

Herd Status: Critical Low

ANNUAL REVIEW OF THE BATHURST CARIBOU HERD 2024 ACTION PLAN



March 2024

BATHURST CARIBOU ADVISORY COMMITTEE

Cover Photo:

Woza, cow with a calf. *Woza* is Tłı̨chǫ word for a cow with calf. Elder Joe Zoe explained that when you see bulls, they are often by themselves. However, when a cow with calf is seen, they will be the first of the larger herds. Consequently, the term *woza* means that the whole herd is coming; cows, calves, everyone are following. Photo Credit: Katie Orlinsky, Ekwò Nàxoèhdee K’è, Tłı̨chǫ Government.

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Disclaimer:

The BCAC recognizes that the implementation of management actions moving forward is subject to appropriations, prioritizations, and budgetary restraints of the participating agencies and organizations.

Bathurst Caribou Advisory Committee & Bathurst Caribou Management Plan

The Bathurst Caribou Advisory Committee (BCAC) was established in 2017 to guide the development of the Bathurst Caribou Management Plan (BCMP; BCAC 2021). The Committee now has an ongoing role in advising on the implementation of the BCMP, including participation in the Annual Review on Bathurst Caribou. The BCAC’s objectives are to:

- Learn from and adaptively manage the physical, biological, and cultural relationship between people and caribou;
- Cooperatively provide advice for the management of the Bathurst herd and its habitat, striving to ensure a healthy, viable herd capable of fulfilling harvesting needs; and
- Promote and strengthen communication and sharing of information related to the Bathurst herd and its habitat.

The BCAC includes representatives from public governments, Indigenous governments and organizations, and other management authorities:



Executive Summary

In December 2023, the members of the Bathurst Caribou Advisory Committee (BCAC or Advisory Committee) met for the 3rd Annual Review Meeting to assess the status of the Bathurst herd. Based on the collaboratively agreed upon status of “**Critical Low**”, the Advisory Committee discussed appropriate actions to be implemented in 2024 by members and co-management authorities.

The most pressing issue for the Bathurst herd continues to be a low population size. The most recent population survey, completed in 2022, estimated the population at 6,851 individuals (95% CI: 3,895–12,050). This is significantly below the threshold of 30,000 individuals identified in the Bathurst Caribou Management Plan that would move the herd’s status into the “Low and Increasing” category. While there were some positive observations reported in both the community and scientific presentations, the population estimate provided by Government of the Northwest Territories, Department of Environment and Climate Change (GNWT-ECC) combined with community reports of limited numbers of caribou, led the Advisory Committee to designate the Bathurst herd status as “Critical Low”.

There were a number of concerns that were discussed at the Annual Review Meeting. One of the main issues for the Advisory Committee was the ongoing impact caused by human activities within the range of the Bathurst herd. These activities include harvesting along the Tibbitt to Contwoyto Winter Road and mining activity in the region. There was a consensus among the Advisory Committee on the necessity of taking action to curb overharvesting on the Tibbitt to Contwoyto Winter Road, but there was a variety of opinions on the best approach to accomplish this goal. Enhancing enforcement would pose challenges without a corresponding increase in helicopter overflights, yet there exists a general reluctance to increase the potential disturbance caused by these flights.

Predation remained a focal point at the Annual Review Meeting. Some communities are reporting an upsurge in predator numbers, particularly from grizzly bears. A wolf management program is underway with the goal to reduce wolf numbers on the winter ranges of the Bathurst and Bluenose-East caribou herds to support herd recovery. This effort includes implementing an incentivised wolf harvest in the North Slave region of the Northwest Territories. Under the Enhanced North Slave Wolf Harvest Incentive Program, NWT hunters receive \$1,200 per wolf harvested in the winter range of the Bluenose-East and Bathurst caribou herds. Nunavut hunters participating in this program within the Northwest Territories are eligible for a \$900 payment from the Government of the Northwest Territories and an additional \$300 from the Government of Nunavut.

While the incentivised wolf harvest is generally supported by the Advisory Committee, there are some organizations that have voiced concerns or even objections to this program. These concerns include but are not limited to, the reliance on hunters to accurately report the location of their harvest, which may potentially lead to the abuse of the incentive program. Objections to the program stem from a perceived lack of scientific and community knowledge supporting the efficacy of the Enhanced North Slave Wolf Harvest Incentive Program.

Finally, the Bathurst Caribou Management Plan provides management actions for five key theme areas (i.e., harvest, predators, habitat and disturbance, research and monitoring, and communication and education) under the six herd statuses. This year, the Advisory Committee reported on their progress for each of the management actions identified in 2023.

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1. Annual Review on Bathurst Caribou

The Annual Review on Bathurst Caribou is a time for all communities, organizations, and governments across the Bathurst range to come together to review and discuss new information about the Bathurst herd and activities within the herd's range. A key outcome of the Annual Review is the determination of the herd's status and recommended management actions for the coming year. During the Annual Review, participants will:

- Review and discuss the Bathurst herd's population, trend, and status;
- Seek consensus on recommended management actions and monitoring actions to be carried out over the coming year;
- Recommend priorities for management actions and monitoring activities for the coming year; and
- Reflect on the effectiveness of the Bathurst Caribou Management Plan to date and discuss lessons learned and potential revisions to the Plan.

Following the Annual Review, a Bathurst Caribou Action Plan is developed and made publicly available.

2. Information Shared at the 2023 Annual Review Meeting

During the 2023 Annual Review Meeting, BCAC organizations gave presentations or shared information on their communities' experiences and observations of Bathurst caribou. Many of the communities that harvested Bathurst caribou in the past reported that caribou had not travelled near their communities in recent years. As such, they had few direct observations to share as part of the status decision for the present year. These communities still play an important role in the BCAC, as their knowledge of historic populations and conditions provides important context for this year's status decision. Additionally, it is hoped that as the Bathurst caribou population recovers, these communities will be able to once again observe and harvest from this herd. Participation in the Advisory Committee until that time will strengthen relationships and improve the quality of the decisions made at the annual meetings.

The following organizations attended the 2023 Annual Review Meeting:

- Athabasca Denesų́iné Né Né Land Corporation;
- North Slave Métis Alliance;
- Deninu Kų́é First Nation;
- Łutsel K'e Dene First Nation;
- Northwest Territories Métis Nation;
- Fort Smith Métis Council;
- Fort Resolution Métis Government;
- Kitikmeot Regional Wildlife Board;
- Nunavut Tunngavik Incorporated;
- Kugluktuk Angoniatit Association;
- Ekaluktutiak Hunter and Trappers Organization;
- Omingmaktok Hunter and Trappers Organization;
- Wek'èezhìi Renewable Resources Board;
- Tłıchų Government, Department of Culture and Lands Protection;
- Government of Nunavut, Department of Environment;

- Government of the Northwest Territories, Department of Environment and Climate Change; and
- Parks Canada.

Summaries of their presentations or information shared at the Annual Review Meeting are provided in the following sections.





Tłı̨chǫ Government, Department of Culture and Lands Protection (TG-DCLP) – Archie Wetrade, Petter Jacobsen, Stephanie Behrens, Roy Judas, Ete Zoe, and Janelle Nitsiza

Janelle Nitsiza introduced the Ekwò Nàxoèhdee K'è (Where the Caribou Cross) program, which has been running since 2016. The Ekwò Nàxoèhdee K'è program covers a wide area where the Bathurst caribou spend their summer and Tłı̨chǫ monitors watch caribou and study the environment, weather, and predators. Table 1 shows the progression of the team’s efforts to monitor the region.

The information presented was focused on the Kokètlı̨ (Contwoyto Lake) camp that ran in July and August 2023. Many of the observations were included directly in the Primary Indicators and Modifying Indicators tables (see pages 20-25), as they provided recent observations of Bathurst caribou.

Table 1. Ekwò Nàxoèhdee K'è Monitoring Efforts from 2016 to 2022.

Monitoring Efforts 2016-2022

	2016	2017	2018	2019	2020	2021	2022
 Caribou Monitors	8	10	10	25	40	28	46
 Field Days	26	40	40	57	48	66	95 (Koketlı̨ - 60)
 Distance Travelled	481 kms	1186 kms	1784 kms	3240 kms	2561 kms	3572 kms	4360 kms (Koketlı̨ - 2322)
 Monitoring Hours	140	207	218	325	190	266	423 (Koketlı̨ - 235)

Calf Abundance

When the Ekwò Nàxoèhdee K'è program started in 2016-2017, the Tłı̨chǫ monitors saw few calves as the weather was warm and dry. From 2018 to 2021, the weather got colder, wetter, and windier, which created good habitat for caribou, but the number of calves remained low until 2022 when it returned to its normal range (see Figure 1).

Calf Abundance Over Time

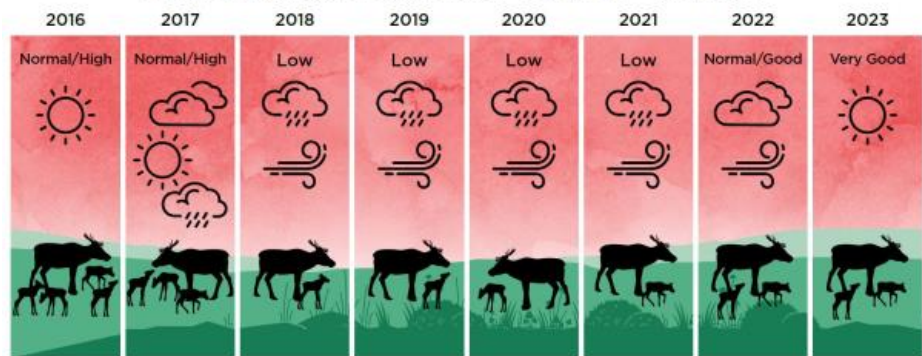


Figure 1. Observations of calf abundance from 2016 to 2023.

It was around 30 calves per 100 cows, and some herds we saw didn't even have any calves with them. It was quite worrisome. But we did see really healthy animals, fat, and good conditions and very healthy land. We didn't understand why the caribou didn't have any calves. Last year, and then again, this year, we started to see more groups with more calves. It's [not] representative of the whole herd, but of the groups we saw in

August, they were one-to-one ratio, and John Franklin said that it was quite good compared to what they used to see. – Petter Jacobsen

In 2023, the number of calves was very good, showing that many calves survived during spring and summer:

- ➔ 2019: 31 calves:100 cows
- ➔ 2020: 29 calves:100 cows
- ➔ 2021: 39 calves:100 cows
- ➔ 2022: 48 calves:100 cows¹
- ➔ 2023: 51 calves:100 cows

Caribou Health

During the first years of the Ekwò Nàxoèhdee K'è program, the health of caribou seen was considered normal, although Tł̨chq monitors did observe a lot of injured animals during the first year. From 2018 to 2022, they started to see that forage and habitat were in excellent condition, resulting in very healthy-looking caribou (see Figure 2).

In July 2023, Tł̨chq monitors observed mostly bulls in good condition that were still shedding parts of their winter coat (see Figure 2).

In August 2023, most of the caribou observed were fat and healthy (see Figure 2). None of the caribou had signs of limping or injuries. However, some caribou lost their antler velvet about four weeks earlier.

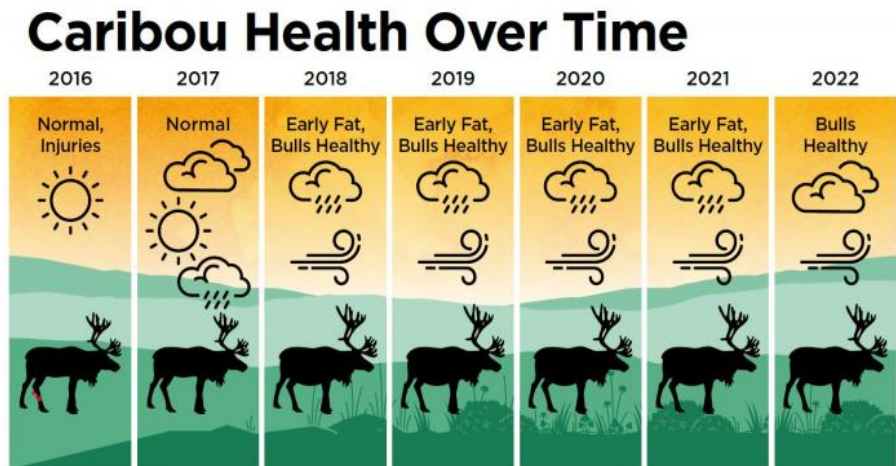


Figure 2. Observations of caribou health from 2016-2022.

Stephanie shared the following observations of the caribou from Kokèti:

In July, they saw were mostly bulls, which were in good condition (51% were fat), they were still shedding parts of their winter coat. Then in August, most of the caribou were fat and healthy. There were no signs of limping or injuries. No patches on the hide. They all looked pretty healthy and in good condition. Jimmy B Mantla was saying that in the next month, the bulls will be big and fat. He was referring to the bulls being big and fat in August, and in July [when he was there], it was early [to see the fat bulls]. And then Archie Wetrade said that even if the caribou look, all right on the outside, you never know what they look like on the inside and what injuries they might have. Some caribou lose their antler velvet earlier than usual and it seemed as though it was like four weeks earlier this year. – Stephanie Behrens

¹ Monitors observed a group with a lot of calves on July 28th that skewed this ratio. If this observation is removed from the calculation, the observed ratio is closer to 40 calves:100 cows.

Habitat

During the early years of the Ekwò Nàxoèhdee K'è program (2016-2017), the weather was warm and dry and there were many insects. Caribou had to move constantly and were not able to settle down and feed. By 2018, the summers started to get a little cooler, wetter, and windier. This reduced the stress on caribou, and they were seen to be more restful and uninterrupted in their feeding. Petter Jacobsen commented that there was quite a substantial difference from the first few years when they barely saw caribou eating calmly, instead moving around in circles to avoid the insects. This change in weather was good for the quality of the forage.



Figure 3. Roy Judas standing by willows in a dried inland rocky pond showing contrasting normal water lines below crustose lichens, SW Fry Inlet, 7 August 2023. Photo credit: John Nishi, Ekwò Nàxoèhdee K'è, Tłı̨chǫ Government.

During the 2023 season, the weather was even drier than last year. This meant that there were even fewer insects to harass caribou, but it may have negatively impacted the available forage. Several people commented that the vegetation was crunchy under their boots and even the shrubs were quite dry. The lack of moisture could be seen in the low water levels in lakes (see Figure 3).

Every time we walk around, we'll go hiking and the stuff that we see is dry, that used to be a pond before now there's no water in it... walking across the moss and stuff that used to be wet before. Now it's just dry and we just walk across where it used to be wet. It is a dry year. The last year, it was like that too. So, two years in a row is dry ... it's not like before. – Roy Judas

Petter shared the following quote from Jimmy B. Mantla:

Water levels usually come up after the spring melt but for two years now the water has not been higher after spring melt. And you can see where the water has been receding quite drastically for two years now. The land was like a sponge, it's trying to absorb as much [moisture] as it can, but there's not enough rain... you can hear the land crunch even though it's raining, it's still crunchy and it's still dry. – Petter Jacobsen quoting Jimmy B. Mantla

Disturbance

A major topic of disturbance this year was the wildfires that occurred in the tundra (see Figure 4). For most of the BCAC organizations, this was the first time they have seen this kind of disturbance. Several people expressed concerns that wildfires in the tundra can reshape the summer habitat of caribou.

In July 2023, the first-time wildfires had been observed at Contwoyto lake. Smoke was first observed on July 24th; one day after lightening. Several fires burned on the south and east side of Contwoyto lake. The fire was at least 6-10 km long on the east and south shorelines of Contwoyto lake; 3-5 km from the shoreline. The fire was still burning and smoking in August 2023. The Bathurst caribou did not migrate south

of Contwoyto lake, and mostly stayed in one area west of Contwoyto lake all summer and fall; the Tłı̨chǫ monitors mentioned this was due to all the smoke and fires.

Earl Evans from the Northwest Territories Métis Nation summarized these concerns, and expressed his hope that more can be done to study this phenomenon:



Figure 4. Lightning-started fire on July 24, 2023, near Contwoyto Lake. Photo credit: John Nishi, Ekwò Nàxoèhdee K'è, Tłı̨chǫ Government.

It's kind of a first for us, the first of its kind, nobody seems to know enough about [tundra fires]. So, I'm wondering about the lichens on the tundra. Are they similar to the lichen below treeline, like on the ground... the stuff below treeline takes 60 to 100 years to come back once it's burnt off. So, this fire on the tundra, is it just a flash fire that just skims the top? Or does it burn deep enough to totally destroy that habitat for 60-70 years? At Contwoyto Lake, both sides are caribou highways, and that's where your burns are starting. So, if you keep having these tundra fires, and it's going to take 60-70 years to revegetate; that habitat is lost for caribou for that many years. The caribou are going to have to move somewhere else to find food, right? So, when you're doing your land use planning and habitat protection for animals, you're going to have to take these fire maps into consideration... So, I think tundra fires are going to create bigger problems than we know. And there doesn't seem to be any research on it because nobody has seen it before. – Earl Evans

Predators

The Ekwò Nàxoèhdee K'è program has observed a steady presence of wolves in the summer and have seen wolves killing calves in past years. Bears are also observed regularly. There have been no reported interactions between bears and caribou.

In 2023, Tłı̨chǫ monitors did not see any wolves, compared to last year when they had observed 14 wolves. However, researchers from Queens University (R. Danby) who conducted plant surveys in the area observed one group of 3 wolves at their south Fry Inlet camp on July 20, 2023. Stephanie Behrens explained that there were two known wolf dens east of Kokètì, but these were unoccupied when visited this summer.

North Slave Métis Alliance (NSMA) – Wayne Mercredi and Orna Phelan

Orna Phelan explained that this is the 5th year of their Winter Road Monitoring Program and that they are into the 4th year of their Guardianship Program. They have been working towards coordinating their efforts with other Indigenous governments in the region, such as the Tłı̨chǫ monitors. Due to capacity and funding limitations, their team members currently go out on the Tibbitt to Contwoyto Winter Road for a few days at a time. While on the land, whether harvesting or patrolling the road, team members fill out observation forms and collect data with cameras and GPS units.

In winter 2024, NSMA is hoping to expand their Winter Road Monitoring Program by having a semi-permanent camp on the road for members to stay in. The plan is that members will be able to go up and run caribou patrols for several days. The program will be a blend of western science and traditional knowledge to better understand how the Bathurst caribou are doing from a Métis perspective. In addition to observations of harvesting, caribou health, predators, and disturbance levels, NSMA will also be deploying wildlife cameras and Autonomous Recording Units (ARUs) along the winter road.

Figure 5 below summarizes NSMA’s monitoring activities since 2021, which was shared after the Annual Review Meeting.



Figure 5. North Slave Métis Alliance's monitoring activities along the Tibbitt to Contwoyto Winter Road from 2021 to 2023.

Wayne Mercredi shared his concerns about poaching and his hopes that by working together, the Advisory Committee can have a positive impact on the Bathurst caribou:

After spending the day up there [on the ice road], I'm coming home. And I'll see three or four trucks going in with big trailers at night. And I'll just be curious. So, the next night I drive back out on the road to the end of Tibbit. And sure, as heck, I'm seeing these trucks coming back. The only thing I can assume is they're loading up with caribou and heading back home. So, they go up late at night, do their hunt in the morning, load everything up and start working their way back. And you know, sometimes I can see that they have caribou in the back. Other times they've got enclosed trailers, I have no idea where these

people are coming from, but this is a very common occurrence. It is one of those things, all of us around the table, we can't tell our people not to hunt; they all have that right. However, we can try and encourage them not to hunt from that herd, because it is going to take some drastic action for all of us to make a difference. One group can't do it. It's got to be all groups. And I wish all the groups were [here] at the table. In saying that, I look forward to continuing to work with some of you guys in the future. And hopefully together, we will be able to do something positive. – Wayne Mercredi

Łutsel K'e Dene First Nation (LKDFN) – Iris Catholique

Iris Catholique expressed concerns for the declining Bathurst caribou, attributing it to the impact of diamond mines and harvest along the Tibbitt to Contwoyto Winter Road. Iris suggested that the winter road should be reclassified as private rather than a public road, further limiting access to traffic supplying the diamond mines.

Iris challenged that both the Mobile Core Bathurst Caribou Management Zone (i.e., No Hunting Zone or Mobile Zone) and the Wolf Management Program were not providing hopeful results. Despite these measures, the low population number persists, highlighting the urgency for effective programs to address the situation. For example, Iris suggested there should be incentives to encourage hunting of alternative species, such as muskoxen and moose. The latter has already been initiated by LKDFN, but it may be a program that other BCAC organizations could consider implementing.

Fort Smith Métis Council (FSMC) – Ken Hudson

Ken Hudson highlighted the abundance of moose and wood bison in the South Slave region, making it more feasible for them to adapt their hunting practices to alternative harvest.

Ken expressed his disappointment that there were cases where conservation officers had seized meat from individuals hunting within the No Hunting Zone, but later returned the meat and backed down from other enforcement measures. He emphasized the need for the territorial government to take more assertive actions. Regardless of cultural background or legal status, Ken insisted that everyone shares the responsibility of saving the Bathurst caribou, even if that means limiting a constitutionally protected right to harvest.

Athabasca Denesų́iné Né Né Land Corporation – Katie Rasmussen

Katie Rasmussen highlighted that the Athabasca Denesų́iné haven't seen Bathurst caribou in their territory for several years, which limits their opportunities to make firsthand observations. Katie shared their ongoing efforts to protect the traditional range of the Bathurst caribou, specifically the development of a community caribou management plan.

In addition, the community is conducting a harvest survey for other caribou herds entering their territory, with plans to implement on-the-ground monitors for harvests in the future. Katie expressed optimism that, as the Bathurst caribou recovers and expands its range into Athabasca Dene territories, there will be suitable habitat for them.

Kugluktuk Angoniatit Association (KAA) – Amanda Dumond, Larry Adjun, and Allen Niptanatiak

Amanda Dumond explained that they didn't have a lot of direct observations of Bathurst caribou this year. However, KAA provided a brief update on their ongoing monitoring projects, including the Bathurst caribou calving ground camera project and a recently completed grizzly bear study in partnership with the

Government of Nunavut. Amanda noted that the community is working to improve their harvest sampling, which was highlighted by community members when caribou harvested near the community had abnormalities that were suspected to be caused by diseases carried by biting insects.

Echoing concerns raised earlier in the meeting, Amanda noted that they are observing dry vegetation in the area and unusual water levels in rivers, and an early break up in late May. The low water levels continued into the fall, which she had never seen before.

Allen Niptanatiak responded to earlier discussion about tundra wildfires saying that he had observed them often:

We just watch them and make sure they don't spread. The nice thing about it is it's a way of regrowing and regenerating the land. It put nitrogen back into the earth and stuff that is needed. But like [Earl Evans] said, lichen can take many, many years to recover, but it comes back usually healthier. – Allen Niptanatiak

Fort Resolution Métis Government (FRMG) – Ron Beaulieu

Ron Beaulieu reminisced about his teenage years when hunting caribou was easy, taking only a day's journey from home to the islands and back. However, over the years, he has witnessed a significant decline in the caribou population, forcing hunters to travel six days one way to find caribou. Ron noted the implementation of the hunting moratorium by the FRMG, which has been in place for five years. This decision reflects a collective effort to allow the Bathurst caribou to recover.

Ron emphasized the crucial role of education in addressing the issue of the hunting moratorium, pointing out that some individuals still engage in caribou hunting despite the moratorium. He highlighted the misconception that possessing a treaty card automatically allows you to hunt, stressing that education and proper management are essential for the community's future and the well-being of future generations.

Government of the Northwest Territories, Department of Environment and Climate Change (GNWT-ECC) – Jan Adamczewski, Abbey Wilson, and Mélanie Routh

Population Estimates

The most recent population survey was conducted within the calving grounds of Bathurst caribou in June 2022. The survey provides an assessment of breeding females (i.e., females that were pregnant during the preceding winter) and adult females (i.e., pregnant and non-pregnant females). A population estimate for the herd is derived by incorporating bulls based on the sex ratio estimated from one or more fall surveys. The 2021 survey reported 6,200 caribou in the Bathurst herd, while the 2022 survey was very similar at 6,800 caribou (see Figure 6). Given that there is always some uncertainty in the estimates, it can be assumed that the herd was about the same size in 2021 and 2022.

In 1986, there were about 470,000 caribou in this herd. It was one of the largest in Canada at the time. Through the 1990s, there was a slow decline and then there was a more rapid decline between 2006 and 2009. The current population estimate represents a little over a 98% decline from the peak in 1986.

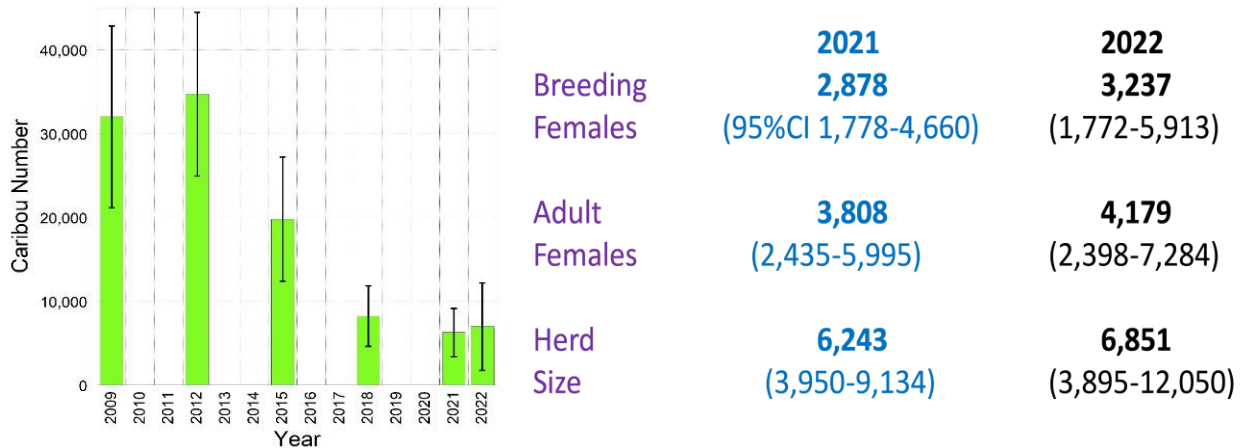


Figure 6. Bathurst population estimates from 2009 to 2022 (left) and survey results from 2021 and 2022 (right; GNWT-ECC).

Herd Fidelity

Satellite collars are deployed on the Bathurst herd, as well as the Bluenose-East herd (west of Bathurst) and Beverly herd (east of Bathurst). A collared cow will return every year to a specific calving ground, which allows GNWT-ECC to identify the herd associated with the collared cow. It is normal for about 1–4% of collared cows to switch between the calving grounds of neighbouring herds, and usually, this movement occurs equally between herds. However, what is of concern in the case of the Bathurst herd, particularly since 2018, is the emergence of a higher percentage of cows switching to other herds.

In 2018, 2019, and 2021, there was a higher percentage of known collared Bathurst cows switching to the Beverly calving grounds (with minimal, if any, switching of known collared Beverly cows to the Bathurst calving grounds):

- June 2018: 3 of 11 (27.2%) known Bathurst cows to Beverly calving grounds.
- June 2019: 3 of 17 (17.6%) known Bathurst cows to Beverly calving grounds.
- June 2020: No known Bathurst cows to Beverly calving grounds.
- June 2021: 6 of 34 (17.6%) known Bathurst cows calved east of Bathurst Inlet, moved to Beverly calving grounds in late June.
- June 2022: No known Bathurst cows to Beverly calving grounds, but 1 Beverly cow to Bathurst calving grounds; 1 Bathurst (2020) to Beverly (2021) to Bathurst (2022) cow.
- June 2023: 4 of 21 (19.0%) known Bathurst cows to Beverly calving grounds.

Movement from the smaller Bathurst herd to the much larger Beverly herd is a continuing concern for the Bathurst herd's future. Jan Adamczewski explained that the Beverly herd outnumbers the Bathurst herd by almost 15:1, therefore it is logical for cows in the Bathurst herd to switch over to the larger Beverly herd, as caribou are gregarious animals. Petter Jacobsen commented that:

When I started with the Tłı̨ch̨ Government, in 2013 and 2014, I did a number of interviews with Elders. They all talked about how the migration route had split, due to the industrial disturbances on the barren land. Their explanation was that the caribou had moved east. I think what we're seeing in the presentation [on Bathurst emigration] just shows or verifies what a lot of the Elders were saying at that time. I just wanted to point that out, because I think what they said and what you're showing is really the same. – Petter Jacobsen.

Jan noted that there is a lot of agreement between scientists and Indigenous knowledge holders when it comes to both the persistence and disappearance of caribou herds:

Both scientific knowledge and Indigenous knowledge would indicate that sometimes herds disappear, and sometimes new herds begin. You know, there's nothing that says that a herd of caribou is there forever and ever. The world is more complex than that. But there's also reason to believe from water crossing studies, and also Elders knowledge that some of these herds have actually been on the landscape for a very long time. I think some of the Indigenous communities have kind of identified with particular herds as being significant and having been significant over many, many generations. I think we would like that herd to persist on the landscape, if it possibly can, and partly to maintain those long-term relationships. If it disappears, then that migratory knowledge, all of that disappears. Could it reappear one day? Possibly. But I think we would prefer if we can try to keep this herd on the landscape. If they choose to move out completely, that's out of our control. But, you know, given what this group is all about, hopefully that doesn't happen. – Jan Adamczewski

Cow Survival Estimates

The cow survival estimate is based on the number of collared cows that survive the year. In some of the last few years, cow survival rates for the Bathurst herd have been higher than in preceding years. This is a very positive indicator as population trend is very sensitive to cow survival rates. The average cow survival rate was 86% between 2018 and 2021, whereas it was 80% in 2022, which is about what is required for a stable population (see Figure 7).

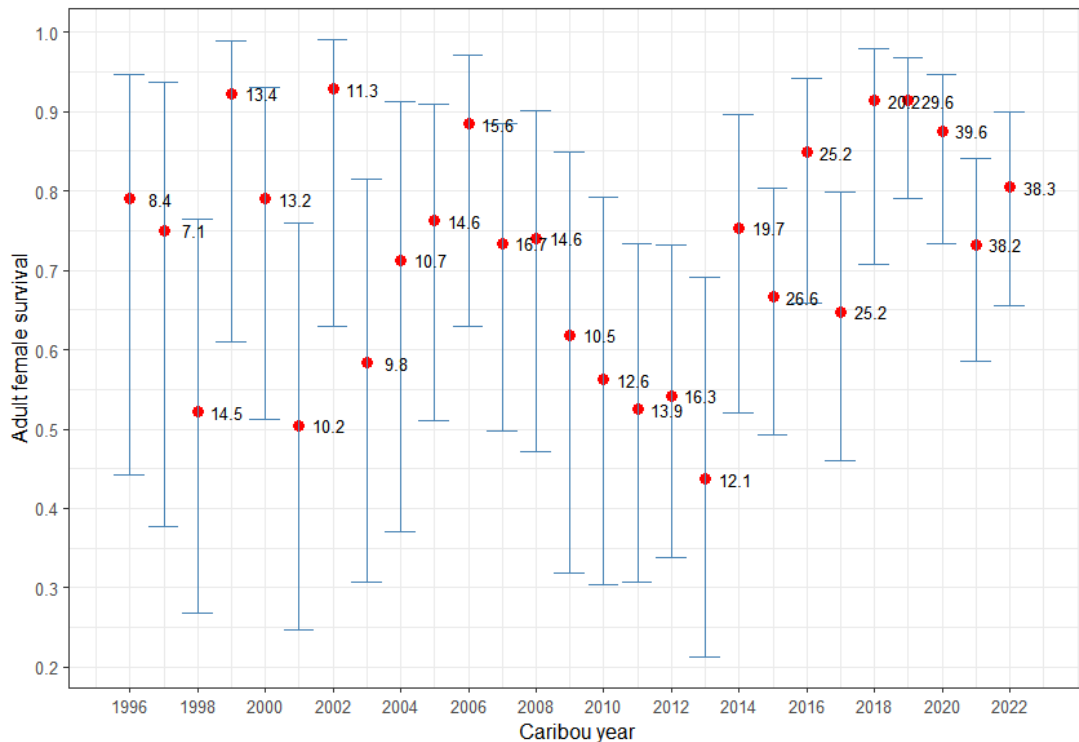


Figure 7. Bathurst collar-based cow survival estimates from 1996 to 2022 (GNWT-ECC).

Proportion of Breeding Females

In June 2023, GNWT-ECC estimated the percentage of females that were breeding from the calving ground composition survey. This is an index of the pregnancy rate from the last winter; breeding cows in June are the ones that had a newborn calf or evidence that they were pregnant (a distended udder or still having hard antlers).

Generally, a percentage of 80% or higher is considered to be relatively healthy. In 2023, the percentage of breeding females was 83.1%. For the last few years, the herd has been around or slightly below 80%.

Jan highlighted that the warm dry summer of 2014 was marked by very high abundance of biting insects and challenging summer foraging conditions, and the following June the proportion of breeding females dropped near 60% for the Bathurst herd.

That's a really important factor in terms of the condition of the animals. If they're not feeding well in the summer, they're going to be skinny in the fall. And the pregnancy rate is probably going to be low. [For example with] the big fire year in 2014, the drought was reflected here in a low pregnancy rate in the females. – Jan Adamczewski

Fall Calf:cow Ratios

In October 2023, the fall calf:cow ratio was similar to recent years at 36.8 calves per 100 cows (see Figure 7). This is considered a moderate-to-good ratio and it is consistent with recent higher collar-based cow survival rates.

Fall Sex Ratios

In October 2023, the bull:cow ratio was found to be 110.1 bulls:100 cows, similar to the ratio of 105.6 bulls:100 cows estimated in October 2022, and substantially higher than the ratio of 64.1 bulls:100 cows estimated in October 2020 (see Figure 8). Jan noted that this phenomenon was quite rare for caribou, as a bull:cow ratio of 50:100 is common in caribou. It is unclear what may be causing a higher number of bulls, but it is possible that cows are switching over to the Beverly herd as observed in 2018, 2019, 2021, and 2023, while bulls continue to remain in the Bathurst herd. Unexpected changes in survival rates of cows and bulls could be another possibility, if cows are dying at higher rates than bulls.

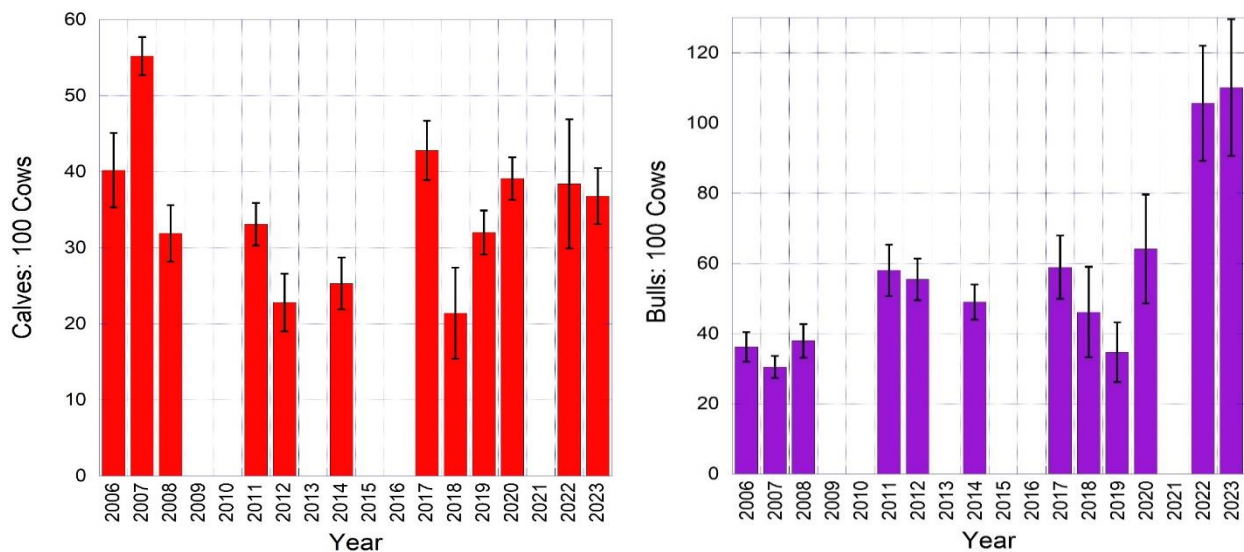


Figure 8. Bathurst fall calf:cow ratio from 2006 to 2023 (left) and bull:cow ratio from 2006 to 2023 (right) (GNWT-ECC).

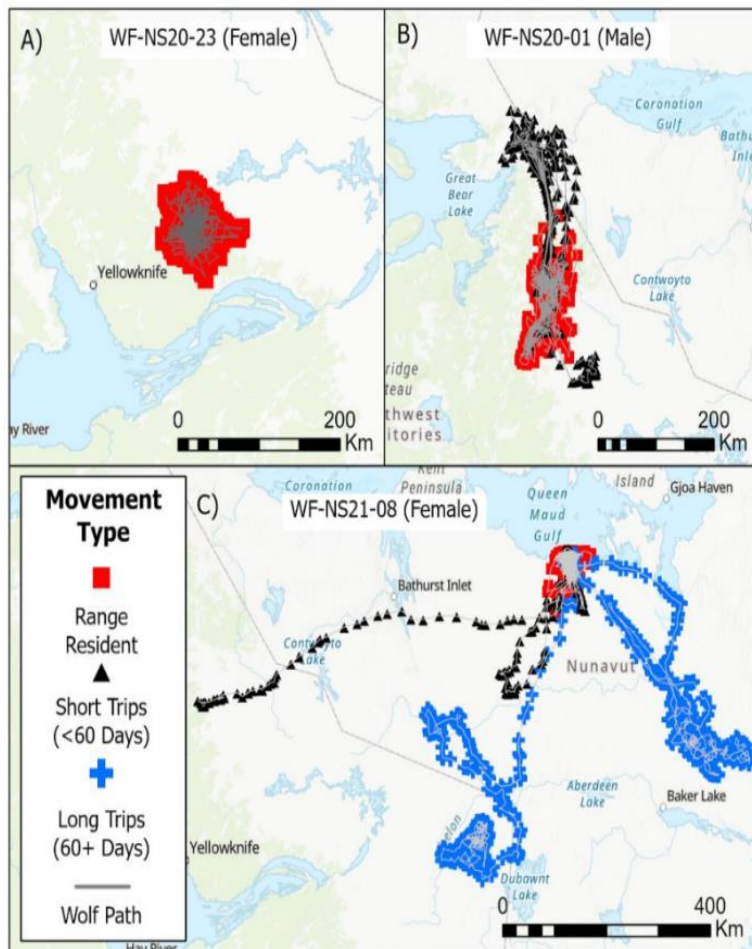


Figure 10. Maps showing GPS collar locations of three wolves in the barren lands. The individual wolf in panel A stayed right below the treeline, whereas the individual wolf in panel B and C followed the caribou migration.

interpreted with caution as it only represents the most recent meal (within 24 hours) and wolves often vomit when chased during hunting events. The average age of the harvested wolves was found to be much younger than in past years, suggesting an impact of harvest on the population.

The Wolf Management Program currently has 12 wolves collared with GPS trackers. To date, 48 wolves have been collared. Data from these collars allow GNWT-ECC to analyze movement, find den/predation sites, and determine if a wolf is associated with a particular caribou herd. GNWT-ECC’s monitoring has so far shown that movement patterns of collared wolves are complex, with some individuals spending time in one area (Figure 10A – range resident), some making short trips to areas of high caribou density (Figure 10B), and many individuals spending time on several different caribou wintering grounds with den sites not limited to the treeline (Figure 10C).

During the 2023 den survey, two active dens were identified; 3 pups were counted at one den and 1 pup at the other den. In 2012, a survey in the same study area found 22 active wolf dens with one pup at one den site, suggesting a decrease in the wolf population since 2012. Remote cameras and sound recording units were deployed at 4 den sites to determine pack and litter size if the wolf reuses that den site.

collaring to better understand wolf movements, and monitoring the health, condition, and dietary composition of harvested wolves.

From January to April 2023, 98 wolves were taken by harvesters and 44 wolves were taken by outfitters, for a total of 142 wolves within the harvest incentive area (see Figure 9). Snow conditions were reported to be wet and difficult to traverse. Out of 98 wolves harvested by resident hunters, 83 (49 males and 34 females) carcasses were examined for specific health indicators to determine the impact on the population. Wolves were in poorer body condition compared to 2021, but similar to that reported in 2022. When examining females, the percent of pregnant animals increased from 12.5% to 26% and the average litter size decreased from 6.2 to 4.9 from 2022 to 2023. The percent of wolf stomachs with content was 69% and of those the percent of stomachs that contained caribou was 71%, which is greater than 2022 and lower than 2021. This metric should be

GNWT-ECC documents wolf-centric and caribou-centric metrics (for both the Bathurst and Bluenose-East herd) to assess the impact of the Wolf Management Program and whether they have been met (see Figure 10 and 11). Note that there is another year (i.e., 2024) of the Wolf Management Program, thus these two figures are incomplete. The wolf-centric metrics document the amount of effort needed to harvest each wolf by asking the harvesters to report the number of days spent hunting and the distance travelled while hunting. On average, it was easier to find wolves this year and hunters had to travel less distance to find wolves in 2023. Many variables affect the effort analysis and should be interpreted with caution. For example, as harvesters learn and perfect their ability to harvest wolves, the effort needed will decrease, but this does not necessarily represent an increase in the wolf population.

Caribou-centric metrics related to adult cow survival rates and fall/late-winter calf to cow ratios have not been met for the Bathurst caribou; however, the breeding females, adult females, and herd estimate metrics have been met. All of the caribou-centric metrics for the Bluenose-East caribou have been met as of 2023.

Metric	2020	2021	2022	2023	Target met?
Number of wolves removed	40	132	53	98	No
Average CPUE day	0.14	0.50	0.74	1.07	No
Average CPUE distance	0.86	4.54	3.39	4.73	No
Sighting rates	0.05 (BAT)	0 (BNE) 0.7 (Mixed)	0.48 (BNE) 0.28 (Mixed)	0.53 (BNE) 0.34 (Mixed)	No
Age structure*	3.4	2.1	1.6	In progress	Yes

*Average cementum age, but not all samples have been analyzed.

Figure 11. Targets⁴ for wolves used to measure impact of the Wolf Management Program.

Metric	2019	2020	2021	2022	Target met?
Adult cow survival rates	95%	87%	73%		No
Fall calf to cow ratios	32	39.1		38.4	No
Late-winter calf to cow ratios		30.4		NA	No
Breeding females estimate			2,878	3,237	Yes
Adult females estimate			3,808	4,179	Yes
Herd estimate*			6,240	6,850	Yes

*Rate of decline has slowed after 2018, but not yet any clear evidence of stability.

Figure 12. Targets⁵ for the Bathurst caribou used to measure impact of the Wolf Management Program.

⁴ Wolf-centric targets are defined as:

- Number of wolves removed – A decrease (with no reduction in effort) in the number of wolves removed.
- Average CPUE day/distance – A decrease in catch per unit effort by hunters (i.e., number of days spent hunting and kilometers travelled while hunting).
- Sighting rates – A decrease in wolf sighting rates per hour flown during March caribou composition survey.
- Age structure – An increase in the number of young wolves harvested compared to adult wolves through cementum age analysis.

⁵ Caribou-centric targets are defined as:

- Adult cow survival rates – No less than 85% adult cow survival rates.
- Fall calf to cow ratios – Ratio between 49-51 calves per 100 cows.
- Late-winter calf to cow ratios – Ratio between 38-45 calves per 100 cows.
- Breeding females/adult females/herd estimate – Two consecutive estimates of breeding females, adult females, and herd size with no decline.

Discussion

Several people asked Abbey how the GNWT ensured that the wolf carcasses being brought in by harvesters are coming from the incentive zone and not from other locations. In response to the concerns that people may be improperly taking advantage of the program, it was acknowledged that there may be some cases of fraud, but it had been decided that it would be too costly to develop a more rigorous system and that by working on the honour system, the goals of the program could still be achieved.

Wayne Mercredi (NSMA) expressed his concerns with the wolf harvest incentive. There is a concern that as older wolves are harvested, they are not around to teach the younger wolf population. This may result in unforeseen consequences for both wolves and caribou. He also noted that people are seeing animals like beavers in places they haven't been seen in a long time or ever.

And once again, it seems like every time that man sticks their fingers in things that we just screw things up. Here we are, we're killing the one predator that would keep these things in line. There's no way that you guys even know the facts because you don't even know which wolves are actually harvested from the affected area. And wolves don't kill every animal and then move on. When it starts to get where the bigger and stronger ones [are all that is left] that they can't catch, they end up having to move to other areas. So, I don't believe in wiping out one species to try and save another species. I understand that it's a living for some people, but at the same time, so were caribou at one time and now look at what we're facing. It's one of those things I just don't understand why it's set up the way it is. – Wayne Mercredi

There was some discussion of expanding the wolf harvest incentive zone, but the point was made that the zone was specifically developed to provide the maximum benefit for the Bathurst and Bluenose-East herds; the herds of highest conservation concern. If the zone was expanded, it would be more likely to include the incidental harvest of wolves associated with the Beverly herd; a herd that is currently not of conservation concern.

Several people spoke about the positive impacts that the Wolf Management Program is having on the caribou.

From our hunter's perspective, they go out and they see the wolves there that have never been in that area before. There's a pack of 10 to 12 of them, and they're just killing muskox, just to teach their young ones. Now, you can't tell me that eliminating [that wolf pack] won't increase the amount of caribou that we're seeing, like that's proven. I just want to make that distinction. You know, it could be a number of things. But yes, eliminating or doing predatory control is, I believe, helping the caribou population coming back. – Peter Kapolak

Dustin Ferland (NTI) cautioned that an indiscriminate harvest can be counter productive. If only the alpha animals from the pack are removed, then the remaining animals will respond by having more pups. For example, when analyzing harvested wolf carcasses, GNWT-ECC is seeing twice as many pregnant wolves now when compared to previous years. Without the full removal of a pack, this type of harvesting may affect the pack dynamics for the wolves but may not lead to the desired reduction of predation of the caribou. Abbey noted that “the impact we're having on pack dynamics is, I'm sure incredible and also incredibly difficult to measure.”

Update on the Implementation of the Bathurst Caribou Range Plan

Mélanie Routh provided an update on the implementation of the Cumulative Land Disturbance Framework and the 7 recommendations found in the Bathurst Caribou Range Plan, published in 2019.

Caribou Guardians Coalition

The Caribou Guardians Coalition (CGC) held its first planning meeting in January 2020 to initiate the collaborative development of an Indigenous Guardian network across the Bathurst range. Three years of funding was secured through Polar Knowledge Canada to support development of the Guardianship Coalition. Funding was received for 3 years from Environment and Climate Change Canada (ECCC) and 2 years from Indigenous Centre for Cumulative Effects (ICCE).

A workshop was held in 2023 to finalize the CGC's operational plan and discuss future funding and now the organization is hiring staff, an Executive Director first, then a Communications Coordinator.

The hiring of the Executive Director will help the organization continue to grow and achieve the goals of supporting the guardian organizations that work to protect caribou throughout the region.

Habitat Conservation

In 2023, the following Indigenous governments and Indigenous organizations were supported to continue working on their TK research related to the identification and protect of key caribou habitat areas (such as water crossings and land bridges):

- Tłı̄cho Government
- Athabasca Denesuline Néné Land Corporation
- Deninu Kųę́ First Nation

At the 8th habitat conservation workshop in January 2023, the Advisory Committee agreed to a 2-year workplan to identify conservation areas that would be submitted to the Minister of ECC in 2025. GNWT-ECC submitted a funding proposal to ECCC on behalf of the Advisory Committee to further support work on habitat conservation, but ECCC notified GNWT-ECC that the funding proposal was not successful.

Mobile Caribou Conservation Measures

In 2022, GNWT-ECC finalized a draft Implementation Framework and Operational Guidance that includes a desktop pilot exercise. The Operational Guidance clearly sets out the methodology, monitoring, and reporting expectations for land use operators to implement Mobile Caribou Conservation Measures (MCCMs) at their project site. Whenever caribou are detected within close proximity to a camp or industrial site, land use operators are required to minimize their activities to mitigate disturbance to caribou and facilitate their passage through the area.

In 2023, GNWT-ECC worked with Mountain Province Diamonds (Kennady North Regional Exploration Project), Rio Tinto (Diavik Diamond Mine), and Blue Star Gold Corp (Ulu Gold Project) to conduct pilot projects using the MCCMs. Mineral exploration at the Kennady North Regional Exploration Project was cancelled, but mineral exploration near Diavik Diamond Mine was completed in April/May 2023. Outcomes of the pilot project have not been provided by Rio Tinto. Blue Star Gold Corp provided data and feedback on the implementation of MCCMs for 2019-2022.

In 2024, GNWT-ECC will continue to work with Rio Tinto to receive outcomes of and feedback on the pilot project. GNWT-ECC will write a summary report that will be included as an appendix to the Operational Guidance.

Best Management Practices for Roads

Last winter GNWT-ECC hired WSP to conduct a literature review of industry reports and scientific articles on the impacts of roads on barren-ground caribou and the mitigation measures currently applied to mitigate these impacts. In 2024, GNWT-ECC will hire WSP again to continue the literature review, as well as draft and finalize a report on best management practices.

Offsetting and Compensatory Mechanisms

GNWT-ECC is exploring the possibility of implementing offsetting and compensatory mechanisms as a tool to improve caribou habitat in the NWT. Offsets are used to support the conservation and protection of caribou and caribou habitat by counterbalancing the impacts on caribou and/or harmful alteration, disruption or destruction of their habitat.

In 2023, GNWT-ECC hired Associated Environmental Consultants Inc. to draft guidelines for offsetting and compensatory mechanisms for both boreal caribou and barren-ground caribou habitat. This document will guide the application, design, implementation, and management of offsetting as a conservation tool for barren-ground caribou and boreal caribou in the NWT. The offsetting guidelines are expected to go out for public review with anticipation that it will be published in summer or fall 2024.

Wildfire Management

The Bathurst Caribou Range Plan has recommendations related to wildfire management and identifying important winter habitat areas. As these areas are identified, they are shared with the Forest Management Division of GNWT-ECC as “values at risk”; these areas are included in the decision-making hierarchy when actioning fires.

Online Map Staking

The Department of Industry, Tourism, and Investment (GNWT-ITI) is pursuing the use of online map staking to reduce sensory disturbance to caribou. Online map staking allows prospectors to “stake” areas for mineral exploration online rather than physically staking the area.

While this system is common in other jurisdictions, it will take several years for GNWT-ITI to work on the regulations under the *Mineral Resources Act* to allow online map staking in the NWT.

3. Determining Herd Status and Management Actions

Each year at the Annual Review Meeting on Bathurst caribou, the BCAC reviews Indigenous, community, and scientific knowledge about the Bathurst herd and seeks consensus on a determination of herd status and recommended management actions. This discussion is guided by the Bathurst Management Wheel (see Figure 12), a framework for adaptive management in which the herd status guides the implementation of various monitoring and management actions for each of the five BCMP subject areas: harvest, habitat and disturbance, predators, research and monitoring, and communication and education.

Each of the six herd status levels is associated with two primary indicators – population size and population trend. The herd status levels are Critical Low, Low and Increasing, Medium and Increasing, High, Medium and Decreasing, and Low and Decreasing. Thresholds of herd size are associated with the boundaries

between the status levels. However, herd size and trend are not the only considerations in determining herd status; a suite of indicators informed by all forms of knowledge are also considered. The full suite of indicators is:

- Population size, trend, and rate of change;
- Caribou vital rates (i.e., cow survival, pregnancy, and calf survival);
- Adult composition (i.e., sex ratio);
- Body condition and health (i.e., skinny/fat, skin and hide appearance/quality, meat and organ appearance/texture, hoof condition, injury, smell, parasites, worms, brucellosis, growths and cysts, movement ability, and condition and size of antlers);
- Predator populations (i.e., abundance, range, and behaviour);
- Range and movement patterns (i.e., behaviour, location of caribou sightings, group sizes, and behaviour of leaders); and
- Habitat and environment (i.e., climate change, disturbance, and forage).

The colours of the Bathurst Management Wheel are blurred to reflect that there is flexibility in assigning herd status where information from indicators may be incomplete and to indicate that there is discretion in the herd status assessment where all indicators from all knowledge sources are considered and discussed.

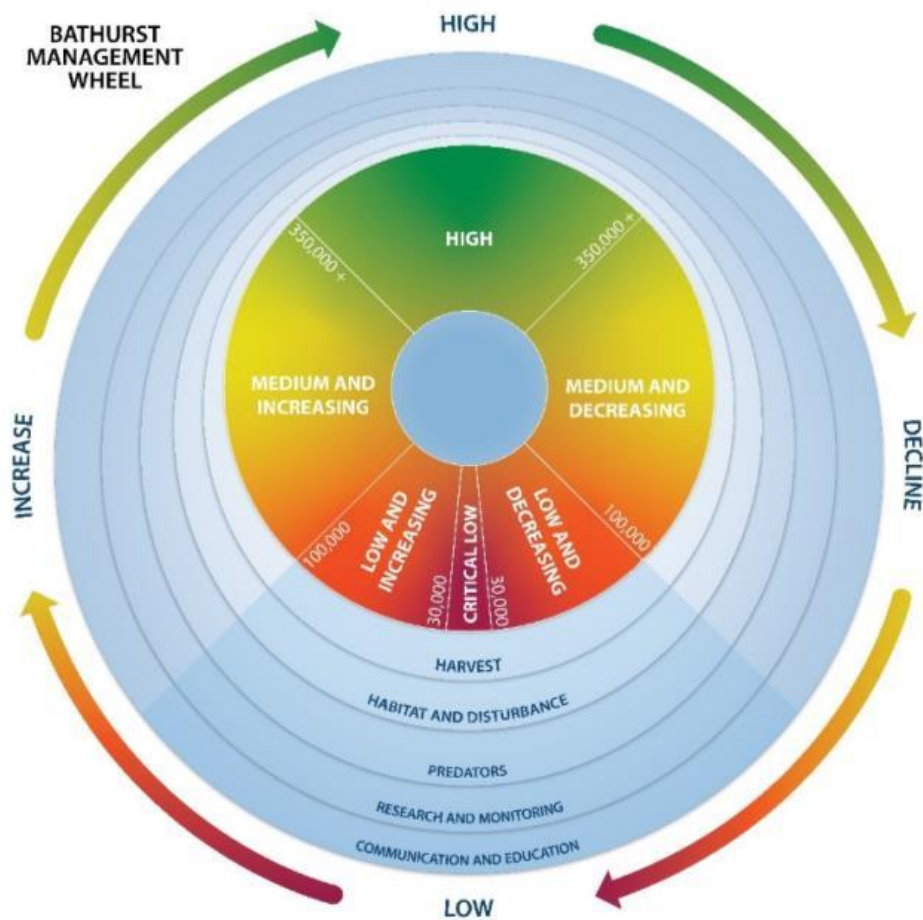


Figure 12. The Bathurst Management Wheel provides a framework for identifying management actions at various herd status thresholds (BCAC 2021).

3.1. Bathurst Caribou Herd Status

The Bathurst herd’s status is determined by the primary indicators of population size and trend, as well as all information about the modifying indicators.

Primary Indicators

Table 2 provides the most up-to-date information about the Bathurst herd’s population size and trend based on Indigenous, community, and scientific knowledge.

Table 2. Most up-to-date information from Indigenous, community, and scientific knowledge on the Bathurst herd’s population size and trend.

	Critical Low	Low & Increasing	Medium & Increasing	High	Medium & Decreasing	Low & Decreasing
Population Size	Less than 30,000	Between 30,000 and 100,000	Between 100,000 and 350,000	More than 350,000	Between 100,000 and 350,000	Between 30,000 and 100,000
Population Trend	↓ or ↑	↑	↑	↑ or ↓	↓	↓
Annual Status Information	<p>J.A. (GNWT-ECC)⁶: Estimated number of adult caribou at least 2 years old: 6,851 (95% CI: 3,895–12,050) Estimated number of breeding cows: 3,237 (95% CI: 1,772-5,913) Estimated number of adult females: 4,179 (95% CI: 2,398-7,284)</p> <p>The estimated annual rate of decline was 25.4% in 2015–2018 and 8.7% in 2018–2021. The rate of decline slowed from 2018 to 2021 and the herd appeared to be stable from 2021 to 2022 (caution is needed in the interpretation of stability as it is based on surveys just one year apart).</p> <p>J.N. (TG)⁷: We saw fewer caribou this summer around Kokètì, as most Bathurst caribou were further west. We saw a total of 253 caribou, in 72 groups, most caribou seen were bulls (45.8%), cows (15.8%), yearlings (8.3%), calves (8.7%), and unknown (21.3%).</p> <p>I.C. (LKDFN)⁸: Łutsel K'e is very concerned about the status of the Bathurst caribou. What we see is the herd population declining from the diamond mines and the ice roads.</p>					

⁶ Jan Adamczewski (GNWT-ECC)

⁷ Janelle Nitsiza (Tłı̄chǫ Government)

⁸ Iris Catholique (Łutsël K'édé Dene First Nation)

Modifying Indicators

Table 3 provides the most up-to-date information about the suite of modifying indicators, based on Indigenous, community, and scientific knowledge.

Table 3. Most up-to-date information from Indigenous, community, and scientific knowledge on monitoring indicators for the Bathurst herd.

Monitoring Indicator	Indigenous & Community Knowledge	Scientific Information	Comments
Cow survival		<p>2022: 80% 2021: 73% 2020: 87% 2019: 95% 2018: 92%</p>	
Productivity & Pregnancy Rate (e.g., birth rate)	<p>J.N. (TG): John Franklin Kaodloak pointed out a good indicator of healthy growth is when there are twins. On August 26, 2023, we observed a cow with 2 calves.</p> <p>P.J. (TG)⁹: From 2018 to 2021, there were good conditions but few calves. In 2022 and 2023, we are starting to see more cows with calves.</p> <p>R.J. (TG)¹⁰: In 2016 and 2017, there were a lot of bugs but then it got colder, and it seemed like there were a lot more calves.</p> <p>J.N. (TG): Caribou come down from the tundra and hang around the treeline, this is how it used to be. They would go to the forest and eat well. Today this is not how</p>	<p>Percent breeding females on calving grounds:</p> <ul style="list-style-type: none"> • June 2023: 83.1% • June 2022: 79.8% • June 2021: 75.6% • June 2019: 86.0% • June 2018: 70.4% <p>Pregnancy rate of captured cows:</p> <ul style="list-style-type: none"> • 2021: 9/10 (90%) • 2020: 30/31 (97%) • 2019: 9/11 (82%) 	Moderate-to-good pregnancy rates 2018–2023.

⁹ Petter Jacobsen (Tłıchq Government)

¹⁰ Roy Judas (Tłıchq Government)

	<p>it is, with forest fires, they now hang around in the barrens. Not as good to eat, they need to eat well to be fat and then they can get pregnant. Because of these fires, they get stopped by that. They go back and stay on the barren lands. With the fires they don't have enough to eat, and they are skinny. The Elders talk about that. If they have good food, they will be fat and pregnant, and they will come back from the barrens with little ones. Some are pregnant some are not; it depends on food.</p>		
<p>Recruitment & Calf Survival (e.g., population changes and calf health)</p>	<p>J.N. (TG): In July and August 2023, we saw 51.2 calves per 100 cows. In August, many of the cows and calf groups had a 1:1 ratio, which is very good.</p> <p>P.J. (TG): A positive sign is we have been seeing a lot more calves over the last couple years.</p> <p>G.N. (NTI)¹¹: I'm originally from the high arctic, my ancestors are people of the seal and fish. Back home it's a different herd, it's the Qamanirjuaq herd. In February, its very cold, our name for that is the "abort month," if its too cold, the caribou will abort, or may abort their fetus.</p>	<p>Calf:cow ratios:</p> <ul style="list-style-type: none"> • October 2023: 36.8:100 (95% CI 32.7-40.6) • October 2022: 38.4:100 (95% CI 31.3-46.9) • March 2020: 30.4:100 (95% CI 26.2-35.0) • October 2020: 39.1:100 (95% CI 36.2-41.9) • October 2019: 32.0:100 (95% CI 28.9-34.9) 	<p>Moderate calf:cow ratios in 2019-2020. No results from March 2021 and 2022 surveys due to herd mixing.</p>

¹¹ Gabriel Nirlungayuk (Nunavut Tunngavik Incorporated)

<p>Adult Composition (e.g., male/female ratio)</p>	<p>J.N. (TG): Most caribou seen were bulls. Caribou seen at Kokèti were bulls (45.8%), cows (15.8%), yearlings (8.3%), calves (8.7%), and unknown (21.3%).</p> <p>E.Z. (TG)¹²: In July, we only saw bulls in singles or pairs. In August, we saw more cows and calves than bulls.</p> <p>R.J. (TG): In 2023, we saw lots of cows and calves, on the east side.</p> <p>E.E. (NWTMN)¹³: I question this ratio of bulls to cows. The animals being shot in the monitoring program were being misidentified as bulls. Once the animals are out of the zone, the cows will get shot as they are the fat ones, and this hunt goes on for weeks.</p> <p>W.M. (NSMA)¹⁴: I haven't seen the increase in bulls. I don't see that on the ice road in February and March.</p>	<p>Fall bull:cow ratio:</p> <ul style="list-style-type: none"> • October 2023: 110.1:100 (95% CI 91.7-129.6) • October 2022: 105.6:100 (95% CI 92.4-122.0) • October 2020: 64.1:100 (95% CI 49.9–79.6) • November 2019: 34.7:100 (95% CI 26.5–43.2) • October 2017: 59.2:100 (95% CI 50.1–67.8) 	<p>Higher bull:cow ratio in 2022 and 2023 than previous years.</p> <p>Increasing herds in NWT in early 1980s had ratios of 65–70 bulls:100 cows.</p>
<p>Body Condition & Health (e.g., skinny/fat, skin and hide appearance/quality,</p>	<p>S.B. (TG)¹⁵: In July, the bulls were in good condition. In August, most caribou were fat and healthy. No signs of limping,</p>	<p>Body condition of caribou during collaring reported as very good in 2023.</p>	<p>L.A. (KAA)¹⁸: The 10 sample kits from the University of Calgary did not arrive on time so they couldn't be used by</p>

¹² Été Zoe (Tłı̨chǫ Government)

¹³ Earl Evans (Northwest Territories Métis Nation)

¹⁴ Wayne Mercredi (North Slave Métis Alliance)

¹⁵ Stephanie Behrens (Tłı̨chǫ Government)

¹⁸ Larry Adjun (Kugluktuk Angoniatit Association)

<p>meat and organ appearance/texture, hoof condition, injury, smell, parasites, worms, growths and cysts, movement ability, and condition and size of antlers)</p>	<p>lameness, or foot injuries.</p> <p>S.B. (TG): Of the 253 caribou sighted, we assessed the condition on 157 caribou: 102 bulls, 35 cows, and 20 calves.</p> <ul style="list-style-type: none"> • Bulls: 51% fat, 48% good, and 1% skinny • Cows: 23% fat, 74% good, and 3% skinny • Calves: 20% fat and 80% good <p>A.N. (KAA)¹⁶: <i>Erysipelas</i> is showing up this year, it's from biting insects, and we have seen it across Nunavut this year. You do not see it from the outside. You see it when it is skinned.</p> <p>P.K. (OHTO)¹⁷: We need to start studying not just caribou as the host animal, but all the other animals and where the diseases are coming from.</p>	<p>Of 13 Bathurst females captured, the average condition score was 2.5 on a scale of 1 (skinny) to 4 (very fat); lowest score 1.5 and highest 3.5.</p> <p>Of 2 Bathurst males captured, the average condition score was 2.5 on a scale of 1 (skinny) to 4 (very fat); lowest score 2.5 and highest 2.5.</p>	<p>JFK when he used the 10 Bathurst tags.</p>
<p>Predator Populations (e.g., abundance, range, and behaviour)</p>	<p>S.B (TG): Not much wolf activity.</p> <p>L.A. (KAA): We have a higher incentive now, its \$900 and is herd specific. We have been making a dent. We don't have tags for grizzly bears. We are trying hard, and it's been proven with the Bluenose-East population, it was 18,500 [the previous survey] and now in this survey</p>	<p>Incidental sightings from June calving composition surveys:</p> <ul style="list-style-type: none"> • 2023: 19 bears, 3 wolves • 2022: 1 bear, 1 wolf • 2021: 9 bears, 2 wolves • 2019: 8 bears, 0 wolves • 2018: 5 bears, 3 wolves • 2015: 4 bears, 3 wolves 	<p>There are more grizzly bears than wolves seen on the Bathurst calving ground.</p> <p>Incidental sightings of predators on caribou surveys tend to have high variability; difficult to assess trends.</p>

¹⁶ Allen Niptanatiak (Kugluktuk Angoniatit Association)

¹⁷ Peter Kapolak (Omingmaktok Hunter and Trappers Organization)

	<p>that just came out its 35,000 caribou.</p> <p>A.D. (KAA): We have been working on a predator hair snag study. We went through a process with the WRRB and GNWT and now our hunters can hunt more freely in traditional Inuit hunting grounds in the NWT.</p> <p>I.C. (LKDFN): The wolf cull has been going on for a while, and we don't see any results. It's not working.</p> <p>W.M. (NSMA): I know some of the wolves harvested are from outside of the incentive zone. I don't believe in wiping out one species to save another. It's important we understand where they go, and will the harvest have an effect, and that we are not just doing it for the money.</p> <p>A.D. (KAA): Our wolf harvest in the range is all about snow conditions and the ability to travel. In 2021, the snow was good, but since then there hasn't been much snow, so the wolf harvest has been low. Has the harvest been effective? We see it on the Bluenose-East range, and in the number of yearlings and calves. I've seen it with my own eyes and hear from our harvesters.</p> <p>P.K. (OHTO): In 1970s and 1980s, wolves</p>	<ul style="list-style-type: none"> • 2012: 4 grizzly bears, 3 wolves 	
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	<p>had a good price, and we had a lot of harvest. Prices were \$1,000-\$2,000, it was an honest dollar. The market then crashed, and the hunters stopped when the price was \$125. So, for many years wolves had free range. Our record wolf harvest was 1,000, when caribou was high. We now average 300 a year. I used to get 100 a year myself, now I harvest 3-5 wolves.</p> <p>P.K. (OTHO): You see from our numbers; the wolves are abundant in Kugluktuk and there are a lot.</p> <p>P.J. (TG): At the end of September in Point Lake, we have hardly seen any wolves in the last 2 years. At Lac de Gras, there was lots of caribou and no wolves. Joe Zoe, our Elder, thought this was strange. This summer at Contwoyto Lake, the dens were empty. Some areas had no wolves. No mosquitos, no hunters, no wolves, the caribou just sat and were happy. With the Bluenose-East caribou at Point Lake, they are just laying around getting fat, it's a good sign.</p> <p>L.A. (KAA): In 2017, John Franklin harvested 24-27 wolves from his kitchen. This was after the fire year; I think this year will be the same. I predict this.</p> <p>G.N. (NTI): Over on the east side, we</p>		
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	<p>don't want more grizzly bears. Polar bears went out of hand for over 50 years, and we don't want grizzlies to get like that.</p> <p>A.N. (KAA): There are more grizzlies now. My father and grandfather used the fat for lamps. At that time, we saw 1 or 2 cubs. Today I see 4 surviving cubs, as 2-year-olds. It's a common sight. I know grizzlies are increasing, we keep saying stop protecting them. We can hunt them with no tags. When you see a high survival rate, they do well. They feed on vegetation. They don't always need meat. Just before and after the dens. We worked hard to get tags. Increasing over 20 years. Maybe we will see 5 cubs.</p> <p>R.J. (TG): Lots of grizzlies at Contwoyto Lake. All the time we see bears on the eskers.</p>		
<p>Range & Movement Patterns (e.g., behaviour, location of caribou sightings, group sizes, and behaviour of leaders)</p>	<p>R.J. (TG): We were getting collar data, but the caribou didn't move much. Every day they were in the same place.</p> <p>P.J. (TG): Bathurst caribou did not migrate south of Kokèti, and mostly stayed in one area west of Kokèti. This was likely due to smoke and fires. In September and October, the collared caribou did not go further south as usual</p>	<p>2023: 4 of 21 (19%) known Bathurst cows switched to Beverly. One known Bluenose-East cow switched to Beverly.</p> <p>2022: No switches of Bathurst caribou to Beverly, but 1 of 13 (7.69%) known Beverly cows switched to Bathurst and 1 of 13 (7.69%) known Beverly cows that previously moved from Bathurst to Beverly</p>	<p>In 2018, 2019, and 2020, there has been strong mixing of Bathurst collared caribou with Beverly throughout the winter. Based on the 2018 herd estimate, Beverly outnumbered Bathurst more than 12:1.</p>

	<p>but stayed northwest.</p> <p>K.R. (ADNLC)¹⁹: We haven't had Bathurst caribou in our region for many years now. We would like to protect the range, so that one day, when the numbers come up, they have a place to come back to.</p> <p>I.C. (LKDFN): We have endorsed our own caribou stewardship plan. We have put a memorandum on ourselves to not harvest Bathurst caribou to give them a break, to see if this will make a difference. We have things in place in order to help people harvest from other herds. We use our own money to give people incentive to harvest muskox and moose, and the Beverly herd. Caribou don't come as close anymore, now we must go up to 600 km, so we don't harvest from the Bathurst herd.</p> <p>R.B. (FRMG)²⁰: When I was young, I could hunt caribou in a day. Now I have to travel 6 days to hunt. We put in a moratorium on hunting caribou; to make them come back. They used to come close to Fort Resolution. Now they don't even come down to Great Slave Lake. When I worked at Diavik, I saw thousands</p>	<p>moved back to Bathurst.</p> <p>2021: 6 of 34 (17.6%) known Bathurst cows switched to Beverly.</p> <p>2020: No switches.</p> <p>2019: 3 of 17 (17.6%) known Bathurst cows switched to Beverly.</p> <p>2018: 3 of 11 (27.2%) known Bathurst cows switched to Beverly.</p> <p>Before 2018: Usually 1–3% switching between Bathurst and neighbouring herds (97–99% fidelity).</p>	
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¹⁹ Katie Rasmussen (Athabasca Denesųliné Né Né Land Corporation)

²⁰ Ron Beaulieu (Fort Resolution Métis Government)

	<p>of caribou in the first 2 years in 2000 and 2001, and by 2007 they hardly came any more.</p> <p>W.M. (NSMA): When I was younger in the 1970s, they were in town on the lakes. We used the Ingraham Trail when they weren't in town anymore. People were hunting truckloads of caribou. In the 1980s, that's when people went up on the ice roads. There was a lot of hunting right off people's trucks.</p> <p>R.M. (FMSC)²¹: I remember talking with my dad on cycles. They used to go down in numbers, and they would come back. But now the world has changed. When there was no caribou, he would live off bison and moose. But now I can hop in my truck and drive two days to Ekati and get caribou and come back to Fort Smith.</p> <p>J.N. (TG): The caribou used to come close to Wekweètì, but not anymore.</p>		
<p>Habitat & Environment (e.g., climate change, disturbance, and forage)</p>	<p>A.W. (TG): When I was out there, I noticed there was no blueberries, it was so dry. I never heard about fires on the barrens, there are no trees. I've been scratching my head, there are strange things happening.</p>	<p>Total area burned (hectares; ha) within the annual range of Bathurst caribou in the last few years:</p> <ul style="list-style-type: none"> • 2023: 968,024 ha • 2022: 231,188 ha • 2021: 53,840 ha 	

²¹ Richard Mercredi (Fort Smith Métis Council)

	<p>R.J. (TG): We have had a couple of dry years. Wherever we go is just dry. Walking across the moss is just dry. Two years in a row it's been very dry. It's not like before, the water is very low. I think about what they eat, the lichen is dry and crunchy.</p> <p>(TG): Water levels usually come up in the spring melt, but for two years now the water has not been higher after the spring melt.</p> <p>J.N. (TG): Even though it was raining it still felt dry. It was so dry it just absorbed all the water.</p> <p>P.J. (TG): Way less water and no habitat for mosquitos, so we hardly see any bugs. There was a summer drought. Dwarf-birch was yellow brown mid-summer and were moisture stressed. Very few mushrooms, and very few, and small berries, that ripened early. Only 2 days of rain this year. We only had two days of high bugs. We had tundra fires on the south side of the Contwoyto Lake in July and August.</p> <p>R.J. (TG): You can see way less water now.</p> <p>R.J. (TG): We saw the lighting and then quickly after we saw the smoke. A couple days later we went there again and took</p>	<ul style="list-style-type: none"> • 2020: 13,657 ha • 2019: 26,837 ha • 2024: 1,652,429 ha 	
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	<p>videos with a drone. There is nothing to burn, no trees, we never saw this before.</p> <p>A.W. (TG): It's not like the 1950s, the trees are not frozen. They are bending. In the 1950s, you could hear the crack in the trees. We know that its changing. The ice, there is no hard ice underneath it at all this year, it's not safe to travel. The dry conditions, everyone wants to wear good shoes for walking long distance. Even the caribou want good shoes, if it's too dry it's not going to last long, they need to have good hoofs to outrun the wolves. The changes, it's not good for my skidoo, or my feet. It happened one time in Behchokò people were using birch canoe and spearing caribou, they didn't see winter one time, they had fall, then spring came. Climate change is across the whole nation.</p> <p>A.D. (KAA): We had a dry year. The ice broke up in May, and the water levels remained really low all year.</p> <p>A.N. (KAA): The tundra fires are not new to us around Kugluktuk. We have seen them; they aren't as hot as they are south of the treeline. It is a way of regrowing or regenerating, it brings nitrogen. The lichen doesn't grow back for many years, but it grows back better.</p>		
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	<p>G.N. (NTI): Like everywhere in Nunavut this summer it was very hot and dry. This summer, I was hunting narwhal in a t-shirt. This summer a lot of hunters were seeing sick caribou from the dryness and the flies. They look good, but when they open them up, they don't. Out of the 5 caught, 3 didn't look good. The folks in Baker Lake couldn't go up to the Thelon to hunt caribou as it was too low.</p> <p>D.M. (DKFN)²²: Why can't they make the no hunting zone bigger to stop all the hunting up on the ice roads. The ice roads are causing the decline. People are going up there shooting 30 caribou and selling the dry meat and then going back 2 weeks later for another 30.</p> <p>J.N. (TG): We had an early spring; this year it was a month early. If spring is early the summer will be long and we will have lots of forest fires. There is still smoke coming out in between here and Rae. There is still fire in the ground in the bush.</p> <p>K.H. (FSMC)²³: Caribou are scared of the ice roads because they think they are pressure ridges. They are scared of the trucks, and we know the trucks don't</p>		
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²² Dean McKay (Deninu Kųé First Nation)

²³ Ken Hudson (Fort Smith Métis Council)

	<p>stop.</p> <p>P.J. (TG): Sinkholes are forming where the ice melts in the eskers.</p> <p>J.N. (TG)²⁴: Caribou are used to live in cold weather all the time. So, I don't know what is going to happen if it warms up. Will it be good for them, not sure.</p> <p>L.M. (NSMA)²⁵: The landscapes that have been disturbed by the mines will never be fully reclaimed to the way that they were before, but they can be restored to a level that are beneficial to caribou. Some of the waste piles look like unnatural shapes so the caribou avoid them. Additionally, they may not be constructed in a way that allows caribou to travel easily over and around them. When done right they can be a place that caribou find refuge from bugs (similar to how they do on eskers), and the reclaimed landscape can appear more natural.</p> <p>G.N (NTI): With climate change, who knows what the future holds. It's +1°C today. Who knows, in Nunavut, Bathurst and all the other caribou calving is in parts of Nunavut. With climate change we noticed calving was early this year.</p>		
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²⁴ Joseph Judas (Tłıchǫ Government)

²⁵ Lawrence Mercredi (North Slave Métis Alliance)

	<p>They calved in early June, late May. They followed the seasons and calved early.</p> <p>R.J. (TG): Wekweètì burned across the south side all the way to Winter Lake. There are caribou at home, not sure what they will do, its all burnt. I saw 20, just past the airport.</p> <p>R.B. (FRMG): On the ice roads, the animals go through a lot of stress, they go through the 3-4 mines, ice roads, noise pollution, animals are sensitive, the trucks passing, and the animals freeze up. The government supports the road but its pretty well slaughter up there. I was there and a grater uncovered blood and wasted meat. They sell the meat, \$400, and at 30 a trip he makes \$18,000 a trip. Its not our Dene way, you have people take advantage.</p>		
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2024 Herd Status

Based on the information shared and discussed at the 2023 Annual Review Meeting, the BCAC determined the status of the Bathurst herd to be:

Herd Status: Critical Low

When the Bathurst herd is critically low, there are fewer than 30,000 caribou. The herd has contracted its range to the centre of habitation and spends a large part of its annual cycle above the treeline. Caribou trails may be faint or growing over. Caribou may show signs of poor body condition, such as a patchy hide or bony appearance.

While there are some positive factors described by both the community and scientific presentations, the population estimate provided by GNWT-ECC combined with community reports of limited caribou led the BCAC to designate the Bathurst herd status as “**Critical Low**”.

In 2022, the estimated population was 6,851 individuals (95% CI: 3,895–12,050). This is significantly below the threshold of 30,000 individuals which would move the herd status into the “Low and Increasing” category.

3.2. Recommended Management Actions

The BCMP outlines recommended management actions for each of the five theme areas (i.e., harvest, predators, habitat and disturbance, research and monitoring, and communication and education) under the six herd statuses (i.e., Critical Low, Low and Increasing, Medium and Increasing, High, Medium and Decreasing, Low and Decreasing). A summary of these recommended actions can be found in the BCMP Appendix C, Table C1. The BCMP also includes one-page summaries of the management recommendations for each herd status (see BCMP, pp. 37–42).

Table 4 below summarizes the recommended management actions for the Bathurst herd for 2024, based on discussions at the 2023 Annual Review Meeting.

Table 4. Recommended management actions for the Bathurst herd for each of the five theme areas (i.e., harvest, predators, habitat and disturbance, research and monitoring, and communication and education) under the herd status of “Critical Low”.

Harvest				
Objective: Strive for the sustainable and culturally respectful harvest of Bathurst caribou over time.				
Task	Partners	Deliverable	Priority Level	Status
Maintain a Total Allowable Harvest (TAH) of 0 in the NWT. TAH of 10 bulls in Nunavut.	GNWT, GN, and member organizations	Limited tags issued under the Nunavut Agreement and Nunavut Wildlife Act.	High	Ongoing since 2016 and 2020 for the NWT and NU, respectively. Harvests under TAH in Nunavut are monitored and managed by Nunavut Hunters and Trappers Organizations and Government of Nunavut.
Consistent with maintaining a TAH of zero in the NWT, member organizations will participate in negotiations with Parks Canada regarding harvest limitations in Thaidene Nëné.	Member organizations	Agreements in place with Parks Canada on harvest limitations within Thaidene Nëné.	High	Ongoing.
Continue implementing the zero TAH in NWT through the use of the Mobile Core Bathurst Caribou Management Zone (Mobile Zone).	GNWT, TG, WRRB	Define the Mobile Zone on a weekly basis; distribute to Indigenous governments and regional offices and publish on the GNWT website. GNWT-ECC conduct regular ground-based and aerial surveillance of the Mobile Zone.	High	Ongoing. GNWT, Tłı̨chǫ Government, and the Wek'èezhìi Renewable Resources Board, through a technical working group, update the Mobile Zone on a weekly basis to continue to protect Bathurst caribou, but also allow for harvest of Beverly and Bluenose-East caribou.
Continue harvest monitoring programs for the Beverly herd on the Tibbitt to Contwoyto winter road.	TG, NSMA ²⁶	Annual report on activities.	High	Tłı̨chǫ camp was set up on the Gahcho Kue winter road to share information on the boundaries of the Mobile Zone and to document Tłı̨chǫ harvest of the Beverly herd outside of the Mobile Zone. North Slave Métis Alliance members drive along the winter road documenting and photographing their observations. If members harvest along the road, they

²⁶ Only the monitoring programs that were discussed at this year’s Annual Review Meeting are included in the table. Several of the member organizations were not present at the Annual Review Meeting and therefore the status of their programs is unknown.

				report their harvest to the NSMA office, including the health and location of the animal.
ECC compliance and enforcement monitoring through check stations on the winter road and ground/aerial patrols.	ECC	Annual report on activities.	High	Ongoing. Renewable resource officers are based out of the McKay Lake station, Lockhart Lake station, and a mobile station. Aerial patrols are conducted as needed.
Predators				
Objective: Manage predator–caribou relationships in accordance with Indigenous values and knowledge and consider predator reduction when predators may be limiting stability or increase of the herd.				
Task	Partners	Deliverable	Priority Level	Status
GNWT and Tłıchǫ Government continue to implement a Wolf Management Program consisting of support for harvesters and the traditional economy, as well as an extensive research and monitoring program.	GNWT, TG	Annual report, review, and evaluation of program components.	High	Winter 2023/24 is the final year of a five-year program to reduce predation on the winter range of the Bathurst herd. Management actions are listed in the Wolf Management Program Annual Report. ²⁷
GNWT to maintain enhanced incentives for wolves harvested within the North Slave Region Wolf Harvest Incentive Area. GN to offer an incentive for wolf sampling program in Nunavut.	GNWT, GN	Annual report of harvesters participating in the program and harvest numbers in the Incentive Area.	High	2023 is the fourth year of enhanced incentives from GNWT. GNWT offers enhanced harvest incentives in the North Slave Region Wolf Harvest Incentive Area, which is defined in January of each year, based on Bathurst and Bluenose-East caribou collar distribution. Resident hunters (Indigenous and non-Indigenous) receive \$1,200 for a wolf harvested in the area. The Government of Nunavut provides a \$300 incentive for harvesting wolves in the region in addition to the \$900 GNWT provides Nunavut harvesters for wolves taken inside the North Slave Region Wolf Harvest Incentive Area.
Indigenous governments of the Advisory Committee develop predator monitoring and management programs as needed.	TG, KAA, KRWB	Annual report on activities.	High	Tłıchǫ Government to continue implementing a wolf harvest program. Kugluktuk Angoniatit Association continues to support wolf harvesting on the Bathurst winter range.

²⁷ <https://www.wrrb.ca/sites/default/files/DRAFT%202021%20Wolf%20Management%20Annual%20Report%2029%20Nov%202021.pdf>

				<p>KAA is also supporting increased sport hunting of grizzly bears by non-resident hunters on the Bathurst Herd’s calving grounds. Currently, 15 tags are available for non-resident hunters in the region, and KAA has requested an additional five tags. These tags provide incentives as there is no limit on grizzly bears taken for subsistence use.</p> <p>KRWB supported an initial predator research program to document traditional knowledge of predators and their changes along caribou ranges.</p>
GNWT explore ways to support more Indigenous governments to access the predator management program.	All member organizations	Meetings and discussions with interested Indigenous Governments and Indigenous organizations.	High	Ongoing.
Research & Monitoring				
Objective: Increase the state of knowledge of Bathurst caribou population dynamics, range, and ecology.				
Task	Partners	Deliverable	Priority Level	Status
GNWT to continue biological monitoring activities as per Appendix A with population surveys kept to a minimum frequency to limit the disturbance on the Bathurst caribou.	GNWT	Annual reports provided under Wildlife Research Permit requirements.	High	Ongoing as per schedule in Appendix A. Most monitoring activities undertaken on annual basis; population estimates every 2 years.
BCAC member organizations to support Community-Based Monitoring Programs and provide annual reports on activities.	All member organizations	<p>Annual report on activities.</p> <p>Annual workshop supporting collaboration between CBMPs.</p> <p>Increase sharing of materials created through the CBMPs.</p> <p>Provide an update on the Caribou Guardianship Coalition.</p>	High	<p>Tłı̨ch̨ Government continuing Ekwò Nàxoèhdee K’è program, as per Appendix B. Ongoing since 2016.</p> <p>Łútsèl K’è to continue Ni Hat’ni Dene community-based caribou monitoring program.</p> <p>NSMA to continue to advance a Caribou Guardianship program.</p> <p>KAA to continue to participate in the NWMB caribou monitoring program. KAA members requested that they be able to provide better IQ to the GN biologist through continuous collaboration.</p>

				Athabasca Denesųliné to continue to work on the community caribou management plan. KRWB communities continue to collect opportunistic observations of caribou and predators through the KRWB caribou IQ monitoring program. Member organizations continue towards the establishment of the Caribou Guardians Coalition.
Support co-production of knowledge with academic institutions, researchers, and other organizations. Such that, research centres the priorities of the local community.	All member organizations	Invite researchers to share their work with the BCAC. Develop a research priority list. Develop a list of ongoing research.	High	NSMA has been collaborating with researchers at the New York State University (SUNY).
Prioritise support for research that centres on Indigenous knowledge that is based in the bio-cultural context of the Bathurst Caribou. Special consideration will be given for work focusing on the issues considered important for the local communities.	All member organizations	Invite researchers to share their work with the BCAC. Develop a research priority list. Develop a list of ongoing research.	High	GNWT developed a list of research projects that are currently active or recently completed on the Bathurst caribou. Topics includes caribou health, predators, climate change, landscape change, impacts of human disturbance, etc.
Habitat & Disturbance				
Objective: Manage land use, including human-caused physical and sensory disturbance, such that Bathurst caribou are conserved within their natural range.				
Task	Partners	Deliverable	Priority Level	Status
GNWT to continue to implement the Bathurst Caribou Range Plan.	GNWT	Habitat conservation – continue workshops in 2023 to identify, prioritize areas, and consider legal options for protection. Mobile caribou conservation measures; pilot Draft Framework and Operation	High	All partner organizations participate in furthering habitat conservation for Bathurst caribou, as well as continue towards the establishment and implementation of the Caribou Guardians Coalition. GNWT drafted an Implementation Framework and Operational Guidance in 2022. In 2023, GNWT worked with industry to conduct three pilot projects using MCCMs.

		Guidance with industry partners. Compensatory mitigation – release Framework document; develop inventory of habitat offsets and appropriate compensatory measures. Develop Road Best Management Practices.		GNWT conducted a literature review of industry reports and scientific articles on the impacts of roads on barren-ground caribou. GNWT drafted guidelines for offsetting and compensatory mechanisms in barren-ground caribou habitat, which will go out for public review in 2024. No updates on wildlife management practices or using Online Map Staking.
Support the clean up of old exploration camps, and outfitter camps	All members	Document and catalog old exploration and outfitting camps to be cleaned up.	High	GNWT included clean up of debris and old camp as the number one priority for offsetting habitat in barren-ground caribou range.
Population-based responses – Consider additional actions to further limit physical and sensory disturbance on the Bathurst range, including:				
GNWT to consider implementing elements of the BCRP Cumulative Land Disturbance Framework’s (CLDF) Intensive Management Response within the Bathurst centre of habitation; see Table C3 in Appendix C (BCRP CLDF).	GNWT	Update Centre of Habitation (CoH) boundary with most recent caribou collar data and Indigenous knowledge sources; participate in project Eas occurring within CoH.	High	Ongoing. GNWT participates in various Eas occurring in the CoH of Bathurst caribou.
Consider applying the Mobile Core Bathurst Conservation Zone to support the implementation of Mobile Caribou Conservation Measures.	GNWT	Pilot Mobile Measures and report on lessons learned. Finalize Framework and Operational Guidance documents considering boundaries for application. Continue to have discussions with BCAC partners regarding the implementation of mobile conservation measures.	High	Work ongoing since 2019. GNWT drafted an Implementation Framework and Operational Guidance in 2022. In 2023, GNWT worked with industry to conduct three pilot projects using MCCMs.
Define the level of protection within an area specified around priority water	All members	Identify and prioritize protections for water crossings and land bridges.	High	BCAC has held a series of workshops focusing on habitat conservation since January 2021. In March 2023, BCAC submitted a funding application to ECCC to

crossings and land bridges as identified through TK and/or community direction.				continue work on habitat conservation, including support for IGOs. GNWT has completed an analysis of collar data to identify important water crossing and land bridge locations for Bathurst, Bluenose-East, and Beverly herds, which was published in 2022.
Continue to define areas of important winter habitat as identified through Traditional Knowledge/Inuit Qaujimagatuqangit (TK/IQ) and/or community direction for consideration in Values at Risk hierarchy for actioning fires.	All members	Areas identified and submitted to GNWT-ECC, Forest Management Division (FMD).	High	TG held workshops with Elders to document unburned winter range. These areas were shared with GNWT-ECC-FMD for consideration in their Value at Risk hierarchy of fire management.
Update the level of disturbance within the range.	GNWT	Report on the level of disturbance within the range. Use the Cumulative Land Disturbance Framework to inform land use decisions.	High	The Cumulative Land Disturbance Framework has been developed and continues to be used in land use decision-making processes. Annual updates are made to the Inventory of Landscape Change. Data are available on the Species and Habitat Viewer webpage.
BCAC member organizations are encouraged to participate in the development of the draft Nunavut Land Use Plan (DNLUP).	All members	Member organizations to report on participation and submissions.	High	In February 2023, BCAC provided comments to the Nunavut Land Use Planning Commission (NLUPC) on the draft Nunavut Land Use Plan.
BCAC members will participate in Eas occurring in the Centre of Habitation.	All members		High	BCAC will participate as an independent entity in Eas when an Executive Director is in place.
BCAC will request that the GNWT Department of Lands and Land Use Planning authorities provide updates at the Annual Review Meeting.	All members		High	Ongoing.
Communication & Education				
Objective: Strengthen awareness and support for Bathurst caribou conservation and culturally respectful hunting and land use among people and communities.				

Task	Partners	Deliverable	Priority Level	Status
GNWT and Indigenous governments and Indigenous organizations continue to promote initiatives to improve hunter practices and reduce wounding and wastage for harvest occurring outside the Mobile Zone.	All members	Social media posts, posters, signs, radio programs in Indigenous languages. Sight in Your Rifle events. Hunter education program delivery.	High	Hunter education program available online and piloted in schools as of 2022.
GNWT continues to support harvest of alternate species through Community Harvester Assistance Program (CHAP).	GNWT	Financial support provided to Indigenous governments and Indigenous organizations.	High	CHAP funding available annually from GNWT-ECC; CHAP program has undergone review and revision through public process.
Indigenous governments continue to promote cultural practices, on-the-land knowledge-sharing opportunities, and harvest of alternate species.	All members	Transmission of local and Indigenous knowledge practices.	High	Ongoing.
GNWT and Indigenous governments and Indigenous organizations to implement recommendations from the Harvesters Gathering hosted by GNWT in 2021.	All members	Follow up on key recommendations: <ul style="list-style-type: none"> • Commitment to work together and improve communication. • Better coordination among GNWT officers, monitors, and Guardians. • Promoting community hunts, hunter accountability, and alternative harvesting opportunities. • Collaborative public messaging. 	High	A Respected Harvesters Gathering of Indigenous government and Indigenous organization representatives was held December 7–8, 2021. Follow-up meeting of leaders occurred in January 2022. All 8 recommendations from the Gathering are being implemented.

4. Next Steps

The Advisory Committee will move forward with implementing the management actions in 2024, with a special focus on moving towards an independent Bathurst Caribou Advisory Committee. In March 2023, a funding proposal was put forward to Environment and Climate Change Canada that will support the development of an Advisory Committee Secretariat which includes contract positions to support BCAC work (including the Caribou Guardians Coalition) with the intent of leading to the establishment of an independent committee. This portion of the proposal also includes funding to support annual gatherings, communications, training, and other operations. The next steps in the process will be to produce a document outlining options for the structure and development of an independent Bathurst Caribou Advisory Committee for consideration by the participating governments and organizations.

APPENDIX A – GNWT-ECC Monitoring Activities

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Estimate of breeding cows and extrapolated herd size from calving ground photo survey	Most reliable estimate for abundance of breeding cows and total number of cows; can be extrapolated to herd size based on sex ratio.	Stable or increasing trend in numbers of breeding cows and herd size.	If trend in breeding cows increasing, survey every 3 years; if trend stable to negative, survey every 2 years	Every 2 years or 3 years	Last survey: 2022, next survey in 2023 (as herd trend is declining).
1b. Fixed-wing reconnaissance survey west and east of Bathurst Inlet at or near the peak of calving, and a corresponding helicopter/ground-based composition survey	Assess separation of Bathurst and Beverly caribou at calving Assess relative abundance and distribution of Bathurst caribou relative to distribution of collared cows. Estimate composition of breeding females, newborn calves, non-breeding females, yearlings, and young males.	A comparatively low rate (\leq ~5%) of emigration by Bathurst cows to the coastal calving area of the Beverly herd that is east of Bathurst Inlet.	Subsequent calving reconnaissance surveys may be planned depending on observed distribution of caribou cows west and east of Bathurst Inlet.	As needed	Distribution of collared Bathurst cows may be influenced by amount of spatial overlap with Beverly caribou in winter.
2. Cow productivity; composition survey on calving ground in spring (June)	Proportion of breeding females in June at peak of calving establishes initial productivity or approximate pregnancy rate.	Proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and suggests poor nutrition in previous summer; recent high values for BNE herd suggest increased pregnancy rates.	Annual	Part of calving ground photographic survey. Annual survey to monitor initial productivity, to compare to later calf:cow ratios.
3. Fall sex ratio and calf:cow ratio; composition survey (October)	Tracks bull:cow ratio and fall calf:cow ratio. Fall calf:cow ratio provides an index of calf survival from birth through initial 4.5 months.	Bull:cow ratio above 30:100; calf:cow ratio consistently more than 40:100.	If bull:cow ratio below target, consider reducing bull harvest. Low fall calf:cow ratios suggest poor calf survival.	Annual	Sex ratio needed for June calving ground extrapolation to herd size.
4. Calf:cow ratio in late winter (March–April); composition survey	Herd can only grow if enough calves are born and survive to one year, i.e., calf recruitment is greater than mortality.	At least 35–40 calves:100 cows on average.	Sustained ratios \leq 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity and survival vary widely year to year, affected by several variables, including weather.
5. Caribou condition assessment from body condition scoring of caribou captured during net-gunning and collaring activities.	Condition assessment provides overall index of nutrition/environmental conditions over time.	Continuing observations of healthy caribou and good calf:cow ratios.	Sustained poor condition suggests unfavourable environmental conditions and possibly decline.	Annual	Hunter-killed caribou condition assessment is currently not possible with a zero harvest of Bathurst caribou. Visual assessment in summer is possible.

6. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Need survival of 83–86% for stable herd. Increased collar number to 50 cows should improve annual estimation.	Continuation of least 85% averaged over 3 years.	If cow survival continues at 85%, or better, herd likely stable; if it declines and stays below 80%, decline likely.	Annual	Population trend highly sensitive to cow survival rate; recovery will depend on sustained cow survival of at least 85%.
7. Total harvest from this herd by all user groups (numbers and sex ratio)	Accurate tracking of all harvests is essential to management and to knowing whether management actions are effective.	All harvests reported accurately and within agreed-upon limits.	Re-assess recommended harvest annually; if herd appears to decline, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline, but harvest is one factor that humans can control.
8. Maintain up to 70 satellite/GPS collars on herd (50 on cows, 20 on bulls)	Collar information is key to reliable surveys, tracking seasonal movements and ranges, monitoring survival and herd fidelity.	Additional collars added every March/April to maintain up to 70 collars on herd.		Annual additions to keep total of 70	Information from collared caribou is essential to monitoring and management of all North American caribou herds.
9. Wolf harvest on Bathurst range	Ongoing wolf removal program (4 of 5 years complete) on Bluenose-East and Bathurst winter ranges to increase adult and calf caribou survival.	Increased harvest of wolves, evidence of depletion of wolf abundance.	Re-evaluation of wolf removal targets as more information is gained on wolf numbers, ecology, and evidence of management effectiveness.	Annual	Herd overlap in winter likely means mixing of wolves associated with those herds and may influence effectiveness of wolf removals.

APPENDIX B – Tłjchq Government Monitoring Activities

Programs	Indicators	Rationale/Methods	Desired Outcome	Timeframe
Ekwò Nàxoèhdee K'è	Health (body condition and injuries)	Update Rationale/Methods on Health indicator: When ENK monitors observe caribou groups within a few hundred meters, they visually assess a sample of ekwò and rate their body condition as skinny, good, or fat.	More fat and average ratings	Annually (July to September)
	Calf Abundance (calf to cow ratio)	An ekwò herd with an average adult female survival rate of 85% would need to have approximately 35 calves per 100 cows in late winter to have a stable population growth rate. Calf abundance in summer would need to be comparatively higher.	High confidence and representative sampling of caribou herds based on ground observations. Summer ratios of at least 35–40 calves per 100 cows	Annually (July to September)
	Predator Abundance	Diga, sahcho, and nõgha are the main predators of ekwò. If there are high numbers of predators when herds are declining, we know that they are feeding on ekwò, and their numbers will not increase.	Low observations/ balanced number of predators	Annually (July to September)
	Habitat (weather and vegetation)	Summer weather conditions, including trends in temperature, wind speed and precipitation, have direct and indirect influences on ekwò health and fitness for the coming months of the rut and the long winter migrations. Summer weather influences plant growth and forage quality, which, in turn, influences ekwò nutrition and body condition and fitness. It is important when we are on the land to observe and assess the vegetation and caribou forage.	Rich, moist soil producing succulents, good quality lichens, grasses, shrubs, and dwarf birch	Annually (July to September)
	Insect Activity	Biting and parasitic insects may influence ekwò foraging behaviour and activity levels, which in turn may affect body condition and pregnancy rates of ekwò.	Low insect activity is desirable so that ekwò can feed well through the growing season	Annually (July to September)
	Industrial Infrastructure and Activity	Industrial activity can be a sensory disturbance for caribou that can negatively impact animals' ability to rest and feed properly. Industrial infrastructure may negatively impact the herds' ability to migrate to seasonal feeding grounds and can fragment their seasonal ranges.	No industrial obstacles that fragment habitat, and less industrial activity causing sensory disturbance	Annually (July to September)
Ekwò Harvest Monitoring Program	Harvest Management	Overharvesting may contribute to the decline of many caribou herds; we want to prevent that for caribou and see them become plentiful again. It is important that harvesting is	Compliance with WRRB determination for zero harvest	Annually (December to May)

		consistent with the WRRB determination for a harvest of zero Kokèti Ekwò.		
	Health (body condition and injuries)	Hunters tend to target healthy, fat animals to feed their families. It is important to note if ekwò are unhealthy because it could indicate the health of the larger herd. Observations of body condition and injuries would focus on ekwò outside the MCBCCA.	Hunters' observations of ekwò with rounded rumps, lots of fat, and good carcass conditions and meat quality	Annually (December to May)
	Predator Abundance	We will work with Tìchq hunters and monitors to help track predator observations. Monitoring the relative occurrence of predators seen by hunters and monitors while harvesting caribou helps to understand the ongoing level of predation.	Low sightings of wolves (including wolf-killed caribou) and wolverines	Annually (December to May)
Dìga Harvesting Program	Number of Dìga Killed	Increased harvesting of dìga decreases their abundance on the landscape and predation on ekwò which gives a better chance for ekwò numbers to recover.	Sustainable amount that allows for the recovery of ekwò	Annually (January to April)
	Ekwò Abundance and Composition	Participants of the Dìga Harvesting Program complete questionnaires by ECC and are asked how many ekwò are observed; watching the amount of ekwò can give insight on the interaction and relationship between dìga and ekwò.		Annually (January to April)
	Catch-Per-Unit-Effort (CPUE)	Trends in CPUE metrics, such as the number of km traveled or hours driven on snowmobiles by hunters, will be used to assess relative occurrence of dìga numbers.	A decrease in CPUE of wolves would be predicted if wolf occurrence (density) has declined because of wolf management actions	Annually (January to April)