

CARIBOU

Topic: Woodland caribou have experienced significant decreases in population in Canada over the last few decades and forest management is often pointed to as part of the cause.

Background: Caribou is a deer species that lives in the high latitude tundra, taiga, and forests of the northern hemisphere, including in Canada. Woodland caribou are a subspecies of caribou. The main reason for decline of caribou is habitat alteration caused both naturally (i.e., wildfires, climate change, and extreme weather) and anthropogenically (i.e., forestry or resource extraction). The habitat alteration has increased predation (mainly from wolves and bears).

In Canada, there are approximately 110,000 woodland caribou found in boreal areas that span from northeastern Yukon in the west to Labrador in the east to Lake Superior in the south. Additionally, Southern Mountain caribou live in Alberta and British Columbia's mountainous regions. Unlike the caribou that live in the tundra, woodland caribou have smaller ranges and remain in forests and peatlands, alone or in small groups. Woodland caribou need a habitat consisting of a large contiguous area with minimal disturbances. Their diet consists of tree and ground lichens in winter, with lichens, grasses, sedges, forbs, horsetails, and shrub leaves in summer. Summer nutrition is important for female woodland caribou who in the summer are tending to their calves.

Woodland caribou are described as “a high-profile, charismatic subspecies in Canada, and (are) a fundamental species for the cultural, spiritual, and dietary life of aboriginal people of northern Canada.”¹

Current Status: Beginning in 2002, woodland caribou were listed under the Canadian Species at Risk Act (SARA) with concerns of conservation status. In November 2014, the species' status was reexamined and remained threatened. Specifically, among the six populations, three have an endangered conservation status: (Southern

Mountain, Central Mountain, and Atlantic-Gaspésie), one is listed as threatened (Boreal), and two are listed as being of special concern: (Northern Mountain and Newfoundland).

Additionally, woodland caribou are listed as a threatened species under provincial legislation in Ontario, British Columbia, Alberta, Manitoba, Labrador, Northwest Territories, and Quebec.

Across the range of subpopulations, woodland caribou in Canada differ significantly in their habit population density, however density is generally 2-3/100 km². It has been estimated that at least 300 caribou would need to live within a range of 10,000 to 15,000 km² in order for a population to be self-sustaining.



Male Caribou High Elevation Trail Cam (Itcha, BC)

Key Considerations: Climate change poses a threat to woodland caribou. Climate change alters the life cycle of plants, impacting access to plants through the depth and hardness of snowpacks, and changes the impact and timing of storm events (i.e., avalanches, rain-on-snow events, and fires). Additionally, climate change causes a loss of forest habitat, an increase in: the presence of both disease and predators; and fire and range expansion of white-tailed deer. White-tailed deer and moose expansion into caribou habitat increase the incidental predation of caribou by wolves and black

bears. The presence of predators reduces caribou populations.

In order to ensure the long-term viability of woodland caribou, steps must be taken to ensure the species is self-sustaining. As defined by Environment Canada, a local population is self-sustaining when: 1.) It has more births than deaths; 2.) It is large enough to resist natural catastrophes and human pressures (i.e., industrial development hunting, etc.); 3.) It doesn't need active intervention from humans (i.e., killing predators); and, 4.) It can persist over the long term (over a number of decades).²



Klawli wildlife habitat area

Critical habitat is the habitat required to ensure the recovery goal of self-sustaining local woodland caribou populations. In particular, large areas old coniferous forests, lichens, peat lands, that are free of linear disturbances. A critical habitat for woodland caribou includes calving sites, wintering areas, rutting or travel corridors.

Critical habitat for the species requires 65% of the area to be undisturbed.³

According to Environment and Climate Change Canada, an undisturbed habitat does not show any: “i) anthropogenic disturbance visible on Landsat at a scale of 1:50,000, including habitat within a 500 m. buffer of the anthropogenic disturbance and/or ii) fire disturbance in the last 40 years, as identified in data from each provincial and territorial jurisdiction.”⁴

Options: Together, governments at both a federal and provincial/territorial level, wildlife management boards, Indigenous people, and non-government organizations have taken steps to both manage and protect woodland caribou and their habitat. Five years after the release of the 2012 Recovery Strategy, Environment and Climate

Change Canada published a 5-year progress report detailing the advances made in implementing the strategy. As stated directly in the 2020 Recovery Strategy these advances include:⁵

- Identification and delineation of boreal (woodland) caribou ranges and habitats within ranges
- Assessment of the population size and/or trend and/or distribution of local populations of boreal (woodland) caribou across Canada
- Development and implementation of operating guidelines for industrial development within boreal (woodland) caribou ranges
- Consideration of boreal (woodland) caribou habitat requirements when planning and implementing
- Land-use planning to identify areas within boreal (woodland) caribou ranges where boreal (woodland) caribou conservation is prioritized
- Development of cooperative stewardship agreements and activities to support the engagement of Indigenous organizations and stakeholders in the monitoring, management, and conservation of boreal (woodland) caribou.

This requires that governments, wildlife management boards, Indigenous peoples, local communities, landowners, and industry work together on these tasks.

As outlined in the 2020 Recovery Strategy, further steps to be taken include:

- Landscape Level Planning: These should focus on the impact of natural disturbances as well as the impacts of development both inside and between woodland caribou ranges.
- Habitat Management: Protecting key areas for woodland caribou via habitat management involves legislated protected areas, no development zones, mixed use zones, and conservation agreements. Additionally, roads, pipelines, cut-lines, cleared areas can be restored. In addition, efforts must be made to promote stewardship of woodland caribou habitats amongst industry, interest groups, Indigenous communities, and organizations.
- Mortality and Population Management: Due to the impact of humans on woodland caribou habitats, predators such as wolves and bears are increasingly moving into these spaces and preying on woodland caribou. Predator management or penning of small herds may be needed to sustain some very threatened populations.

Conclusions: Caribou need large ranges of closed canopy conifer habitat that have low abundance of deer, moose, wolves and bears. Given the large landscape footprint of forestry and oil and gas, conservation of woodland caribou has become a problem that will require novel techniques, especially in the shadow of ongoing climate change. Coordinated action from industries, environmental organizations, private landowners, governmental organizations, and Indigenous partners are critical in developing and implementing strategies to sustain woodland caribou populations.



Undisturbed conifer forest on a peatland (near Great Slave Lake, NWT)



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Footnotes:

1. <https://www.ncasi.org/wp-content/uploads/2020/06/TB1066-Sept2020.pdf>
2. https://publications.gc.ca/collections/collection_2013/ec/En3-4-149-2012-eng.pdf
3. <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/woodland-caribou-boreal-2020.html#toc11>
4. <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/policies-guidelines/woodland-caribou-range-plan-guidance-2016.html>
5. <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/woodland-caribou-boreal-2020.html>

References:

- Environment and Climate Change Canada. 2020. [Amended Recovery Strategy for the Woodland Caribou \(Rangifer tarandus caribou\), Boreal Population, in Canada](#). Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. xiii + 143pp.
- Environment Canada, 2011. [Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou \(Rangifer tarandus caribou\), Boreal Population, in Canada: 2011 update](#). Ottawa, Ontario, Canada. 102 pp. plus appendices.
- NCASI. 2020. [Current state of knowledge and research on woodland caribou in Canada](#). Technical Bulletin No. 1066. Cary, NC: National Council for Air and Stream Improvement, Inc.
- Natural Resources Canada. 2021. [Woodland caribou – boreal population](#).
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