



Woodland caribou in Québec and mountain caribou in Gaspésie: Factors in their decline, measures to halt the decline and current population status

The woodland caribou, or boreal caribou, is an emblematic boreal forest species. Most of its populations in Canada are either declining or endangered, and those in Québec have not escaped this trend. The Gaspésie mountain caribou population is also declining.

The Ministère des Forêts, de la Faune et des Parcs is working to prepare a strategy that will address the needs of caribou populations in Québec, to ensure their long-term survival while also fostering the vitality of Québec and its regions.

As part of this process, the available information on caribou populations in Québec and elsewhere has been reviewed and collated.

This document presents a summary of the literature review, which focuses on a variety of aspects including general ecology, limiting factors and threats associated with population decline, conditions for self-sufficiency, habitat restoration and population management measures, and current population status.¹

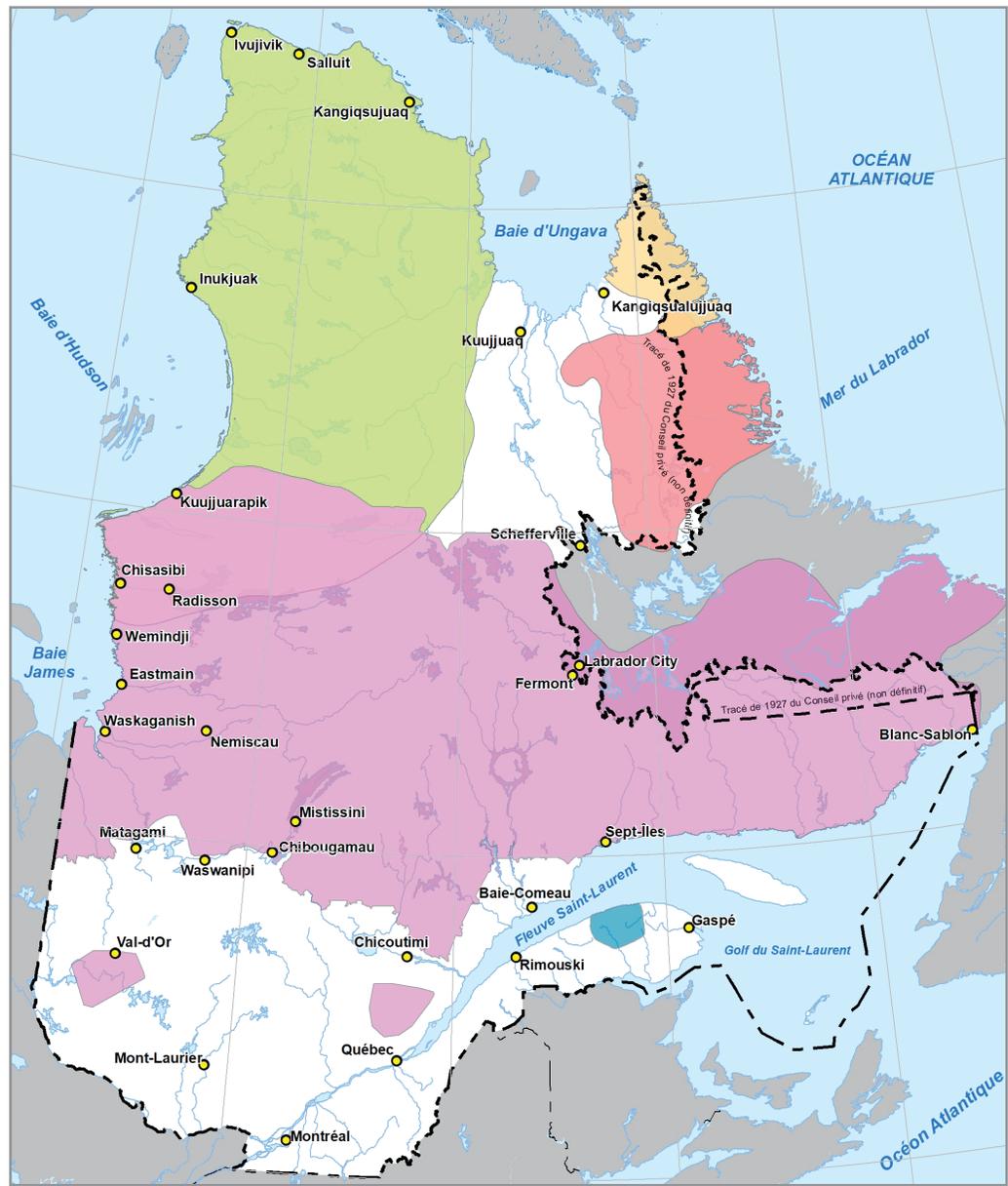
The knowledge inventory allowed to target the information that needs to be enriched and identify areas in which knowledge acquisition work must continue in order to improve the management and conservation of woodland caribou populations in Québec and Gaspésie mountain caribou population.

¹ The review of literature on factors involved in the decline of woodland caribou populations in Québec and Gaspésie mountain caribou population can be found on the MFFP's website.

Caribou in Québec: Three ecotypes

All caribou in Québec belong to the same subspecies. Biologists classify caribou by ecotype, depending on where they live, their characteristics and their specific behaviours. There are three caribou ecotypes in Québec: migratory, woodland (or boreal) and mountain.

- The migratory ecotype lives in the taiga, the tundra and the Arctic tundra in Northern Québec. It forms large groups that migrate seasonally over long distances.
- The woodland caribou tends to be mainly sedentary and lives in the boreal forest and the taiga. It has been designated as a vulnerable species in Québec since 2005.
- The mountain caribou lives in mountainous environments and may migrate seasonally over short distances. The Gaspésie population lives mostly in the Gaspésie provincial park and surrounding areas. It has been designated as a threatened species since 2009.



Distribution of caribou ecotypes in Québec and Labrador

- Woodland caribou
- Gaspésie mountain caribou
- Torngat mountain caribou
- Migratory caribou Leaf River herd (LRH)
- Migratory caribou George River herd (GRH)

Map projection:
Lambert conic projection with two standard parallels (46 and 60)

0 200 km

1/9 515 227

Sources :
BGAQ (1/2,000,000), Ministère de l'Énergie et des Ressources naturelles, 2003

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Note: This document has no legal scope.

In Québec, woodland caribou inhabit a strip of boreal forest located between the 49th and 55th parallels. Two isolated populations of woodland caribou (the Val-d'Or and Charlevoix populations) and one population of mountain caribou (the Gaspésie population) live south of the 49th parallel.

Threats to caribou populations

There are many factors that may limit the persistence of caribou populations, including:

- habitat loss and disturbances of human origin due to industrial activities, and the resulting increase in predation;
- habitat loss and disturbances of natural origin (forest fires or insect infestations);
- disturbances caused by humans (e.g. recreational and tourist activities such as snowmobiling);
- emergence of diseases and parasites;
- climate change, which may alter caribou habitats among other things.

These factors vary in terms of their importance, and some have only a small impact. However, when combined, they are likely to exacerbate the situation considerably.

The greatest threats to woodland caribou and to the Gaspésie mountain caribou population are habitat loss and disturbances and the resulting increase in predation, due to spatial reorganization and its impacts on the caribou's predators and their other prey.

The caribou's main predators are the grey wolf, black bear, coyote and Canada lynx. The wolf is the main predator of adult woodland caribou in Québec, while the coyote is the main predator of Gaspésie mountain caribou calves.



Habitat disturbances caused by humans result mainly from forestry, mining and energy-related activities, the development of roads and energy transmission lines, and land use developments for recreational and tourism. All these activities alter and fragment the habitat, hindering the caribou's ability to move around. They also reduce the availability of good-quality habitat and increase the species' exposure to predators. Habitat quality and the caribou's probabilities of survival are therefore diminished.

Forest roads, for example, create openings in the habitat that allow predators to reach their prey more easily. Forest development activities also cause forests to rejuvenate; the caribou, unlike other species such as the white-tailed deer or moose, need mature forests in order to feed and reproduce.

Measures to halt the decline of caribou populations

It is essential to protect large intact habitat blocks in order to maintain populations. However, in some sectors where habitats have been disturbed, habitat restoration is regarded increasingly as a viable means of preserving caribou populations. Planting of seedlings to close forest roads, along with maintenance of nearby mature trees, may help to halt the decline of caribou populations. However, measures such as these are expensive and logistically complex.

Population management measures may also help to maintain certain caribou populations in the short term, if they are applied alongside habitat restoration and protection measures. For example:

- control of predators such as wolves, and management of other prey species such as moose and white-tailed deer;
- penning to protect caribou populations from predators over a period of months or years;
- breeding in captivity and assisted reproduction;
- reintroduction, relocation and supplementation using caribou from other populations;
- feeding;
- anti-parasitic treatments;
- mitigation measures for road accidents, for example by installing fences along roads and providing wildlife bridges;
- reduction of disturbances from industrial, recreational and tourism activities.

All these measures should be seen as temporary tools that can be used in combination to help maintain populations until the return of favorable conditions in the habitat.



Knowledge enhancement

Although the caribou is one of the most extensively studied large mammal species, particular aspects of the available information can be improved. They include caribou biology, present and future relations between the caribou and its environment, and the effectiveness of the measures implemented in the future woodland and mountain caribou strategy. Knowledge acquisition will therefore continue, in order to guide and make changes to population and habitat conservation and management measures.

A strategy based on scientific knowledge and social dialogue

The survival of Québec's woodland caribou populations is a delicate issue and presents a considerable challenge. The Québec government will continue to monitor caribou populations throughout its territory and will maintain a dialogue with local and indigenous communities in order to make the best possible decisions in the circumstances, in conjunction with the all citizens.

The future strategy for woodland and mountain caribou will therefore be based on the latest scientific information and the results of consultations with all stakeholders.

