Wek'èezhìi Renewable Resource Board
Management Proposal

1. Applicant Information

Project Title:

Government of the Northwest Territories and Tłı̨chǫ Government Joint Proposal on Management Actions for the Bluenose-East Barren-ground caribou (Sahtì ekwǫ̀) Herd 2024 – 2026

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2. Management Proposal Summary

Start Date: December 1, 2024	**Projected End Date:** July 1, 2026
Length: 2 years	**Project Year:** 1 of 2

In 2024, the Advisory Committee for Cooperation on Wildlife Management (ACCWM) determined the Bluenose-East barren-ground caribou herd (Sahtì ekwǫ̀) status colour zone continue to be yellow, representing intermediate population size with an increasing population trend.

The ACCWM assessment was based on both scientific and community-based monitoring information. Observations of Bluenose-East caribou from 2022-2024 from Tłı̨chǫ Government's

Ekwǫ̀ Nàxoèdee K'è caribou monitoring program along with observations from Kugluktuk Hunters and Trappers Organization (HTO) showed that calves have been large and in good condition; adult males and females have been in good to excellent condition; and there have been high proportions of calves, yearlings and young bulls and cows in the herd. A June 2023 calving ground photo survey of the Bluenose-East caribou herd resulted in estimates of 18,580 (95% CI 15,225-22,674) breeding cows, 24,466 (95% CI 20,550-29,129) adult females, and 39,525 (95% CI 33,021-47,310) total adults in the herd. This indicates that the herd stabilized between 2018 and 2021 based on estimates of female caribou and has since increased to 2023. Demographic indicators like collar-based adult cow survival rates, fall and late winter calf-cow ratios, bull-cow ratios and pregnancy rates have also shown positive trends since 2018. Collectively, these scientific and community-based observations and monitoring results are consistent with an increasing trend.

Tłı̨chǫ Government and Government of the Northwest Territories (GNWT) Department of Environment and Climate Change (ECC) propose continuation and modification of key management actions for a period of two years to promote continued recovery of the Bluenose-East herd beginning in December 2024. Actions are grouped under the five categories (harvest, predators, habitats and land use, education, and monitoring and research) defined in the Taking Care of Caribou Management Plan, which provides primary guidance on management of the Bluenose-East herd.

(1) Harvest: Tłı̨chǫ Government and GNWT propose that resident, non-resident and commercial harvest from the Bluenose-East herd remain at 0 and that the Total Allowable Harvest (TAH) be increased to 395 bulls/year in Wek'èezhìi. The recommended TAH of 395 bulls is based on 1% of the most recent population estimate of 39,525 caribou in 2023. Combined with the Government of Nunavut's acceptance of the Nunavut Wildlife Management Board (NWMB) decision to increase the TAH of Bluenose-East caribou to 450 (either sex) for Kugluktuk, the overall harvest rate would be approximately 2.1% of the 2023 population estimate. Reported annual harvest of Bluenose-East caribou within Wek'èezhìi, between 2018-19 and 2022-23, has averaged 58 (median = 74; range = 0-76). Tłı̨chǫ Government and GNWT propose a proportional re-allocation of the TAH of 395 bulls to NWT harvester groups.

(2) Predators: A Tłı̨chǫ Government-GNWT joint wolf management program to reduce predation on the Bluenose-East and Bathurst caribou winter ranges was undertaken over a 5-year period ending July 2024. Annual reports on program activities and outcomes are available on the WRRB website and from the GNWT. An evaluation of the overall 5-year program and consideration of further predator management actions is underway.

(3) Habitat and Land Use: Tłı̨chǫ Government and GNWT continue to participate in environmental assessments and land use planning processes in NWT and Nunavut that may affect the herd and its range. GNWT developed an implementation framework and operational guidance for mobile conservation measures, a flexible tool for reducing sensory disturbance to caribou during industrial exploration. Both governments are working together and with industry to test these measures and provide guidance on minimizing disturbance from exploration activities. Both governments also continue to support Traditional Knowledge (TK) and scientific research focused on impacts of land use and habitat change on caribou heath, abundance, and range condition.

(4) Education: Tłı̨chǫ Government and GNWT recognize the importance of communication and engagement with communities and harvesters about the status of the Bluenose-East herd and other barren-ground caribou herds in the NWT and management actions in place for them. Examples of education/public awareness initiatives promoting traditional ways of harvesting, improving hunter practices, and reducing wounding and wastage including GNWT's Hunter Education program for new/young hunters, Tłı̨chǫ Government's Ekwò Harvest Monitoring Program, and respectful harvester campaigns communicated via social media, radio, and other formats to share information on caribou conservation.

(5) Monitoring & Research: Tłı̨chǫ Government and GNWT support continuing scientific and TK research into factors contributing to caribou abundance and health. Tłı̨chǫ Government has been operating the Ekwǫ̀ Nàxoèhdee K'è on-the-land caribou monitoring program for Bluenose-East caribou at Deèzàatì (Point Lake) since 2020 and starting in winter 2024 hired a caribou monitor based in Wekweètì. Together, these monitoring initiatives will continue to contribute information on caribou and habitat condition, herd composition, predators, and the influence of environmental conditions and cumulative effects.

GNWT monitoring activities for the Bluenose-East herd will be modified from levels recommended by the WRRB in 2019, in recognition of the herd's improved status. Monitoring activities will include a population survey and June composition survey in June 2025 and every three years thereafter along with annual composition surveys in October and, if needed, March/April. Deployment of satellite radio-collars will continue at target numbers of 70 caribou (50 cows and 20 bulls). Monitoring of harvest and use of authorization cards will continue.

Collectively, through these management actions and collaboration with all co-management partners throughout the herd's range, Tłı̨chǫ Government and GNWT will continue to support recovery of the Bluenose-East barren-ground caribou herd.

Please list all permits required to conduct proposal.

NWT and Nunavut Wildlife Research Permits will be required to conduct monitoring recommended in this proposal.

3. Background

Guidance for management and monitoring of the Bluenose-East (Sahtì ekwǫ̀) herd is provided in the ACCWM's Taking Care of Caribou Management Plan for the Bluenose-East, Bluenose-West and Cape Bathurst herds (ACCWM 2021). Under the Taking Care of Caribou Plan, the ACCWM develops annual action plans that outline herd-specific management actions based on the status of the herd. ACCWM assessed the Bluenose-East herd status colour zone to be yellow in 2024, representing intermediate and increasing numbers.

Here we summarize GNWT and Tłı̨chǫ Government monitoring information that contributed to

the ACCWM assessment as well as the proposed management actions to follow.

Sahtì ekwǫ̀ status from scientific monitoring

The Bluenose-East herd was estimated at about 120,000 caribou in 2010 (Adamczewski et al. 2017), then declined by about 84% in 8 years to an estimated 19,300 in 2018 (Boulanger et al. 2019). The June 2021 estimate of 23,200 caribou (Boulanger et al. 2022) indicated that the herd had stabilized. The herd was estimated at 39,500 caribou in 2023 (Boulanger et al. 2024), a significant increase from 2021 (Figure 1). The calving ground survey in June 2023 had excellent field conditions and a relatively low coefficient of variation (CV) of 8.7%, thus the estimates should be reliable.

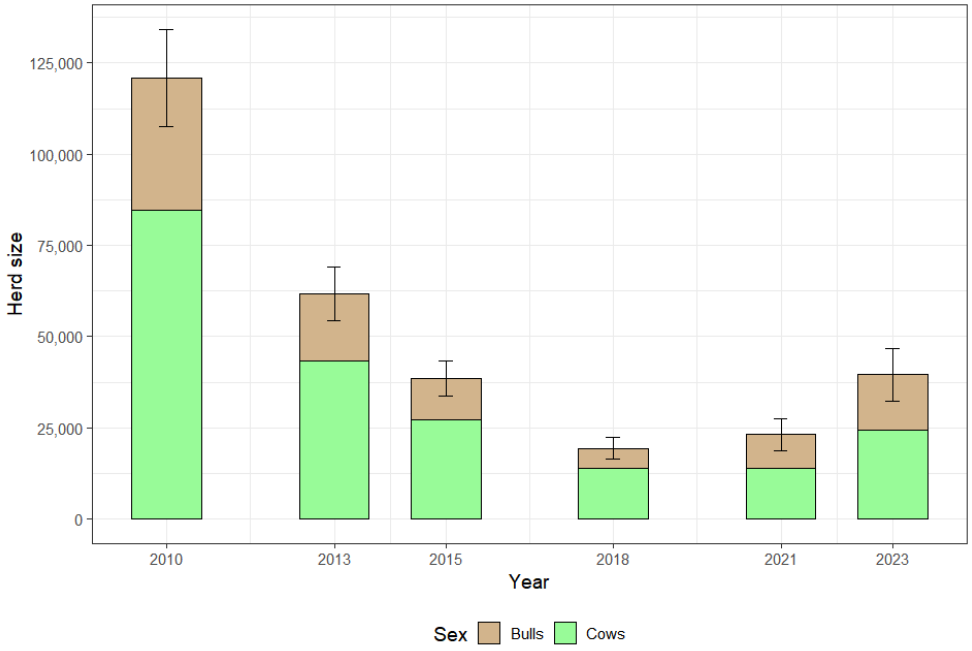

Figure 1. Bluenose-East herd estimates 2010-2023 based on calving ground photo surveys (mean ± 95% Confidence Interval (CI)).

Stabilization of the Bluenose-East herd between 2018 and 2021 and an increasing trend to 2023 is consistent with recent demographic indicators in the herd and summarized below.

Population trends in caribou herds are sensitive to cow survival rate. Annual estimates of Bluenose-East collar-based cow survival for 2020 (83%), 2021 (85%) and 2022 (81%) averaged 83%, consistent with a stable trend (Figure 2). In an increasing herd, cow survival is expected to be in the 90% range (Crête et al. 1996). Studies of Alaskan migratory caribou suggest that collar-based cow survival can sometimes underestimate true survival (Haskell and Ballard 2007).

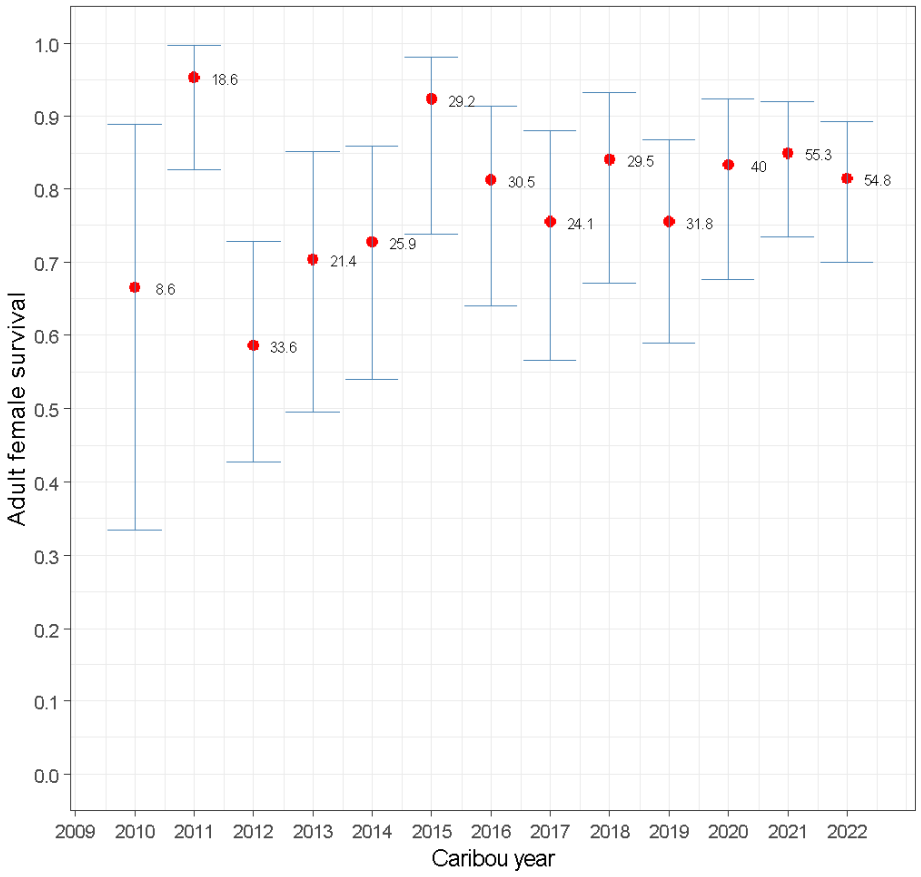

Figure 2. Annual collar-based cow survival estimates for the Bluenose-East herd 2010-2022. The year begins in early June and ends at the end of May (e.g., year 2020 is from June 2020 to May 2021). Red dots show the mean estimate and error bars show 95% CIs. The average number of collared female caribou is shown for each year.

The proportion of breeding females on the calving grounds at the peak of calving reflects the pregnancy rate from the previous winter. The proportion of breeding females was 87.5% in 2019, 91.9% in 2021, 86.2% in 2022 and 80.9% in 2023 (Figure 3). The estimates from 2018-2023 suggest a consistently high pregnancy rate. Anecdotal observations during the June 2021 and 2023 composition surveys, along with observations from A. Niptanatiak in Kugluktuk (pers. comm. 2019, 2024), suggest that there have been increased numbers of cows with twins since 2019, although the extent of the twinning is difficult to estimate.

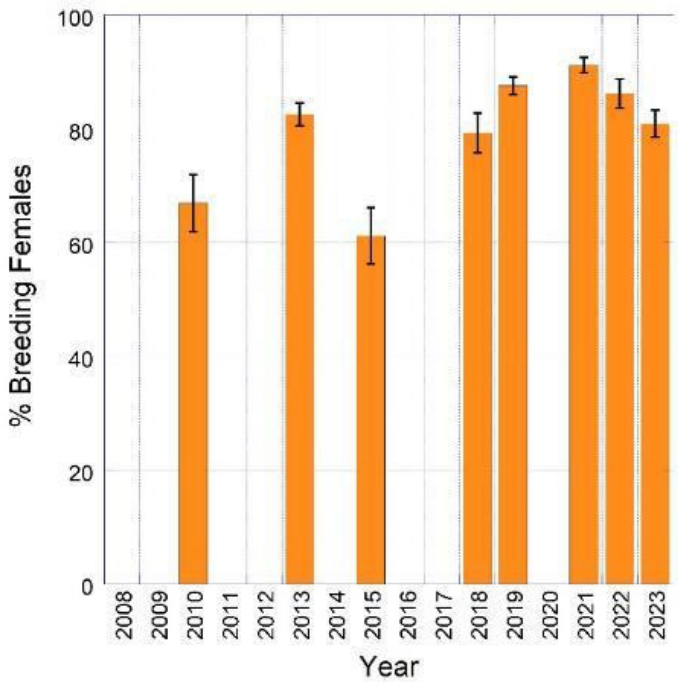

Figure 3. Proportion of breeding females on the Bluenose-East calving ground from composition surveys near the peak of calving, 2010-2023 (Mean ± 95% CI). Estimates were pooled across the survey area in each year.

Calf:cow ratios estimated in the fall (usually late October) during the breeding season provide an index of calf survival from calving through the first 4.5 months of life, although they are also affected by initial productivity in June. Fall surveys of the Bluenose-East herd in October 2020, 2021, 2022 and 2023 resulted in estimates of 51.7, 49.6, 52.3, and 51.4 calves per 100 cows, respectively. These values have been the highest found between 2009 and 2023 (Figure 4).

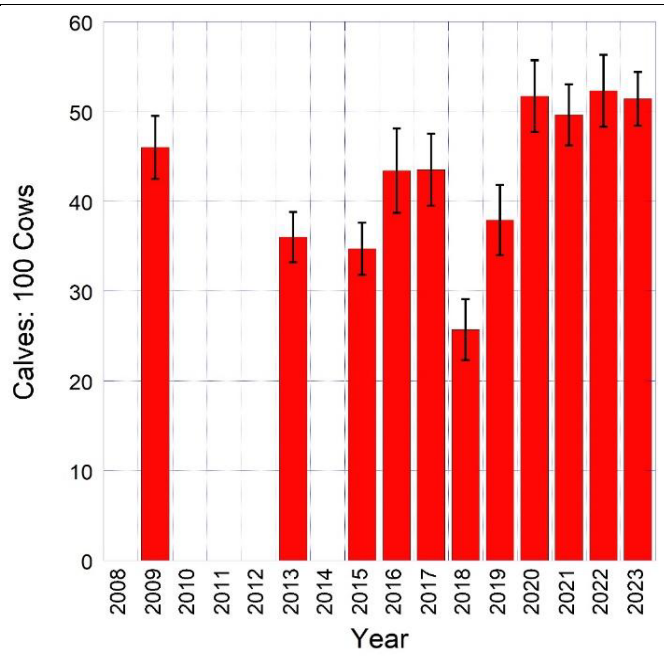

Figure 4. Fall (October) calf:cow ratios in the Bluenose-East herd 2009-2023 (Mean ± 95% CI).

Fall composition surveys near the peak of the rut can also give an estimate of the bull:cow ratio as all sex and age classes are mixed. For the Bluenose-East herd, October 2020, 2021, 2022 and 2023 estimates were 63.3, 68.7, 64.8 and 58.2 bulls: 100 cows, respectively, and these four values were the highest recorded in the herd since 2009 (Figure 4). Results from these last four surveys are similar to the average from 6 fall composition surveys during the 1980s when the large herds were last increasing (66 bulls: 100 cows, in Gunn et al. 1997, p. 35). Bull:cow ratios of 31-38 bulls: 100 cows were observed in the Bathurst herd during its most rapid decline 2006-2009 (Nishi et al. 2014).

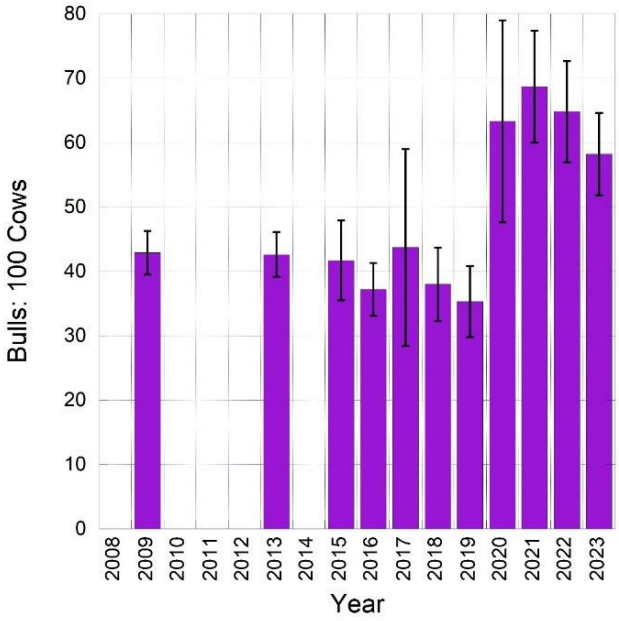

Figure 5. Fall (October) bull:cow ratios estimated in the Bluenose-East herd 2009-2023. Means are shown with 95% CI.

Taken together, these demographic indicators show healthy trends beginning in about 2018 and continuing to 2023. However, as detailed in Boulanger et al. (2024), demographic indicators (especially cow survival), were generally consistent with a more moderate increase from 2021 to 2023 (7-11% per year) compared to the rate indicated by the survey estimates from those two years alone. The herd estimates from 2021 to 2023 indicated a 31-32% annual rate of increase, which is biologically implausible and difficult to reconcile with other demographic indicators and population modeling. One potential explanation for this is that herd estimates from 2021 and 2018 could have been somewhat low due to poor sightability on visual portions of the calving grounds. In contrast, calving ground survey conditions were excellent in 2023 and the survey variance was low; thus, the herd was clearly increasing in 2023. Observations from Tłı̨chǫ monitors (described below) are also consistent with an increasing herd trend. Although we are confident the Bluenose-East herd has increased, the discrepancy between the apparent rate increase from 2021 to 2023 based on calving ground surveys and other demographic indicators suggests caution in interpreting the true rate of herd increase until a further population estimate is available.

Sahtì ekwǫ̀ status from Traditional Knowledge Monitoring

Tłı̨chǫ Government has been operating the Ekwǫ̀ Nàxoèdee K'è caribou monitoring program on Deèzàatì (Point Lake) since 2020 but due to unforeseen circumstances such as the COVID-19 pandemic, the program was unable to run during the summers of 2020 and 2021. Below is a summary of monitoring results from 2022 and 2023.

<u>Body Condition and Health</u>

During fall 2022, the Sahtì ekwǫ̀ were in overall good body condition and healthy. Adult bulls

and cows were described as “good and fat”. Bulls had large antlers, white neck manes, new and clean coats, and rounded rumps and backs due to thick fat layers on their backs. Of the 136 bulls observed, 76% were fat, 24% were good, and none were skinny. For the cows, they had new clean coats and straight and rounded backs due to the fat layer on their back. Of the 143 cows observed, 73% were fat, 27% were in good condition, and none were skinny. For the 38 calves observed, 87% were in good condition and 13% were fat.

Through September, there was little to no harassment of caribou from biting insects. Additionally, no wolves were seen following the herds and there were no fall hunters. Without any disturbance, we watched the animals eating peacefully throughout the day. An elder noted that most adult caribou showed very large bellies, and explained how this is different compared to earlier years:

> “Before (until the 2000s) when we hunt on barrenlands around Rawalpindi Lake, the caribou did not have large bellies as we see now; before people [hunters, outfitters] were bothering caribou, chasing them around, and they could not settle down to relax in one area as now. Now we see them eating and resting all day; their belly gets big”.

During fall 2023, all the caribou appeared healthy and in good body condition. Most cows were “fat” and described as “good”. The teams assessed body conditions of all the bulls (100%) as fat, and no bulls observed as thin. 89% of the cows were fat, 7% in good condition, and 1 skinny cow was noted. 16 calves were observed in 9 groups; 44% were fat, 56% in good condition, and no thin calves were seen. The calves appeared healthy, and many had grown larger body size at the end of September.

Tsıa – Calves

During September 2022, we watched 31 caribou groups, counted 195 cows and 76 calves, and estimated 38.4 calves per 100 cows (+ 7.0 Standard Error). The calf-to-cow ratio of 38.4 is considered a low-to-average ratio for fall. During 2023, we estimated an average calf: cow ratio of 60.3 (± 10 SE) calves per 100 cows (based on 19 caribou groups with a total of 46 cows and 28 calves). This observed calf:cow ratio in the fall suggests high calf survival through spring and summer. This also indicates that calves born in June have been growing well and are healthy. However, due to the small sample of caribou groups the observed calf to cow ratio may not be representative of the herd.

During September of 2022 and 2023, all the calves were considered healthy, with no visible injuries. Calves are usually not fat as they spend their energy to grow, however at the end of September many calves had grown to a large body size. At times, it was challenging to differentiate between a calf and yearling; as the calf legs and body had grown, in some instances, almost as tall as their mothers, and the calf’s antler had grown longer than what is considered a “normal” short antler of a calf. In late fall, the calf’s belly also starts to grow as they transition from only drinking milk to eating grass and vegetation. Watching cows and calves around Deèzàatì, the elder pointed out that these are woza; the Tłı̨chǫ term for a cow with calf:

> “The first caribou you will see are woza; the cow and its calf...then the larger herd is coming”.

The elder explained that when a cow with a calf is first seen, they will be the first of the larger

herds. Thus, the term woza means that the whole herd is coming; the cows, calves, and everyone are following.

Yèagoa & Tsıdaa - Young Bulls and Cows

In many herds, there was a high proportion of young caribou, 2-3 year-old caribou, both yèagoa (young bulls) and tsıdaa (young cows). In some herds, there was a high proportion of tsıdaa (young cows). The elders explained that in some of the herd there were fewer calves because of the many young caribou, not yet mature to produce offspring. Additionally, some herds with mostly bulls, had a high proportion of yèagoa. The elder explained that it is a good sign to see many tsıdaa and yèagoa; meaning that many calves and yearlings survive overwinter and could help the population grow:

"You can tell all caribou around here are young, because of the way they are moving. They are moving fast – bouncing & trotting."

Range and movement

After two weeks of watching caribou migrating along their trails around at Deèzàatì, Joe Zoe, an elder from Gametì, described a sense of confidence that the caribou are "coming back" to their old trails at Deèzàatì, and that the herds are moving south to Rawalpindi Lake and Mesa Lake; the traditional Tłıchǫ caribou harvesting camps. While watching a group of caribou at Deèzàatì, Joe Zoe explained that:

"They are following their old trails that they used many years ago - they never forget them...they always come back."
"It's looking good now, for a while they were gone, but it looks good now."
"We have been here for many years now watching and protecting caribou, looks like they are coming back now"

Habitat

During September 2022, the caribou habitat and forage were in overall good condition. In early September, the vegetation was generally moist and had grown well throughout the summer. By mid-September, the grasses and sedges were in average or poor condition and had turned yellow and brown color. However, caribou were feeding on grasses in wet muskeg fields and on yellow grass by shorelines of lakes. During the last two weeks of September, the lichen (adzìì) showed very good quality and moist and fluffy. Caribou were feeding extensively on lichen in September, and lichen was growing in large amounts all around Deèzàatì (Point Lake). In late August, we observed caribou eating mostly the leaves and branches of willows, but by mid-September, the leaves had fallen off the willows and dwarf birch, and the caribou feed extensively on lichen. During late fall 2023, caribou habitat was in good quality. However, vegetation was dry when the team arrived in mid-September, due to drought conditions in the region during the summer. By the last week of September, the vegetation conditions improved due to rain, overnight moisture and fog which made lichen moist.

"When we first got here the lichen was dry, but there has been quite a bit of rain in the last week and now it is nice and moist for the caribou to eat."

"Everywhere we have gone through has nice wet lichen. The food is good for them here. Looks like they are eating lots."

Summer drought and forest fires

During July and August 2023, the barrenland was very warm and dry. Grass meadows that should have standing water, had dried-up soil with dried brown crust. Ponds and most small creeks had dried up. Insect activity levels were low to none, due to the lack of standing water and small ponds; important places for mosquito larvae to mature. During August, insect activity was very low; due to the heavy smoke from forest fires and dry conditions. During early August, dwarf birch showed yellow and brown leaves (when plants are supposed to be prime). In some areas, the grass growth appears to be lesser than last season. The lack of rain throughout summer resulted in decreased water levels to an extreme low; lower than in 2022. During the third week of September, the smoke was thick on the barren lands, and it became hard to spot caribou in the hills. Even in early October, the forest fire smoke was covering the hills; the elder stated:

"It used to snow mid-September – now there is more smoke than snow".
"We don't know what that smoke and ashes means for the caribou food and what they eat."

The summer of 2023 was an extreme year for wildfires; with the high number of fires in the forest and on the tundra; a large area of treeline forest by Red Rock Lake had burned in August. The elders expressed concern about the effects of smoke and ashes on caribou forage, and uncertainty of the impacts to the land and wildlife.

Harvest monitoring and management context

Harvest of the Bluenose-East caribou herd in recent years has been managed in three settled land claim regions: Sahtú Settlement Area, Wek'èezhìı (Tłı̨chǫ Agreement), and Nunavut (by community of Kugluktuk). Reported harvest between 2018-19 and 2022-23 is summarized in Table 1. Total harvest reported was 204 caribou for 2018-2019, 164 for 2019-2020, and 246 for 2020-2021. Harvest information was incomplete for 2021-22 and 2022-23, and is pending for 2023-24. On average, 205 caribou were taken from the herd based on harvest reported for 3 years up to 2020-21. A harvest of 205 caribou would be 1.1% of the herd estimated in 2018 at 19,300, 0.89% of the herd estimated in 2021 at 23,200, and 0.52% of the herd estimated at 39,500 in 2023, with a substantial proportion of these being bulls. This relatively low level of harvest has likely had a limited population-level effect on trend of the Bluenose-East herd in recent years.

Table 1. Reported harvest of Bluenose-East caribou from 2018-19 to 2022-23. Sources: ACCWM Annual Status Reports and Action Plans.

Reported Harvest by Region	Year				
	2018-19	2019-20	2020-21	2021-22	2022-23
Wek'èezhìı	74 bulls	76 bulls	63 bulls	76 bulls	0
Déljne	25	0	55 bulls, 35 cows	Not reported[1]	Not reported[2]
Kugluktuk	105 (52 bulls, 53 cows)	88 (bulls and cows)	93 (bulls and cows)	Not reported[3]	170 (bulls and cows)
Total	204	164	246	≥76	≥170

WRRB's Reasons for Decision reports (WRRB 2016a, 2016b, 2019, 2022) provide an overview of previous proceedings from 2010, 2016, 2019, and 2022 along with the Board's determinations and recommendations for management of the Bluenose-East herd. As a result of hearings in 2019-2020 of the WRRB and NWMB, harvest limits for the Bluenose-East herd were established as 193 bulls (intended to be herd-wide) under the WRRB, and 170 caribou (1:1 sex ratio) under the NWMB for Kugluktuk. On 28 May 2024, the Government of Nunavut accepted a NWMB decision to increase the TAH of Bluenose-East caribou to 450 of either sex for the Kugluktuk HTO. Bluenose-East harvest in the Sahtu Settlement Area is set out in the *Belare Wíle Gots'ę Ɂekwę – Caribou for All Time – A Déljne Got'ıne Plan of Action 2021*-2023 (Déljnę Ɂehdzo Got'ıne 2021), a community-based plan developed by the Déljne Renewable Resources Council which includes a harvest limit of 30 caribou.

4. Description of Proposed Management Action

Tłıchǫ Government and GNWT propose key management actions for the Bluenose-East herd. Actions are grouped under the five categories defined in the Taking Care of Caribou plan: harvest, predators, habitats and land use, education, and monitoring and research (ACCWM 2021).

Proposed management actions represent a continuation, and in some cases, modification, of management actions in the GNWT and Tłıchǫ Government Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ (Barren-ground caribou) Herd 2022 – 2024 (GNWT & TG 2022). As in the previous proposal, the short-term goal of the proposed management actions is to promote conditions that will allow for continued growth of the herd. Over the longer-term, the goal is to enable sustainable caribou harvesting that meets the needs of all Indigenous

[1] Assumed low due to limited winter access.

[2] Assumed low due to limited winter access.

[3] Requested info from Kugluktuk HTO.

communities across the herd's range. Within Wek'èezhìi, the goal is to accommodate Tłı̨chǫ rights to harvest caribou throughout Mǫwhì Gogha Dè Nı̨ ı̨ tłèè.

Harvest management

Tłı̨chǫ Government and GNWT propose that Indigenous harvest of the Bluenose-East herd in Wek'èezhìı be increased to 395 bulls/year, which represents 1% of the most recent population estimate (Boulanger et al. 2024). Resident, non-resident and commercial harvest from this herd is proposed to remain at 0. This conservative rate for a bull harvest allocated to Indigenous communities is consistent with a management emphasis on herd growth and would be re-assessed following the next planned calving ground population survey in June 2025.

Below we outline the rationale for the proposed management actions from the perspective of Tłı̨chǫ Government and GNWT.

<u>Tłı̨chǫ Government perspective on Sahtì ekwǫ̀ population estimates and harvesting</u>

The new Sahtì ekwǫ̀ herd estimate of 39,525 animals indicates that the herd has increased from the last survey in 2021; estimated at 23,202. Tłı̨chǫ Government are glad to hear that the indicators from both the GNWT surveys and the Ekwǫ̀ Nàxoèdee K'è program are showing positive signs for the herd, but that does not mean we shouldn't continue to do the work we have been doing. Additionally, in 2023, 3.5 million hectares of forest burned in the NWT and severe drought conditions were experienced, we are not sure of the extent of these impacts to the caribou herd.

Elders workshop on Sahtì ekwǫ̀

It is important for Tłı̨chǫ Government to hear perspectives from elders and community members about Sahtì ekwǫ̀. Therefore, Tłı̨chǫ Government staff convened a 2-day caribou workshop with Tłı̨chǫ elders and harvesters from the four Tłı̨chǫ communities in November 2023. The purpose was to discuss the new herd estimate, options for future harvest and potential other management actions for Sahtì ekwǫ̀ with the community members. Two main recommendations emerged from the workshop:

1. *Keep harvest the same for now*. Elders suggested a precautionary approach and to keep harvest the same for now until we see a longer-term positive trend. Moreover, there are uncertainties of the effect of the ongoing drought and extreme forest fires on caribou which could affect their movement and abundance. The population increase we see now is possibly due to sacrifices in harvesting during recent years, in addition to reducing predation by Tłı̨chǫ Government and GNWTs wolf management actions. Elders suggested we continue these management actions until we see longer term signs from both traditional knowledge and science that confirms the herd recovery.

2. *Small TAH increase.* Community members discussed the option of a small increase in harvest, for the sole purpose of reinstating the traditional practice of a fall community hunt. They expressed that the current amount of hunting cards was not sufficient to organize a full community hunt, but a small increase would make it worthwhile to organize a fall hunt. The harvesters spoke of the benefits of reinstating the fall

community hunt for Tłı̨chǫ culture, language and way of life. In addition, the fall hunt would possibly allow for Tłı̨chǫ youth and school classes to go back to the barrenlands and experience traditional harvesting practices along with the elders.

Chiefs Executive Council (CEC) decision on Harvest

The Chiefs Executive Council (CEC) also considered the recent decisions of the NWMB to increase the TAH of Bluenose-East caribou in Nunavut for Inuit harvesters from 170 to 450 caribou; and remove the non-quota limitation on harvest.

In a submission to the NWMB on this matter, Tłı̨chǫ Government outlined its perspective and rationale for a precautionary strategy for managing the Bluenose East caribou within Wek'èezhìı and encouragement of a coordinated herd-wide perspective for developing, implementing and monitoring management actions. In its submission, Tłı̨chǫ Government noted that across the transboundary range of the Bluenose-East herd, co-management authorities share a common goal; to ensure the long-term health and conservation of caribou and for the keystone relationship between caribou and Inuit, Dene, and Métis peoples, to be respected and sustained for current and future generations.

Based on the NWMB decision and on Tlicho elder's advice, the Tłı̨chǫ CEC decided to take a sustainable approach to harvest management and recommended a bull only harvest with a TAH in Wek'èezhì of 1% of the 2023 population estimate. This decision also reflected the November 2023 workshop recommendation made by Tłı̨chǫ elders. Despite the recent 2023 population estimate, which, for the first time in over a decade, contained positive signs, Tłı̨chǫ Government remains committed to a cautious approach, and prefers to have additional longer-term data from both scientific and traditional knowledge sources that confirms herd recovery before we consider substantial increases in TAH. Tłı̨chǫ are doing our best to protect Sahtì ekwǫ̀ during this era of scarcity, and the decision to be conservative has been made while recognizing that we have sacrificed harvesting opportunities to fully support herd recovery for many years now.

Based on WRRB Determinations #1-2019 and #2-2019 for Sahtì ekwǫ̀ harvest, reported Tłı̨chǫ harvest of Sahtì Ekwǫ̀ in recent years has been consistent with the allocation and sometimes even below the TAH (2018-2019: 74 caribou harvested; 2019-2020: 76; 2020-2021: 63; 2021-2022: 76; and 2022-23: 0).

<u>GNWT perspective on Sahtì ekwǫ̀ population estimates and harvesting</u>

The 2018, 2021 and 2023 calving ground surveys for the Bluenose-East herd indicate that the herd stabilized between 2018 and 2021 and was increasing in 2023. The June 2023 calving ground survey had excellent field conditions with a low variance on the new estimate of 39,500, indicating the survey estimate was reliable (Boulanger et al. 2024). Positive trends in demographic indicators from 2018 to 2023, based on both scientific monitoring and Tłı̨chǫ Ekwǫ̀ Nàxoèhdee K'è monitoring, are consistent with this stabilizing and then increasing trend. We note, however, that while multiple lines of evidence point to an increasing herd, as noted in Boulanger et al. (2024), some of the key demographic indicators like the collar-based cow survival rate and calf:cow ratios, together with population modeling, were consistent with a more

moderate increasing trend from 2018 to 2023 (7-12% annual growth) compared to the apparent 31-32% annual growth from the 2021 and 2023 population estimates. We also note that herd trends in the Bluenose-East and Bathurst herds have, since 2009-2010, shown that changes can happen quickly. For example, the Bathurst herd appeared to stabilize from 2009 to 2012 after a very rapid decline from 2006 to 2009 but has since declined further based on surveys from 2015 to 2022, even under complete harvest restrictions in the NWT (Adamczewski et al. 2023). Given uncertainties around the rate of the Bluenose-East herd increase in 2023, a conservative approach to management of the herd is recommended, at least pending a further population estimate confirming continued herd growth (proposed for June 2025).

Allocation of harvest

Both Tłı̨chǫ Government and GNWT support herd-wide approaches to barren-ground caribou management and will continue to participate and engage in the collaborative Bluenose-East co-management processes with harvester groups across the herd's range. Both governments also recognize and respect management processes that are in place for Bluenose-East caribou in jurisdictions outside of Wek'èezhìi.

In March 2024, the NWMB recommended, and in May 2024 the Government of Nunavut accepted, an increased TAH of 450 Bluenose-East caribou for the Kugluktuk HTO along with removal of the non-quota limitation of a 1:1 harvest sex ratio requiring that female (cow) harvest be 50% or less of the total Bluenose-East Harvest. In consideration of the TAH increase for Kugluktuk HTO, Tłı̨chǫ Government and GNWT propose a TAH of 395 bulls for harvester groups within the NWT (Table 2). The proposed re-allocation is proportional to the TAH allocation for NWT harvester groups from WRRB Determination #2-2019 and does not include an allocation to Nunavut.

A TAH of 395 bulls for NWT harvester groups in Wek'èezhìı, combined with a TAH in Nunavut of 450 for Kugluktuk (Table 2) equals a total potential herd-wide harvest of 845 Bluenose-East caribou, representing 2.1% of the 2023 herd estimate of 39,525 caribou. Harvest modeling conducted using the most recent population and demographic estimates for the Bluenose-East herd suggests that a total harvest of 2.1% of the herd, whether bulls, cows or a mix of the two, is likely to be sustainable and allow for continued herd growth (Boulanger et al. 2024 Appendix 5).

Table 2. Proposed allocation of harvest of Bluenose-East caribou within the Northwest Territories by harvester group. Proportions are based on the proportional allocations to NWT harvester groups per WRRB Determination #2-2019.

Harvester Group	Allocation of TAH per WRRB Determination #2-2019	Proposed allocation of TAH of 395 bulls	
		Proportion	TAH
Tłı̨chǫ	76	0.613	243
Sahtú	33 (30[1])	0.266	106 (30[1])
Dehcho	3	0.024	9
Inuvialuit	2	0.016	6
NWTMN	3	0.024	9
Akaitcho	4	0.032	13
NSMA	3	0.024	9
Kugluktuk (NU)	69 (170[2])	--	-- (450[3])
Total	**193 (291)**		**395 (845)**

[1] The Belare Wíle Gots'ę́ ʔekwę́ – Caribou for All Time – A Délı̨nę Got'ı̨nę Plan of Action 2021-2023 includes a harvest limit of 30 Bluenose-East caribou for Délı̨nę hunters in the Sahtú.
[2] On 26 March 2024, NWMB decided on a TAH of 170 Bluenose-East caribou for Kugluktuk HTO with a non-quota limitation of a 1:1 harvest sex ratio.
[3] On 28 May 2024, the Government of Nunavut accepted a TAH of 450 Bluenose-East caribou for Kugluktuk HTO along with removal of the non-quota limitation of a 1:1 harvest sex ratio.

The 243 authorization cards (bulls) for Tłı̨chǫ communities are for Tłı̨chǫ harvesters to continue cultural practices on the land and the harvest will be allocated among the communities. GNWT will provide new authorization cards to harvest Bluenose-East caribou bulls in July of each year and make them available to all Indigenous groups as per their allocations in August prior to the beginning of the fall hunt. Tłı̨chǫ Government will continue to report on Bluenose-East caribou harvest by Tłı̨chǫ harvesters, based on authorization cards.

<u>Continued support for harvest of other wildlife and on-the-land activities:</u>

Tłı̨chǫ Government and GNWT recognize that reduced caribou harvesting opportunities have serious implications for Tłı̨chǫ and other Indigenous communities, and that limitations on hunting have negative impacts on the continuity of Tłı̨chǫ culture, language and way of life. For these reasons, both governments have programs in place to support harvest of other wildlife and on-the-land activities.

Tłı̨chǫ Government will continue to expand programs focused on cultural practices on the land. These programs include: the Ekwǫ̀ Nàxoèhdee K'è caribou monitoring program of Bluenose-East caribou at Point Lake; sustaining cabins, traditional canoe trails between communities,

and winter skidoo trails to harvesting areas; and promoting alternative harvest such as the Tłı̨chǫ Dǫtaàts'eedı program where fish is provided to community members in addition to fuel subsidies to assist people to go out moose hunting. These programs support Tłı̨chǫ citizens in providing for their families in times of reduced caribou harvest. Continuing programs that teach TK of the land and caribou by bringing together elders, youth and community members on the land provides opportunities for knowledge exchange about important cultural and environmental locations, maintaining the Tłı̨chǫ language and knowledge base, practicing of hunting culture, and maintaining cultural identity and continuity as a hunting people, ultimately, to condition people with skills and knowledge of the land, for when caribou return.

GNWT's Sustainable Livelihoods Unit, in collaboration with the Wildlife Management Division and North Slave Region, play an active role working with Tłı̨chǫ Government and Tłı̨chǫ communities to identify appropriate cultural activities and harvest of other wildlife and fish, and sources of support. The Community Harvester Assistance Program (CHAP) is ongoing and will continue to be reviewed and updated to ensure it meets the needs of Indigenous communities.

2. Predators

The rapid decline in the Bluenose-East herd between 2015 and 2018 occurred despite a very limited harvest between the NWT and Nunavut. Low adult and calf survival rates in the Bluenose-East herd at that time suggested that predation might be a key limiting factor. The Bathurst herd was also declining rapidly and had reached very low numbers in 2018. In response, a 5-year wolf management program was implemented from 2019-2020 to 2023-2024 with the goal of reducing wolves as the main year-round predator of barren-ground caribou to assist with recovery of the Bluenose-East and Bathurst herds.

The wolf management program consisted of three main components: 1) support for wolf harvesters and the traditional economy, including training and incentives; 2) the use of aerial removals if harvest targets were not met through ground harvest (not supported by WRRB recommendation in its 2021 Reasons for Decision on the Wolf Management Program and only completed in 2020); and 3) extensive research and monitoring.

The five winters of wolf management actions resulted in removal of 85 wolves in 2020, 135 wolves in 2021, 69 wolves in 2022, 142 wolves in 2023 and 97 wolves in 2024 from areas where the bulk of the Bathurst and Bluenose-East herds were wintering (Clark et al. 2024, Nishi et al. 2024, Wilson et al. 2023, 2024).

Annual review, assessment and adjustment of the wolf management program has taken place in each of the first four years of the program. The fifth year of the program ended in spring 2024. A comprehensive collaborative review of the entire five-year program is now underway, including recommendations for possible further predator management actions.

3. Habitat and Land Use

Continued recovery of the Bluenose-East herd will require healthy habitat on the herd's range in the NWT and Nunavut. Currently, there is very limited development on the Bluenose-East range. Of a total range size of 294,975 km^2, approximately 35.2 km^2 (0.0152%) has been disturbed through human and industrial land use. An important part of managing impacts to

caribou range use and habitat is through the environmental assessment and land use planning processes. GNWT and Tłı̨chǫ Government continue to lead and participate in processes in the NWT and Nunavut that may affect the Bluenose-East herd and its range as well as to support TK and scientific research focused on factors affecting caribou habitats.

GNWT developed an Implementation Framework and Operational Guidance for the Mobile Caribou Conservation Measures in 2022 (GNWT-ECC 2022a, 2022b). Mobile Measures are a flexible tool for reducing sensory disturbance to caribou and allowing them to move, with minimal disturbance, through an area adjacent to small and medium sized exploration camps. GNWT worked with industry partners to test on-site field implementation of Mobile Measures at the Diavik Diamond Mine (Rio Tinto) and the Ulu Gold Project (Blue Star Gold Corporation) in 2023. A summary of the outcomes and feedback on the on-site field implementation of Mobile Measures was received from industry partners and are currently being compiled as an appendix to the Operational Guidance.

In addition, both governments also continue to work together and with other Indigenous governments and Indigenous organizations to identify key caribou habitats. Between 2021 and 2023, GNWT hosted a series of workshops on habitat conservation with the Bathurst Caribou Advisory Committee to identify key water crossings and habitat features within the Bathurst herd range. Although the focus was on the Bathurst caribou herd range, there is extensive overlap of the Bluenose-East range with the Bathurst fall and winter ranges. In 2022, GNWT also conducted a technical analysis of 25 years of caribou collar data from the Bluenose-East, Bathurst, and Beverly caribou herds to identify, categorize, and map water crossings as key habitat features (CASLYS 2022). In 2023, the Bathurst Caribou Advisory Committee agreed to a 2-year workplan to identify conservation areas that would be submitted to the Minister of Environment and Climate Change, but due to funding limitations, the workplan started in 2024. As work progresses on habitat conservation, GNWT and the Bathurst Caribou Advisory Committee will continue to look at options for identifying, prioritizing, and legally protecting key caribou habitat.

4. Education

Tłı̨chǫ Government and GNWT recognize that continued effort is needed to increase awareness among harvesters, communities, and the public about the status of NWT barren-ground caribou herds, the need for conservation actions to promote recovery, and how people can contribute to conservation. As such, both governments continue to coordinate education/public awareness initiatives to improve public knowledge of ekwǫ̀ and to promote respectful hunting practices to reduce wounding and wastage.

GNWT's Hunter Education program for new/young hunters is being taught in schools and will continue to be reviewed and updated to reflect current needs and priorities. GNWT has also developed mobile applications to make maps of the Mobile Core Bathurst Caribou Management Zone more accessible and to help inform harvesters of their whereabouts relative to the mobile zone boundaries.

Tłı̨chǫ Government's Ekwǫ̀ Harvest Monitoring Program supports Tłı̨chǫ monitors to monitor the number of caribou harvested while also educating Tłı̨chǫ hunters on GNWT regulations, acting as a safety net for Tłı̨chǫ hunters, assisting Tłı̨chǫ hunters in butchering their harvest,

and promoting and encouraging respectful harvesting. The Ekwǫ̀ Harvest Monitoring Program has mostly focused along the Tibbitt-to-Contwoyto winter road where most harvest has occurred in recent years. Starting in winter 2024, Tłı̨chǫ Government hired a monitor based out of Wekweètì to assist and monitor the Sahtì ekwǫ̀ harvest in the area. This monitor is in addition to the community monitor that GNWT hires in Wekweètì.

Both governments continue to use social media and other formats such as radio to share information on respectful harvest and caribou conservation more broadly.

5. Monitoring and Research

Four aspects of monitoring and research are described in this section: (a) scientific monitoring led by GNWT in collaboration with co-management partners, (b) Tłı̨chǫ Traditional Knowledge monitoring, (c) harvest monitoring, and (d) support for scientific and TK research that helps explain changes in caribou abundance, demographics, health, and habitats.

(a) Scientific monitoring:

In 2019, GNWT and Tłı̨chǫ Government proposed (GNWT and TG 2019) and the WRRB recommended (2019) increased monitoring of the Bluenose-East herd, owing to its low numbers and declining trend in 2018. Based on both scientific monitoring and information from Ekwǫ̀ Nàxoèhdee K'è Bluenose-East monitoring, the herd has stabilized and was increasing in 2023, with multiple indicators of a healthy herd with high representation of young age classes. As a result, both governments propose modifying Bluenose-East scientific monitoring to reflect the herd's much improved status, as recognized in ACCWM's 2024 Action Plan for the herd.

Table 4 lists updated scientific monitoring of the Bluenose-East herd, mostly led by the GNWT. The monitoring actions are proposed for 2024 to 2026 but many also involve a longer timeframe. These activities are meant to address most of the key scientific monitoring indicators identified in the BGCTWG Adaptive Management Framework. In addition to being presented in Table 4, monitoring actions are described below with a brief rationale.

I. Population survey in 2025, then every 3 years thereafter: In 2019, calving ground photo surveys for the Bluenose-East herd were proposed at a 2-year interval (reduced from 3 years) due to continuing herd decline (WRRB Recommendation #10-2019), with the next survey planned for June 2020. This was not possible given COVID restrictions, and the survey was flown in June 2021, 3 years after the 2018 survey, and again in June 2023. A survey two years after the 2023 survey should provide additional information on the increasing herd trend and, in turn, allow for re-assessment of harvest management. Thereafter, a return to calving ground photo surveys every 3 years is recommended, consistent with a previous 3-year interval in this herd from 2015 to 2018 to 2021.

II. Maintain annual collar numbers at 70: As per WRRB recommendation #13-2019, collar numbers are proposed to be maintained at 70 (50 cows and 20 bulls) to 2026. These collar numbers provide more reliable annual estimates of cow survival rates as well as higher confidence in defining the distribution of caribou throughout the year, assigning harvest to herd, and monitoring of herd fidelity to calving grounds. Range use by bulls

shows patterns that vary from those of cows, thus maintaining the 20 bull collars used in recent years will also be important.

III. June composition surveys during years of calving ground population surveys: Prior to 2019, composition surveys in June were flown only in years of calving ground photo surveys as they are an integral part of those surveys. These surveys provide information on the proportion of breeding females (a proxy for the pregnancy rate) in June. Results of June surveys for the Bluenose-East herd from 2018 to 2023 showed consistently high estimates of the proportion of breeding females. Less frequent June composition surveys should provide sufficient monitoring of the proportion of breeding females in the herd and in part address WRRB concerns about reducing disturbance to caribou on the calving grounds. A return to flying June composition surveys only in years of calving photo surveys, as was the case until 2019, is proposed.

IV. Annual fall composition surveys: Fall composition surveys in the breeding season provide two key indicators of herd demographic health: a calf:cow ratio that is an index of calf survival to 4 ½ months of age, although this ratio is also influenced by initial calf productivity in June; and a bull:cow ratio that is needed to extrapolate from estimates of adult females on the calving grounds to herd size. The bull:cow ratio also is an index of bull survival rates, which can vary widely. Since 2018, GNWT has had relatively good success in estimating herd-specific calf:cow ratios in the fall in the Bluenose-East and Bathurst herds due to generally good spatial separation of herds, while late-winter estimation of calf:cow ratios in March has been more challenging due to extensive mixing of the Bathurst, Bluenose-East and Beverly herds. In addition, late-winter calf:cow ratios in the Bathurst and Bluenose-East herds that followed fall calf:cow ratios have generally shown very similar patterns with March ratios being 0-5% lower. Thus, of the two composition surveys (fall and late-winter), the fall surveys provide more reliable information on herd-specific estimates for the Bluenose-East and Bathurst caribou herds. Annual fall composition surveys are recommended for the Bluenose-East herd.

V. Composition surveys in late winter (usually March) as needed: Late winter composition surveys can provide valuable information about survival of calves to about 9.5 months of age through calf:cow ratios, and in combination with fall calf:cow ratios, can give an index of over-winter calf survival. Estimation of late-winter calf:cow ratios for the Bluenose-East and Bathurst herds has been somewhat challenged in recent years (since 2018) by extensive mixing of these two herds with the Beverly herd. Continued regular monitoring of late-winter calf:cow ratios is recommended for the Bluenose-East herd; however, fall surveys will take higher priority and late winter surveys will be undertaken as needed (e.g., if fall surveys are unsuccessful).

(b) Traditional Knowledge monitoring:

Tłı̨chǫ Government continues to operate the Ekwǫ̀ Nàxoèdee K'è caribou monitoring program on Deèzàatì (Point Lake). The program operated in 2022 and 2023, but due to the COVID-19 pandemic was unable to run during the summers of 2020 and 2021. Ekwǫ̀ Nàxoèdee K'è monitoring of Sahtì ekwǫ̀ takes place during late August and September when the Bluenose-East herd is more likely to migrate to Deèzàatì. The program uses Tłı̨chǫ TK methods to assess

caribou health and behavior, cow-calf ratios, predator abundances and habitat conditions. In addition to the Ekwǫ̀ Nàxoèdee K'è caribou monitoring program on Deèzàatì, Tłı̨chǫ Government also hired a monitor based out of Wekweètì during the winter of 2024 to record observational data on the Bluenose-East herd, such as body condition, herd abundance, vegetation quality and predator abundance, as well as assist in sample collection in support of research objectives described below.

(c) Harvest monitoring:

Accurate reporting of caribou harvest remains a priority for the Bluenose-East caribou herd. Tłı̨chǫ Government will continue to monitor and report on Bluenose-East harvest by Tłı̨chǫ harvesters, based on authorization cards and community monitors. In addition, GNWT hires a community monitor based out of Wekweètì annually who ensures that hunters are abiding by the allocated authorization cards and are not harvesting illegally. Tłı̨chǫ Government also implements their Ekwò Harvest Monitoring Program each winter to monitor harvest of ekwò by Tłı̨chǫ hunters, to help Tłı̨chǫ hunters understand GNWT regulations, and to discourage disrespectful harvesting. Tłı̨chǫ Government's Ekwò Harvest Monitoring Program has primarily focused on the Tibbett-to-Contwoyto winter road due to higher harvesting efforts in that area rather than in the historic Bluenose-East range.

(d) Research on caribou abundance, demographics, health, and habitats:

Changes in abundance of migratory barren-ground caribou herds, including the Bluenose-East herd, likely reflect a combination of factors, potentially including underlying natural cycles, environmental conditions (weather) in all seasons and a changing climate, parasites and disease, predation, harvest, and cumulative effects of development, including exploration camps, roads and other infrastructure on habitats. Research into the relative importance of different factors in driving fluctuations in caribou population numbers can help to inform targeted management and conservation action.

Tłı̨chǫ Government and GNWT will continue to support research into underlying drivers of trends in caribou abundance, demographics, and health by partnering with academic researchers using scientific and TK approaches. Both governments also support Indigenous guardianship and monitoring programs that increase community involvement, first-hand monitoring of caribou, other wildlife and environmental conditions, and co-generation of knowledge.

Examples of research currently supported by Tłı̨chǫ Government and GNWT include:

- *Fate of the Caribou* is a barren-ground caribou focused research program led by Dr. Eliezer Gurarie at the State University of New York. The program involves several graduate students and research associates and is broadly focused on factors that affect demography and ecology of barren-ground caribou in the NWT, Nunavut and Alaska. Several of the papers to date and on-going projects have used a comparative approach that includes multiple caribou herds in northern Canada.

- Since 2021, GNWT, in collaboration with the WRRB, Sahtú Renewable Resources Board, Gwich'in Renewable Resources Board and Wildlife Management Advisory

Council (NWT), and Bathurst Caribou Advisory Committee, have been working on a Cumulative Effects Assessment which aims to develop decision-support tools to simulate the cumulative effects of landscape changes (e.g., climate, wildfire), project development (e.g., roads, mines), and management practices (e.g., harvest levels) on the habitat quality and population dynamics of five barren-ground caribou herds, including the Bluenose-East herd. This project may result in an improved understanding of the key vulnerabilities of the Bluenose-East herd with respect to habitat change in the coming years and decades.

- A 3-year research program funded jointly by the GNWT Cumulative Impacts Monitoring Program (CIMP) and Polar Knowledge Canada that is focused on barren-ground caribou and factors that affect their health and population trends. Seven projects were funded under this program and are currently in progress, including the following two projects:

    - Tłı̨chǫ Government is collaborating on CIMP/POLAR projects with the University of Calgary (*Genomic Health and Community-defined and monitored indicators of recovery in barren-ground caribou*) and McGill University (*Contaminants and Caribou Epigenetics*) focused on contaminants, epigenetics, genomic health, and community-defined and monitored indicators of barren-ground caribou recovery. As introduced earlier, Tłı̨chǫ Government hired a monitor based out of Wekweètì during the winter of 2024 to record observational data on Bluenose-East caribou while also assisting in sample collection for these CIMP/POLAR projects. The aim is to collect a suite of samples from 20 animals from the Bluenose East herd and the samples will be distributed to the associated researchers.

Table 4: Scientific monitoring of Bluenose-East herd (GNWT primary lead).

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 and is extrapolated to herd size based on sex ratio.	Continued increase in the herd to 2025 and thereafter	Last survey in 2023 and new survey proposed for 2025, to confirm increasing trend and re-consideration of harvest options and possibly predator management.	2 years 2023-2025, then 3 years	Survey interval will be re-considered if indicators suggest a major change (e.g., much poorer survival or calf:cow ratios)
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 Bluenose-East herd suggest increased pregnancy rates.	In years of calving ground photo surveys	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 50:100; 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. Higher bull:cow ratios 2020-2023 58-65 bulls: 100 cows.
4. Calf:cow ratio in late winter (March- April); composition survey	Herd grows when calf recruitment (i.e., calves born and survive to one year) is greater than mortality.	At least 35-40 calves:100 cows on average.	Sustained ratios ≤ 30:100, herd likely declining.	Regular; fall surveys overall more critical	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
5. Caribou condition assessment from harvested animals	Condition assessment provides an overall index of	High hunter condition scores (average 2.5-	Sustained poor condition suggests unfavourable environmental conditions and possibly decline.	2024-25	Sample numbers to date limited (2010-2023). Tłı̨chǫ Government is

	nutrition/environmental conditions over time.	3.5 out of 4); target 70 animals/year.			working University of Calgary and Mcgill University to collect samples from 20 animals in the Bluenose East herd.
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 estimation.	Continuation of at least 83-85% averaged over 3 years to 2025.	If cow survival continues 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 83-85%.
7. Total harvest from this herd by all users groups (numbers & sex ratio)	Accurate tracking of all harvest is essential to management and to knowing whether management actions are effective.	All harvest reported accurately and within agreed-on 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 factors 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.

Table 5. Monitoring Programs led by Tłı̨chǫ Government for Sahtı ekwǫ̀

Programs	Indicators	Rationale/Methods	Desired Outcome	Timeframe
Ekwǫ̀ Nàxoèhdee K'è	Health (body condition and injuries)	Knowing the condition of caribou can give an indication of how well the overall herd is doing and how well they are feeding. When caribou are observed their body condition is rated as skinny, average or fat.	More fat and average caribou seen	Annually (July to September)
	Calf Abundance (Calf to Cow Ratio)	An ekwǫ̀ 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	Dìga, sahcho and nòg̨ ha are the main predators of ekwǫ̀, if there are high numbers of predators when herds are declining, we know that they are feeding on ekwǫ̀ and their numbers will not increase.	Low observations 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 ekwǫ̀ health and fitness for the coming months of the rut and the long winter period. Summer weather influences plant growth and forage quality, which, in turn, influences ekwǫ̀ 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 succulent, good quality lichens, grasses, shrubs and dwarf birch	Annually (July to September)
	Insect Activity	Biting and parasitic insects may influence ekwǫ̀ foraging behavior and activity levels, which in turn may affect body condition and pregnancy rates of ekwǫ̀.	Low insect activity is desirable so that ekwǫ̀ 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	No industrial obstacles that fragment habitat, and less industrial activity causing sensory disturbance	Annually (July to September)

		seasonal feeding ground and can fragment their seasonal ranges.		
Ekwǫ̀ 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 consistent with the WRRB determination for a bull-only TAH and proportional allocation to Tłı̨chǫ communities.	Compliance with WRRB determination for a TAH and proportional allocation of ekwǫ̀ for Tłı̨chǫ	Annually (December to May)
	Health (body condition and injuries)	Hunters tend to target healthy, fat animals to feed their families, it is important to note if ekwǫ̀ are unhealthy because it could indicate the health of the larger herd	Hunter's observations of ekwǫ̀ with rounded rumps, lots of fat, and good carcass conditions and meat quality.	Annually (December to May)
	Predator Abundance	We will work with Tłı̨chǫ 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)

5. Consultation

This section lists key meetings where the GNWT presented results of Bluenose-East calving ground surveys and other monitoring. Discussion and participant comments at these meetings have shaped the proposal. On several occasions, participating organizations were offered individual follow-up meetings.

- On November 8, 2023, GNWT staff presented results of the June 2023 calving ground survey of the Bluenose-East herd at the annual Section 15 meeting (required under the *Wildlife Act*) of NWT organizations responsible for wildlife management (in person/virtual). Meeting notes are available upon request.

- GNWT staff presented June 2023 survey and other monitoring results for the Bluenose-East herd from Nov 21-23, 2021 at the annual ACCWM caribou herd status meeting in Yellowknife. This meeting was attended by representatives from NWT and Nunavut, including Kugluktuk, and all the boards making up the ACCWM. An updated Action Plan for the herd with updated herd status was finalized in March 2024.
- GNWT sent a letter via email to Indigenous Governments and Indigenous Organizations on the 2023 barren-ground caribou survey results in November 2023. The letter offered follow-up presentations upon request.
- On 29-30 November 2023, Tłı̨chǫ Government staff facilitated a two-day workshop with Tłı̨chǫ elders and harvesters to discuss the GNWT Bluenose-East caribou survey results and implications for harvest management. Workshop participants recommended continuation of WRRB determination #1-2019 of a TAH of 193 bulls. The Tłı̨chǫ CEC subsequently supported continuation of the TAH and re-evaluation pending additional data from both scientific and traditional knowledge that confirm strong herd recovery.
- An in-person meeting and presentation on the 2023 Bluenose-East survey results caribou surveys and management was requested by the Kugluktuk Hunters and Trappers Organization in December 2023. An evening meeting took place on January 9, 2024 in Kugluktuk that included GNWT and GN staff and the Kugluktuk HTO. An additional meeting took place the next morning that also included the Tłı̨chǫ Government.
- The Nunavut Wildlife Management Board held a discussion on March 26, 2024 to review a proposal from the Kugluktuk HTO for an increase in the TAH of Bluenose-East caribou in Nunavut. GNWT contracted J. Boulanger to carry out simulations of various levels of harvest on likely future trend of the Bluenose-East herd from 2023-2026 and provided a summary of this modeling to the NWMB.
- Tłı̨chǫ Government staff met with Tłı̨chǫ CEC on July 23-24, 2024 to discuss Tłı̨chǫ Government management recommendations for Sahtì ekwǫ̀; CEC recommended a bull caribou TAH for Wek'èezhìi to be based on 1% of the most recent population estimate.

In addition:

- Tłı̨chǫ Government, GNWT and WRRB staff met regularly (monthly and at times weekly) in the fall and winter 2023-2024 to discuss status and management of the Bluenose-East, Bathurst and Beverly caribou herds. These 3 groups comprise the Barren-Ground Caribou Technical Working Group, which has been meeting since 2010.

- Tłı̨chǫ Government and GNWT staff have had meetings approximately monthly in 2023 and 2024 to discuss wildlife issues. These meetings included discussions in late 2023 and early 2024 concerning updated joint management proposals for the Bluenose-East and Bathurst caribou herds.

7. Communications Plan

Tłı̨chǫ Government and GNWT will communicate contents of the joint management proposal through a variety of methods. Tłı̨chǫ communities will be informed of the proposal through social media, the Ekwǫ̀ Harvest Monitoring Program, and other means outlined in Section 4 (Education). Tłı̨chǫ Government and GNWT will also prepare a plain language summary of the joint management proposal to accompany the full proposal. Both governments will continue to participate and present on Bluenose-East monitoring and management at annual and sub-annual NWT *Wildlife Act* Section 15 meetings, ACCWM Annual Herd Status meetings, WRRB Board meetings, and other opportunities that arise. Lastly, both governments will plan to do a joint Tłı̨chǫ community tour to present on and discuss barren-ground caribou conservation, management, and herd status with communities.

8. Relevant Background Supporting Documentation

ACCWM. 2021. Advisory Committee for Cooperation on Wildlife Management. Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds management plan. Yellowknife, NT. http://www.accwm.com/management-plan.

Adamczewski, J. Z., J. Boulanger, B. Croft, T. Davison, HeatherH. Sayine-Crawford, and B. Tracz. 2017. A comparison of calving and post-calving photo-surveys of the Bluenose-East herd of barren-ground caribou in northern Canada in 2010. Canadian Wildlife Biology and Management 6(1): 4-30.

Boulanger, J., J. Adamczewski, J. Nishi, D. Cluff, J. Williams, H. Sayine-Crawford, and L. M. LeClerc. 2019. Estimates of breeding females & adult herd size and analyses of demographics for the Bluenose-East herd of barren-ground caribou: 2018 calving ground photographic survey. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 278.

Boulanger, J. J. Adamczewski, J. Williams, D. Cluff, K. Clark, S. Goodman, K. Chan, and R. Abernethy. 2022. Estimates of breeding females & adult herd size and analyses of demographics for the Bluenose-East herd of barren-ground caribou: 2021 calving ground photographic survey. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 325.

Boulanger, J., J. Adamczewski, J. Williams, S. Goodman, K. Clark, R. Abernethy, and L.-M. Leclerc. 2024. June 2023 calving ground surveys: Bluenose-East and Bathurst herds. Environment and Climate Change, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 319.

Caslys Consulting Ltd. 2022. Caribou water crossing analysis: summary report. Submitted to: Wildlife and Fish Division, Environment and Natural Resources, Government of the Northwest

Territories.

Clark, K., J. Nishi, D. Cluff, S. Shiga, S. Behrens, N. Jutha, R. Abernethy, & R. Mulders. 2024. Technical Report Wolf (dìga) management program: January - May 2021. Environment and Climate Change, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report (in prep.).

Crête, M. S., S. Couturier, J. Hearn, and T. E. Chubbs. 1996. Relative contribution of decreased productivity and survival to recent changes in the demographic trend of the George River herd. Rangifer 9:27–36.

Délı̨nę Ɂehdzo Got'ı̨nę (Délı̨nę Renewable Resources Council). 2021. Belare Wíle Gots'ę́ Ɂekwę́ – Caribou for All Time – A Délı̨nę Got'ı̨nę Plan of Action 2021-2023.

GNWT and TG (Government of the Northwest Territories and Tłı̨chǫ Government). 2019. Joint proposal on management actions for the Bluenose-East Ɂekwǫ (Barren-ground caribou) Herd: 2019 – 2021. Submitted to the Wek'èezhìı Renewable Resource Board.

GNWT ECC[4] (Government of Northwest Territories, Environment and Climate Change). 2022a. An implementation framework for mobile caribou conservation measures on the Bathurst caribou range. Preliminary draft report for GNWT ECC, February 2022.

GNWT ECC (Government of Northwest Territories, Environment and Climate Change). 2022b. Mobile caribou conservation measures – operational guidance. Preliminary draft report for GNWT ECC, February 2022.

Gunn, A., J. Dragon, and J. Nishi. 1997. Bathurst Calving Ground Survey 1996. Government of the Northwest Territories Department of Resources, Wildlife and Economic Development, Yellowknife, Northwest Territories, Canada. File Report 119.

Haskell, S. P.., and W. B. Ballard. 2007. Modeling the Western Arctic caribou herd during a positive growth phase: potential effects of wolves and radio collars. Journal of Wildlife Management 71:619-627.

Nishi, J. S., B. Croft, J. Boulanger, J. Z. Adamczewski, and A. Kelly. 2014. An estimate of breeding females in the Bathurst herd of barren-ground caribou, June 2009. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. File Report 144.

Nishi, J., R. Mulders, K. Clark, K., S. Behrens, R. Abernethy, S. Shiga, and D. Cluff. 2024. Wolf (dìga) management pilot program technical report 2020. Environment and Climate Change, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 313.

Tłı̨chǫ Government. 2024. Ekwǫ Nàxoèhdee K'è 2023 Results. Tłıc̨hǫ Research and Training Institute 2024. Manuscript Report (in prep.).

Tłı̨chǫ Government. 2023. Ekwǫ Nàxoèhdee K'è 2022 Results. Tłıc̨hǫ Research and Training Institute 2023.

Tłı̨chǫ Government. 2021. Ekwǫ Nàxoèhdee K'è 2020 Results. Tłıc̨hǫ Research and Training Institute 2021.

Wilson A, Nishi J, Cluff D, Olson B, Shaw J, Kite R, Behrens S, Jutha N, Abernethy R, Wilson N,

[4] The GNWT department formerly known as Environment and Natural Resources (ENR) was re-named Environment and Climate Change (ECC) in 2023.

Clark K. 2023. Technical Report: Wolf (dìga) Management Program: January-June 2022. Environment and Climate Change, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 307.

Wilson, A., R. Abernethy, D. Cluff, S. Behrens, N. Jutha, J. Nishi, J. Gorrell, and B. Woodworth. 2024. Technical Report: Wolf (dìga) Management Program: December 2022 – September 2023. Environment and Climate Change, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report (in prep.).

WRRB 2016a. (Wek'èezhìi Renewable Resources Board). Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 6-8 April 2016 Behchoko, NT & Reasons for Decisions Related to a Joint Proposal for the Management of the Bluenose-East (Barren-ground caribou) Herd. Part A, June 13, 2016. Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016b. (Wek'èezhìi Renewable Resources Board). Reasons for decisions related to a joint proposal for the management of the Bluenose-East (Barren-ground caribou) Herd. Part B, Oct. 3, 2016. Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016b. (Wek'èezhìi Renewable Resources Board). Reasons for decisions related to a joint proposal for the management of the Bluenose-East (Barren-ground caribou) Herd. Part B, Oct. 3, 2016. Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB (Wek'èezhìi Renewable Resources Board). 2019. WRRB Reasons for decisions final report – Sahtì Ekwo Bluenose-East Herd. June 16, 2019. Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB (Wek'èezhìi Renewable Resources Board). 2022. WRRB Response to Joint Management Proposal for Sahtì (Bluenose-East) Ekwǫ̀ Herd from TG and GNWT January 28, 2022. May 27, 2022. Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB (Wek'èezhìi Renewable Resources Board). 2021. Reasons for Decisions Related to a Joint Proposal for Dìga (Wolf) Management in Wek'èezhìı. Wek'èezhìı Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT.

9. Time Period Requested

Management actions proposed here would apply from December 1, 2024 until July 1, 2026 with the results of the next calving ground photo survey of the Bluenose-East herd expected in 2025. The Tłı̨chǫ Government and GNWT suggest that management actions, including harvest management and other actions, be reviewed annually or whenever key additional information is available according to the BGCTWG Adaptive Management Framework (e.g., additional survey information or recommendations from ACCWM or boards).

10. Other Relevant Information

11. Contact Information

Contact the WRRB office today to discuss your management proposal, to answer your questions, to receive general guidance or to submit your completed management proposal.

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