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NWT Cumulative Impact Monitoring Program

Ecological Influences on Nutrition and Body Condition of Boreal Caribou

Summary

Caribou are picky eaters! Based on surveys of forage (what caribou eat) and caribou body condition, this project identified what food items and habitats in southern NWT provide the best nutrition for boreal caribou, and where areas with higher nutritional value occur on the landscape. Results can inform decision-makers about habitats that are important for maintaining healthy caribou populations.

Why is This Important?

Nutrition and body condition are closely linked to survival for animals like caribou. Access to sufficient high-quality food in the summer allows caribou to raise healthy calves and regain body fat needed to survive and reproduce.

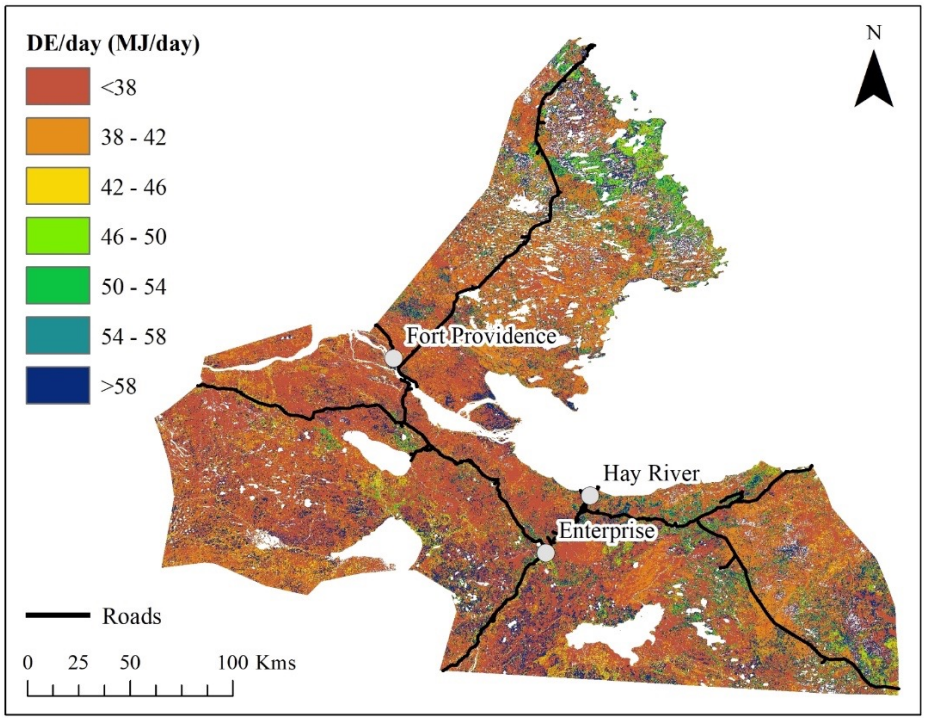
Project participants sharing information during 2019 field visits. L-R Patrick Riley, Robert Lamalice, George Bugghins, Pat Martel, John Cook. (Credit: A. Kelly)

What Did We Do?

Good forage for caribou generally falls into two classes: 1) certain species of forbs (flowering plants that do not have woody stems) and deciduous shrubs, and 2) lichens. We measured the forage available to caribou and described how it changes across different habitat types and over time after wildfires. We then looked at how forage availability and quality influenced summer nutrition and body fat of caribou in December. We visited habitat sites with Indigenous knowledge holders to strengthen our collective knowledge about boreal caribou, nutrition, and habitat use.

What Did We Find?

- Forbs and shrubs that caribou like to eat were most abundant in young stands up to 20-40 years after fire and in fens (shrubby wetlands) of any age. Lichen was most abundant in older stands of 75-125 years old.
- Mushrooms provide excellent nutrition and may be a critical food in various habitats.
- Caribou body fat condition in 2019 (a dry summer) was positively related to caribou use of younger stands that contained more forbs and deciduous shrubs that caribou like to eat.
- Caribou body fat condition in 2021 (a very wet summer) was positively related to caribou use of stands where lichens were more abundant.



Foodscape map illustrating predicted caribou nutrition in units of digestible energy (DE, in MegaJoules (MJ) per day) based on forage biomass and composition surveys conducted in summer 2016 and 2019.

What Does This Mean?

- Both science and Indigenous knowledge concluded that from a nutrition perspective, caribou benefit from a mixture of younger vegetation like certain shrubs and forbs, and habitat with abundant lichens.
- "Foodscape" maps help highlight areas that provide higher levels of nutrition.
- Finding and eating enough forage to regain body fat in late summer and autumn is critical!

For More Information

Allicia Kelly, GNWT-Environment and Climate Change, Allicia_Kelly@gov.nt.ca

NWT Cumulative Impact Monitoring Program (CIMP205)

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