



Norman Wells
Public Listening
**Climate Change
& Wildfire**



Sahtu Knowledge of Wildfire and Climate Change Impacts on Caribou

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Bluenose-West Caribou Status and Trend Observations

Colville Lake:

- ▶ Numbers stable but more spread out.¹
- ▶ Migration changed in recent years.²
- ▶ Staying near barren-ground.³
- ▶ Hunters have to go further to hunt.³

Deline:

- ▶ Smaller numbers.⁴
- ▶ One or two seen at Neregha.⁴

¹ Advisory Committee for Cooperation on Wildlife Management (ACCWM) 2023, 2021, 2020; Sahtú Renewable Resources Board (SRRB) 2020

² ACCWM 2023, 2021

³ ACCWM 2023, 2021

⁴ ACCWM 2020

Bluenose-West Caribou Climate and Climate Change Observations

Colville Lake:

- ▶ Less snow closer to the barren-grounds; more snow in the trees.¹
- ▶ Migration route shifted further north (about 10 years ago).²
- ▶ March 2019, weather warmed up fast causing caribou to leave area a month earlier than normal.²
- ▶ Weather warming so seeing more landslides, erosion, changes in waterways, changes in migration timing, snow crusts, wolves.³
- ▶ There are more caribou when cold.³

¹ ACCWM 2023

² ACCWM 2021

³ ACCWM 2019

Bluenose-West Caribou Health/Condition Observations

Colville Lake:

- ▶ Remain fat as always.¹
- ▶ Seem to be in good health.¹
- ▶ More grizzlies staying out of den and hunting longer.²
- ▶ Snow is crustier, wolves can get around easier.²

Other:

- ▶ Healthy and fat.³
- ▶ Bull to cow ration about 1:1.³
- ▶ The more isolated the caribou are from people, the more stressed they are by wolves.³
- ▶ A lot of caribou do not have much fat, suggesting trouble grazing.²

¹ ACCWM 2020; SRRB 2020

² ACCWM 2019

³ ACCWM 2021

Bluenose-East Caribou Status and Trend Observations

Deline:

- ▶ Not as many caribou as in recent years, fewer since 2018.¹
- ▶ Not seen around traditional places like Caribou Point.²

Other:

- ▶ See in alone or in pairs not large groups.³
- ▶ Did not come near any Sahtu community in 2018.⁴

¹ ACCWM 2023, 2021, 2020, 2019; Headwater Group (HG) 2022b, 2021

² ACCWM 2020

³ ACCWM 2020

⁴ ACCWM 2019

Bluenose-East Caribou Climate and Climate Change Observations

Deline:

- ▶ Land drier.¹
- ▶ More shrubs on tundra.¹
- ▶ Caribou travelling differently, possibly not as far as normal.¹
- ▶ Snow ice changing and impacting travel and food access in winter.¹
- ▶ Less good home/habitat to survive on.¹

General:

- ▶ Lots of snow (2 - 2 ½ feet) with hard crust.²
- ▶ Hard for caribou to get food.²
- ▶ Staying on lakes and in open areas.²

¹ Délı̄ne ʔekwé Working Group (DEWG) 2021

² ACCWM 2020

Bluenose-East Caribou Health/Condition Observations

Deline:

- ▶ Caribou staying far away from community.¹
- ▶ Insects causing stress, may impact health.²
- ▶ Caribou Point harvest, 8/12 caribou pregnant and in fair condition.³

Other:

- ▶ Group observed with some chafing on legs from ice crust on snow.⁴

¹ ACCWM 2022

² DEWG 2021

³ ACCWM 2020

⁴ ACCWM 2020

General Barren-ground Caribou Status and Trend Observations

General:

- ▶ Seeing fewer caribou.¹
- ▶ Movement patterns different than when there was less snow.²
- ▶ Some caribou not migrating, but staying in mountains or islands on Great Bear Lake.²

Deline:

- ▶ People looked for ᐱᓃᓃᓃ at ᐱᓃᓃᓃ and Neregha in fall and summer 2020, saw nothing.³

¹ HG 2022b; HG 2021b

² ACCWM 2021

³ ACCWM 2021

General Barren-ground Caribou Climate and Climate Change Observations (1)

Deline:

- ▶ Water in top two feet of Great Bear Lake changed temperature.¹
- ▶ Insects cause stress on caribou.²
- ▶ Summer 2020 lots of rain so no fires.³
- ▶ Dec. 2020 saw rain.³

¹ HG 2022b

² DEWG 2021

³ ACCWM 2021

General Barren-ground Caribou Climate and Climate Change Observations (2)

Overall:¹

- ▶ Getting warmer, hotter.
- ▶ Lake surfaces getting warmer.
- ▶ Water levels increasing.
- ▶ More erosion.
- ▶ Melting permafrost.
- ▶ Increase of shrubby vegetation in Mackenzie Mountains.
- ▶ More willows.
- ▶ More swampy ground.
- ▶ Insects more active.
- ▶ Caribou getting bogged down in mud in some areas.
- ▶ Less ice patches to protect caribou.
- ▶ Weather and wind directions changed.
- ▶ Different species observed.
- ▶ Ice condition changing.
- ▶ Snowfall timing changing.
- ▶ Lakes not frozen as long.

¹ HG 2022a, b; ACCWM 2022, 2021, 2020, 2019; DEWG 2021; Species at Risk Committee (SARC) 2017

General Barren-ground Caribou Wildfire Observations

Tulita:

- ▶ Previous generations saw wildfires only once in a while.¹

Deline:

- ▶ No fires in 2020.²
- ▶ More risk of fire now.³

General:

- ▶ More wildfires and more intense than in past.⁴
- ▶ Less trees stands means less shade for caribou.⁵
- ▶ Lichen being burned and takes long time to grow back.⁶
- ▶ Though seen as part of natural system, people concerned about impacts on caribou.⁷

¹ HG 2022b

² ACCWM 2021

³ DEWG 2021

⁴ HG 2022a; DEWG 2021; SRRB 2016; ACCWM 2014

⁵ HG 2022a; SRRB 2016

⁶ ACCWM 2014

⁷ SARC 2017

Barren-ground Caribou Health and Condition Observations

Deline:

- ▶ Insects causing caribou stress.¹

General:

- ▶ Caribou not as fat now.²

¹ DEWG 2021

² ACCWM 2014

Boreal Woodland Caribou Status and Trend Observations

General:

- ▶ Limited new information available about current boreal caribou population trends in Indigenous and Community Knowledge sources.¹

¹ SARC 2022

Boreal Woodland Caribou Climate and Climate Change Observations

General:

- ▶ Increase in size and severity of fires.¹
- ▶ Changing snow, ice and permafrost contribute to habitat degradation and fragmentation.¹
- ▶ Increasing extremes in annual temperature and flooding impacts animals.²
- ▶ Warmer temps, increased rain in November, milder winters, increasing summer storms.²
- ▶ Caribou food can be impacted by precipitation; too much snow harder to access.²
- ▶ 85% say winters warmer than past.²
- ▶ Differing opinions on whether snow accumulation patterns have changed.³
- ▶ Numerous suggestions that the amount of snow that falls over the winter has decreased during the lifetimes of the participants, and that river and lake ice may not form as quickly nor as thick as in the past.³

¹ SARC 2022

² McDonald 2010

³ Zimmer et al. 2002

Boreal Woodland Caribou Wildfire Observations

General:

- ▶ Areas burned not used by caribou until habitat recovers.¹
- ▶ Larger and more severe fires may result in habitat recovery taking longer.¹
- ▶ Fires can impact ability to acquire food.²
- ▶ Fires can force caribou to relocate to more desirable locations.²
- ▶ There are different observations regarding how long it takes before boreal caribou return to a burned area; some say it's as soon as there is new growth, others say they never return.²

¹ SARC 2022

² McDonald 2010

Boreal Woodland Caribou Health and Condition Observations

General:

- ▶ 2002 generally reported to be healthy.¹
- ▶ Weather plays significant role in health and well-being.²
- ▶ Increasing extreme temperature and flooding can cause negative impacts.²
- ▶ Milder winters.²
- ▶ Increasing summer storms.²
- ▶ Increased rain in November. These changes can impact food sources and accessibility to food.²

¹ Zimmer *et al.* 2002

² McDonald 2010

Northern Mountain Status Trends and Observations

General:

- ▶ Overall population trend unclear; likely declining in localized areas.¹
- ▶ Distribution appears to be changing; unclear natural shift or response to climate change.²

Tulita:

- ▶ Migration routes and movements around Keele River and Caribou Flats have change.³
- ▶ Shúhtaot'ı̄ne oral histories indicate caribou used to travel much further north in their migrations.⁴
- ▶ Now uncertainty about what the caribou are doing and where they may be going, but they seem to be moving away from their usual areas.⁴

¹ SARC 2020; Winbourne 2019

² Winbourne 2019

³ Winbourne 2017b; Olsen et al. 2001

⁴ Winbourne 2017a

Northern Mountain Caribou

Climate and Climate Change Observations

General:

- ▶ Warming.¹
- ▶ Shrubification.¹
- ▶ Shrinking ice patches and glaciers.¹
- ▶ Variability in snow pack.¹
- ▶ Timing of melt, icing events, rapid snowmelt.¹
- ▶ Drying tundra in places.¹
- ▶ Warmer summer months and increased insect harassment.¹
- ▶ Impacts to some herds (e.g., changes to migration, displacement, insect harassment).¹
- ▶ Distribution and movement patterns appear to be changing, as well as frequency of unfavourable conditions.²
- ▶ Concerns about higher numbers of grizzly bears hunting caribou.³
- ▶ Concerns of the impacts of muskoxen and bison on caribou when they move into an area.³

¹ Winbourne 2019, 2017a,b

² Winbourne 2019; Olsen et al. 2001

³ Winbourne 2017a

Northern Mountain Caribou Wildfire Observations

General:

- ▶ Damaging habitat, especially winter range, and increasing in number and level of damage (at least three areas destroyed in 2014).¹
- ▶ Wildfires increasing in size and intensity; threaten habitat especially on winter ranges.²
- ▶ Wildfires destroyed lichen caribou depend on for food, causing them to move from wintering areas.²
- ▶ Fires can also cause travel disruptions if they go through migration corridors, influencing distribution of caribou, other ungulates, and predators.²

¹ Winbourne 2017a

² Winbourne 2019, 2017a, b

Northern Mountain Caribou Health and Condition Observations

General:

- ▶ When caribou suffer from environmental changes, they may be more susceptible to other factors, such as predation and/or parasites.¹
- ▶ They may be less productive.¹
- ▶ If climate change results in a warming trend in summer, that increases fly activity.²
- ▶ There could be an impact on caribou body condition.²

¹ SARC 2020

² Winbourne 2019

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