
caribou in Canada's
boreal forest?



OCTOBER 2004

A special report and action plan prepared by:

 **CPAWS**
CANADIAN PARKS AND WILDERNESS SOCIETY



About CPAWS

The Canadian Parks and Wilderness Society (CPAWS), founded in 1963, is Canada's grassroots voice for wilderness. We focus on establishing interconnected networks of parks and wilderness areas and making sure that nature comes first in their management. We are solutions oriented and we get results.

CPAWS envisages a healthy ecosphere where people experience and respect natural ecosystems. We work to achieve this by:

- Protecting Canada's wild ecosystems in parks, wilderness and similar natural areas, preserving the full diversity of habitats and their species;
- Promoting awareness and understanding of ecological principles and the inherent values of wilderness through education, appreciation and experience;
- Encouraging individual action to accomplish these goals;
- Working cooperatively with government, First Nations, business, other organizations and individuals in a consensus-seeking manner, wherever possible.

CPAWS believes that by ensuring the health of the parts, we ensure the health of the whole, which is our health too.

We Get Results

Through our 20,000 members and 12 chapters across the country, our work is delivered 'on the ground,' mainly by dedicated volunteers who love and care deeply about our wilderness. Every year, our volunteers contribute nearly \$1 million in time to our wilderness causes. CPAWS is a place where people passionate about nature can get involved!

Since 1963, we have helped protect over 410,000 square kilometers of Canada's most treasured wild places (an area nearly seven times the size of Nova Scotia), including:

Kluane * Nahanni * Pacific Rim * Killarney
Tatshenshini * Pukaskwa
Gwaii Haanas (S. Moresby) * Auyuittuq
BC Northern Rockies * Grasslands
Muskwa Kechika * Tatshenshini

We are a registered charitable non-profit organization (#10686 5272 RR0001) and are governed by a 21 member national volunteer Board.

For more information, or if you have questions, please call our national office at 1-800-333-WILD or consult our website at www.cpaws.org.

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Executive Summary

Canada's boreal forest is North America's greatest remaining conservation opportunity and woodland caribou are its iconic species. Unfortunately over the past century, the habitat they require has eroded steadily and many of their populations have declined. Today, they are gone from close to half of their historic range, and the pace of habitat loss continues to quicken. If we are to be successful in conserving Canada's boreal forest we must ensure a future for its woodland caribou.

Woodland caribou are extremely sensitive to disturbance, particularly associated with industrial resource development. The changes in forest condition that occur in the wake of logging, oil and gas exploration, mining or other developments often leave woodland caribou vulnerable to increased predation and the overhunting that too often accompanies increased access, and bereft of the forest lichens that make up a major part of their diet.

As a result, scientists are increasingly warning that we are witnessing the "slow motion" extinction of this special creature. In response, CPAWS is launching a Canada-wide campaign to stop and reverse woodland caribou habitat destruction in order to also reverse the decline in woodland caribou populations.

Our actions will include:

- Encouraging establishment of large, interconnected protected wild areas to secure and anchor key populations of woodland caribou.
- Seeking fundamental changes in the ways in which resource management occurs in the forestry, oil and gas, mining and hydroelectric industries on forested lands in caribou range.
- Working with leading industries, First Nations and provincial and territorial governments to reward higher conservation performance in the marketplace.

Through our participation in the Boreal Forest Conservation Framework and Forest Stewardship Council forest certification, CPAWS is determined to improve the bleak outlook for woodland caribou and ensure that meeting the habitat and survival needs of this and other boreal species becomes a priority in decision making for this globally important forest.



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Woodland caribou: Adapted for life in the boreal forest

Woodland Caribou have traditionally played an important role in northern aboriginal cultures. They have been central figures in myth and legend and were seen as signs of benevolence. Today, their presence and persistence in our northern forest is a sign of forest health; their loss, a sign of our inability to co-exist with natural systems.

Woodland Caribou (*Rangifer tarandus caribou*) are supremely well adapted to life in northern forests. Members of the deer family, woodland caribou have a short stocky body, fur-covered short wide ears and a flat muzzle, a long thick winter coat with semi-hollow hairs that protects them from both cold and wind and large concave hooves (with shrinkable foot pads to protect against frostbite) that help them prance over soft snow and muskeg.

Their large hooves also serve as paddles, while their hollow coats add buoyancy for these strong swimmers. Both males and females have antlers, with males shedding their up to metre-long racks in November or December (females and younger animals may keep theirs through the winter). However, their thick winter coats can lead to overheating, which is why they seek out snow patches in summer or may seek out shade and forest cover, particularly during calving.

Caribou are the only large mammal that can survive on a diet of lichens, which make up 60-70% of their diet. In fact, woodland caribou have an excellent sense of smell that actually helps them locate lichens beneath snow in winter. Lichens are one of the few readily available food sources in snow-blanketed boreal and mountain forests, but are usually most abundant in older coniferous forests. One study in Alberta found, for example, that woodland caribou move to forests that are 150 years or older in search of lichens during winters with deep snows.

Unlike other members of the deer family, woodland caribou reproduce slowly. Calves are usually born in late May or early June on naturally protected calving areas like islands, lakeshores or peninsulas or alpine ridges that the animals often return to year after year. Unlike other members of the deer family, caribou females (cows) do not breed until they are two-and-a-half years old and produce only one calf per year (unlike white tailed deer, which often have twins, for example). Woodland caribou suffer higher calf mortality rates, with only 30-50% of calves surviving their first year.

Unlike better-known barren ground caribou (*Rangifer tarandus groenlandicus*) that move across the arctic tundra in large herds, woodland caribou are forest dwellers (although the northern mountain population spends time in non-forested or sparsely forested high elevations). They live in small bands or small, scattered groups (rarely more than a few dozen animals) in Canada's boreal region from Yukon to Newfoundland. Individuals are often dispersed throughout the forest during much of the year, particularly after calves are born

(northern mountain females and newborns stay high and remote). The densely covered and often boggy terrain favoured by woodland caribou coupled with their highly dispersed population makes it difficult for predators such as wolves (as well as bears, lynx and mountain lions) to locate enough caribou prey to increase their own populations in these regions. Caribou largely inhabit areas that are not used by deer, which can carry a brain parasite that is deadly to caribou

According to the COSEWIC Assessment and Status Update Report on Woodland Caribou, "the niche of forest-dwelling caribou is lichen-rich mature and old coniferous forest in a matrix with one or more of alpine/subalpine, subarctic (taiga), peatlands, or



Caribou at a salt lick in the Muskwa-Kechika region of northern BC.

WAYNE SAWCHUK

lakeshore. There is little overlap with preferred habitats of other large ungulates [moose, elk, deer]. Population densities outside of Newfoundland are in the range of one to four caribou per 100 square kilometres. As well, “caribou are almost always on the move. Consequently, predators and parasitic insects cannot predict where caribou will occur and lichen ranges are not overused and trampled.”

Caribou may move up to 80 kilometres between calving and wintering ranges and populations have home ranges that can be extremely large – hundreds or even thousands of square kilometres, depending on the population group studied. Woodland caribou are notoriously difficult to track due to their highly dispersed and mobile populations, but current estimates are that there are approximately 184,000 woodland caribou in Canada.

Of these, the Newfoundland island population makes up 54% of the total (about 100,000 animals; high numbers in Newfoundland reflect a lack of predators, particularly wolves on the islands inhabited by caribou). The boreal population, which is found throughout the boreal forest stretching from Labrador to the western NWT, accounts for 33,000 animals; the Northern Mountain population, which inhabits mountain slopes in northern Alberta, BC and Yukon, accounts for 44,000; the Southern Mountain population in southern Alberta and BC accounts for 7,200; and the Gaspésie population on Québec’s Gaspé Peninsula includes fewer than 200 animals. (See map on page 5).



Woodland caribou decline: Extinction in slow motion?

Woodland caribou have lost close to half of their historic range in Canada over the past 100 years. These disturbance sensitive creatures were once found as far south as Algonquin Park in central Ontario and ranged through southern Alberta and B.C. into Idaho. They were also inhabitants of the maritime provinces up until the 1920s.¹

Caribou have been steadily disappearing from vast areas of their historic range as human development has pushed into these areas. One scientific study estimated that only 51% of woodland caribou's historic range was still inhabited by these elusive creatures in the 1980s. In Ontario, the same study found that woodland caribou have been losing approximately 35,000 square kilometres of range every decade for the past 110 years.²

The factors behind this disappearance are complex, but researchers feel that there is little question that the main factor is industrial development of the forest landscape. In fact, computer models developed by the University of Alberta found that

human disturbance was “overwhelmingly” the cause of woodland caribou decline in the study area of northern Alberta. In fact, the models suggest that without human changes to the landscape, woodland caribou would be seven times more abundant in northern Alberta.³

Human development leads to a cascading series of impacts that seem to inevitably lead to the disappearance of woodland caribou from such areas. In fact, today healthy woodland caribou populations are almost entirely restricted to areas of undeveloped boreal forest, such as north of the current logging limit in Ontario or in remote mountain areas of northeastern British Columbia. (Previous University of Alberta research has found that woodland caribou rarely venture to within 200 metres of human industrial developments, including roads and seismic lines.⁴)

A prime factor in this decline may be the comprising of the woodland caribou's key survival method, which relies on the dispersion of individual animals through large areas of forest and distinct habitat separation from deer and moose (with caribou mainly using older forests away from the younger forests preferred by deer and moose).

When forests are opened up by logging operations, roads, oil exploration seismic lines and other disturbances, this survival strategy is quickly compromised. The younger shrubbier growth in post-logging forests draws in increased numbers of deer, moose and elk, which in turn sustain larger predator populations, particularly wolves. Deer also bring with them a brain parasite that causes death in caribou. Easy road or trail access can also lead to a dramatic increase in hunting pressure from both humans and predators such as wolves and bears.

With food sources like lichens found mostly in old forests now much scarcer, human hunting and predator populations on the upswing and their dense protective forest cover largely destroyed, caribou face an uphill battle for survival. Woodland caribou's low birth rate also makes the species particularly prone to a downward population spiral when it comes under pressure. Around the world, woodland caribou (or forest-dwelling reindeer) appear to be losing the battle for survival, with two-thirds of global populations reported to be in decline.

In Canada, the boreal population of woodland caribou was listed as “threatened” by the Committee on the Status of Endangered Species in Canada (COSEWIC) in 2002. Planning for caribou recovery has begun in some provinces, but will likely require a major shift in patterns of industrial land use and/or very large systems of protected areas. According to COSEWIC, “It is doubtful that caribou can persist in forests managed primarily for [tree] fibre production.”



Bull caribou in Torngat Mountains, Labrador

Caribou researcher James Schaefer adds that, “Movement is the central feature of caribou biology . . .

Caribou have one of the lowest energy expenditures for movement of any mammal, and we now appreciate that one of the most important aspects of caribou biology is the way they use space.”

Schaefer predicts that if development continues to push into the intact forest areas used by woodland caribou, these boreal icons could become extinct in Ontario in 100 years or less. Similarly, the University of Alberta study found that a “business as usual” approach to forest development would lead to the disappearance of woodland caribou in the study area in 37 years.

As a result of these trends, scientists have characterized the decline of woodland caribou as “hard to perceive, slow motion crisis” that is inexorably changing caribou from the metaphoric to the actual grey ghosts of the boreal forest.

A More Hopeful Future for Alberta’s Most Endangered Caribou Herd?

The foothills of Alberta’s Rocky Mountains are the home of the Little Smoky Woodland Caribou herd. Described as the most endangered provincial herd by the Alberta Caribou Recovery Strategy and as “fragile and precarious” by COSEWIC, this caribou population has seen its habitat increasingly disrupted by the creation of roads, logging operations, and the building of seismic lines and pipelines for the oil and gas industry.

CPAWS and other conservation groups are focusing their attention on this area in an effort to ensure that there is no further loss of habitat for the herd and that a scientifically sound recovery plan is developed. Elements of the plan must include protected core habitat, limits on human access to the herd’s home range, restoration of habitat that has been previously degraded, caps on industrial activity and then appropriate rollbacks on such uses, and the long-term research and monitoring necessary to ensure that the plan is working.

CPAWS is hopeful that its current discussions with some progressive members of the oil-and-gas and forestry industries will pay off and that they will join us in this effort to help stop the loss of the wild in Alberta’s foothills.



Leadership here will be key to efforts with other herds that are in trouble across the province and the country.

Caribou, fire and climate change

The forests inhabited by woodland caribou (and particularly the boreal forest) have a high frequency of natural wildfires that can burn anywhere from a few hundred to thousands of hectares of forest. In the natural cycle of the boreal forest, these fires could displace or even eliminate local woodland caribou populations for a period of time, but are also critical for renewing the coniferous forest types preferred by caribou.

Today, forestry disturbs a far greater percentage of woodland caribou habitat each year than fire and rather than renewing coniferous forests rich in lichens, it often leads to the conversion of such forests to younger deciduous forests that are more attractive to deer, moose and elk. With more and more of the boreal landscape being changed in this way, there are fewer refuge areas for caribou during wildfires and fewer opportunities for them to establish new ranges in spruce and pine forests regenerating after fires.

Additionally, it is predicted that global climate change will likely increase the frequency and possibly the severity of wildfires, further impacting forest caribou, particularly in western Canada. Climate change may also make traditional woodland caribou habitat more suited to deer by shifting forest ecozones northward.



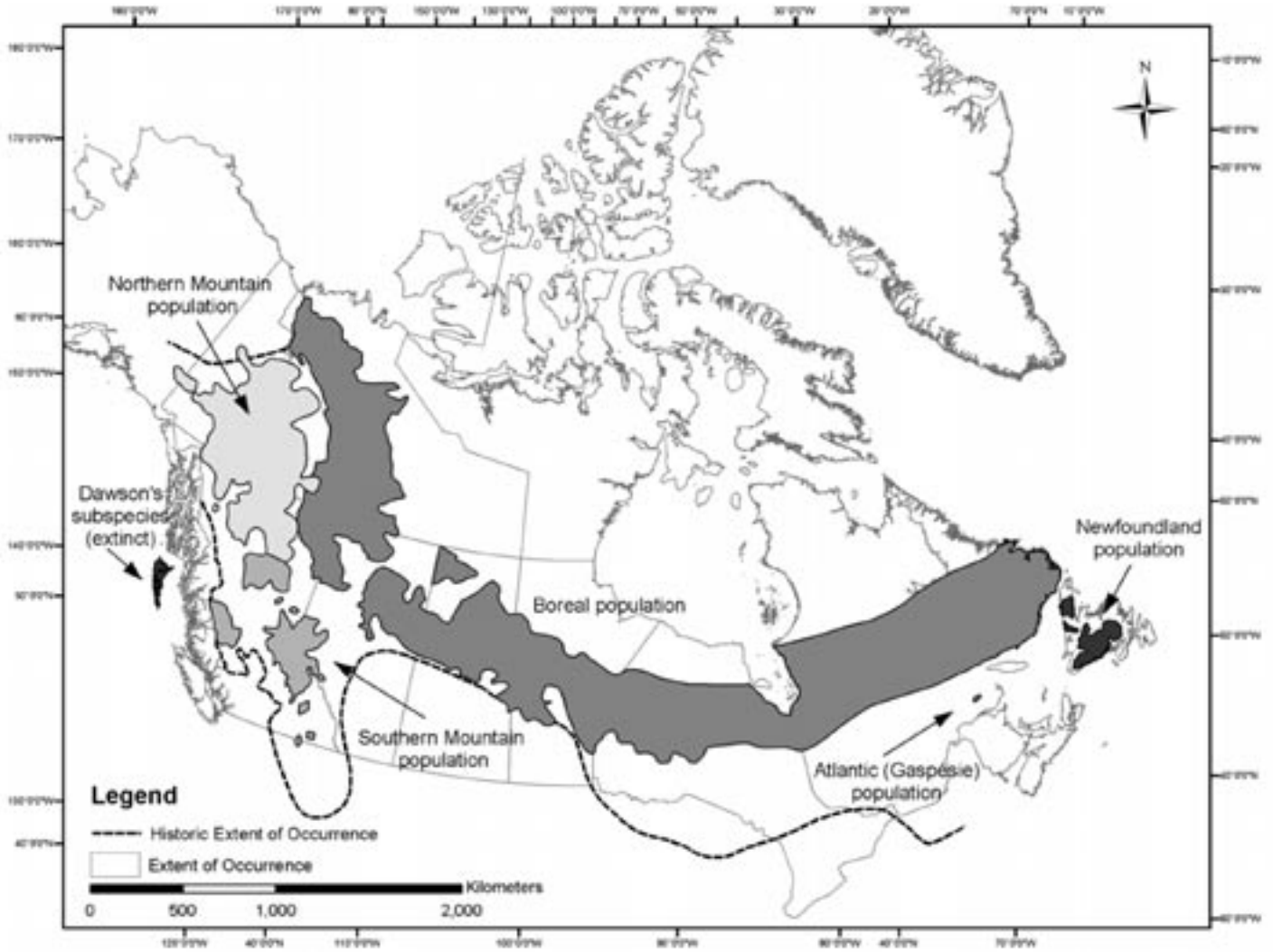
Forest fires may temporarily displace woodland caribou, but fire is integral to the regrowth of the coniferous forests preferred by caribou. Above: old burn with patch of live trees in northeastern Ontario.

Endnotes

- 1 COSEWIC. COSEWIC Assessment and Status Update Report on Woodland Caribou (*Rangifer Tarandus Caribou*) in Canada. 2002.
- 2 Schaefer, James A. “Long-Term Range Recession and the Persistence of Caribou in the Taiga.” *Conservation Biology*, Vol. 17, No. 5. P1435-1439. October 2003.
- 3 University of Alberta, “Computer models expose humans as main cause of caribou decline,” Press Release issued Sept. 1, 2004. See also Weclaw, Piotr and Robert J. Hudson, “Simulation of conservation and management of woodland caribou.” *Ecological Modelling*, Vol. 177, Issues 1-2, pp. 75-94. September 2004.
- 4 Ibid.

Grey ghosts: Can we save woodland caribou in Canada’s boreal forest?

Woodland caribou populations: current and historic ranges

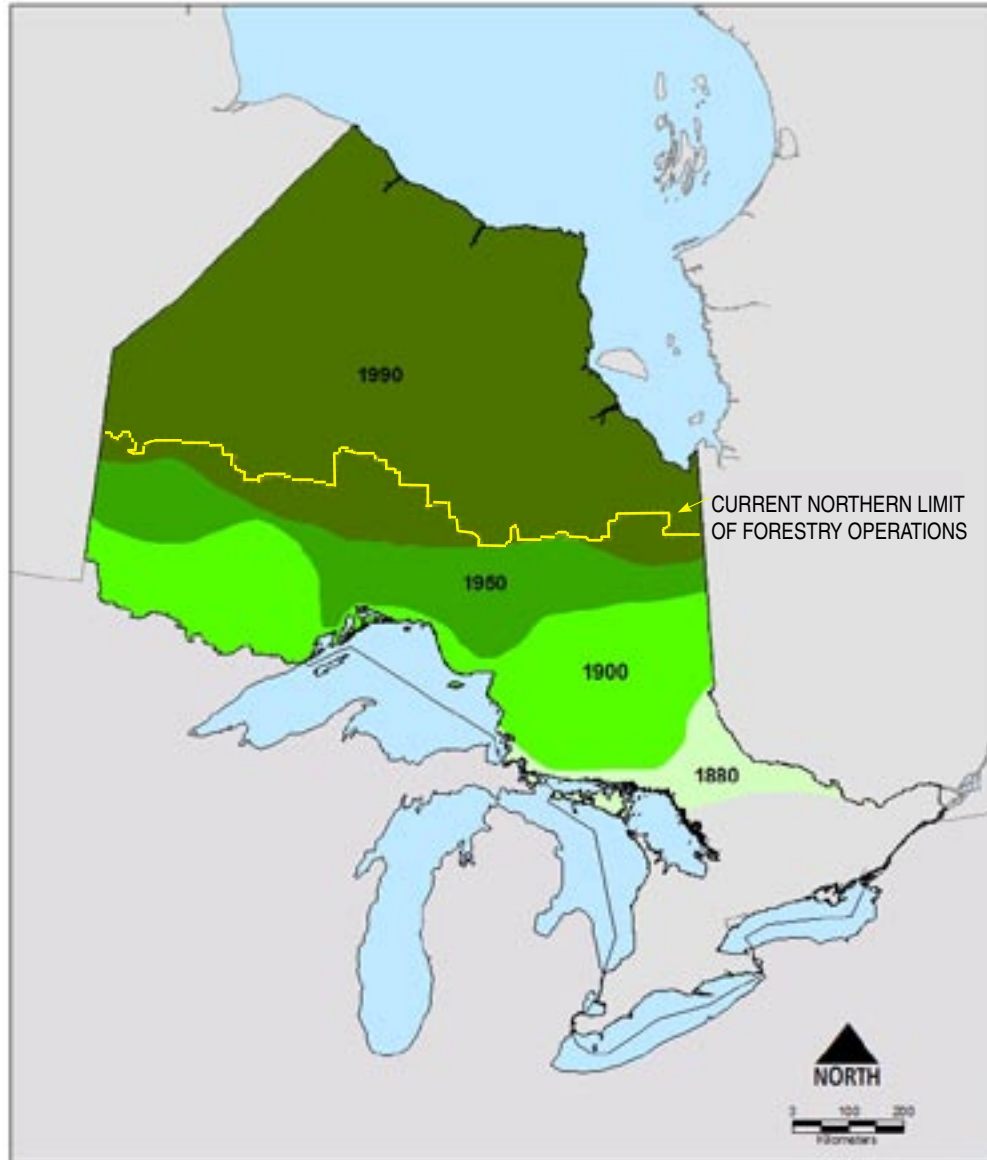


Current (solid lines) and southern limit of historical (dashed line) extent of occurrence of forest-dwelling woodland caribou in North America in 2001.

COSEWIC



Woodland caribou range recession in Ontario: 1880-1990



Woodland caribou range in Ontario has steadily retreated northward in step with the expansion of industrial logging activities.



Woodland caribou: National status and population trends

These assessments of the status and threats facing the five regional populations of woodland caribou in Canada have been extracted from the 2002 Assessment and Status Update report of the Committee on the Status of Endangered Species in Canada (COSEWIC). (Text order may have been changed in some instances and academic references have been removed.)

Boreal population

(Northwest Territories, British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Québec, Newfoundland-Labrador)

Estimated population
33,000

Status
Threatened

Reason for designation

A widespread population ranging across the boreal forests of northern Canada. Populations have decreased throughout most of the range. Threatened from habitat loss and increased predation, the latter possibly facilitated by human activities.

Population trends

In the Boreal population, numbers have decreased during recent studies in a majority of local populations where trend data are available (12/1). Decreases may also occur in 65% of the range where no trend data are available. There is a high proportion of small local populations in small ranges at low density.

Area of occupancy has shrunk up to 40% in Alberta and Ontario. Several small subpopulations at the southern periphery of the extent of occurrence have disappeared in the past 20 years. Caribou populations in commercial forests are most at risk from habitat loss and degradation, accelerated habitat fragmentation, and increased predation caused indirectly by increased numbers of deer, moose, and elk. Much of the range is in the commercial forest and some of it is in areas with high oil and gas activity. Ranges of some local populations in the commercial forest will decline sharply in quantity and quality as forestry and other developments expand.

Habitat

Data from satellite collars [in Saskatchewan] indicate a distinct preference for peatlands (99% of locations)

and peatlands and black spruce forests. In contrast, there was relative avoidance of young forests originating from fire or logging. [In Manitoba] Caribou used peatland complexes and generally avoided clear-cut areas and aspen/poplar-dominated sites. [In Ontario,] caribou habitat includes open coniferous forest over sandy soils, which produces an abundant ground cover of *Cladina spp.* lichens . . . Caribou selected habitats containing conifer cover and avoided disturbed areas and shrub-rich habitats.

[Use of peatlands] by caribou generally is attributed to an attempt to avoid predators. However, peatlands are also important food sources, have fewer parasitic insects, and create some separation from other ungulates. Predators cause direct mortality and may transmit harmful parasites. Some peatlands and adjacent black spruce and tamarack forest produce terrestrial and arboreal lichens and provide year-round habitat requirements.

Threat assessment

Oil and gas activity is increasing in the Northwest Territories and northeastern B.C., where little is known about local populations of caribou. Historical range in Alberta was greater than present though distributions were undoubtedly patchy because, east of the foothills, the majority of cover is deciduous and mixedwood forest. Caribou range has been lost, degraded, and fragmented by petroleum activities, logging, mining, hydroelectric developments, and associated linear structures [seismic lines, access roads]. In Saskatchewan, road development associated with forestry and mining resulted in range fragmentation and increased hunting mortality.

Caribou range in the commercial forest is changing rapidly as forestry operations are widespread across most of the boreal forest. Concerns for caribou relate to large reductions in proportions of medium and old-growth coniferous forests, increased access and fragmentation, altered predator-prey relationships, a

meningeal parasite harboured by white-tailed deer (*O. virginianus*) east of Saskatchewan, and climatic change at regional and local scales.

Landscape-level forest management guidelines in B.C. and Ontario attempt to emulate, to some extent, disturbance caused by fire. In Ontario, large leave blocks

should reduce populations of moose, deer, and associated wolves and also reduce access by predators and human hunters. Whether such recommendations are widely instituted, in the light of considerable opposition, remains to be seen.

Northern Mountain Population

(British Columbia, Yukon Territory, Northwest Territory)

Estimated population

44,000

Status

Special Concern

Reason for designation

Forestry, roads and other developments in the range of this population are beginning to affect some herds, through habitat modification and increased human access. Most of the habitat is currently remote and has changed little. Most of the population of over 3,500 adults appears stable but is particularly dependent on conservation actions, such as management plans. Two of 39 herds within this population are declining and may be at risk from changing predator-prey relationships and greater motor vehicle access.

Population trends

Forestry and other developments in the Northern Mountain population are beginning to affect a few local populations of caribou. However, the habitat is little changed in remote areas of occupation. Variable weather, changing predator-prey relationships, and greater access by unregulated hunters affect numbers in local populations.

Habitat

Caribou spend much of the summer in alpine and upper subalpine range and in winter move down to coniferous forest in lower subalpine and, rarely, to the montane. In Yukon and northern B.C., most caribou winter in areas where snow cover is relatively light. They winter at low elevation in either mature lodgepole pine (*P. contorta*) or spruce forests where they feed primarily on terrestrial lichens and secondarily on arboreal lichens. Some caribou also winter on high slopes where wind action allows access to terrestrial lichens.

Threat assessment

Habitat concerns expressed by jurisdictional representatives ranked below non-regulated hunting (70% of local populations) and predation (62% of populations). Most local populations are quite isolated from human activities and forestry operations are a concern for only 35% of the populations and connectivity for 37%. Lack of available habitat is of high or medium concern for 32% of the local populations, with wildfire a concern for 56% of 37 populations. Seasonal use by caribou of low elevation range in winter conflicts with forestry operations. Oil and gas activity is expected to increase.

Southern Mountain population

(British Columbia, Alberta)

Estimated population

7,200

Status

Threatened

Reason for designation

Local herds in the Southern Mountain population are generally small, increasingly isolated, and subject to multiple developments. Their range has shrunk by up to 40% and 13 of 19 herds are declining. The most southerly herds are likely to disappear. Many herds are threatened by decreasing habitat quantity and quality, harassment and predation.

Population trends

Local populations in the Southern Mountain population are generally small, increasingly isolated, and subject to multiple developments. The range has shrunk by up to 40% and almost half of the local populations (12-14/30) are decreasing in number. Local populations at the southern limit of the distribution (Selkirk, South Purcells, and Banff) and other small, isolated populations (Barkerville, George Mountain, and Telkwa) are likely to disappear. The outlook for habitat quantity and quality and predator management is not favourable.

Habitat

The Southern Mountain Population in B.C. occurs mostly in alpine and englemann spruce-subalpine fir biogeoclimatic zones. The west-central metapopulation is in a precipitation shadow where sub-boreal forests of pine and spruce occur at lower elevation. The north-central metapopulation is in a wetter climate where spruce-fir and spruce forests predominate.

In early winter, caribou use valley bottoms and lower

slopes, and then move to upper slopes and ridge tops after the snow pack deepens and hardens in mid- and late winter. They survive for 6-8 months feeding almost exclusively on arboreal lichens . . . In spring, caribou descend to access green vegetation. Pregnant caribou move upwards again in May and usually are found in old forests.

In Alberta's Rocky Mountains, only very old forests with northern or eastern exposures produce abundant, long-strand arboreal lichens.

Threat assessment

Hunting was suggested as the main cause of range retraction in central and southern parts of the province [B.C.]. Predation and forestry operations are now the main concern. Access/disturbance and forestry operations are of high or moderate concern for 94%

and 90%, respectively, of the 30 local populations. Loss of connectivity and lack of available habitat are concerns for 73-74% of populations. Those are high numbers considering that three of the populations are in national parks and several populations are partially in protected areas. Forest fire was a concern for 47% of populations.



Use by caribou of low elevation range in winter conflicts with forestry operations. Timber cuts are being made at higher elevation as the first cut is completed in valley bottoms and on lower slopes. Fragmentation of range is a serious consequence of forestry and other developments. In the Purcell Mountains, caribou frequented areas containing at least 40% suitable habitat at fine (250 ha) and coarse (5000 ha) scales. One accepted hypothesis is that increases in moose numbers on caribou range, as a result of re-colonization abetted by logging, has resulted in more wolves and higher caribou mortality. Thus, predation is a concern for 94% of local populations.

WAYNE SAWCHUK

Atlantic-Gaspésie population

(Québec)

Estimated population

>200

Status

Endangered

Reason for designation

A small isolated population of less than 200 adult animals confined to the Gaspésie region. The population is at risk from predation and habitat loss.

Population trends

The Atlantic (Gaspésie) population is an isolated relic population of caribou that formerly ranged into the Maritime provinces and northeastern U.S.A. Although numbers have varied from 150 to 250 individuals over the past 20 years, it is subject to genetic drift [loss of genetic diversity because of the loss or reduction of

gene types – alleles – in the population], inbreeding depression [increased occurrence of traits that lessen survival because rarer genes more often dominate in individual animals], and chance catastrophic events.

Habitat

Range types used by Gaspésie caribou were grouped into alpine, mature spruce, mature fir, immature forest, and hardwood. Mature fir cover along with white spruce in the subalpine was important winter range. Critical summer habitat included tundra of Mont Albert and Jacques-Cartier Mountains. Logging, which occurred in the park until 1977, removed part of the forest habitat including arboreal lichens.

Threat assessment

Habitat in the Gaspésie Park was modified by fire, insect infestations, and logging. There is little use of young stands by caribou.

Newfoundland population

(Islands of Newfoundland)

Estimated population

100,000

Status

Not at Risk

Reason for non-designation

There are about 85,000 adult caribou in Newfoundland, and they are less subject to predation than caribou elsewhere in Canada because of the absence of wolves. Only one of 27 herds is reported as decreasing and most of the habitat appears secure. The recent arrival of coyotes, however, may increase predation pressure in the future.

Population trends

Woodland caribou of Newfoundland are found on the Main Island and offshore islands in 15 natural and 22

introduced populations . . . After a sharp decline in the early 1900s, the populations became centred in the most inaccessible parts of their range. In the last few decades, however, the range has expanded gradually and woodland caribou now occupy most of their historic range.

Habitat

Caribou use a mixture of boreal and taiga coniferous forest with some shrub land, peatlands, and 'barrens.' Caribou in the Corner Brook Lake area preferred barrens, mature and over-mature forests, and avoided scrub, bog, and immature forest.

Threat assessment

Commercial logging in summer disturbs caribou, though benefit is derived from clearings where caribou obtain some relief from insects.



Woodland caribou: Provincial status and recovery efforts

In addition to being listed by the Committee on the Status of Endangered Species in Canada, many woodland caribou populations have also been designated as at risk under provincial legislation.

British Columbia

Mountain Caribou eco-type subpopulations are struggling. The transboundary South Selkirk herd has been declared Endangered in the United States. The BC Conservation Data Centre (CDC) has placed the southern ecotype of Woodland Caribou on the provincial Red List. The recently released Strategy for the Recovery of Mountain Caribou in British Columbia (MWLAP ver. 1.0, 2002) has reported that:

- Mountain Caribou have been extirpated from over 40% of their former BC range;
- Nine of the thirteen Mountain Caribou populations are in decline and/or have declined during the past 20 years due to habitat alteration, habitat fragmentation, alteration of predator-prey relationships, increased human access and associated disturbance and/or past over-hunting;
- The forest harvest in core habitat is continuing at non-sustainable rates and commercial recreation tenures are being awarded for most of their core habitat.

Yukon

The Yukon does not have endangered species legislation. However, it has caribou guidelines, developed in 1996, that suggest emphasizing “self regulating” herds in wildlife management. Details are at www.yfwmb.yk.ca/comanagement/species/caribou/guidelines.html

Northwest Territories

The Northwest Territories is in the process of developing a territorial Species at Risk Act, and released a progress report towards this goal in 2003 (see www.nwtwildlife.rned.gov.nt.ca/legislation/legislation.htm). A General Status Report for the NWT reports approximately 13,000 woodland caribou in the territory and ranks this species as “sensitive” (not currently

“at risk”, but perhaps requiring special attention or protection to prevent them from becoming “at risk”). Population trends are unknown, however there are some initial indications that both numbers and distribution may be decreasing. Currently, research is underway by the territorial government to better define the status of woodland caribou in the NWT.

Alberta

Under the Alberta Wildlife Act, caribou are designated threatened because of reduced distribution, declines in regional populations and threats of further declines associated with human activities.

It is hoped that by late 2004 the Alberta government will respond to the multi-sector Caribou Recovery team report by establishing recovery teams and plans in regions where herds occur.

Saskatchewan

The woodland caribou is not listed as a species at risk in Saskatchewan. Woodland caribou are also not consistently considered in environmental assessments and land-use planning in the province. However, a report from the province’s Environment ministry does acknowledge that woodland caribou are under pressure:

“There is a general range contraction along the southern edge of caribou range in Saskatchewan as a result of habitat loss, fragmentation and habitat changes ... the northward contraction of boreal caribou range in Saskatchewan is consistent with that reported elsewhere in North America” (A. Arsenault, Saskatchewan Environment Fish and Wildlife Report 2002-03, December 2003).

Manitoba

The Manitoba government’s 1993 Woodland Caribou in Manitoba report estimates the “woodland caribou population has decreased by 50% since 1950.” The provincial government’s Woodland Caribou

Conservation Strategy released in 2000 states “the goal is to maintain woodland caribou at contemporary levels of abundance and distribution in Manitoba.” However, the Manitoba government has yet to list and protect woodland caribou under its Endangered Species Act.

Ontario

The Committee on Status of Species At Risk in Ontario (COSSARO) has proposed a threatened status for woodland caribou (forest dwelling type), but this has yet to be adopted.

Currently the Ontario Ministry of Natural Resources is developing a provincial caribou strategy and a regional strategy for the province’s northeast. They are also using caribou guidelines in forest-management planning in areas where caribou are still found (near northern limit of logging).

Québec

Current indications are that woodland caribou will be designated as vulnerable by FAPAQ in December 2004.

Labrador

Three boreal woodland caribou herds (Lac Joseph, Red Wine Mountains and Mealy Mountains herds) in Labrador have been listed as threatened under the province’s *Endangered Species Act*. The province released a recovery strategy for these herds in 2004. The strategy identifies recovery goals and objectives for the caribou herds which have suffered population declines. There has also been a decline in the caribou herds’ distribution and use of available habitat.



CPAWS: Taking action for caribou from coast to coast

CPAWS is committed to reversing the decline in woodland caribou populations across the boreal forest region.

Our efforts will be integrated into our work with the Canadian Boreal Initiative to implement the groundbreaking Boreal Forest Conservation Framework, which calls for permanent protection of at least 50% of the entire boreal forest and for best practices for resource management in any areas that may be used for forestry, mining, oil and gas exploration, etc. A number of leading resource companies along with several First Nations and conservation groups from across Canada have already endorsed the Framework. (Please see Appendix A on page 16 for a full description of the Framework)

We believe the key elements to a solution include:

- Undertaking comprehensive land-use planning with a mandate to put conservation first for boreal forest regions. Such planning can help us lessen the cumulative impacts of development activities and identify critical areas for protection for disturbance-sensitive species like woodland caribou.
- Protecting large areas of intact (little or no access) old forests as part of an interconnected network of protected areas that is designed at a minimum at a regional level. Woodland caribou's need for movement means that small, isolated protected areas will not be sufficient to sustain this species. Protected areas or a series of interconnected areas in the range of 5,000-10,000 square kilometres are the estimated minimum that is required to protect populations of woodland caribou.

Canada also need to adopt new approaches to resource development that significantly lessen impacts on species such as woodland caribou:

- Forestry: We must move quickly to adopt forestry practices that retain large areas of intact old forest, that protect calving areas like shorelines and other sensitive sites, and that reduce or eliminate post-harvesting access to previously inaccessible areas. As part of this new approach, the industry should put in place alternatives to clearcutting (still used for more than 90% of the annual boreal harvest). Adopting Forest Stewardship Council standards for

forestry operations in the boreal region should be a minimum requirement.

- Oil and gas: The industry must adopt new practices that reduce the extensive forest fragmentation caused by the dense matrix of seismic lines, access roads, pipelines and other infrastructure that oil-and-gas activities have traditionally created. Use of snow roads and winter drilling should be encouraged to protect fragile forests, including lichens, and exploration activity should minimize road building and seismic line clearing by using aerial exploration methods, snow roads and through the coordination of such activities with other resource industries.
- Mining: The mining industry must acknowledge the importance of participating in comprehensive land-use planning in a productive manner and must coordinate its activities with other resource industries (e.g., sharing – and controlling – road access). Special attention must be paid to impacts on water and controlling or eliminating runoff from mine drainage and tailings in order to protect wetlands and waterways used by caribou.
- Hydro-electric: Emphasis should be placed on true run-of-the-river projects and these should be located as close to energy demand centres as possible. Long transmission corridors through areas of intact forest should be avoided and site access must be carefully planned and controlled.

What CPAWS is doing across the country

To realize our overall goals for Canada, CPAWS has established immediate caribou conservation goals, and strategies to achieve these goals, in the jurisdictions where we have programs and offices.

National

- Public education and outreach through True North Wild and Free, a national book tour celebrating Canada's boreal forest during autumn 2004.
- Joint sponsorship of a conference on practical steps for woodland caribou conservation to be held with partner organizations in 2005.
- Support for regional initiatives to establish new protected areas and to change industrial practices.

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Yukon

Caribou conservation is integral to all CPAWS-Yukon conservation campaigns. Caribou is a focal species for conservation, as well a species that is very important to northerners. The Yukon is home to at least 25 caribou populations including both woodland and barren-ground caribou. These caribou populations are distributed throughout the territory.

Caribou Conservation Goals:

- Maintain intact and healthy Wolf Lake Herd (in the proposed Wolf Lake National Park study area).
- Maintain and intact and self-regulating Bonnet Plume Woodland Caribou Herd (Peel watershed) – largest woodland caribou herd in the Yukon.
- Protect the winter range of the Porcupine Caribou Herd (Peel watershed, Eagle Plains).
- Promote conservation of winter range of the Rancheria Woodland Caribou Herd in Southeast Yukon/Northern BC.

Conservation Strategies:

- Discuss the establishment of national park in the Wolf Lake Area with First Nations in the region.
- Seek protection of the Peel Watershed.
- Challenge Yukon government's proposed "roads to

resources" program, because of its threats to caribou and is contrary to government caribou management guidelines.

- Change the government's ongoing oil-and-gas disposition process to better protect caribou.
- Undertake a scenario mapping project, to demonstrate how oil-and-gas development in the Yukon will affect caribou and wetlands and to inform land-use planning initiatives, land and resource management decision making, etc.
- Assess possible impacts of other industrial threats to caribou, including coalbed methane development.
- Developing a public information booklet about the Little Rancheria Caribou herd and its status, encouraging establishment of a Habitat Protection Area for this herd.

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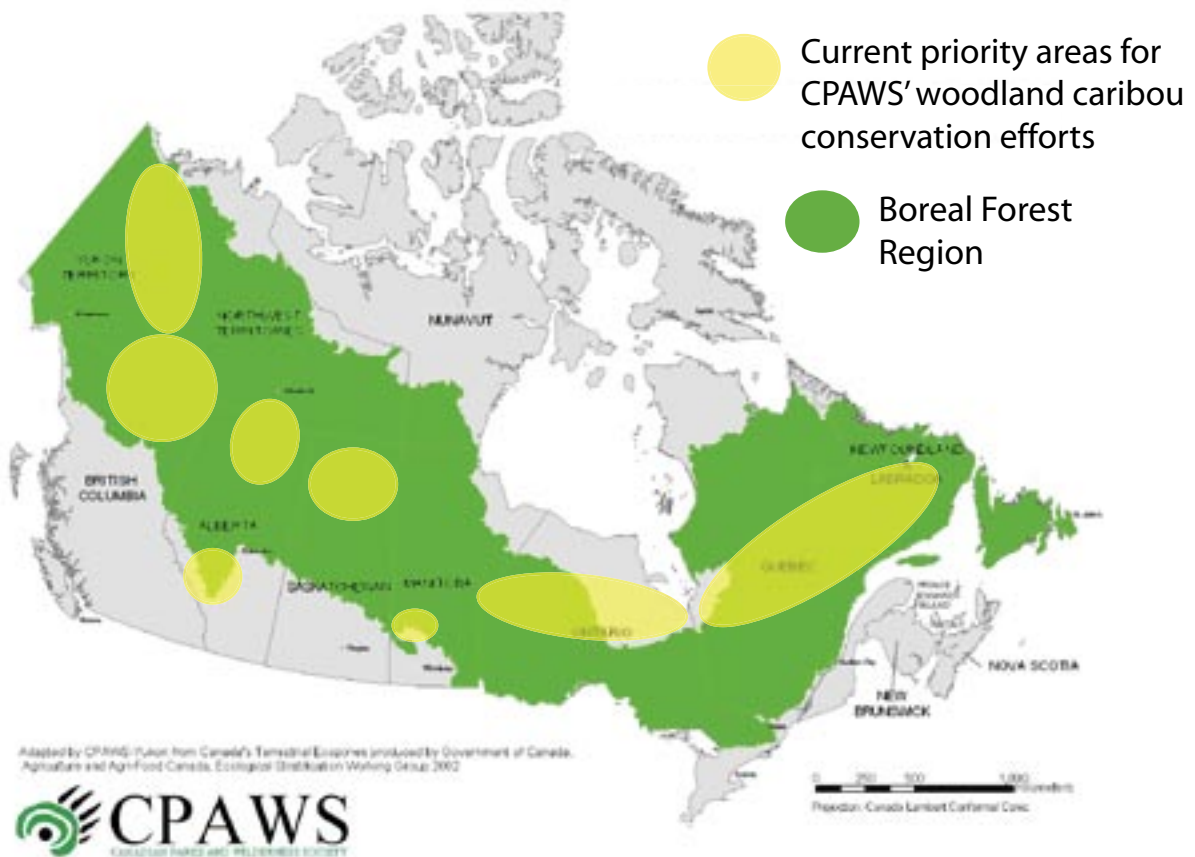
British Columbia

Caribou Conservation Goal:

- Undertake Mountain Caribou Habitat Conservation Project to reverse the decline of South Selkirk and Central Selkirk sub-populations by securing and restoring key early-winter and late-winter old-growth forest habitat on the private lands that comprise about one-third of the critical habitat of the transboundary herd. CPAWS' work with landowners raises the profile of Mountain Caribou regionally and pioneers a more precautionary approach for all land use within critical habitat areas.

Conservation Strategies:

- Recovery Planning under federal Species at Risk Act through participation in the South Kootenay and North Kootenay Recovery Planning tables.
- Habitat protection and restoration by working with a number of private landowners to develop covenants, stewardship agreements, and conservation



strategies for Mountain Caribou habitat within private forestry lands.

- Outreach and media work to draw conservation allies, regional governments, private landowners, commercial tourism operators, and private recreational users into the discussion about the future of mountain caribou.
- Development of policy alternatives and the elimination of forestry cut-blocks and recreational tenures from core habitat. CPAWS-BC is working with regional groups to address this issue.

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Alberta

Caribou Conservation Goals

- **Establishment of a protected wild area for caribou in the Chinchaga region of western Alberta.**

- **Development of management planning guidelines and protected areas to conserve caribou where forestry is occurring.**

Conservation Strategies

- Establishment of a protected areas in the Chinchaga region that includes a phase-out of petroleum activity and no net increase in the industrial footprint during the transition to full protection.
- Work with Alberta-Pacific Forest Products (Al-Pac) in its efforts to obtain Forest Stewardship Council certification for its license areas in Alberta. This will require management planning for caribou.
- Continuing our conservation efforts in the Rocky Mountain Foothills and, through this coordinated conservation effort, gaining logging deferrals and ultimate protection for much of the caribou range in this area.

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Saskatchewan

Caribou Conservation Goals

- Establishment of a network of large protected wild areas in land-use plans in the Athabasca and North Central Regions.

Conservation Strategies

- Pressing for protection of large caribou habitat areas and for altered management on lands that are logged through our membership on the Saskatchewan Woodland Caribou Recovery Team.
- Production and tour of an informational slide show on Saskatchewan's boreal forest that will be shared with the public. Photos and narratives discuss various boreal animals, including the woodland caribou.
- Working with Metis and First Nation communities in the north central and northern quarter regions of Saskatchewan's forest to develop culturally and ecosystem-based plans that bring together the best current science and indigenous peoples' ecological knowledge. Woodland caribou information is an important aspect in plan development.

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Ontario

Caribou Conservation Goals:

- Protection of large forested areas in Ontario's northern boreal forest.
- Securing changes to forestry practices to allow for the continued survival of caribou in areas where forestry occurs

Conservation Strategies

- Participating in First Nation community-based land-use planning in the northern boreal forest to ensure large protected areas are established before any industrial development begins.
- Developing a Recovery Strategy as a member of the Ontario Woodland Caribou Recovery Advisory Committee.

- Developing a strategy to protect remaining caribou in northeastern Ontario as a member of the Northeast Region Caribou Recovery Task Team.. A draft Recovery Plan for the Northeast Region is expected to be released in fall 2004.
- Determining measures to be taken by forest companies to protect caribou habitat by serving as a member of the provincial Landscape Guide Development Team.
- Initiated a woodland caribou research project — "Northern Frontier Forests and the Conservation of Woodland Caribou" — in partnership with Trent University, Wildlife Conservation Society Canada and the Ontario Ministry of Natural Resources.
- Involvement in a unique project with Pikangikum First Nation Elders that brings together the best current science with the traditional ecological knowledge of the community's Elders to plan for caribou in the Whitefeather Forest Planning Area.
- Preparing a woodland caribou fact sheet for distribution to people involved in forestry planning in northern Ontario.

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Québec

Caribou Conservation Goals

- Protection of large wild areas where Woodland Caribou live through the creation of parks and reserves.
- Securing changes to forestry practices to allow for the continued survival of caribou in areas where forestry occurs

Conservation Strategies

- Undertaking public outreach and education at the provincial and regional level through broadsheets, posters and provision of information to media.
- Providing input and leadership for the Québec Protected Areas System planning effort to ensure that large wilderness areas are protected for woodland caribou.

- Providing input to the Coulombe Commission (commission investigating forestry practices in Québec) to ensure that the needs of caribou are addressed in forestry planning.
- Pressing for greater action and the development of recovery plans when woodland caribou are formally designated as a vulnerable species under provincial legislation (expected in December 2004).

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Sahyoue and Edacho Peninsulas of the Great Bear Lake watershed through the NWT Protected Areas Strategy

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Caribou Conservation Goals

- Protection of caribou herds in the Mackenzie Valley in advance of industrial development
- Securing expansion of Nahanni National Park Reserve to protect adequate habitat for the Nahanni caribou herd and others using the South Nahanni watershed
- Creation of protected areas in the Dehcho and Sahtu regions

Conservation Strategies

- Working to conserve the natural and cultural values of the Mackenzie Valley, including woodland caribou, in partnership with other conservation groups, government, and aboriginal groups through the NWT Protected Areas Strategy, by establishing a network of protected areas in the Mackenzie Valley in advance of industrial development.
- Working to expand Nahanni National Park Reserve, a renowned World Heritage Site, in conjunction with the Dehcho and Sahtu First Nations, to protect the entire 35,000 sq km South Nahanni Watershed.
- Engaging in land use planning exercises in the Dehcho and Sahtu regions of the NWT to ensure adequate habitat protection for caribou and other wildlife species.
- Working in the Sahtu region to develop a Great Bear Lake Watershed Management Plan
- Working to secure permanent protection for the



Appendix A: Boreal Forest Conservation Framework

The Boreal Forest Conservation Framework was released on December 1, 2003. This framework sets out a bold vision and action plan for conserving Canada's boreal forest. Coordinated by the Canadian Boreal Initiative, the Boreal Forest Conservation Framework has been developed and endorsed by eleven leading organizations representing conservation groups, industry and First Nations. The Framework calls for the protection of 50 per cent of the Boreal Forest in an interconnected network of protected areas and the sustainable, ecosystem-based management for forestry and other resource industries outside of this network.

The Canadian Parks and Wilderness Society is pleased to be part of this effort and we are committed to working with the existing and future partners in implementing the Framework.

CPAWS has twelve national and regional offices developing conservation solutions on the ground in Canada's boreal forest. Our major program streams include involvement in forest markets and certification, oil and gas practices reform, aboriginal community engagement, land-use planning participation and public outreach and communication.

Summary of the Boreal Forest Conservation Framework

The Boreal Forest Conservation Framework reflects the collective wisdom of the Boreal Leadership Council and is based on the best currently available information. Over the coming months, the Canadian Boreal Initiative will be working with Council members to expand Framework endorsement in a variety of sectors, generate on-the-ground examples of the Framework principles in action, and create opportunities for governments to become engaged and active participants. The CBI has also commissioned science-based research to refine the necessary levels of protection and other activities required to implement this vision.

Context

Canada's boreal region contains one-quarter of the world's remaining original forests. One of the largest intact forest ecosystems left on Earth, Canada's boreal is home to a rich array of wildlife including migratory songbirds, waterfowl, bears, wolves and some of the world's largest woodland caribou herds. The boreal

region's natural wealth sustains many of Canada's aboriginal communities, who have lived in harmony with the boreal for thousands of years. It also supports thousands of jobs and contributes billions to the Canadian economy.

Vision

The Boreal Forest Conservation Framework is based on a shared vision to sustain the ecological and cultural integrity of the Canadian boreal forest region, in perpetuity.

Goal

The Framework's goal is to conserve the cultural, sustainable economic and natural values of the entire Canadian boreal region by employing the principles of conservation biology to:

- protect at least 50 per cent of the region in a network of large interconnected protected areas, and
- support sustainable communities, world-leading ecosystem-based resource management practices and state-of-the-art stewardship practices in the remaining landscape.

The Framework represents a national vision and goal for the region as a whole, rather than a formula to be applied on a unit-by-unit basis in a particular part of the boreal. In promoting a conservation approach for the entire boreal, the Framework recognizes that conservation challenges and opportunities will vary from place to place.

Principles

The principles of the Boreal Forest Conservation Framework include:

- Maintain ecological processes which account for the overall health of the boreal forest across the full spectrum of human uses;
- Ensure sustainable economic benefits to Northern communities and the viability of commercial interests;
- Respect the lands, rights and ways of life of Aboriginal peoples and First Nations;
- Achieve optimal additional environmental and social benefit from the least raw material supply, cost, and workforce adjustment impact;

continued

- Utilize scientific knowledge, traditional knowledge, and local perspectives to achieve the conservation of natural and cultural values.

Commitments

The partners of the Boreal Forest Conservation Framework are committed to supporting the Framework through a range of both individual and collaborative actions. These actions include but are not limited to support for and participation in:

- scientific and traditional ecological knowledge research;
- land-use planning;
- protected-areas designations;
- innovative policy development supporting Framework principles;
- economic incentives for sustainability in the boreal region.

The Boreal Forest Conservation Framework is co-ordinated by the Canadian Boreal Initiative and was launched by:

- CPAWS
- World Wildlife Fund Canada
- ForestEthics
- Ducks Unlimited
- Poplar River First Nation
- Tembec Inc.
- Domtar Inc.
- Innu Nation
- Dehcho First Nations
- Alberta-Pacific Forest Industries Inc.
- Suncor Energy Inc.



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