



FEB 22 2016

Mr. Michael Neyelle
Chair
Sahtú Renewable Resources Board
PO BOX 134
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Dear Mr. Neyelle:

Responses to Information Requests
Round No. 2 – Bluenose-East Management Proposal

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories (GNWT) received a list of information requests from the Sahtú Renewable Resources Board (SRRB) on February 15, 2016 in regards to the *"Government of the Northwest Territories Proposal on Management Actions for Bluenose-East Caribou 2016-2019"*.

ENR would like to provide the attached response to the SRRB's information request.

Sincerely,

Ernie Campbell
Deputy Minister

Attachment

- c. Mr. Jeff Walker, Superintendent, Sahtú Region, ENR, GNWT
- Mr. Roger Fraser, Acting Superintendent, North Slave Region, ENR, GNWT
- Ms. Lynda Yonge, Director of Wildlife, ENR, GNWT
- Ms. Deborah Simmons, Executive Director, SRRB



Responses to Bluenose-East Caribou Herd Management Proposal Sahtú Renewable Resource Board Information Requests Round 2

1. Predation

Predation is a major limiting factor that directly affects the number of caribou in a herd and the ability of the herd to recover. Its importance is recognised in a large number of published papers and in the caribou management plans. This issue was identified in detail by the communities in the ACCWM Plan of Nov 3, 2014 (Page 86), for instance. The ENR Plan contains no estimates of the numbers of individuals (adults or calves) that are predated annually in the respective herds. Does ENR have observations, studies or reports on the numbers of caribou, in particular calves, lost to predators annually on the calving ground for the BNE herd and at other times during the annual migration/reproductive cycle?

Does ENR have observations, information or estimates about how predation numbers compare to the estimated numbers that are harvested in the herds?

ENR Response:

Predation rates on the Bluenose-East herd are unknown. As identified in the ACCWM Plan (Nov. 3, 2014) and outlined in the Management Proposal for Bluenose-East Caribou, wolf predation is recognized as being a potentially significant limiting factor contributing to this herd's decline and may also hinder herd recovery. However, there is currently no quantitative information on wolf abundance, or predation rates, on caribou calves or adults specifically for this herd. During the Bluenose-East calving ground surveys in 2010, 2013 and 2015, wolf sightings were opportunistically recorded (summarized in BNE WRRB IR Round 1, ENR Response - Appendix 1A). Wolves observed during BNE spring composition surveys were also recorded (summarized in BNE WRRB IR Round 1, ENR Response - Appendix 1C). However, these incidental wolf sighting rates offer no insight into predation rates - on either calf or adult caribou.

As is the case in most jurisdictions, quantifying and assessing wolf predation rates is a challenging issue to address. There are published estimates on wolf predation on caribou from some other areas, but caution should be used in applying these directly to different situations. The annual kill rate of wolves has been estimated at ~29 caribou / adult wolf, with apparent consumption rates ranging from 4.4 – 5.6 kg of caribou per wolf per day (Hayes et al. 2000). Without reliable estimates of wolf abundance or predation rates specifically for the BNE herd, it is difficult to provide any useful relative comparison with estimated numbers of caribou that are being harvested. However, in the published

literature, wolves elsewhere have characteristically taken more younger animals than do hunters, presumably because this cohort is more vulnerable to predation. Hunters tend to take more prime-age animals (i.e., reproductive cohorts).

As outlined in the BNE Joint Management Proposal to the WRRB, ENR will be leading a technical feasibility assessment in 2016. In addition to reviewing options for monitoring, this collaborative review would consider the full range of management options, as well as the likely effectiveness of different management actions. The deployment of 50 collars on BNE caribou (30 cows, 20 bulls) may also provide potential insight into the relative significance of predation. More intensive monitoring of collars that become stationary would provide an opportunity to promptly investigate the cause of mortality. Over time, the accumulation of mortality data may provide insight into the relative significance of predation of collared caribou.

ENR has heard from community hunters (Traditional Knowledge) often over the years that the number of wolves on the wintering range is high and that the number of caribou killed by predators is not insignificant. ENR acknowledges the importance of the information provided by people on the land, and will continue to support traditional harvesting of wolves on the winter range of the Bluenose-East caribou range.

2. Herd distribution

Some reports in the literature indicate that bulls and cows with calves overwinter in different habitats due to the need for cows to avoid predators.

Does ENR have, or is ENR aware of, any evidence of this type of habitat preference for the Bluenose East (BNE) herd?

ENR Response:

ENR is aware of the segregation that occurs between bulls and cows of the Bluenose-East caribou in the winter. Although some isolated groups of bulls can be sighted throughout the entire wintering range, observations made during the late winter recruitment surveys since 2009 suggest that higher density of males can be found at the southwestern limit of the Bluenose-East caribou winter distribution. Females tend to winter in larger groups further north and away from those bulls. It is not unusual, however, that young bulls can be present among those wintering groups of cows.

The general area where more bulls than cows appears to be in the winter is located between Keller Lake, Lac Tache, Grandin Lake and Lac Ste-Therese.

This pattern of Bluenose-East caribou distribution is generally supported by the distribution of collared bulls and cows. The current protocol for number of collars on Bluenose-East caribou recommends deploying and maintaining 30 collars on cows and 20 on bulls annually which will facilitate greatly the tracking of movement and distribution of bulls and cows in the winter.

Is ENR aware of any documented traditional knowledge that would help define where the herd is distributed during major events, e.g. overwintering, in the annual cycle?

ENR Response:

ENR is not aware of any documented TK information to help define where the herd is distributed during major events. ENR would welcome the opportunity to learn from traditional knowledge holders any information allowing a better understanding of movement and distribution of Bluenose-East caribou throughout their annual cycle.

ENR recognizes the considerable knowledge of hunters on the distribution of Bluenose-East caribou in their winter habitat. The Délı̄nę Caribou Conservation Plan workplan includes on-the-land monitoring of caribou, and the identification and mapping of critical habitat (ꞑededahk'á) for caribou for submission to the Sahtú Land Use Planning Board for inclusion in the Five Year Review.

Is ENR aware of any studies conducted on the range use by the most vulnerable individuals in the herd (calves and sub-adults) for these three herds?

ENR Response:

ENR is not aware of any studies looking specifically at range use by calves and sub-adults on the Bluenose-East caribou herd range. Information is available on seasonal distribution of Bluenose-East caribou from 30 collars on cows and 20 on bulls; while only adult caribou are collared, calves will generally be associated with breeding cows.

3. Herd recovery

Several questions remain as to whether, and when, the herd will begin to recover. A major factor in the ability of the herds to recover is the pregnancy rate, and whether the herd is capable of achieving close to the maximum intrinsic rate of increase. Current studies report the number of calves in terms of calf:cow ratios and replacement by 1+ individuals. ENR indicates in its reports that pregnancy rates are estimated from blood samples taken during community hunts and research studies.

Have these data been compiled for the BNE herd and do they indicate an optimum pregnancy rate for herd recovery?

ENR Response:

Some information on pregnancy rates for the Bluenose-East caribou herd is available from the Wildlife Health Monitoring (WHM) Program in the Sahtú and the Tłı̄chǫ Caribou Monitoring Program in Wek'èezhì (more details and references available further below in response to IR 3). As noted in section 3.A of the GNWT Proposal on Management Actions for Bluenose-East Caribou 2016-2019, there is evidence of low pregnancy rates in at least some years, including 2010, 2012 and 2015.

To place this information from the BNE herd in context, the pregnancy rate in breeding-age cows from the George River herd averaged 89-100% during a period of increase in herd size in the 1970s, and 59-78% during the early 1990s when the herd was declining (Bergerud et. al. 2008). In healthy herds, the breeding-age cows usually have a pregnancy rate of 80% or more. However, because multiple factors affect a caribou herd, it is important to consider pregnancy rates in the BNE herd together with other demographic rates including calf recruitment and adult cow survival, as well as natural and human sources of mortality. For that reason, it is not possible to identify a specific optimum pregnancy rate for the Bluenose-east herd recovery in isolation of these other factors.

References:

Bergerud, A.T., S.N. Luttich, and L. Camps. 2008. The return of caribou to Ungava. McGill-Queen's University Press, Montreal and Kingston, Ontario.

Does ENR have estimates for losses from numbers or individuals or productivity due to disease?

ENR Response:

Caribou health is determined by the cumulative effect of a range of different biological, environmental and other factors. Health is also an indicator of vulnerability that reflects the capacity of caribou to cope with and respond to natural and anthropogenic challenges. Diseases and parasites are one factor that can influence the health of wildlife populations and individual animals. They can impact host survival, condition and fecundity, even when no apparent disease is observed. The effect of diseases and parasites on caribou needs to be considered in the context of cumulative effects of multiple factors on caribou productivity and survival.

ENR is working with its co-management partners to document and monitor wildlife health, and continued monitoring and hunter reporting of sick or dead caribou is very important to document potential caribou health issues. Diseases and parasites have been monitored in Bluenose-East caribou as part of health and condition monitoring done in the WHM Program established in the Sahtú and the Tłı̨chǫ Caribou Monitoring Program in Wek'èezhì (references below). This monitoring has provided information on the diversity, prevalence and intensity of parasites and diseases in Bluenose-East caribou, and this baseline information is important to be able to monitor changes over time. It is difficult to quantify the contribution of parasites and diseases to changes in body condition, fecundity or other measures of caribou health, and at the present time an estimate of the loss of individuals or reduction in productivity due specifically to disease and parasites in isolation of other factors is not available. Future monitoring and research may be able to provide insight into this question.

Has ENR compiled data on body condition from research or community health-monitoring programs?

ENR Response:

A WHM Program was established in the Sahtú in 2002 as a partnership between ENR, the University of Calgary, the Sahtú Renewable Resources Board (SRRB) and the Sahtu Renewable Resource Councils (SRRCs). The program was established in response to community concerns about wildlife health, and one of its objectives was to establish baselines and track changes in body condition, body size, and pathogen occurrence in caribou (including Bluenose-East caribou) and moose. Information on body condition of Bluenose-East caribou is included in a summary report providing a synthesis of the activities and results from the program from 2002-2014 (Carlsson 2015).

Information on body condition and pregnancy rates of Bluenose-East caribou is available for 2010-2014 from a community-based health and condition monitoring

program carried out collaboratively by ENR, Tłıchǫ Government and Tłıchǫ communities. The Tłıchǫ Caribou Monitoring Program includes hunter training, provision of sample kits, and collection of information on health and condition of harvested Bluenose-East caribou. Information on pregnancy rates for Bluenose-East caribou for 2010, 2012 and 2014 are also available from blood testing done during collar deployment. The results of this monitoring are summarized in a draft summary report on monitoring of Bathurst and Bluenose-East caribou herds (GNWT ENR 2014).

References:

Carlsson, A.M. 2015. Community-based monitoring of wildlife health in the Sahtú Settlement Area: a synthesis of the program 2002-2014. Prepared for: GNWT ENR and SRRB. 43 pp. + appendices.

GNWT ENR. 2014. Overview: monitoring of Bathurst and Bluenose-East caribou herds, September 2014. Draft summary report. Government of the Northwest Territories, Department of Environment and Natural Resources. 60 pp.

4. Linear feature avoidance

Recent research in Alaska (caribou) and Europe (reindeer) has shown that during migration some individuals will not cross linear features, such as roads, and may move long distances outside the migration route to go around them. In Europe the studies have shown that some individuals may be delayed in returning to the calving grounds by several days.

Does ENR have evidence of similar splitting within the herd for the BNE herd due to linear feature avoidance?

ENR Response:

ENR is not aware of the presence of permanent linear features on the annual range of the Bluenose-East herd yet. The temporary winter road to Gamètì and Wekweètì does intersect in some years with the southern range of the Bluenose-East winter distribution but this is not common. The winter distribution of most of the Bluenose-East caribou based on the tracking of collared caribou over the years appears to be North and West of the winter road.

Does ENR have estimates of the potential impacts of current development in the migration route that might be impacting the current success of calving for the BNE herd?

ENR Response:

ENR is not aware of any major potential impacts related to current developments on the

migration route of the Bluenose-East herd leading up to the calving grounds. ENR is aware and concerned however, by preliminary exploration activities that took place in the summer of 2014 and 2015 in the core calving area of that herd.

GNWT/ENR supports the position of the Government of Nunavut to protect all barren-ground caribou herds and has been and will continue to be actively involved with the Nunavut Land Use Planning process led by the Nunavut Planning Commission.

5. Cross-regional variation

Different regions through which caribou migrate in the NWT are subject to different regional cultures and contexts, including distinct land claim agreement structures and obligations. The BNE herd, for instance, migrates through regions subject to the Sahtú, Tłı̄chǫ and Nunavut land claim agreements and associated collaborative management systems. How would ENR deal with cross regional variation in management approaches, including different approaches to harvest management?

ENR Response:

ENR's primary objective is to work with co-management boards and various aboriginal governments and organizations to develop and implement management actions for the Bluenose-East caribou herd in a spirit of collaboration. ENR recognizes differences in approaches and methods to managing the herd based on regional variation and do not see this as an obstacle to successful co-management initiatives.

In recent months for example, the Tłı̄chǫ Government and the people of Délı̄ne have successfully undertaken a different approach to monitoring and managing the harvest within their own communities and ENR embraces the opportunity to work together and establish healthy co-partnership to ensure that we continue to have caribou forever.

Ultimately, ENR's goal is to develop jointly, monitoring and management actions based on the most recent information available to support sound and responsible decision-making processes for a healthy and stable Bluenose-East caribou herd.