



Tłıchǫ Government
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Northwest
Territories Environment and Natural Resources

Mr. Jonas Lafferty
Interim Chair
Wek'èezhli Renewable Resources Board
4504 49TH AVENUE
YELLOWKNIFE NT X1A 1A7

DEC 15 2015

Dear Mr. Lafferty:

Re: Joint Management Proposal for Bluenose-East Caribou

The Tłıchǫ Government (TG) and the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories (GNWT) would like to submit to the Wek'èezhli Renewable Resources Board (WRRB) a management proposal for the period of November 2016 to November 2019 for the Bluenose-East herd. The proposal is updated from the version sent to WRRB on November 22, 2015 and reflects suggestions made by WRRB in a letter on November 27, 2015. Please note that a very similar proposal will be sent concurrently to the Sahtú Renewable Resources Board (SRRB) and the Wildlife Management Advisory Council NWT (WMAC-NWT).

We look forward to hearing from the WRRB on our proposal and about a hearing in 2016 on these caribou management and monitoring actions.

Sincerely,

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- c. **Grand Chief Edward Erasmus, TG**
 - Chief Clifford Daniels, Behchokq, TG**
 - Chief David Wedawin, Gamètì, TG**
 - Chief Johnny Arrowmaker, Wekweètì, TG**
 - Chief Alfonz Nitsiza, Whatì, TG**
 - Ms. Laura Duncan, Executive Director, TG**
 - Chief Tim Lennie, Pehdzeh Ki First Nation**
 - Chief Edward Sangris, Dettah, Yellowknives Dene First Nation (YKDFN)**
 - Chief Ernest Betsina, N'dilo, YKDFN**
 - Chief Felix Lockhart, Lutsel K'e Dene First Nation**
 - Ms. Annie Boucher, Executive Director, Akaitcho Territory Government**
 - Mr. Don Balsille, Chief Negotiator, Akaitcho Treaty 8 Tribal Council**
 - Grand Chief Herb Norwegian, Dehcho First Nation**
 - Mr. Bill Enge, President, North Slave Metis Alliance**
 - Mr. Gary Bailey, President, Northwest Territory Metis Nation**
 - Mr. Clem Paul, President, Mountain Island Metis**
 - Ms. Jody Pellssey, Executive Director, WRRB**
 - Ms. Deborah Simmons, Executive Director, SRRB**
 - Mr. Michael Neyelle, Chair, SRRB**
 - Ms. Amy Amos, Executive Director
Gwich'in Renewable Resources Board (GRRB)**
 - Mr. Eugene Pascal, Chair, GRRB**

Ms. Jody Pellissey, Advisory Committee for Cooperation on Wildlife Management

Mr. Larry Carpenter, Chair, WMAC-NWT

Mr. Patrick Gruben, Chairperson, Inuvialuit Game Council (IGC)

Mr. Steve Baryluk, IGC

Mr. Gary Bohnet, Principal Secretary, Office of the Premier, GNWT

Mr. Carl Lafferty, Superintendent, Dehcho Region, ENR

Mr. Troy Ellsworth, Superintendent, South Slave Region, ENR

Mr. Jack Bird, Assistant Deputy Minister Operations, ENR, GNWT

Ms. Lynda Yonge, Director of Wildlife Division, ENR, GNWT

Mr. Ben Kovic, Chairperson, Nunavut Wildlife Management Board

Ms. Cathy Towntongie, President, Nunavut Tungavik Inc.

Mr. David Nivingalok, Chair, Kugluktuk Hunters and Trappers Committee

Mr. Stanley Anablak, President, Kitikmeot Inuit Association

**Mr. Gabriel Nirlungayuk, Deputy Minister
Department of Environment Government of Nunavut (GN)**

Mr. Dirkus Gissing, Director of Wildlife, Department of Environment, GN

Mr. Mathieu Dumond, Manager of Wildlife, Department of Environment, GN

Wek'èezhìi Renewable Resource Board Management Proposal

1. Applicant Information	
Project Title: Government of the Northwest Territories and Tłıchǫ Government Joint Proposal on Management Actions for Bluenose-East (BNE) Caribou 2016-2019	
Contact Persons: Organization Names: Addresses: Phone/Fax Numbers: Email addresses: Sjoerd van der Wielen Manager, Lands Section Department of Culture and Lands Protection Tłıchǫ Government Behchokǝ, NT X0E 0Y0 Phone: 867-392-6381 Fax: 867-392-6406 sjoerdvanderwielen@tlicho.com Fred Mandeville Jr. North Slave Regional Superintendent Department of Environment & Natural Resources Government of the Northwest Territories Yellowknife, NT X1A 2P9 Phone: 867-873-7019 Fax: 867-873-6263 fred_j_mandeville@gov.nt.ca	
2. Management Proposal Summary: provide a summary description of your management proposal (350 words or less).	
Start Date: November 1, 2016	Projected End Date: November 1, 2019
Length: 3 years	Project Year: 1 of 3
A June 2015 calving ground photographic survey of the Bluenose-East (BNE) herd caribou resulted in an estimate of 17,396 ± 4,616 breeding cows, which indicated that abundance of breeding females had decreased by ~29% per year since the June 2013 estimate of 34,472 ± 4,363 (95% CI; Figure 1; Boulanger 2015). Relative to the June 2010 and 2013 surveys, which suggested an annual rate of decrease of ~14%, the recent survey suggests that the rate of decrease in breeding females has more than doubled over the past two years. In view of this rapid decline, the Tłıchǫ Government (TG) and GNWT ENR are proposing management actions to stop the herd's decline and promote recovery for a 3-year period from November 2016 to November 2019. TG and ENR propose that resident and commercial harvest from this herd remain at 0 and that Aboriginal harvest be limited on a herd-wide basis to 950/year in total and 100% bulls.	

This harvest would be reviewed on an annual basis and as new information becomes available. Until an allocation accepted by all user groups becomes available, the allocation in NWT is proposed as 611 caribou (Tłıchq 373, Sahtú 163, Dehcho 15, Inuvialuit 8, NWT Métis Nation [NWTMN] 14, Akaitcho 20, and North Slave Métis Alliance [NSMA] 17). This would leave an allocation of 339 BNE caribou for Nunavut (NU). Although TG and ENR have no authority over wildlife management in NU, they will work collaboratively with responsible authorities in Nunavut towards implementing a consistent overall approach to Aboriginal harvest of this inter-jurisdictional herd that ranges through NT and NU.

TG and ENR will consider potential actions to address other factors that may affect the herd's trend and ability to recover, including predators and human disturbance on the landscape.

Key points include:

- ENR will lead a technical review of wolf monitoring methods in the NWT, which will be completed in 2016. With input from TG and other parties, ENR will also carry out a feasibility assessment of a full range of predator management options that could support recovery of barren-ground caribou herds.
- Concurrent with the technical review, TG and ENR will explore specific and measurable predator management actions for BNE caribou that are community-based, culturally appropriate, and undertaken with territorial governments and wildlife management authorities. A community-based wolf hunting pilot project is being developed for the Bathurst range for winter 2015-2016 and if successful, methods may be extended to the BNE range in 2016-2017.
- There are currently no mines in Bluenose-East caribou range in the NWT, but Tundra Copper has carried out exploration activity on the BNE calving grounds; TG and ENR will participate in environmental assessment processes for development activities that may affect the BNE herd. TG and ENR expressed opposition to the Tundra Copper activities to the Nunavut Impact Review Board in 2015.

ENR and TG also recognize the importance of increased communication and engagement with communities and harvesters about the status of the caribou herds and about management actions underway, and the importance of accurate harvest reporting by all harvesters.

ENR will continue to monitor the BNE herd's status using calving ground photographic surveys every 3 years, annual spring recruitment surveys, regular fall composition surveys to monitor sex ratio, and annual reconnaissance surveys over the calving grounds. Satellite collars will be maintained on the herd (30 cows, 20 bulls) with annual additions to replace collars that are on caribou that die and collars that reach the end of their battery life. ENR and TG will work on an approach to sharing collar data.

Accurate monitoring of harvest will be essential to overall monitoring and management of this herd. TG is developing proposals for enhanced community-based visual monitoring of caribou and caribou habitat. Additional monitoring (e.g. more frequent fall composition surveys and annual assessments of pregnancy rate from fecal sampling in winter) may be carried out if resources are available.

A proposal with the same primary content as the current one will be submitted by ENR to the Sahtú Renewable Resources Board (SRRB) and the NWT Wildlife Management Advisory

Council (WMAC-NWT).

Please list all permits required to conduct proposal.

Renewable Resource Boards (WRRB, SRRB and WMAC-NWT) may hold public hearings to review proposals involving a Total Allowable Harvest (TAH) for the BNE herd, as included in this proposal.

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

3. Background (Provide information on the affected wildlife species and management issue)

A. Bluenose-East Caribou Status in 2015

The June 2015 calving ground photographic survey of the Bluenose-East caribou herd estimated $17,396 \pm 4,616$ (95% Confidence Interval) breeding females which, compared to the June 2013 estimate of $34,472 \pm 4,363$, indicates that the abundance of breeding females has declined by ~29% per year since 2013 (Fig. 1; Boulanger 2015). This result is alarming for two reasons: 1) the rate of decrease has accelerated in recent years. It is now twice the -14% annual rate of change observed between calving ground surveys in 2013 and 2010; and 2) if the observed annual rate of -29% continues, in two years, the number of breeding females would be less than half of what it is before the next calving ground survey scheduled for June 2018. The accelerated decrease in abundance of the BNE herd is similar to the rapid rate of decline observed in the Bathurst herd between 2006 and 2009, when the annual rate of decline based on breeding cow estimates exceeded ~30%. The 2015 photo survey results confirmed the steep downward trend in the Bluenose-East herd suggested by the June 2014 reconnaissance survey of this herd's calving grounds. The herd estimate derived from the calving ground survey is $38,592 \pm 4,733$ (CI) for 2015, which compares to $68,295 \pm 18,041$ in 2013 (Boulanger et al. 2014).

An overview of population monitoring of the BNE and Bathurst caribou herds was provided by ENR (2014a) in late 2014 to Aboriginal governments and co-management boards participating in meetings on management of the two herds. An update with estimates from the BNE June 2015 calving ground survey was provided by letter to Aboriginal governments and co-management boards on September 24, 2015 and a further update was provided on December 2, 2015. Complete survey reports will be provided as they become available.

Other demographic indicators for the Bluenose-East herd in recent years are consistent with a rapidly declining trend between 2010 and 2015: late-winter calf:cow ratios in recent years have averaged below 30 calves:100 cows (ratios of 30-40 calves: 100 cows or greater are associated with stable herds), estimated cow survival has been well below the 80% needed for a stable herd (Boulanger et al. 2014, ENR 2014A), and there is evidence of low pregnancy rate in at least some years, including 2010, 2012 and 2015 (ENR 2014a). Although sample sizes were small, evidence gathered by Tłıchq hunters during winter harvesting suggested that cows were in relatively poor condition between 2010 and 2014 (Garner 2014), and particularly between 2010 and 2012 (ENR 2014a).

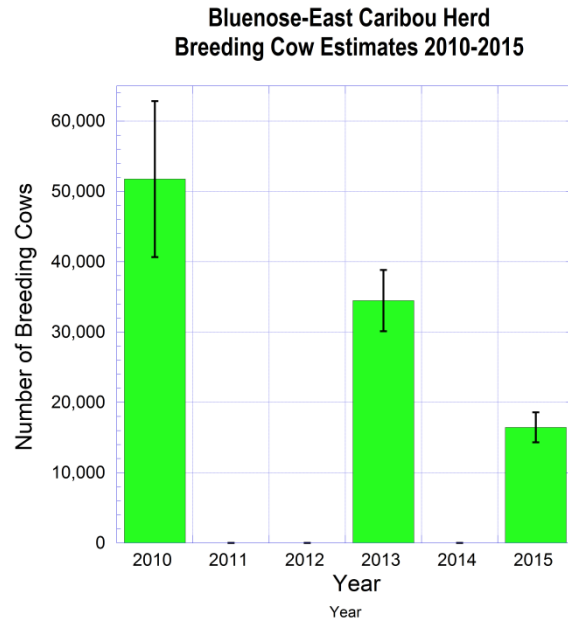


Fig. 1. Estimated numbers of breeding cows ($\pm$ 95% CI) in the Bluenose-East herd 2010-2015.

ENR notes that the declining trend in the Bathurst and Bluenose-East caribou herds is consistent with generally declining trends, with very few exceptions, in migratory tundra caribou herds in North America: George River and Leaf River herds in Quebec/Labrador; Qaminirjuaq herd in Nunavut; Bathurst, Bluenose-West and Tuktoyaktuk Peninsula herds in NWT, with the Cape Bathurst herd stable-declining slightly (based on preliminary estimates from 2015 surveys); Central Arctic, Western Arctic and Teshekpuk herds in Alaska. The Porcupine herd is the lone exception in Alaska with an increasing trend.

The average estimated/reported Bluenose-East harvest in winters 2009-2010 to 2012-2013 was about 2700 caribou/year, and likely at least 65% cows (ENR 2014a; BGTWG 2014). These estimates are considered minimums; wounding losses were not included, some harvest was un-reported and the true harvest may have been at least 4000/year (ENR 2014A). The increased Bluenose-East harvest since the winter of 2009-2010 may reflect a shift in hunting effort from the Bathurst herd to the Bluenose-East herd. The Bathurst harvest before 2010 was not fully documented but estimated at 4000-7000/year, mostly cows (Adamczewski et al. 2009). After 2010 Bathurst harvest was limited to 300 caribou (80% bulls; ENR 2014a) in 2 large management zones, while the BNE harvest was unrestricted.

B. Management Context for the Bluenose-East Caribou Herd

Guidance for the management and monitoring of the Bluenose-East herd is primarily found within the Advisory Committee for the Cooperation on Wildlife Management's management plan for the Cape Bathurst, Bluenose-West and Bluenose-East herds, finalized in November 2014 (ACCWM 2014). In 2015 the ACCWM requested and received support from ENR for development of an Action Plan for the Bluenose-East herd; when completed, this will guide management actions proposed for this herd.

In October 2010, the WRRB issued a report with a series of recommendations focused primarily on the Bathurst herd; recommendations for the BNE herd included closing resident and commercial harvest and a Harvest Target of 2800 caribou (4% of an estimated 70,000)

with a target of 85% bulls and 15% cows. This harvest target was not implemented when the population surveys in 2010 demonstrated that the herd was over 100,000 and had an increasing trend (Adamczewski et al. 2014).

In fall and winter 2014-2015, ENR hosted three meetings of Aboriginal leaders (August 27, November 7 and November 28) and two 2-day technical meetings (October 9-10 and October 22-23) to review evidence for decline in the Bathurst and Bluenose-East herds and to consider management actions to address these declines. Meeting summaries were sent to participants and are available from ENR on request. In early 2015 the ACCWM recommended, and ENR accepted, a harvest limit for NWT Aboriginal hunters of 1800 BNE caribou, with at least 80% of those being bulls, for the remainder of winter 2014-2015. Although the Nunavut harvest of this herd was not well documented, it was assumed to be ~1000/year. After an unsuccessful attempt on a short time-frame to reach agreement among NWT Aboriginal user groups of this herd and co-management boards on an allocation or sharing formula, ENR determined an allocation for the herd in NWT. This was based in large part on recent documented harvest from this herd but also on several other criteria including access to other caribou. The allocation on February 6, 2015 was to include caribou already taken to that point, and the 1800 tags were to be shared as follows: Tłıchq 1100 (61.11%), Sahtú 480 (2.67%), Dehcho 45 (2.50%), Inuvialuit 25 (1.39%), NWT Métis Nation 40 (2.22%), Akaitcho 60 (3.33%), and North Slave Métis Alliance 50 (2.78%).

4. Description of Proposed Management Action

Goal of Management Actions

The short-term goal of the management actions proposed is to stop the herd's decline and promote recovery. Over the longer-term, the goal of management is to promote recovery of the herd so that sustainable harvesting that addresses community needs levels and allows the exercise of Tłıchq right to harvest throughout Mqwhì Gogha Dè Nı̀ttèè is again possible.

Harvest management for the Bluenose-East herd

In view of the recent rapid decline in the BNE herd, TG and ENR suggest that the herd is in the orange phase (intermediate and declining) of the ACCWM management plan, where a Total Allowable Harvest (TAH) acceptable to the ACCWM could be set. The rate of decline is such that the herd could reach the red zone (i.e., 20,000 caribou or less) in 2 years, and the rapid decline must be considered along with herd size when proposing management actions. Accordingly, TG and ENR recommend that resident and commercial harvest from this herd should remain at 0 and Aboriginal harvest should be limited on a herd-wide basis to 950 caribou/year with the harvest being 100% bulls. Based on an extrapolated herd size estimate of 38,592, a harvest of 950 represents ~2.5 % of the herd. TG and ENR consider that the ACCWM's recommended harvest limit of 1800 (2800 in total for the herd, including Nunavut) from 2014-2015 is too high to continue, given the herd's rapid decline and poor demographic indicators. The 50% decline in the herd's breeding cows from 2013 to 2015 indicates that the herd's breeding cows need to be conserved if the herd is to stabilize and recover. As noted in the ACCWM plan, harvest of bulls should focus on young or small bulls so that many of the large bulls are left for breeding. Harvest recommendations would be reviewed annually or as new information becomes available.

ENR and TG support meetings of all user groups and boards to consider the proposed

allocation or sharing formula for Aboriginal harvest of BNE caribou. Until an allocation formula accepted by all user groups becomes available, the allocation in NWT is proposed as 611 caribou (Tłıchq 373, Sahtú 163, Dehcho 15, Inuvialuit 8, NWT Métis Nation [NWTMN] 14, Akaitcho 20, and North Slave Métis Alliance [NSMA] 17). This proposed allocation is based on the allocation determined by ENR for the winter 2014-2015 harvest season. Management of harvest using tags, authorizations or other methods will be developed in collaboration with Aboriginal communities.

This would leave an allocation of 339 BNE caribou for Nunavut. TG and ENR have no authority for wildlife management or caribou harvest in NU and will collaborate with responsible authorities in NU towards implementing a consistent overall approach to Aboriginal harvest of this herd in NT and NU. Collaboration between GNWT and Government of Nunavut (GN) on trans-boundary caribou herds at a technical level is ongoing; the most recent example was GN participation in 2015 BNE and Bathurst calving ground photo surveys. Updates on survey results have been provided to GN as they have become available, along with the herd-wide harvest recommendations proposed by TG and ENR. GNWT has also been in contact with GN at the Minister's level on caribou management issues. An update provided by GN in late November 2015 indicates that a hearing under the Nunavut Wildlife Management Board is likely to occur in February or March 2016; Total Allowable Harvest (TAH) for the BNE herd will be assessed at that time. GN has been working with regional wildlife boards, communities and the NWMB on these caribou harvest issues; the process in NU includes a needs assessment and community consultation. ENR will remain in frequent contact with GN on these issues and participate where possible in the NWMB process.

Wolf monitoring and management

Wolves are difficult to count on the large remote ranges used by barren-ground caribou herds in NWT and NU. ENR will conduct a technical review of wolf monitoring methods in the NWT in 2015 and 2016. In view of the further decline in the BNE, Bathurst and other NWT herds, ENR will also lead a technical feasibility assessment of a full range of wolf management options in 2015 and 2016, to consider the practicality, costs, and likely effectiveness of different management actions. The goal of the assessment is to assess the technical feasibility of wolf management options for implementation within an adaptive management framework that would support recovery of barren-ground caribou herds. This assessment will be developed collaboratively with TG and the input of other interested parties. ENR has initiated a number of discussions with biologists and managers with the Alaska Department of Fish and Game on approaches that they have used in feasibility assessments for predator management; 3 of Alaska's 4 tundra migratory herds have declined in recent years and management actions, including predator management, to address these declines is under discussion.

At this point, grizzly bear management to benefit BNE caribou is not being considered, although anecdotal observations on calving ground surveys, including surveys on the BNE calving grounds in 2013 and 2015, suggest that there may be more bears than wolves on the calving grounds. ENR will provide a summary of wolf and bear observations on recent calving ground surveys in early 2016. Bears are known to contribute significantly to caribou calf mortality in the first few weeks after calving in Alaska, but substantial caribou killing by bears is usually limited to this time period. (B. Dale, Alaska Department of Fish and Game, pers. comm. 2015). Also, Tłıchq traditional knowledge exists about the effects of bear predation on caribou outside calving grounds and the issue may be revisited by ENR or TG. Wolves are

effective predators of caribou year-round. The BNE calving grounds are within Nunavut, thus any consideration of predator management on the calving grounds would need to be led by GN and discussed under NU processes for wildlife management.

TG and ENR support the development, implementation and evaluation of specific and measurable predator management actions for caribou that are community based and/or undertaken with territorial governments and wildlife management authorities for 3 – 5 years for BNE. To start, GNWT and TG are proposing a community-based wolf hunting program for the 2015-2016 harvesting season focused on the Bathurst herd and the Bathurst mobile conservation zone. If successful, the approach could be extended in 2016-2017 to the BNE herd and incorporated into an adaptive wolf management approach as outlined above. A summary of the proposed approach is provided below.

- The basic premise is that Tłıchq communities will have meaningful input into deciding how to hunt and trap wolves in a culturally respectful manner, selecting candidates (including interested youth) who will be trained in effective field techniques for hunting/trapping wolves, skinning, and fur preparation, and identifying appropriate locations away from communities for skinning and processing wolf carcasses. Selected individuals will receive training from recognized expert wolf hunters/trappers and/or expert instructors. GNWT-ENR would develop, coordinate, and provide the training workshops with input from TG. An important factor in these workshops will be the cultural teachings from local Elders. Some believe that, from a cultural standpoint, Tłıchq people do not hunt wolves. By bringing in an Elder to explain to Tłıchq people that wolves are a problem and that Tłıchq should do something about it as long as one follows the traditional laws, more people will be motivated to go out on the land to harvest wolves.
- Individuals for community-based teams would initially be selected from Wekweètì and Gamètì. Teams will establish field camps in focal areas during winter months and harvest wolves in a manner consistent with Tłıchq practices. ENR, with support from TG, will provide funding, training and field support, and monitor overall program effort and effectiveness. Tłıchq hunters would have the following options: 1) deliver the wolf carcass (entire unskinned wolf) to ENR and receive straight pay-out (proposed as \$200); or 2) prepare the hide themselves for submission to ENR either with traditional skinning (proposed as \$400 for the hide and \$50 for the skull) or pelts prepared according to taxidermy standards through the Genuine Mackenzie Valley Fur (GMVF) Program (proposed as \$400 for the pelt, \$50 for the skull, and a prime fur bonus of \$350 if the pelt sells for more than \$200 at auction). Wolf carcasses will be necropsied by ENR biologists.
- The objective for the first year of the community-based wolf hunting pilot program will be for TG and ENR to train up to four teams in 2015-2016 focused on the Bathurst range. Implementation and potential expansion of the program in subsequent years to the BNE range will be tied to program objectives established through the feasibility assessment outlined above, and as experience is gained from the pilot program.
- Depending on available resources, an additional workshop could be held in one other Tłıchq community in fall 2015 or winter 2016, with remaining Tłıchq communities completing the training by winter 2016. This would result in a core group of trained and experienced wolf hunters in each of the Tłıchq communities who would be active in the

field and capable of training other interested hunters and trappers in the community.

In addition to training Tłıchǫ hunters as part of a community-based wolf hunting pilot program, recommendations from a number of communities and governments were made in 2014-2015 to extend wolf hunting opportunities and incentives to Northwest Territories residents and non-residents (i.e., guide-outfitters). The opportunity for resident hunters and guided outfitters to hunt wolves on the Bathurst range is already in place. GNWT-ENR will work with other Aboriginal organizations to increase wolf harvest over the winter range of the Bathurst herd in culturally appropriate ways, that are respectful of Tłıchǫ lands and customs. These approaches may be extended to the range of the BNE herd.

Land use in the Bluenose-East caribou range

There are currently no mines in Bluenose-East caribou range in the NWT or NU, but Tundra Copper carried out exploration activity on the BNE calving grounds in summer 2015. TG and ENR will participate in environmental assessment processes for developments that may affect the BNE herd. ENR and TG expressed opposition to the Tundra Copper activities to the Nunavut Impact Review Board, as did the Government of Nunavut (GN). ENR participated in a workshop June 2015 in Iqaluit on the draft Nunavut Land Use Plan and supported GN's position opposing development on all caribou calving grounds in NU, and participated in a workshop in November 2015 in Iqaluit hosted by the Nunavut Wildlife Management Board (NWMB) focused on protection of caribou habitat in NU. Any other industrial development proposed for the BNE herd's range will need to be considered carefully in view of the herd's reduced numbers and declining trend.

Public education and hunter education

As part of caribou harvest management for the BNE herd, GNWT-ENR and TG suggest that an area where greater effort is needed is hunter education, with an emphasis on promoting traditional practices of using all parts of harvested caribou and minimizing wastage. Below are a few extracts from the consultation meetings that took place leading up to the Draft Bathurst Caribou Management Plan of 2004.

"People do not do things without the caribou being aware of it. We depend on the caribou and so, when we will kill a caribou, we show respect to it. If we don't do that and we don't treat them really well, the caribou will know about it." (Rosalie Drybones, Gameti. 1998).

- *"People should know how to think and talk respectfully about caribou."*
- *"People should respect caribou as gifts from the Creator."*
- *"All people should have knowledge of the caribou to respect caribou. This means knowing caribou behavior as well as how to think and talk about caribou."*
- *"Hunters should not be too particular when hunting caribou."*
- *"Caribou should not suffer in death."*
- *"Hunters must not boast about their harvest."*
- *"It is important to use all parts of the caribou and waste nothing."*
- *"People must care for the stored meat and discard bones and other unused parts in a manner that will not offend the caribou."*
- *"The relationship between the people and the caribou is based on mutual respect."*
- *"The rules about caribou respect are meant to be obeyed."*

Wastage is prohibited under Section 57 of the Northwest Territories Wildlife Act:

57. (1) *Subject to the regulations, no person shall waste, destroy, abandon or allow to spoil*

(a) big game, other than bear, wolf, coyote or wolverine, or an upland game bird that is fit for human consumption; or

(b) a raw pelt or raw hide of a fur-bearing animal or bear.

TG and ENR suggest the following education/public awareness initiatives to improve hunter practices and reduce wounding and wastage:

- Continue to work with the communities, in particular more closely with schools, on promoting Aboriginal laws and respecting wildlife, including how to prevent wastage; and
- Invite elders to work with the youth to teach traditional hunting practices and proper meat preparation.

Posters, pamphlets, media and road signs will be used to better inform the public about respecting wildlife, traditional hunting practices, wastage, poaching and promoting bull harvest. Table 1 below summarizes the TG and ENR objectives for increased public engagement and hunter education.

ENR has promoted sound hunter harvest practices, preventing meat wastage, harvesting bulls instead of cows, and implementing related conservation education in NWT communities for a number of years. In response to community requests, ENR is currently developing a Hunter Education program. A working group developed the materials which are currently out for review with individuals, boards, agencies and organizations involved in the Wildlife Act creation.

Monitoring of the Bluenose-East herd

Table 1. Summary of approaches and objectives for increased public engagement and hunter education for caribou in Wek' èezhii.

General Approach	Description & Objective	Lead (Support)
Public hearings	A public hearing on wildlife management actions for BNE herd in 2016	WRRB & SRRB (TG, ENR)
Community meetings	1 meeting per year in each Tłıchq community to discuss and update wildlife management issues and actions	TG (ENR)
Radio programs	When needed radio announcements, interviews and/or updates on wildlife management in Tłıchq language during winter hunting season over next 3 years	TG & ENR

Sight-in-your-rifle programs	Conduct community-based conservation education programs with an objective of 1 workshop / Tłıchq community / hunting season for next 3 years	ENR (TG)
Outreach through internet and social media	Regular updates (10 updates per season) on government websites and social media during fall and winter hunting seasons (Facebook & Tłıchq website)	TG, ENR (WRRB)
Poster campaign	Produce posters for distribution in each Tłıchq community: posters to be developed for each year over next 3 years	TG, ENR

Table 1 lists biological monitoring of the Bluenose-East herd, mostly led by ENR, proposed for 2016-2019. This monitoring is generally consistent with the monitoring listed in the ACCWM 2014 management plan (e.g. page 38).

Caribou Surveys:

Calving ground photographic surveys to estimate abundance of breeding cows and herd size will be continued at 3-year intervals – the next survey for the BNE herd is scheduled for June 2018. Recruitment surveys (conducted in March/April to estimate survival of calves) will be conducted annually, and fall composition surveys (conducted during the breeding season in October to estimate sex ratio) will be completed every 2-3 years. Although not listed in the ACCWM plan, ENR proposes to fly annual reconnaissance surveys of the calving grounds in June to monitor abundance of cows in the herd. Recent experience with monitoring the Bathurst and BNE herds has shown that the June reconnaissance surveys - although less precise than calving ground photographic surveys - are able to track trend in relative abundance of breeding cows in years between population surveys (ENR 2014a). In years when calving ground photographic surveys are conducted, ENR updates a demographic assessment of the herd using an OLS (ordinary least squares) model (see Boulanger et al. 2011). The goal of the demographic assessment is to evaluate all available population data from satellite collared cows and surveys, and estimate the vital rates of the herd (i.e., productivity and survival) that best explain its current size and trend. The demographic analysis that includes data up to the June 2015 calving ground survey will be completed in early 2016 and then updated after the 2018 calving photo survey.

Condition Assessment and Visual Monitoring:

Traditional knowledge on BNE caribou condition has been gathered in recent winters by Tłıchq community monitors from hunter-killed animals and was summarized by Garner (2014) and ENR (2014a). Limited sample numbers have somewhat constrained the reliability of the assessments of trend in condition and pregnancy rate. Reliable reporting of caribou condition with adequate sample numbers could improve understanding of the herd's nutritional status and the influence of environmental conditions that are tracked through the drought index, oestrid (warble and bot fly) index and indices of snow conditions on herd condition. Condition

sampling in winter from hunter-killed caribou will continue (led by TG) with a focus on increasing sample sizes and completeness of monitoring, when and if funding allows.

Collars:

The number of GPS collars on the BNE herd will be increased annually to 50 (30 on cows and 20 on bulls) with late-winter collar deployments, to replace collars with expired batteries and collars on caribou that died. This number of collars on the Bathurst and BNE herds has the support of the TG as of 2014, recognizing that the caribou collars are key elements in monitoring and management. In the past, there have been up to 60 collars on BNE caribou in years of post-calving surveys, as these surveys depend on having enough collars to find a large percentage of post-calving aggregations. The calving ground photo survey recently used to estimate population size for the BNE herd (2010, 2013, 2015) is less dependent on large numbers of collars, thus 50 collars should be sufficient for most applications of collar data, including population surveys. ENR (2014b) provided a brief review of uses of collars and recommended numbers of collars for various applications in a rationale for increasing the numbers of collars on the Bathurst herd. Some applications, such as monitoring cow survival rates with good precision, would require 100 collared caribou, while other applications can be addressed reliably with 50 or fewer collars.

TG and ENR agree to consider further increasing the number of collars on cows and bulls in this time of herd decline, depending on resources available. The use of collars has in the past been a contentious issue, as recognized in the ACCWM plan. However, at this particular and critical time with low and declining BNE numbers, it is important to have the best available information. Balancing social and cultural concerns and the scientific rationale for increasing sampling size to improve quality of biological information is not easy. Support for increased collar numbers from TG would come with the understanding that GNWT will commit the resources needed to improve the program, and share the data regularly with the TG. The collars may also assist in determining where and when predators should be removed as well as in monitoring whether predator management actions may be having an effect on the herd. The collared caribou should also help in developing better monitoring studies that determine if changing environmental and climatic conditions, as well as the influence of resource development, are affecting the caribou.

A programming option that has recently become available is “geo-fencing” where the number of GPS locations collected increases substantially and allows more detailed analysis of the movements of collared caribou near mines, roads or other designated sites. ENR is considering the use of these options on collars that will be placed in future on BNE caribou to assess their responses to disturbed areas like mines, camps and roads.

Harvest:

Accurate harvest reporting by all harvesters will be a priority for the BNE herd. In recent years ENR and TG have collaborated on caribou harvest monitoring via monitors in the four Tłı̨chǫ communities in combination with check-stations and patrols by wildlife officers. Harvest reporting has been viewed field workers as lower than actual with room for improving accuracy. Sahtú communities and the SRRB have indicated through letters and proposals that Sahtú harvesters want to monitor and manage caribou harvest through community-based programs. ENR is open to proposals on caribou harvest monitoring that is culturally appropriate, provided there is a) sufficient information on how a community-based plan would work operationally, b) there are clearly identified accountability mechanisms for reporting and

monitoring the harvest, and c) consequences of a failure to comply are specified. Estimates of BNE harvest in Nunavut are based on best estimates of experienced GN wildlife staff in Kugluktuk. Accurate harvest reporting needs to be a priority for all communities and harvesters that hunt the BNE herd.

Further monitoring:

Additional monitoring of BNE caribou that may be considered is outlined below, but implementation is dependent on whether resources (funds and staff time) are available.

- (1) Annual composition surveys on the calving grounds to determine the proportion of breeding females as an index of pregnancy rate;
- (2) Annual fall composition surveys to provide increased information about summer calf survival;
- (3) Assessments of wolf abundance (or density) and condition on the BNE winter range;
- (4) Annual winter assessments of caribou pregnancy rate from fecal samples collected during late-winter composition surveys; and
- (5) Annual monitoring of environmental factors (drought index, insect index) that may affect caribou feeding, pregnancy rate and condition.

Wolf monitoring:

In the joint management proposal for the Bathurst herd, TG and ENR have described additional monitoring that is associated with a pilot program to increase community-based wolf hunting on the Bathurst winter range. Those approaches may be extended to the BNE range if successful and if resources are available. As an initial step, ENR would monitor the numbers of wolves taken annually in the BNE range. Recent review of the fur harvest database also showed that not all harvested wolves are accounted for within the fur harvest database. Thus as a follow-up, GNWT and TG will collaborate to improve monitoring the annual wolf harvest and other wolf mortalities by region, through coordination of data collection and analyses of existing fur harvest and wildlife export permit records

Wolves are difficult to count reliably due to their generally low numbers and clumped distribution. ENR has initiated a technical review of wolf monitoring methods in the NWT, recognizing that several caribou herds are at low numbers or declining (or both) and that there is strong interest from Aboriginal governments and communities in increasing wolf harvest. ENR has also committed to leading a technical feasibility assessment, that will be developed collaboratively with TG and the input of other parties, to consider a full range of wolf management options. The initial focus would be the Bathurst herd. The assessment may be extended to the BNE herd in 2016-2017.

Research on drivers of change in caribou abundance:

TG and ENR recognize that there are likely multiple factors that contributed to the BNE herd's recent decline, including adverse environmental conditions (e.g. a drought year in 2014 potentially leading to poor feeding conditions, poor cow condition and a low pregnancy rate in winter 2014-2015). A recent study by Chen et al. (2014) suggested that spring calf:cow ratios in the Bathurst herd were correlated with indices of summer range productivity one and a half years earlier; the mechanism proposed was that cows with poor summer feeding conditions were likely to be in poor condition during the fall breeding season, leading to low pregnancy rates. ENR has also asked biologist D. Russell to review environmental trend data collected

since 1979 by CARMA for NWT caribou herds (drought index, snow depth indices, warble/bot fly index, etc.) that may assist in explaining how key environmental trends have contributed to declines in caribou herds. This review will contribute to development of a long term environmental dataset for the BNE herd.

The two governments generally support increased research into underlying drivers of change in herd abundance by partnership with academic researchers and remote sensing specialists. There is a need to better understand predation rates and their significance to caribou, environmental factors affecting caribou condition and population trend, and on the effects of climate change on these relationships.

Table 1: Biological monitoring of Bluenose-East herd (ENR and/or TG lead)

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Numbers (density) of 1+ year old caribou on calving ground from reconnaissance surveys	Provides index of number of breeding cows on calving grounds; number of 1+ year old caribou correlated with number of breeding females.	Increasing trend in numbers of 1+ year old caribou on annual calving ground.	If trend in 1+ year old caribou is increasing, continue as before; if trend stable-negative, re-consider management.	Annual (between photo-surveys)	Precision of survey is low but these surveys have reliably tracked trend from population surveys at 3-year intervals.
2. Estimate of breeding cows from calving ground photo survey	Most reliable estimate for abundance of breeding cows & can be extrapolated to herd size based on pregnancy rate and sex ratio.	Increasing trend in numbers of breeding cows by 2018.	If trend in breeding cows increasing, continue as before; if trend stable-negative, re-consider management.	Every 3 years	Last surveys 2013, 2015, next in 2018. Trend in breeding females is most important for herd trend.
3. Cow productivity; composition survey on calving ground in spring (June)	Relatively low calf:cow ratio in June 2009 – many sub-adult cows not yet breeding; establishes basis for potential calf recruitment through fall & winter.	High calf:cow ratio (80-90 calves:100 cows): proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and poor nutrition in previous summer; survey data integrates fecundity & neonatal survival.	Every 3 years	Essential component of calving ground photographic survey.
4. Fall sex ratio; composition survey (October)	Tracks bull:cow ratio; Bathurst ratio increased from 31-38 bulls/100 cows 2004-2009 to 57-58/100 in 2011-2012; prime bulls key for genetics, migration.	Bull:cow ratio above 30:100.	If bull:cow ratio below target, reduce bull harvest. Fall calf:cow ratios indicate spring & summer calf mortality relative to June ratios.	Every 3 years	Needed for June calving ground photo survey – extrapolation to herd size. Provides fall estimate for calf:cow ratio.
5. 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 30-40 calves:100 cows on average.	Sustained ratios $\leq$ 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
6. Caribou condition assessment	Condition assessment provides overall index of nutrition/environmental conditions, estimate of pregnancy rate	High hunter condition scores (average 2.5-3.5 out of 4)	Sustained poor condition suggests unfavourable environmental conditions and likely further decline.	Annual	Sample numbers to date limited (2010-2013). TG working to improve program, sampling.
7. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Cow survival estimated 75-78% in 2013 (from model). Need survival of 83-86% for stable herd.	At least 83-86% by 2018	If cow survival continues $<$ 80%, herd likely to continue declining.	Every 3 years (new population estimate)	Population trend highly sensitive to cow survival rate; recovery will depend on increased cow survival.
8. 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 continues to decline as found 2013-2015, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline but harvest is one of the few factors humans control.
9. Maintain up to 50 satellite/GPS collars on herd (30 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 50 collars on herd.		Annual additions to keep total of 50.	Information from collared caribou is essential to monitoring and management of all N. America caribou herds.
10. Wolf Harvest on BNE range	Several Aboriginal governments and communities have expressed interest in increasing wolf harvest by hunters and trappers to increase caribou survival.	Increased harvest of wolves	If herd continues to decline, consider increased focus on wolf harvest to slow herd decline and increase likelihood of recovery.	Annual	Control of predators, depending on methods, may be controversial.

5. Consultation

Describe any consultation undertaken in preparation of the management proposal and the results of such consultation.

TG sent a letter to WRRB on August 25, 2015 proposing management actions for the BNE and Bathurst herds. This included a harvest limit of 950 caribou in total from the BNE herd (including Nunavut) and 80% bulls, and an allocation among NWT user groups based on the ENR allocation of early 2015. ENR sent a letter to WRRB on September 22, 2015 on management actions for the Bathurst and BNE herds, which included agreement with TG on the harvest limit of 950 and the allocation as proposed by TG, but with a 100% bull sex ratio. WRRB recommended to TG and ENR on September 25, 2015 that the governments come to agreement on the BNE harvest (and other actions); TG and ENR then met in Oct. 2015 and came to agreement on a BNE harvest of 950 and 100% bulls. The allocation among user groups had been previously agreed on by TG and ENR, although this could change if an allocation accepted by all users becomes available.

TG held a workshop on wolf management with Tłı̨chq̓ elders and hunters on Oct. 29, 2015; elders agreed that the wolf was a problem for the caribou and that something needs to get done. The elders also said that they want Tłı̨chq̓ hunters to harvest wolves as long as traditional laws are followed.

ENR and TG support a meeting of all BNE user groups and relevant boards, requested by co-management boards in fall 2015, to determine an allocation or sharing formula for harvest of this herd. This meeting is expected early in 2016.

ENR sent a letter to Aboriginal governments and co-management boards with an interest in the BNE herd, including government and Aboriginal organizations in Nunavut, on Sept 24, 2015 outlining the herd's status with preliminary results of the June 2015 survey, noting the urgency of taking action in time for the winter harvest season, and requesting parties to respond to ENR with their recommendations on management actions by October 15, 2015. A further update letter was sent on November 2, 2015 describing proposed management for the BNE herd for winter 2015-2016.

ENR received a letter from the SRRB on management of BNE caribou on November 3, 2015, and has had an on-going series of meetings with SRRB, SSI (Sahtu Secretariat Incorporated) and Sahtú communities in fall 2015. A community-based caribou management plan for Deline dated November 23, 2015 was made available to ENR at the end of November 2015. ENR will work with Sahtú organizations and communities on caribou harvest management that is culturally appropriate and consistent with overall management objectives for the herd.

WMAC(NWT) sent a letter on BNE management to ENR November 20, 2015 with general support for conservation of the herd and noting the importance of addressing the Nunavut harvest of the herd, requesting clarification about a proposed bull-only harvest from the herd, requesting support for a users' meeting on BNE harvest allocation, and noting the importance of a consistent approach to harvest management from the BNE herd.

ENR is preparing a management proposal for the BNE herd, similar in content to the current proposal, to submit to SRRB and WMAC-NWT in December 2015.

6. Communications Plan

Describe the management proposal's communications activities and how the Tłıchq communities will be informed of the proposal and its results.

TG and GNWT leadership will, together, hold an information session in each of the 4 Tłıchq communities. The initial round of these meetings, led by staff representatives, was held in early December 2015 and a further round of meetings is planned for January 2016.

There will be technical workshops in each of the four Tłıchq communities to inform on the implementation of any harvesting season restrictions.

Table 1 (listed earlier in this proposal) describes approaches and objectives for increased public engagement and hunter education for caribou in Wek'èezhii.

7. Relevant Background Supporting Documentation

List or attached separately to the submission all background supporting documentation, including key references, inspection/incident reports and annual project summary reports.

Adamczewski, J., J. Boulanger, B. Croft, H. D. Cluff, B. Elkin, J. Nishi, A. Kelly, A. D'Hont, and C. Nicolson. 2009. Decline in the Bathurst caribou herd 2006–2009: a technical evaluation of field data and modeling. Environment and Renewable Resources, Government of Northwest Territories, Yellowknife, NWT, Canada.

Advisory Committee for the Cooperation on Wildlife Management (ACCWM). 2014. Taking Care of Caribou – The Cape Bathurst, Bluenose-West, and Bluenose-East Barren Ground Caribou Herds Management Plan (Final). C/O Wek'èezhii Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

Barren-ground Technical Working Group (BGTWG). 2014. Barren-Ground Caribou 2013/14 Harvest & Monitoring Summary. Unpublished Report. Wek'èezhii Renewable Resource Board, Tłıchq Government, and Government of the Northwest Territories. Yellowknife, NT. Online [URL]: http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20%20FINAL_Oct15_2015.pdf

Boulanger, J. 2015. Estimates of breeding females from the 2015 Bluenose East calving ground survey, Draft November 4, 2015. Department of Environment and Natural Resources, Yellowknife, Northwest Territories, unpublished report.

Boulanger, J., A. Gunn, J. Adamczewski, and B. Croft. 2011. A data-driven demographic model to explore the decline of the Bathurst caribou herd. *Journal of Wildlife Management* 75:883-896.

Boulanger, J., B. Croft, and J. Adamczewski. 2014c. An estimate of breeding females and analyses of demographics for the Bluenose East herd of barren ground caribou: 2013 calving ground photographic survey. Department of Environment and Natural Resources, Government of Northwest Territories. File Report 143.

Chen, W., L. White, J. Z. Adamczewski, B. Croft, K. Garner, J. S. Pellissey, K. Clark, I. Olthof, R. Latifovic, G. L. Finstad. 2014 Assessing the Impacts of Summer Range on Bathurst Caribou's Productivity and Abundance since 1985. *Natural Resources*, 5, 130-145. <http://dx.doi.org/10.4236/nr.2014.54014>

ENR (Government of the Northwest Territories, Environment and Natural Resources). 2014a. Overview: Monitoring of Bathurst and Bluenose-East Caribou Herds, September 2014. Environment and Renewable Resources, Government of Northwest Territories, Yellowknife, NWT, Canada.

ENR (Government of the Northwest Territories, Environment and Natural Resources). 2014b. Technical rationale to increase the number of satellite collars on the Bathurst caribou herd. Environment and Renewable Resources, Government of Northwest Territories, Yellowknife, NWT, Canada.

Garner, K. 2014. Tłıchq Caribou Health and Condition Monitoring Program. Final Report, Department of Culture and Lands Protection, Tłıchq Government, Behchokǝ, NT. 34 pp.

8. Time Period Requested

Identify the time period requested for the Board to review and make a determination or provide recommendations on your management proposal.

Management actions proposed here would apply from November 2016 until November 2019 with the results of the next calving ground photo survey of the BNE herd expected in 2018. TG and ENR suggest that management actions, including the harvest of 950 caribou (100% bulls) and allocation among NWT user groups, be reviewed annually or whenever key additional information is available (e.g. additional survey information or recommendations from ACCWM or boards).

9. Other Relevant Information

If required, this space is provided for inclusion of any other relevant project information that was not captured in other sections.

TG and ENR support efforts by the WRRB and other boards, through recommendations and public hearings, to address the possible multiple causes of the BNE decline and the implementation of the ACCWM management plan.

10. 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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