

A Report on the Newfoundland Caribou



HIGHLIGHTS

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Newfoundland
Labrador

Environment and Conservation

A Dramatic Decline in Newfoundland Caribou



Caribou on the island of Newfoundland (Newfoundland) numbered as few as 10,000 in the 1950s, but grew to more than 90,000 by the late 1990s. The Newfoundland caribou population remained at about peak size for approximately five years, and then began to decline very swiftly.

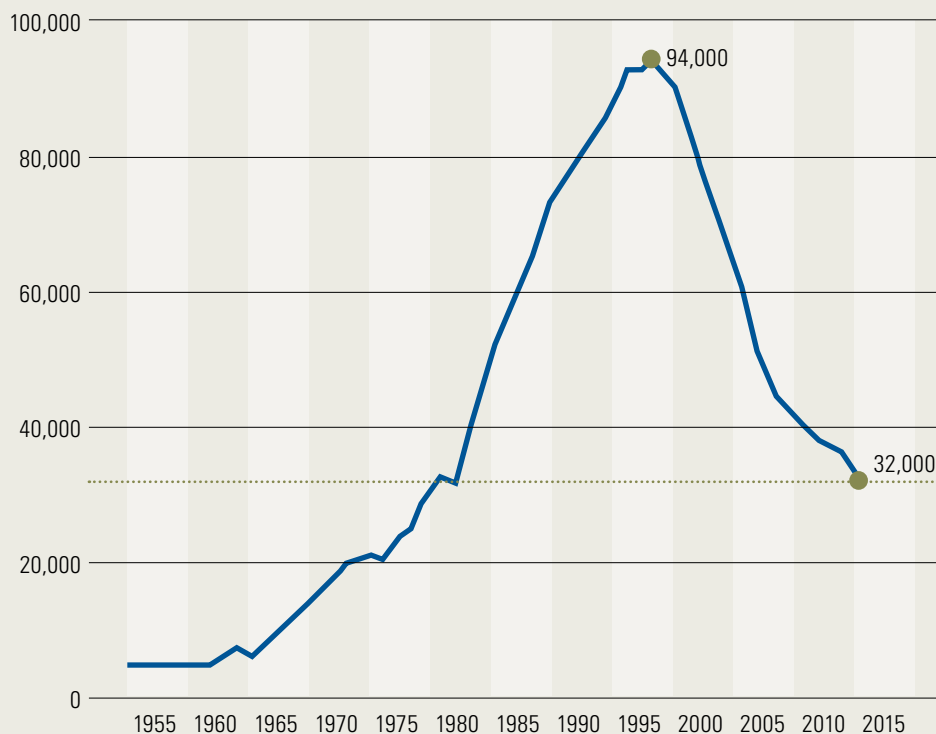
By 2003, the population had decreased to about 60,000.

Surveys conducted in the early 2000s indicated that the number of calves was unusually low. Calves were being born in high numbers, but not enough were surviving to be able to replace adults that normally die each year.

The vast majority of calf deaths were attributed to predators (black bear, coyote, lynx, and bald eagle), but it was unclear whether this was a result of changes in the predator populations or changes in the caribou population.

The Government of Newfoundland and Labrador committed to address the drastic decline in Newfoundland's caribou numbers through improving our knowledge and understanding of the caribou system.

Caribou Population Size



The Newfoundland caribou population grew, reaching a peak of about 94,000 in the late 1990s. Just as swiftly as it grew, the caribou population declined to about 32,000 by 2013. Although this decline appears severe, the population remains higher than it was during the 1950s through the 1970s.

2008-13

Studying the Caribou Decline in Newfoundland

- 734 caribou calves, 434 adult caribou, 94 black bear, 125 coyote and 26 lynx were captured, radio-collared and monitored.
- Over 480 calf mortalities recorded and investigated to determine cause of death.
- In excess of 100 individual herd composition surveys conducted from the air.
- Aerial censuses were conducted at least once for all major herds, except the Avalon herd where highly uncooperative weather conditions prevented operations.
- Approximately 9,000 tissue samples from caribou and predators were collected for DNA analysis, diet analysis, and health monitoring.
- Several hundred sites were visited to describe and classify habitat.
- Sixteen graduate and seven undergraduate students from universities across Canada and the United States, including Memorial University, contributed to the core research.
- “How to Hunt Black Bear”, “How to Hunt Coyote”, and “Living with Coyote” education workshops were attended by more than 3,000 residents.

Taking Action

Caribou are ecologically significant as the only large herbivore native to Newfoundland. Caribou are important to residents recreationally, culturally and symbolically and have direct and indirect influence on rural economies.

The Government of Newfoundland and Labrador developed a comprehensive research and management program to increase the understanding of Newfoundland’s caribou population dynamics, use evidence to inform management decisions and share knowledge with the public.

- Caribou research and monitoring included updating population estimates, studying feeding habits and movement patterns, and conducting experiments to test reducing predator-caribou interactions during calving season.
- Predator research was undertaken to establish density estimates, study feeding habits and movement patterns and improve knowledge around the role of predators in caribou population patterns.
- Habitat work concentrated on the landscape and interactions between caribou, predators and habitat, as well as understanding effects of human activity, weather and climate patterns.
- Enhanced education and outreach focused on increasing public understanding of the complexity of the caribou-predator-habitat relationship and providing training opportunities for residents interested in harvesting black bear and coyote.



The Caribou Resource Committee, with representatives from government departments, industry associations, non-governmental organizations and the general public, was established to support the work.

The academic team was comprised of renowned researchers from across North America with expertise in population dynamics, predator-prey interactions, predator ecology and behaviour, landscape ecology, and quantitative biology.

Safari Club International Foundation was a strong advocate of the program, and supported research by providing valuable advice and in-kind contributions of equipment, supplies and laboratory services worth \$250,000.

Why the Newfoundland Caribou Population Declined

Newfoundland's caribou numbers decreased because there were too many caribou for the island to support continually.

High densities of caribou put a strain on food availability which resulted in smaller animals and broad scale changes in habitat use as caribou began to forage in habitat they previously avoided, which included areas where they were more likely to encounter predators, in order to get adequate food

Predators, especially black bear and coyote, took advantage of small and highly vulnerable calves and calf survival dropped dramatically. Without young animals entering the population to replace the older animals that died each year, the caribou population decreased swiftly.

Although predation is the most visible constraint on the caribou population, habitat quality and availability are the most important limitations.

A Natural Pattern of Increase and Decrease



This pattern of rapid population increase followed by rapid decrease is a common pattern in wildlife populations.

Historic records for Newfoundland suggest that a similar caribou population decline occurred about 100 years ago. Caribou are thought to have numbered nearly 100,000 in the 1890s but less than 20,000 by the 1920s. Similar to the recent decline, caribou were reported to be smaller in size as the population approached peak numbers.

Newfoundland's caribou show a natural pattern of growth and decline. Like North Atlantic caribou populations (such as those in Labrador and Greenland), the decrease appears to be followed by a long period of low population density.

Very high caribou numbers are uncommon; caribou normally exist at relatively low densities.

Positive Signs in the Population

In recent years, with the decrease in caribou density, the speed of population decline has slowed.

Coinciding with this reduced rate of decline, improvements in caribou size and calf survival rates have been observed. Although the Newfoundland population is continuing to decline, some herds are showing stable or increasing numbers.



The Role of Nutrition

Even though caribou expanded their diet and changed their habitat use and movement patterns in order to find enough food, they began to show signs of nutritional stress during the phase of rapid population growth in the 1980s and 1990s. This suggests that they consumed food plants more quickly than they could re-grow or had to compete with each other for a limited food supply well in advance of the actual decline.

Nutritional stress resulted in smaller caribou foraging in habitat where exposure to predators was greater and giving birth to small, vulnerable calves with poor survival rates.

The Role of Predators

Calves were smallest around the population peak and through the beginning of the decline, making them highly vulnerable to predators. In the early part of the caribou decline as many as 85 per cent of calves born each year were killed by predators.

As caribou numbers reduced, calves became larger. Observations of decreased predation and increased calf survival have been noted in recent years.

None of Newfoundland's caribou predators rely exclusively on caribou for food. For this reason, predator populations can remain stable even when caribou numbers decrease. Black bear and coyote both exist at low densities in Newfoundland.

Newfoundland's caribou have always co-existed with predators and although predators can have a sizeable influence on the population, there is no evidence to suggest that caribou are jeopardized over time by sharing the landscape .



A Note about Coyote

Coyote arrived in Newfoundland as a natural extension of a continent-wide range expansion. Since arriving in the 1980s, coyote have increased steadily in number and become dispersed throughout Newfoundland. About the time the caribou population began to decline, coyote were abundant enough to be seen regularly by residents; it is no surprise then that many people associate coyote with the Newfoundland caribou decline.

Coyote have added to caribou mortality since their arrival but are not the cause of decreasing caribou numbers. Changes in caribou body size, habitat use and a decreasing trend in the speed of population growth all began before coyote were prominent on the island.

The real coincidence in the timing of coyote arrival and caribou decline may be that a vulnerable caribou population aided the success of coyote in their establishment in Newfoundland.



The Role of Hunting

Hunting added to the speed at which caribou numbers decreased, particularly in the early phase, but it did not cause the decline. A complete closure of hunting would not have stopped the decline nor would it have changed population trends.

The Role of Human Activity and Land Use

Newfoundland-specific studies show that development and land-use are sources of disturbance for caribou. Caribou appear to be more sensitive to activity than infrastructure, and may be particularly sensitive to snow machine and All-terrain vehicle (ATV) use. In a well regulated environment, snow machines and ATVs can coexist with caribou and may even aid in management.

Although there is no evidence that human activity and land use contributed to the current caribou population decline, we know from other parts of Canada that large expanses of undisturbed habitat are necessary for caribou conservation. At present, most of the Newfoundland landscape traditionally occupied by caribou remains relatively intact.

What to Expect for Newfoundland's Caribou

The Newfoundland caribou population is expected to stop declining when a balance between food resources and caribou numbers is reached. There are positive signals already seen in the population, suggesting the population may be approaching stability. These include:

- larger caribou;
- increased calf survival and reduced rates of predation;
- some herds showing stable or increasing numbers; and,
- the rate of population decline is slowing.

Caribou are, however, still displaying signs of nutritional stress. The Newfoundland population is expected to continue to decline in the near future and will likely remain low for an extended period of time before it begins to increase again.



Committee on the Status of Endangered Wildlife in Canada

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent committee that evaluates the status of Canada's wild animals, plants and lichens. COSEWIC uses the best available information from science and traditional ecological knowledge in determining species status and making recommendations to governments.

In Fall 2014, based largely on the wealth of information made available as a result of the province's long-term commitment to science and monitoring, COSEWIC determined the evidence demonstrates that Newfoundland caribou go through natural fluctuations and that the population is numerically secure. However, due to the uncertainty around the future influence of coyote on the caribou, COSEWIC assessed the population as Species of Special Concern.

This assessment triggers the federal Species At Risk Act and provincial Endangered Species Act and requires both levels of government to consider designating the population (federally as a "species of special concern" and provincially as "vulnerable"). If listed by either or both levels of government, the status will require the development of a management plan, but does not result in any prohibitions (for example, hunting would still be permitted).

Goals for Caribou Management

SUSTAINABILITY

The primary goal of caribou management for Newfoundland is the maintenance of a sustainable population. Sustainable management of caribou protects ecological benefits, economic benefits, and cultural benefits.

PUBLIC TRUST

Recognizing that wildlife is a public trust resource, that is, a resource collectively owned by the public and held in trust by government for the benefit of the public, a secondary goal for Newfoundland caribou management is to act on behalf of citizens in a manner consistent with current and future public interest. Management undertaken on behalf of the public interest requires open communication, meaningful public engagement, and accountability and transparency in decision-making.



Newfoundland and Labrador continues to be actively engaged in knowledge-based management.

The Provincial Government is already using the improved knowledge gained from caribou research and management to make informed decisions for future caribou management. Available information aids in determining short-term and long-term objectives for caribou abundance, setting appropriate harvest plans, and identifying areas of high sensitivity for caribou.

Caribou and predator population monitoring and strategic research continue to be conducted. Public education and meaningful engagement of all stakeholders is a priority.

What YOU can do for caribou right now:

- Do not distress caribou by approaching or following them.
- Be inconspicuous when you are observing caribou. Turn off your engine and do not make sudden movements.
- Take an active interest in wilderness and wildlife.
- Participate in outdoor activities.
- Comply with all hunting regulations.
- Complete licence returns.
- Adapt snares to allow non-target species to break away.

The full version of *A Report on the Newfoundland Caribou* is available online at www.gov.nl.ca/env

Additional scientific and technical reports on the Newfoundland caribou population are available online at www.gov.nl.ca/env

For additional information or to obtain hard copies of these reports, please contact:

Department of Environment and Conservation
4th Floor, West Block
Confederation Building
P.O. Box 8700
St. John's, NL A1B 4J6
envcinquiries@gov.nl.ca
709-729-2664 or 1-800-563-6181



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