

NWT Environmental

Research Bulletin (NERB)



NWT Cumulative Impact Monitoring Program (NWT CIMP)

A source of environmental monitoring and research in the NWT. The program coordinates, conducts and funds the collection, analysis and reporting of information related to environmental conditions in the NWT.

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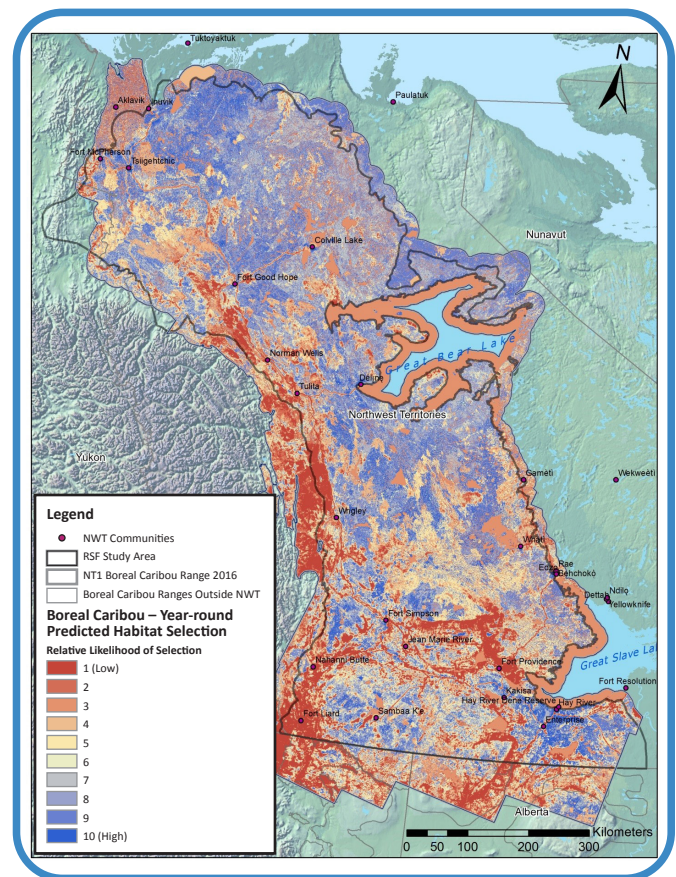
A series of brief plain language summaries of various environmental research findings in the Northwest Territories. If you're conducting environmental research in the NWT, consider sharing your information with northern residents in a bulletin. These research summaries are also of use to northern resource decision-makers.

Habitat Selection by Boreal Caribou in the NWT

To create range plans for boreal caribou, the Government of the Northwest Territories (GNWT) and its co-management partners need to map areas that are most important for their survival. This project aimed to better understand how land-cover type, wildfires and human disturbance affect where boreal caribou prefer to be on the landscape. Predictive maps of habitat selection were generated to assist with range planning.

Why is this research important?

Boreal caribou are considered a threatened species across Canada and in the NWT. Habitat disturbance from human development and wildfires are thought to be the main cause of caribou declines in southern Canada. In the NWT, wildfires are the main source of habitat disturbance, so we need to better understand how boreal caribou use burned areas over time.



Boreal caribou: Year-round predicted habitat selection

What did we do?

We considered the effects of fire, vegetation, and the distance to human disturbance areas to understand what areas boreal caribou prefer. Caribou collar data was used to create habitat selection models and predictive maps of boreal caribou habitat preference during different seasons and on a year-round basis.

What did we find?

We found that generally, caribou:

- Select areas where burns are less than 10 years old and greater than 30 years old. They avoid burn areas that are 11–30 years old. This selection behavior is strongest during the snow-free seasons. In early to late winter caribou avoid burns less than 40 years old.
- Select areas further away from major roads and other disturbances such as well pads and cut blocks, but closer to settlements than expected.
- Avoid areas with a high number of seismic lines throughout the year, but avoidance was weakest during winter.

What does this mean?

The current definition of critical habitat for boreal caribou, which considers all fires less than 40 years old as disturbed habitat, may be too simplistic. Animals are assumed to select habitat in a way that enhances their survival and reproduction. In the NWT, female caribou appear to seek out recently burned land-cover types during the snow-free season. This suggests that these areas may have some benefit to caribou. Range plans should consider maintaining a mix of recently burned and unburned areas to meet the shifting seasonal requirements of boreal caribou.

What's next?

Maps of boreal caribou habitat preferences from this project will be used to support the development of regional range plans, by helping to identify important areas for boreal caribou.

Recommended Reading

DeMars, C. A., R. Serrouya, M. A. Mumma, M. P. Gillingham, R. S. McNay, and S. Boutin. **2019.** *Moose, caribou, and fire: have we got it right yet?* *Canadian Journal of Zoology* 97:866–879.

Johnson, C. A., G. D. Sutherland, E. Neave, M. Leblond, P. Kirby, C. Superbie, and P. D. McLoughlin. **2020.** *Science to inform policy: linking population dynamics to habitat for a threatened species in Canada.* *Journal of Applied Ecology*.

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