

# WRRB Information Request

## Round 2 – Intervener Requests

### Abbreviations

ARC – Alberta Research Council

CTR – Caribou Technical Report, or *Decline in the Bathurst Caribou Herd 2006-2009; a Technical Evaluation of Field Data and Modeling Report*

ENR – Environment and Natural Resources

GN – Government of Nunavut

GNWT – Government of the Northwest Territories

TG – Tłıchǵ Government

WRRB – Wekeezhii Renewable Resources Board

**IR Number:** 2.1

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

### Reference

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

### Request

ENR to provide data on the trend in the Bathurst herd size 1986-2009 and to comment on any changes in the rate of decline in the trend of breeding females

### Response

As described in sections 5.2 and 6.2 of the CRT the decline of the Bathurst herd has accelerated from 2006-2009 over earlier periods, accompanied by demographic changes, of which a decline of cow survival to 0.67-0.68 is the most striking and most significant for the herd's future.

**IR Number:** 2.2  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

### **Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

### **Request**

1. ENR to provide harvest information 1987-2009 (total and by sex) for the Bathurst herd with a brief explanation of the data sources and known or likely biases and how those biases may influence the data.
2. ENR to provide harvest trends 1987-2009 by harvest type; outfitter, resident and GHL (subsistence).
3. ENR to provide an assessment of the trend in harvesting and describe any implications – for example, if the trend could or could not be considered a constant yield harvest.

### **Response**

Section 5.8 of the CTR provides the information ENR has on harvest of Bathurst caribou by outfitters, resident hunters and GHL holders.

In addition, section 5.11 of the CTR is a comparison of declines and harvest in the Cape Bathurst, Bluenose West and Bathurst herds.

The aboriginal harvest in recent years (2006-2009) is not well documented, but check-station and community interview information for 2007-2008 and 2008-2009 suggest that the total harvest of Bathurst caribou has been on the order of 4000-5000 cows and 2000 bulls per year, and may have been higher in some years.

These totals are lower than were documented by the Dogrib Harvest Study in the early 1990's, but it appears that the harvest has not declined in recent years as the herd has decreased.

The resident harvest has declined to 100-200 bulls/year in the late 1990's. The outfitter harvest is well reported and declined in recent years to 223 in 2009, although these totals may have included some Bluenose East bulls.

The aboriginal harvest reported via check-stations and interviews is likely an under-estimate, as some hunters did not report at the check-station, wounding losses would not have been recorded, and some hunters were likely uncomfortable reporting their harvest.

We used population models to back-calculate likely cow harvest, as an additional indicator of probable harvest. Access to the herd even at low numbers has increased in recent years due to winter roads to Tłı̄chǫ communities and diamond mines.

The harvest has likely been a fairly constant yield in terms of totals harvested, but has exerted an ever-greater effect on a declining herd. A similar pattern

occurred in the Cape Bathurst and Bluenose West herds, where a non-declining harvest had a much greater effect at low herd size and in declining herds than at larger herd sizes.

**IR Number:** 2.3

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

### **Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

### **Request**

ENR to provide a risk analysis to show the effects on the trend in breeding females of *not* reducing female harvest by various levels (for example zero; 25% and 50% and 100% of mean female harvest 2006-2009) to clarify any implications of different options for management actions.

### **Response**

Section 7.0 of the CTR outlines deterministic and stochastic modeling of the Bathurst herd and the likely effects of harvest continuing un-changed from current levels, harvest eliminated completely, and harvest reduced by half with varying sex ratios in the harvest.

These may not exactly match A. Gunn's request but they do illustrate the range of possible futures for the herd with various harvest scenarios. In brief, if harvest continues at present annual totals, the herd may be eliminated in 4-5 years; if female harvest is reduced to zero and other demographic variables are very positive (high pregnancy rates, high calf survival, high natural cow survival), the herd might stabilize in the next 5 years and begin a modest increase; cutting the estimated harvest in half would likely result in a continuing decline slowed from the decline 2006-2009.

Three versions of the harvest reduced by half, with sex ratios of 71% cows, 50% cows, and 29% cows, all would result in a slower decline, with the fastest continued decline for the highest cow percentage and the slowest with the lowest cow percentage.

The stochastic modeling provides an additional perspective by reminding us that pregnancy rates, calf survival and other variables will vary in the real world, and that all the model projections are indicators of likely trend under particular conditions, not predictions of the future.

In addition, information from the decline of the Beverly herd suggests that at very low numbers, basic predator-prey relations change and there are substantial risks in allowing a barren-ground caribou herd to fall to very low numbers.

**IR Number:** 2.4  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to clarify what rate of increase in breeding females is likely from reducing harvest relative to other factors reducing female survival such as predation.

**Response**

There are insufficient data to clearly separate harvest mortality from natural mortality of cows. However, modeling by J. Boulanger suggests that a reasonable estimate of natural mortality in Bathurst cows is 14% per year, based on likely mortality in the 1980's when harvest exerted a low effect on cow mortality. Current mortality is 32% from his modeling, thus harvest mortality would be 18% of the 2009 estimate of cows in the herd. J. Boulanger's modeling suggests that this would equal roughly to a harvest of about 5000 cows/year.

A review of barren-ground caribou population ecology by T. Bergerud indicates that (natural) adult and calf survival rates are generally correlated. Spring calf:cow ratios in the Bathurst herd in 2007, 2008 and 2009 were similar to calf:cow ratios for this herd in the 1980's and 1990's, which would suggest that natural mortality of cows 2007-2009 might be similar to cow mortality rates in the 1980's and 1990's – i.e. the use of 14% natural mortality is a reasonable assumption.

**IR Number:** 2.5  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to assess the likelihood of whether the effect of reducing female harvest on herd size will be detectable by 2012 (assuming a mean estimate of breeding females with a Coefficient of Variation similar to 2006 and 2009).

**Response**

Modeling carried out to date suggests that closure of female harvest would most likely result in an estimate of breeding females in 2012 similar to that recorded in

2009. It is unlikely that a statistical comparison of the two estimates would show a significant difference.

However, the current NWT Caribou Management Strategy identified an interval of 3 years between population surveys in declining herds, and the level of concern over the herd's status will undoubtedly require close monitoring of this herd.

Annual calving distribution surveys should also provide a clear indicator of trend in numbers of breeding cows.

**IR Number:** 2.6

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to assess the risk of a statistically stable herd size in 2012 and how to distinguish between a continued decline or a recovery under that condition.

**Response**

Please refer to Information Request 2.3 response.

**IR Number:** 2.7

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to assess what levels of recruitment (or calf survival) will be required so that the increase in female survival (reduced harvesting) will lead to an increase in the number of breeding females by 2012.

**Response**

As described in the CTR (section 7.0, particularly section 7.2), an increase in adult female survival to 0.86 (which is the estimated 1985 level) would allow the herd to stabilize with calf survival levels of 0.53 to 0.50.

An increase in adult female survival to 0.91 would allow the herd to stabilize with calf survival values of 0.32 to 0.35.

The ranges in calf survival are due to variation in fecundity in the herd; if fecundity is higher, a lower calf survival is needed.

Other combinations of calf survival, cow survival and fecundity are also presented in Figure 7.3 (CTR). Calf survival would have to be at least 0.30 and cow survival would have to be greater than 0.81 for any possibility of increase in the herd's numbers.

**IR Number:** 2.8

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to provide an assessment of how age structure may influence recovery.

**Response**

Section 5.7 in the CTR provides the limited data available on the herd's age structure.

Ages of harvested cows from condition studies and a modeled herd age structure suggests a shift (from the 1990's) towards higher proportions of very young cows and older cows.

In other herds a large representation of older cows has been shown to contribute to declines because older cows will tend to have lower fecundity and higher natural mortality rates. However, the exceptionally high cow mortality rates in the Bathurst herd make it somewhat unlikely that many cows would reach advanced ages.

In addition, limited condition data and high pregnancy rates from condition studies for this herd (section 5.5) provide no indication of reduced fecundity or poor condition in older cows.

The higher calf:cow ratios in 2007, 2008 and 2009 indicate that there is likely a substantial proportion of very young cows in the herd. This could delay recovery of the herd as there may be a lag before these cows are producing young

**IR Number:** 2.9  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

Given that the proposal describes a decline in both the Ahiak and Bluenose East herds, ENR to assess any available data on their harvest levels and how the proposed “limited” female harvest will be additional to those levels. This will likely involve an assessment of the degree of overlap in winter distribution on an annual basis.

**Response**

Proposed “limited” harvest of cows in the winter from the Ahiak and Bluenose East herds would include a possible condition and health assessment of about 30 cows in late winter.

Information on harvest of the Ahiak herd is limited. Some harvest of this herd likely occurs from Lutsel K’e hunters in the winter, and from communities in northern Saskatchewan.

A cost-shared program between the Prince Albert Grand Council, government of Saskatchewan and GNWT was initiated in early 2009 to work with hunters from northern Saskatchewan and improve knowledge of hunter harvest in this region.

Harvest of Bluenose East caribou has in the past been primarily from Deline, Bluenose East radio-collars in the last 2-3 winters have been primarily in the Tłı̨chǫ Settlement Area and have overlapped extensively with Bathurst collars. A portion of the harvest in the Tłı̨chǫ area has been Bluenose East caribou.

In addition, radio-collars in 2009 on Bluenose East cows and bulls indicate that most of the caribou taken by outfitters who normally hunt the Bathurst herd was in 2009 Bluenose East bulls. For additional information please see the maps in the CTR.

The Sahtu Renewable Resources Board has in the past proposed a voluntary maximum 4% harvest and 80% bulls for the Bluenose East herd.

**IR Number:** 2.10  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to describe management actions taken for Cape Bathurst and Bluenose West and an assessment of their effectiveness and how that relates to proposed actions for the Bathurst herd.

**Response**

Section 5.11 in the CTR is a comparison of declines, harvest and harvest management in the Cape Bathurst, Bluenose West and Bathurst herds.

In brief, the Cape Bathurst herd declined rapidly to about 1800 caribou in 2006; harvest was closed on this herd in 2007 and a 2009 post-calving survey showed nearly the same number of caribou in July 2009 as in July 2006.

Similarly, a Total Allowable Harvest of 4% of the herd and at least 80% bull harvest in the Bluenose West herd is associated with a change from rapid decline to 2006 to initial stability from 2006 to 2009.

It must be remembered that there are no guarantees of continued stability or increase in these two herds, but the rapid shift in population trend suggests that harvest had contributed heavily to the two herds' declines and that harvest management was effective.

For Bathurst in 2007, tags were reduced from five to two for resident hunters and tags for outfitted hunts were reduced to 750.

**IR Number:** 2.11  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A: Proposed Action 4. Eliminate all harvesting females Bathurst herd.

**Request**

ENR to specify what is meant by "when herds are mixed together".

## **Response**

Some overlap of neighboring barren-ground caribou herds on the winter range has always occurred in NWT herds, based on radio-collar information since 1996.

In the case of the Bathurst herd, overlap on the winter range with the Bluenose East herd was extensive in some recent years – see Figure 5.21 in the CTR.

The degree of overlap could be estimated by comparing numbers of satellite collars per herd. This overlap needs to be considered in evaluating harvest in the winter or possible harvest management of the winter harvest.

**IR Number:** 2.12

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

## **Reference**

Appendix A - Proposed Action 5. Reduce harvesting males Bathurst herd

## **Request**

The ENR proposal refers to a limited bull harvest. ENR to provide more details about 'limited' and how it will be assessed.

## **Response**

An exact number of bulls has not been determined.

However, in view of the rapid decline of the Bathurst herd and bull:cow ratios lower in the Bathurst herd than in neighboring herds (see section 5.4 of the technical report), model projections showing a stabilizing trend in the herd only with complete harvest closure (section 7.1), and a substantial harvest of bulls from this herd up to 2009, ENR would suggest keeping the number of bulls taken to a low number.

A rough calculation indicates that the herd likely has about 8000 bulls and 24000 cows. If half the 8000 bulls are prime bulls and half are young or small bulls, then a 4% harvest of the small bulls is 160. ENR's preference would be for numbers below this range be focused on young males.

**IR Number:** 2.13  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A - Proposed Action 5. Reduce harvesting males Bathurst herd

**Request**

ENR to provide details about how the implications of an antlerless bull harvest (see Section 4) and how the bull:cow fall ratio values will be used to limit the antlerless bull harvest.

**Response**

The reference to antlerless caribou was as an example of identifying bulls in the winter, when for the most part bulls have shed their antlers, while cows for the most part have retained theirs.

Section 7.3 in the CTR summarizes a number of studies that indicate that pregnancy rates in caribou and reindeer can likely be maintained at low sex ratios of 10 bulls:100 cows.

However, there are also studies that suggest highly skewed sex ratios (few males) may affect population genetics negatively, and breeding by younger or smaller bulls may increase the likelihood of cows bred on a second estrus and of calves born later.

Hunters from several NWT communities have also noted that the prime bulls are important for the herd's health and leading migrations.

A normal range is 60:100 and ENR is concerned when numbers for bull:cow ratios are below 40:100, and they should never fall below 18-20:100, based on a study in red deer that suggested values of 18 bulls:100 cows or higher were preferred to maintain genetic health in hunted populations.

**IR Number:** 2.14  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix A - Proposed Action 5. Reduce harvesting males Bathurst herd

**Request**

ENR to provide a more detailed explanation of 'mobile harvesting zones' for Bluenose East and Ahiak herds.

## **Response**

Pending population estimates of the Bluenose East and Ahiak herds in 2010, ENR proposes that 3 zones be created, with the boundaries somewhat flexible to accommodate some year-to-year variation in areas used by the 3 herds, as defined by radio-collars, in late November.

In the Bathurst zone there would be essentially no caribou harvest, possibly excepting a small number of bulls, while in the Ahiak and Bluenose East zones a more substantial bull harvest could be considered.

**IR Number:** 2.15

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

## **Reference**

Appendix A - Proposed Action 8. Protection of Calving ground

## **Request**

ENR to provide details on the 'current level of protection' as the proposed management action is to maintain this level of protection.

## **Response**

Most of the barren-ground caribou herds in the NWT have calving grounds in Nunavut, including the three herds under discussion in this proposal (Bluenose East, Ahiak, Bathurst).

GNWT has approached GN about increased protection of these calving grounds.

In the NWT, the Cape Bathurst calving ground is identified for protection under the Paulatuk Conservation Plan. It is also recognized under the Wildlife Act as a Critical Wildlife Area. The Bluenose West calving ground is in a national park.

GNWT has consistently advocated that no exploration or other development activity be permitted on calving grounds between May 15 and June 30. This would protect cows just before calving and for about 3 weeks after the peak of calving, when the cow-calf bond is at its most sensitive to disturbance and calves are totally dependent on their mothers.

Indian and Northern Affairs Canada has caribou protection measures and there has been no land use permits issued for exploration activities on known calving grounds in Nunavut during this critical time of year.

**IR Number:** 2.16  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to provide details on how the monitoring actions relate to ARC report recommendations rather than only one ARC recommendation (more collars).

**Response**

ENR has developed a Management Response to the ARC report and has provided this to the WRRB.

ENR has already implemented some of the ARC recommendations, including greater use of population modeling, increased demographic monitoring of all herds, and increased radio-collar numbers for some herds. An overall approach to monitoring barren-ground caribou herds will be developed in the next 5-year Caribou Management Strategy.

In general terms, ENR believes that more intensive monitoring of declining herds, particularly at low numbers, is warranted. Low numbers of radio-collars have made it more difficult to assess adult survival, although this could be determined by other methods.

The number of radio collars per herd depends on the purpose for which collars are being used.

**IR Number:** 2.17  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to provide details on the monitoring as criteria for management actions – for example; if 10 month calf:cow ratios declined to 20:100 cows, what would ENR recommend as management action? In particular, ENR to provide details on the adult sex ratio and harvest proposals for the limited male harvest.

## **Response**

Details on proposed male harvest in relation to fall bull:cow ratios were provided in an earlier response.

Calf:cow ratios would not necessarily be linked directly to management actions, but a number of years of low calf:cow ratios would serve as an indicator of poor environmental conditions; since adult and calf survival are correlated, low calf:cow ratios would most likely be indicative of poor natural adult survival rates.

Calf:cow ratios would be used, as ancillary information about the herd's status and welfare.

**IR Number:** 2.18

**Source:** Independent Board Consultant, Anne Gunn

**To:** Government of the Northwest Territories

## **Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

## **Request**

ENR to justify whether a sample of 20 cows is likely to be representative of the herd pregnancy rates and under what conditions. ENR to explain why this is a necessary measure compared to, for example, monitoring calf:cow ratios at the peak of calving.

## **Response**

We have not undertaken a power analysis to assess sample numbers needed to adequately sample a herd's condition.

Condition studies on Bathurst cow's are not recommended as part of this proposal.

Monitoring calf:cow ratios at peak of calving can also provide some information. A sample of 20-30 cows from the Bluenose East herd would provide basic information on health and condition that can be compared to recent studies of the Bathurst herd.

One more collection from the Ahiak herd is planned as this herd in 2008 had an exceptionally low pregnancy rates and Ahiak cows assessed in Feb. 2009 were in poorer condition than Bathurst cows in March 2008.

**IR Number:** 2.19  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to provide a detailed rationale to link trends in wolf cub survival at den sites to trends in wolf numbers.

**Response**

In addition to section 5.9 of the CTR, wolf numbers are influenced most by annual recruitment of pups. Pup survival is heavily influenced by food supply and disease (e.g., canine parvovirus and canine distemper).

**IR Number:** 2.20  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to provide a rationale for why monitoring actions do not include monitoring trends in wolf sightings during caribou surveys.

**Response**

ENR staff normally record sightings of wolves, bears and other species during caribou surveys and will continue to record these sightings.

An analysis by P. Frame and D. Cluff (summary in section 5.9 of the CTR) showed that numbers of wolves seen on caribou surveys did not provide a reliable index of wolf abundance, due to high variability in sightings.

**IR Number:** 2.21  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to provide more details of current harvest levels for wolves and what specific steps are proposed as incentives and what increases in wolf harvesting are being proposed.

**Response**

Industry Tourism and Investments, Genuine Mackenzie Valley Fur Program provides \$200 for each well handled pelt. ENR also provides an additional \$100 per carcass to collect information on productivity and condition.

Annual harvest of wolves in the North and South Slave Regions has been 400 to 500. This includes harvest obtained from outfitters, residents and fur records.

**IR Number:** 2.22  
**Source:** Independent Board Consultant, Anne Gunn  
**To:** Government of the Northwest Territories

**Reference**

Appendix B - Proposed Actions to monitor the Bathurst, Bluenose East and Ahiak herds. Proposed Action 1

**Request**

ENR to explain why seasonal distribution is not a monitoring action although changes, especially in winter distribution relate to caribou abundance.

**Response**

Radio-collar locations are used routinely by ENR to plan surveys, monitor seasonal movements, and in this case, to assess which caribou are accessible from roads and communities for harvest.

Monitoring Seasonal movements is required to establish mobile protection areas. Monitoring seasonal distribution of caribou from collars is listed in the management proposal.

**IR Number:** 2.23  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Why has this report been distributed to the public as a joint report with joint recommendations when there is so much uncertainty and disagreement as action to be taken?

**Response**

The Tłıchǫ land claim requires consultation among affected parties on management proposals prior to submission to the WRRB. The WRRB requested a joint proposal from the Tłıchǫ Government (TG) and GNWT on management for the Bathurst herd by Oct. 30, 2009. A series of meetings between TG and GNWT staff resulted in the management proposal sent to the WRRB in the first week of November. TG and GNWT agreed to submit the proposal and indicate where agreement was reached.

**IR Number:** 2.24  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Has ENR compared the annual data of total caribou harvests to total wolves over the years and if not, why not?

**Response**

Wolves and caribou have co-existed for thousands of years. ENR's data suggests that wolf numbers are declining as caribou numbers decline as wolves have no alternate source of prey.

ENR has not compared total caribou harvests to total wolves over the years. Such a comparison is likely too variable among years and would be inconclusive. Factors contributing to this include wolf harvests from different communities can draw on different caribou herds, wolf harvests fluctuate in respect to where the caribou are and where the communities and winter roads are. Wolf harvests fluctuate with pelt prices, not all wolf pelts are exported and sometimes wolf pelts are held back a year in anticipation of better prices the following year, or if they miss an auction date.

**IR Number:** 2.25  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What are the costs to carry - out all of the activities in this proposal? Is the GNWT going to be responsible for paying for all these jobs and new activities and how does the GNWT justify this during a recession? In recent surveys of concerns by NWT residents, were the caribou listed as a top priority or social issues?

**Response**

Barren-ground caribou are the most important country food sources in the NWT. Most communities and aboriginal peoples identify caribou as an essential part of their culture.

GNWT has an obligation to consult with and accommodate all aboriginal groups whose harvesting rights may be infringed on by harvest management.

The 2006-2010 Caribou Management Strategy for the NWT had a budget over 5 years of about Eight million dollars. The legislature of the NWT sets priorities and interest in caribou was recognized as a priority.

**IR Number:** 2.26  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What are post calving grounds? Is ENR proposing to allow oil and gas and tourism activities on these grounds? Why was mining singled out as an activity?

**Response**

Barren-ground caribou in the NWT and Nunavut generally calve in early to mid June.

ENR's recommendation for several years has been that there should be no exploration or development activity on caribou calving grounds from May 15 to June 30. The purpose of this is to minimize disturbance to late-pregnant cows and cows with young calves during the calves' first 2-3 weeks, when they are

totally dependent on their mothers and the cow-calf bond is most vulnerable to disturbance.

**IR Number:** 2.27  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Does ENR have a specific map that outlines the land claims areas for the Tłıchǫ and other aboriginal communities in NWT, including those with fee simple lands, those that are traditional territory and those that are lands identified for a special purpose or protection from activity? Please advise as to the routes of the caribou throughout these areas and where the calving grounds are on these areas.

**Response**

The Tłıchǫ land claim agreement contains this map. There are no other settled land claims in the North and South Slave Regions. Please see figure 3.2 of the CTR for seasonal ranges of the Bathurst herd and figure 3.4 for ranges of other herds. The calving grounds for the herds using the North Slave Region are located in Nunavut. Spring and fall migrations of these herds are broad scale movements over large areas.

**IR Number:** 2.28  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Did ENR have any meetings with community groups and individuals other than the Tłıchǫ in preparing this joint proposal? Have other aboriginal and Inuit groups been involved? Were NWT residents involved when this joint proposal went before the Tłıchǫ community in the summer of 2009? Were any organizations or individuals consulted in preparation of this joint proposal?

**Response**

ENR has been making presentations to the public since July to discuss ideas on recovery options. ENR held two sets of workshops in October with representatives from North Slave, South Slave, Sahtu, northern Saskatchewan

and Nunavut communities as well as Barren-ground caribou outfitters to discuss recovery options. These options were considered in developing the joint proposal. ENR has provided a consultation record to WRRB.

**IR Number:** 2.29  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

The Alberta Research Council report recommended clarifying various statistics and information to the public such as rates of decline. Have these recommendations been implemented?

**Response**

ENR has developed a Management Response to the ARC report. ENR has already implemented some of the ARC recommendations, including greater use of population modeling, increased demographic monitoring of all herds, and increased radio-collar numbers for some herds. An overall approach to monitoring barren-ground caribou herds will be developed in the next 5-year Caribou Management Strategy.

The GNWT has also produced an educational package called “Caribou and People: A Shared Future” which includes a DVD focused on caribou and their ecology, including factors that affect population trend (increasing, decreasing or stable).

**IR Number:** 2.30  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Re the Bluenose Herd, ENR notes that despite lack of success in June 2009, biologists reported seeing lower numbers. Could ENR please explain how this conclusion was reached and what the number was.

**Response**

The July survey of the Bluenose East herd was unsuccessful because cool, wet weather meant that portions of the herd did not aggregate sufficiently for photos

to be taken. However, the biologist who led the 2009 survey of this herd and also led the 2005 and 2006 surveys of this herd, Boyan Tracz, had experience of this herd's summer range from the 3 surveys and his overall impression was that he was seeing fewer caribou in 2009 than in 2006. It was not possible to come up with a reliable estimate of herd size. The Bluenose East herd declined by almost half between 2000 and 2006. To date, there are no indications that the herd has increased. A survey is planned in 2010 to update the estimate.

**IR Number:** 2.31  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

Was this proposal reviewed by the GNWT legal advisors prior to its submission to the public?

### **Response**

Legal advice to Departments from the Department of Justice is privileged communications.

**IR Number:** 2.32  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

The proposal indicates that consultation and collaboration with the Nunavut Government and co-management groups will be needed to ensure that proper protection is maintained for each calving round, as the Bluenose East, Bathurst and Ahiak calving grounds are all in Nunavut.

1. Why are the GNWT and Tłıchǵ proposing to restrict resident and non-resident hunters when it cannot be certain that these calving grounds will be protected?
2. Why are precautions not being required in Nunavut at the same time as in NWT?
3. Why is the NWT taking the lead if the calving grounds are in Nunavut?

## **Response**

GNWT believes that the extent and rate of decline in the Bathurst herd are such that urgent management actions are needed now.

The GNWT has included the GN in workshops on the Bathurst decline and met with the Kugluktuk Hunters and Trappers Association (at their request) to provide information about the Bathurst and other herds. The GNWT has also made a presentation to the Nunavut Wildlife Management Board.

The GNWT has raised the issue of calving ground protection at senior levels (Ministers) with the Nunavut government. The immediate issue to address is reducing harvest.

**IR Number:** 2.33  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

## **Reference**

### **Request**

1. Who funded community hunts of caribou in the past?
2. How many caribou were taken during these hunts?
3. Is this subsistence hunting and traditional hunting?
4. How may aboriginals rely purely on subsistence hunting these days?

## **Response**

Industry, Tourism and Investment (ITI) provides funding for community hunts. Reports are provided to ITI. NWT Bureau of Statistics collects information on the use of country foods per household.

**IR Number:** 2.34  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

## **Reference**

### **Request**

The proposal indicates that low numbers of breeding females in the Bathurst herd warrant immediate management. What is the threshold used for science reasons, political reasons? Are they the same?

## **Response**

Barren-ground caribou herds have gone through large changes in numbers for a long time. The George River herd in Quebec was estimated at 2500-4000 in 1950, then increased to about 600,000 in 34 years before declining; this herd is still declining.

When the Bathurst herd numbered more than 300,000, harvest was essentially unmanaged as the estimated harvest was a small percentage of the herd. When herds are declining and reach low numbers, the hunter harvest can become a significant factor in their decline.

There is by definition no sustainable harvest from a declining population. Management agencies consider information and make decisions on harvesting levels. In this case, the extent and rate of decline in the Bathurst herd is such that the herd may be lost in 4-5 years, this is not acceptable.

ENR's view in this case is that the preferred option for the Bathurst herd is to close all harvest to give the herd maximum opportunity to recover. Herd size and trend both figure into management recommendations for this herd. Stabilization and herd growth are not guaranteed even with total harvest closure, as weather and other factors will continue to affect the herd. In addition, experience with the Beverly herd and other herds has shown that herds may sometimes decline to very low numbers and then stay at low numbers for an extended period, regardless of harvest. The fastest possible return to sustainable caribou harvest from this herd will come if the herd is given its best chance at recovering.

**IR Number:** 2.35  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

## **Reference**

### **Request**

The proposal indicates that “A limited low number of breeding females may be allowed to be harvested from the Bathurst herd in the winter months for scientific purposes (health and condition and assessment of pregnancy rate). Meat will be distributed to Aboriginal elders. The numbers to be collected are to be discussed further with Tłıchǝ Aboriginal hunters, members of the WRRB and ENR biologist”.

1. How can members of the NWT comment on this proposal when these numbers have not been agreed to?
2. Why is meat only to be distributed to Aboriginal Elders?

### **Response**

The intent of this item in the proposal was to allow for a small (maximum 30) number of cows to be harvested to assess condition, health and pregnancy rate

as part of a community hunt. The meat is then distributed by the Aboriginal group who undertook the community hunt. For greater certainty, ENR is not recommending any harvest of Bathurst cows for any purpose.

**IR Number:** 2.36  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

#### **Request**

The proposal indicates “No harvest of females is to take place when caribou of different herds are mixed together in the winter time to avoid accidental hunt of Bathurst cows. When this situation occurs, it is recommended that males only be hunted (ENR’s position). Consultation between Industry, Tourism and Investment (ITI) and ENR will take place to explore avenues to provide financial support to hunters to access new hunting areas.”

1. What is the Tłıchǵ’s position?
2. What does the consultation aspect really mean?
3. What does access to new hunting areas mean?
4. Who provides financial support and to whom?
5. Do people really know the difference between the herds and who will police this?

#### **Response**

Section 5.8 in the CTR provides some maps of radio-collar locations in fall and winter from the Bluenose East, Bathurst and Ahiak herds. These can be used to identify areas that have only collars from one herd and areas with mixed collars from two neighboring herds.

Because ENR is proposing to close the Bathurst harvest, some communities (e.g. Lutsel K’e, Wekweeti) would have to travel large distances to access areas with Bluenose East or Ahiak caribou. GNWT would assist these communities with costs associated with community hunts.

**IR Number:** 2.37  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

The proposal indicates “The Diamond Mines’ Wildlife and Environment Monitoring programs (WEMP) will be redesigned to adjust for results and findings acquired through several years of data collection and new proposed monitoring will be presented to the Tłıchǵ government and communities for their inputs.”

1. What is involved here?
2. What are the plans that you want people to comment on?
3. How can interveners comment on this proposal when these plans are uncertain?
4. Why are these plans not also presented to NWT residents?

**Response**

Under the Environmental Agreements signed with each diamond mine, wildlife monitoring programs were established. In September 2009, a workshop was held to review the diamond mine wildlife monitoring programs. The 3 independent boards that monitor the mines, along with government staff and consultants participated. A report has been prepared. The mines are responsible for these programs and a public review will be required if changes are planned.

**IR Number:** 2.38  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

During ENR meetings with the Tłıchǵ, did any of the elders indicate that they should also reduce the harvesting of male and female caribou?

**Response**

The issue was discussed.

Elders have always expressed concerns about potential overharvesting of bulls at each of the community meetings held in the past three years. In the opinion of

Tłjchq elders, bulls are the leaders of the herd and needed in larger numbers to make sure cows are bred. If too many are removed the caribou will go away.

Other elders have made reference to past Chiefs such as Jimmy Bruneau who advocated sparing the caribou females when the number of animals is too low.

**IR Number:** 2.39  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

1. How many caribou tags were issued to residents in the NWT annually for the last 5 years?
2. Does the GNWT know how many resident caribou hunters there are in the NWT and how many families rely on this meat as a substantial portion of their diet?

### **Response**

As described in section 5.8 of the CTR, the hunt of barren-ground caribou by resident hunters in the last few years has declined and has been between 100 and 200 bulls/year. In addition, ENR has already provided the WRRB a spreadsheet, with more detailed information on the resident hunter harvest.

**IR Number:** 2.40  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

The proposal indicates no direction is required from the Board on this action re compliance, winter road etc.

1. Why is no direction sought here?
2. Why is public interest implication in Wek'èezhii referred to specifically not the NWT interest?

### **Response**

It is the responsibility of ENR to enforce legislation. ENR works with co-management boards on public education as this is within their mandates also.

ENR also works with Aboriginal organizations to monitor harvest (for example, winter road check stations) and undertake public education.

**IR Number:** 2.41  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

ENR website indicates:

“The Department of Environment and Natural Resources promotes and supports the sustainable use and development of natural resources to protect, conserve and enhance the Northwest Territories environment for the social and economic benefit of all residents. This responsibility is shared with Aboriginal, federal, territorial, and municipal governments, boards and agencies and every resident of the Northwest Territories.

Vision

Our children will inherit a secure future that relies on a healthy environment capable of supporting traditional lifestyles within a modern economy built on the strengths of our people and the wise use and protection of our natural resources providing communities and individuals with opportunities to be productive and self-reliant.”

Please advise how this proposal is consistent with ENRs values which are about all NWT citizens.

### **Response**

ENR places the highest priority on conservation and wise use of natural resources within the NWT, and is guided by GNWT legislation, land claims and recommendations of co-management partners.

No one in the NWT would gain from a continued steep decline of the Bathurst caribou herd, and ENR needs to consider the long-term needs of NWT citizens and unborn generations.

Barren-ground caribou herds have varied widely in numbers for a long time. In times of decline and low numbers, sacrifices may sometimes be needed to allow caribou and other wildlife to recover from low numbers.

In the Inuvialuit, Gwich'in and Sahtu Settlement Areas, co-management boards have taken the lead in making tough decisions about closing all harvest (Cape Bathurst herd) or reducing and changing the sex ratio of the harvest (Bluenose West herd).

The WRRB will review the available information and make recommendations on caribou management in Wek'eezhii. ENR is also bound by land claims that clearly identify priorities for allocation of harvest of wildlife when conservation requires reduction of harvest.

In the Inuvialuit, Gwich'in and Sahtu Settlement Areas, resident and commercial harvest of barren-ground caribou has already been eliminated, to assist with the recovery of caribou herds.

**IR Number:** 2.42  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

#### **Reference**

#### **Request**

The proposal allows for Tłıchǫ hunters to assess presence/absence of fetuses in 20 cows hunted during winter which is a joint decision but previously indicated that Tłıchǫ want unlimited hunting of cows. Please explain.

#### **Response**

The reference to assessing pregnancy rates is a monitoring action and is an example of information that can be obtained from hunters.

**IR Number:** 2.43  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

#### **Reference**

#### **Request**

Did the Tłıchǫ and GNWT consider instilling means to ensure that all caribou harvesting is being conducted according to the traditional values of Elders and good hunting practices?

#### **Response**

ENR has been discussing this with Aboriginal partners and is planning to substantially increase the effort placed in hunter education. This will include hiring community patrolmen and involve elders to promote traditional practices and values with Aboriginal hunters.

**IR Number:** 2.44  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

1. Does ENR need to determine whether wolves are hunting caribou as recommended in this proposal?
2. If so how would you do this?
3. What cost would be involved in doing so?
4. Would providing incentives to hunters to trap and hunt wolves not be more efficient, fair, effective and economic than the actions proposed in this proposal?

### **Response**

Examination of wolf stomachs, obtained by Mark Williams from hunters, indicated that about 90% of the diet of tundra wolves is caribou.

ENR has been monitoring wolf dens annually in the Slave Geological Province since 1996. Those surveys indicate that in the last 5 years, productivity and den use late in the summer has dropped. Observations of wolves on the Bathurst calving grounds are low. In 14,000 km of survey flight lines in June 2009, 4 wolf sightings were recorded. This is typical. See Section 5.9 in TCR.

ITI's Genuine Mackenzie Valley Fur Program provides \$200 per well handled pelt and ENR provides \$100 per carcass to assess condition and productivity of wolves.

**IR Number:** 2.45  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

What does ENR mean by “tend to support” in terms of assessing scientific data? The Alberta Research Council report provides for a number of cautions in data interpretation, ambiguous language and weak conclusions. Why is the GNWT using this report to support a declining caribou population?

### **Response**

ENR has already implemented some of the ARC recommendations, including greater use of population modeling, increased demographic monitoring of all herds, and increased radio-collar numbers for some herds.

An overall approach to monitoring barren-ground caribou herds will be developed in the next 5-year Caribou Management Strategy. In general terms, ENR believes that more intensive monitoring of declining herds, particularly at low numbers, is warranted.

As detailed in the CTR, ENR staff and consultants have carried out a substantial amount of analysis of the information available for the Bathurst herd and its neighboring herds. The information supporting the herd's decline is extensive and there is no indication that the "missing" Bathurst caribou moved either east or west from the Bathurst range.

**IR Number:** 2.46

**Source:** Individual – Karen McMaster

**To:** Government of the Northwest Territories

**Reference**

**Request**

What does it cost to do a photo census?

**Response**

The approximate cost of the Bathurst June 2009 calving ground photo survey was \$350,000. Much of this cost is fixed-wing and helicopter aircraft charters.

**IR Number:** 2.47

**Source:** Individual – Karen McMaster

**To:** Government of the Northwest Territories

**Reference**

**Request**

For calculation of caribou, how do you arrive at the plus or minus?

**Response**

Most caribou surveys do not count every single caribou in a herd; most commonly transects are used for either visual counts or photographic transects.

A variance, confidence interval or coefficient of variation is usually calculated from the variation among transects in a survey, and is used as a measure of uncertainty around an estimate.

Pollsters who report on a survey of consumers or voters also provide an estimate of uncertainty for their results. The exact formulas can be found in statistics textbooks. Surveys are designed to have low variance around the estimates.

**IR Number:** 2.48  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

If the Bluenose herd decreased so much between 2006 and 2000, why was nothing done in 2006?

### **Response**

When large declines were first reported for the Bluenose West, Cape Bathurst and Bluenose East herd in 2005, people questioned the results. The surveys of all three herds were repeated in 2006 and confirmed the declines.

By recommendation of the Wildlife Management Advisory Council (WMAC – NWT), all harvest on the Cape Bathurst herd was closed in 2007. For the Bluenose West herd, 3 co-management boards recommended a Total Allowable Harvest of 4% with 80% bulls, and this has been implemented. The Sahtu Renewable Resources Board recommended a voluntary maximum of 4% harvest and 80% bulls in 2006 for the Bluenose East herd.

In recent years the Sahtu harvest of the Bluenose East herd has been limited because it has been remote from Deline, which has been one of the main harvesting communities for this herd. However, radio-collars have shown that the Bluenose East herd has been mostly in the Tłıchǫ settlement area in the last 3 years and the harvest from this herd is not well documented. This is a source of concern for ENR and the main reason for caution in advocating harvest of this herd to offset harvest from the Bathurst herd.

**IR Number:** 2.49  
**Source:** Individual – Karen McMaster  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Why are aboriginal hunters and resident hunters not required to report the number of caribou they harvest? Would this be valuable information in understanding the caribou situation in the NWT?

**Response**

Land claims required harvest studies to be undertaken to determine minimum needs levels for beneficiaries. Most of these studies were completed over the past ten years and provide an estimate of harvest. Once these studies were completed, ENR has focused efforts to collect harvest when required for management purposes. Since 2008, ENR has been providing calendars to Aboriginal harvesters to collect information on harvest in the North Slave region. ENR also maintains winter road check stations which provide information on Aboriginal harvest.

Under the *Wildlife Act*, resident hunters are required to report harvest and this is noted in the annual questionnaire sent to resident hunters.

**IR Number:** 2.50  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

1. What has the annual budget for managing Caribou been in the preceding 5 years?
2. What is the proposed budget for the next 5 years?
3. Who will be hired to perform the work?

**Response**

In the 2006-2010 Caribou Management Strategy, the total budget over five years was \$8 million dollars. The budget for the next 5 years will be determined in the next five year caribou management strategy being developed. The work is undertaken by staff, contractors and in co-operation with Aboriginal groups and adjacent jurisdictions.

**IR Number:** 2.51  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How can a recovery plan be implemented when the cause of the decline cannot be identified?

**Response**

As described in the CTR, barren-ground caribou herds across their North American range go through large changes in numbers, and most likely have done this for hundreds and possibly thousands of years.

Low spring calf:cow ratios and late calving in the Bathurst herd in the early 2000's indicate that the herd would have declined in the early 2000's regardless of harvest.

Although the harvest is not as well documented as we would like, the available evidence suggests that the harvest has been about 4000-5000 cows and 2000 bulls per year and that the total number of caribou harvested in recent years has not declined as the herd has decreased. As a result, from 2006 to 2009 the accelerated decline has increasingly resulted from hunter harvest.

Model projections suggest that if the harvest is eliminated, the herd should stabilize and under ideal conditions, begin a modest increase in the next 5 years.

Harvest closure for the Cape Bathurst herd and harvest reduction with a shift to primarily bull hunting has been effective as both these herds show initial stability from 2006 to 2009. Weather and other factors will continue to affect these herds.

**IR Number:** 2.52  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How would the calving grounds be defined for the purpose of closing them to mining exploration?

**Response**

ENR defines annual calving grounds as the area occupied by breeding cows from the time of peak calving to the time when the calves are about 3 weeks old. In the Bathurst herd in 2009, the peak of calving was estimated as June 6-9 so another 3 weeks would take the herd to the end of June.

A workshop on caribou calving grounds (report published in 2002) provided this definition of calving (peak of calving plus 3 weeks) as the period when young calves are not yet foraging significantly on their own and heavily dependent on their mothers' milk.

Behaviorally the cows and calves are most sensitive to disturbance during this time of the year, and the calves are unlikely to survive long if separated from their mothers.

Calving grounds can be mapped in June by systematic aerial surveys and in other years, concentrations of radio-collared cows provide a strong index to where the main calving aggregations are found that year.

To date, land use permits have not been issued on calving grounds during the calving season in NWT or Nunavut.

**IR Number:** 2.53

**Source:** N.W.T. Wildlife Federation – Martin Knutson, President

**To:** Government of the Northwest Territories

#### **Reference**

#### **Request**

Define “post calving period” If no exploration is allowed post calving when and where is this area?

#### **Response**

ENR defines the calving and immediate post-calving period as peak of calving (at least 50% of the cows with calves) plus three weeks, as describe in IR response 2.52.

The area would be defined based on recent systematic reconnaissance surveys of the calving grounds.

Since 1996 the Bathurst herd has calved on the west side of Bathurst Inlet and the overall location has changed little, although the area occupied by the main aggregations has diminished as the herd has declined.

**IR Number:** 2.54  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Will all hunters be restricted from killing female caribou? If so who will monitor this and what will the fines be?

**Response**

ENR is responsible for enforcing regulations. Renewable Resource Officers will be doing regular snowmobile, truck and aircraft patrol, there will also be extra patrolmen hired from the various Tłıchǫ communities. The Wildlife Act defines penalties. Fines range from \$250.00 to \$1000.00 per offence.

In the ENR interim emergency measures, all hunters will be restricted from hunting male and female caribou in the no hunting zone as of 1 January 2010. This measure will be reviewed once WRRB recommendations are received.

**IR Number:** 2.55  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Explain how limiting the Resident Hunt and Non-Resident hunt is going to help increase the herds when the Aboriginals take the most animals and they are still allowed to hunt?

**Response**

GNWT is guided by the Tłıchǫ Agreement Chapter 12 Wildlife Harvesting Management. Discussions on harvest levels and allocation will occur at the WRRB public hearing.

**IR Number:** 2.56  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Is it possible to tell a Bluenose East Caribou from an Ahiak Caribou?

**Response**

Radio collars are used to assess affiliation of caribou to herd. There is a very low rate of interchange among herds. ENR uses radio-collar locations summed over a period of time to map areas used primarily by one herd and areas that have overlap of neighboring herds. If a particular area has only Bluenose East collars in the winter, the harvest in that area is assigned to Bluenose East caribou.

In recent winters Bluenose East collars have overlapped with Bathurst collars to the west of the main Bathurst range, and Ahiak collars have overlapped with Bathurst collars to the east of the main Bathurst range, but Bluenose East and Ahiak collars have not overlapped.

**IR Number:** 2.57  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many Caribou would be killed to provide pregnancy data?

**Response**

ENR obtains information on pregnancy rates during community hunts or from individual hunters who record this information.

Calf:cow ratios just after the peak of calving can also provide a measure of productivity at this time of year.

**IR Number:** 2.58  
**Source:** N.W.T. Wildlife Federation – Martin Knutson, President  
**To:** Government of the Northwest Territories

**Reference**

**Request**

1. How much taxpayer money will be used to “provide financial support”?
2. Will this financial support be given to resident hunters who do not get to hunt?

**Response**

ITI provides funding to hunters and trappers organizations to support the traditional economy. Organizations may use this funding for community hunts.

**IR Number:** 2.59  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

According to ENR, caribou mortality, for the Bathurst Herd, has increased from 11% in 1996 (Bathurst Caribou Management Plan), to 21% in 2004 (ENR Manuscript Report #163), to over 57% from 2006-2009. What has ENR identified as the cause of this mortality?

**Response**

Estimates of adult cow mortality rates in barren-ground caribou herds (George River herd, Porcupine herd, Bathurst herd) have generally ranged from about 80% to just over 90%. Population trend is very sensitive to cow survival rates.

In the Porcupine herd, a cow survival rate of 82% is likely associated with a declining herd while a survival rate of 86% is associated with a stable or slightly increasing herd, depending on calf survival rates.

As described in the Bathurst technical report, the estimated cow survival rate from 2006 to 2009 has been 67-68%. The decrease from 81-82% to 68-69% is primarily a result of harvest mortality.

Reduced calf survival between 2000 and 2005 has reduced recruitment into the herd and contributed to the decline.

**IR Number:** 2.60  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

In 2008, ENR harvested approximately 60 caribou for samples. What was the age structure of these caribou?

**Response**

This information can be found in the CTR. The age structure in the cows for which we have ages had shifted slightly toward older and very young cows, compared to a previous sample in 1992. This most likely reflects poor recruitment of calves into the herd between 2000 and 2006; these year cohorts are poorly represented in the middle-aged segment of the herd.

Higher recruitment in 2007, 2008 and 2009 means there is a substantial representation of very young females in the herd. This could delay recovery somewhat as these females may need another year or two to begin producing calves.

**IR Number:** 2.61  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

ENR has reported pregnancy rates of 91% for the Bathurst caribou herd in 2008. If most Bathurst Caribou don't become pregnant until their third year, and the caribou are only living for two years (58% mortality rates), then how does the ENR explain the high pregnancy rates?

**Response**

As noted in the CTR, estimated cow survival rates in 2006-2009 were 67-68%. This does not mean that every cow that reaches 2 or 3 years of age is dead at that point. There is a representation of cows varying in age from less than one year (calves) to cows 10-12 years old. Cows of every cohort have had high

mortality rates, but that mortality is still distributed over a range of cohorts from different years.

**IR Number:** 2.62  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What is the source of the 119,600 caribou figure for the Bluenose East herd in 2000 mentioned in the ENR proposal? All the research presented at the WRRB hearing in 2007 says ENR counted 84,412, and upped that figure to approximately 104,000.

**Response**

The source of the figure of 119,600 caribou in the Bluenose East herd is a summary report by John Nagy which contains revised survey estimates for the Bluenose West, Bluenose East and Cape Bathurst herds.

**IR Number:** 2.63  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What is the exact data to support the ENR assertion that the Ahiak caribou herd is down 60% from the 2006 level of 200,000?

**Response**

The ballpark estimate of 200,000 caribou in the Ahiak herd in 1996 was an extrapolation from a systematic calving distribution survey that year by Anne Gunn. It was an approximation without a confidence interval or variance meant to draw attention to what appeared to be a substantial herd that had relatively little study or monitoring. It was not meant to be a proper population estimate and should be considered in the correct context.

Section 4 of the CTR provides the documentation for the Ahiak trend analysis. The decline of 60% refers to a comparison of the average number of caribou cows seen per 10-km segment on calving reconnaissance surveys of this calving

ground carried out in 2006, 2007, 2008, and 2009. These surveys were not meant to provide population estimates but because the methods were similar, they can be used to give an index of abundance. The average number of caribou cows seen per segment in 2009 was 60% less than in 2006.

**IR Number:** 2.64  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What is the mortality rate of collared caribou, by herd, over the past ten years.

**Response**

ENR has not calculated the mortality rates of collared caribou in every herd. As noted in ENR response to previous Information Request, survival estimation from radio-collars in barren-ground caribou herds has varied over a range from 90% or slightly higher in growing herds (e.g. George River herd) to 82-86% in the Porcupine herd and 81-86% in the Bathurst herd.

The more recent low survival rate of 67-68% was calculated from a population model for the Bathurst herd that used the recent rapid decline of the herd to estimate cow survival rates, as described in the technical report.

**IR Number:** 2.65  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What are the exact locations of collared caribou, by herd, over the past 3 years. Please show the collared caribou from time of collaring to present. Also, please identify caribou as bulls or cows.

## **Response**

ENR has provided a sequence of radio-collar maps for the Bluenose East, Bathurst and Ahiak herds to the WRRB as information for the board's consideration.

Bulls have been radio-collared in the Cape Bathurst, Bluenose West and Bluenose East herds, where radio-collar numbers have generally been higher than in the Bathurst and other herds further to the east.

**IR Number:** 2.66

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

## **Reference**

### **Request**

What are the mathematics used to extrapolate the size of the Ahiak herd, from the 4453 caribou counted to the 200,000 caribou reported?

### **Response**

The calculations used to derive the estimate of 200,000 caribou were provided in File Report 126 – Abundance and Distribution of the Queen Maud Gulf caribou herd 1986 to 1998. The Queen Maud Gulf herd was renamed the Ahiak herd at the request of the Kitkimeot Inuit Association in the late 1990's.

**IR Number:** 2.67

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

## **Reference**

### **Request**

Please explain how the Ahiak herd, censused in 1995 at 31,556, increased to 200,000 the following year?

### **Response**

The Ahiak herd was not censused in 1995. A calving reconnaissance survey in 1996 was used to derive the estimate of 200,000. We reiterate that this was intended as a ballpark estimate of population size only, and has since been taken out of that context.

**IR Number:** 2.68  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

According to ENR, between the Ahiak herd and the Bathurst herd, about 250,000 caribou have died in the past year. How many carcasses or diseased animals has ENR documented?

**Response**

The figure of 250,000 dead caribou did not originate from ENR. There are many mortalities in every caribou herd annually. It is not uncommon for 60-70% of calves to die before reaching one year of age. Varying percentages of every herd's cows and bulls die every year.

If this mortality is distributed over a large landscape and over multiple seasons, hunters and predators like wolves will consume much of the animals they kill, and scavengers quickly dispose of the rest.

There are known cases of localized winter die-offs where large numbers of caribou died over a short time so that predators and scavengers were unable to keep up with the carcasses. Outside of these events, carcasses are usually disposed of within a few days by predators and scavengers.

**IR Number:** 2.69  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

If 250,000 caribou are dying a year, this is about 4800 caribou dying per week, or nearly 700 per day, every day. Does ENR have personnel on the ground, following the caribou, waiting for them to die, so that they can be autopsied?

**Response**

As noted in the previous response, the figure of 250,000 dead caribou does not originate from ENR. Every barren-ground caribou herd ENR studies has annual mortalities of cows, bulls, and calves.

The estimated number of breeding cows in the Bathurst herd in 1996 was 210,300, and the estimated mortality rate at that time was 14%. This would mean that about 29,400 cows died that year.

These mortalities were dispersed over a large area and over a full year, and between predators, hunters and scavengers, these dead caribou would be disposed of in a matter of hours or days after each death.

In addition, if the 210,300 cows produced 178,750 calves that year (fecundity of 0.85, about average for a barren-ground caribou herd), and 60% of those calves died in the first year, then there would have been 107,250 dead calves that year.

We would not expect to find dead calves or cows on the ground, however, because many of these caribou would have died from predation, and what the predators did not kill, the foxes, wolverines, ravens, gulls and other scavengers would quickly have disposed of.

**IR Number:** 2.70

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

**Reference**

**Request**

The outfitters shot 223 caribou last year. ENR says 250,000 died. How is closing down the outfitting industry going to save the crashing caribou?

**Response**

As in IR responses 2.68 and 2.69, the figure of 250,000 dead caribou did not originate from ENR.

As described in the CTR the estimated harvest of caribou likely had relatively small impacts on the herd when it numbered 300,000-400,000. However, with a current size of 32,000 caribou, the estimated harvest in 2008-2009 of 4000-5000 cows and 2000 bulls would amount to 20% of the herd. With current demographics and size of the Bathurst herd, the population model indicates that any level of harvest will cause the herd to continue to decline.

**IR Number:** 2.71  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

## **Reference**

### **Request**

Don Thomas' paper "Needed: less counting of caribou and more ecology" rejects the use of calving ground surveys for caribou management. It says other ecological factors, such as caribou calf survival (which has been high), pregnancy rates (which has been high), hunting pressure (dropped 70% in the past 13 years) etc. should be looked at. What is the ecological evidence ENR has to support this caribou crash?

### **Response**

ENR agrees that using only calving ground surveys not does provide sufficient information for management decisions. ENR also collects information on demographics and ecological factors. As described in the CTR, a large part of the decline of the Bathurst herd is likely the result of natural factors. In the early 2000's, a succession of low spring calf:cow ratios and late calving indicate poor conditions that very likely meant a declining trend regardless of harvest. Biologist Tom Bergerud has shown that poor calf survival is usually correlated with poor adult survival, thus natural survival rates of Bathurst cows over this period were likely reduced.

In 2007, 2008, and 2009, Bathurst calf:cow ratios were higher than in the 2000's, but during this period, the estimated hunter harvest, particularly the cow harvest, had an increasingly large impact on the herd.

By 2009, the winter 2008-2009 harvest, combined with natural mortality, reduced overall cow survival rates to 67-68%, and at this rate of cow survival, there is no way for calf survival to offset cow mortality rates. These trends and conclusions are detailed more fully in the CTR.

**IR Number:** 2.72  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

If the wolf numbers are down, according to ENR, how does ENR rationalize the doubling of wolf tags for the outfitters?

**Response**

Outfitted hunters harvest very few wolves. In 2008-09, 296 tags were issued and 9 wolves were harvested. In 2009-10, 233 tags were issued and 13 wolves were harvested.

Predators can still have a negative effect on caribou survival rates, particularly calf survival. ENR's understanding of the Bathurst herd's decline indicates that the herd cannot recover unless cow survival rates increase substantially, which must be addressed via reduction in cow harvest. The herd's recovery may also be assisted by reduction of predator numbers even if they have not been the main cause of the recent decline.

**IR Number:** 2.73  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

If there are 200,000 caribou in the Ahiak herd (2008 GNWT report), 32,000 in the Bathurst caribou herd, and 66,000 in the Bluenose East herd, and we apply ENR's 4% harvesting goal implemented in the Sahtu, that means a TAH of 11,920, roughly double the current harvest. Even if ENR is correct, and the Ahiak herd is down 60% (they admit they have no such data), it still means a TAH of 8720, which is over 30% more than the current harvest level. With harvest levels anywhere from 30% to 200% under previous management goals, why is ENR requesting the Tłıchǵ to drastically reduce harvest, along with shutting down the outfitting industry and resident harvest?

## **Response**

ENR manages barren-ground caribou on a herd basis and the ARC report confirmed this is consistent with how caribou are managed elsewhere. Therefore, assessing harvest of caribou must consider the population's size and trend, and whether the harvest is primarily composed of bulls or cows. A 4% rate of harvest divorced from these variables has little meaning.

By definition, there is no sustainable harvest from a declining population. A harvest may still be allowed by a management agency or board, depending on trend and other information for that herd.

Owing to the rapid rate and extent of decline in the Bathurst herd 2006-2009, ENR is proposing to close all harvest on this herd.

In the two neighbouring herds, an up-to-date population estimate is lacking. It should be noted that these two herds are also harvested by communities from Sahtu, Dehcho, South Slave, Nunavut and northern Saskatchewan. Results of reconnaissance surveys on the Ahiak herd indicate a declining trend. By virtue of the precautionary principle, ENR is proposing that harvest for this herd should be limited and focus primarily on bulls, and re-assess when there is further information.

The population status of the Bluenose East herd was declining rapidly between 2000 and 2006 and a new estimate will be obtained in 2010. Using the precautionary principle, ENR is proposing the harvest on this herd should be limited and focus primarily on bulls. This would be consistent with recommendations from the Sahtu Renewable Resources Board for this herd.

**IR Number:** 2.74

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

## **Reference**

### **Request**

ENR asserts that Bathurst and Ahiak traditional calving grounds overlap (ENR File Report #123). If a caribou is collared on the wintering ground, and it migrates north to the east side of the inlet, how does ENR determine its herd designation?

### **Response**

The calving grounds of barren-ground caribou herd move over time.

As documented by Tom Bergerud in his 2008 book *The Return of Caribou to Ungava*, the Leaf River herd's calving ground shifted north a considerable distance from the 1970's, in Bergerud's understanding mostly due to changing

wolf numbers. This herd's calving grounds were near treeline in 1974, then over time shifted increasingly further north, ending up nearly 400 km further north than in 1974, but close to where calving caribou were reported in the 1800's.

Likewise, the George River herd's calving grounds shifted north from the 1970's to the 1990's.

In each case, though, studies documented a progressive shift and the two herds remained identifiably the same.

The Bathurst herd's calving grounds were west of Bathurst Inlet in the 1950's and have shifted from the east side to the west side of Bathurst Inlet in the last 30 years, but the herd's calving grounds have been monitored regularly, and the herd has continued as an identifiable distinct population since the 1970's.

Information about the Ahiak herd has been limited; however, whenever ENR biologists have conducted surveys, this calving ground has been distinct and separate from the Bathurst herd's calving grounds. Both the Ahiak and Bathurst calving areas were surveyed concurrently in 1986, 1996, 2006, 2007, 2008 and 2009. The Ahiak surveys were all reconnaissance surveys to delineate the calving area not obtain a herd estimate.

If a caribou is collared on the wintering grounds, the herd affiliation is determined by the first calving ground used by the cow.

In ENR's experience, 96-98% of the collared cows will continue to return to their first calving grounds in future years.

**IR Number:** 2.75

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

## **Reference**

### **Request**

Does the ENR reject or accept the concept, that more than one area of concentrated calving can occur on the herd's traditional calving ground?

### **Response**

In the case of the Leaf River herd, Tom Bergerud makes the case that the herd's northward shift of nearly 400 km in locations of calving grounds may have brought this herd back to where calving was known from the 1800's, possibly for the same herd during a previous period of high numbers.

In the case of the Bathurst herd, surveys at frequent intervals documented the shift in calving grounds from one side of Bathurst Inlet to the other, but as with

the Leaf River and George River calving grounds, this has demonstrably remained an identifiable and distinct population to the present day.

We also know that caribou from the Dolphin and Union herd winter on the mainland south of Victoria Island in areas that barren-ground caribou from the Bathurst and Ahiak herds calve on, in June. This does not make the Dolphin and Union herd part of the Bathurst or Ahiak herds as caribou from this herd calve on Victoria Island and migrate annually to the mainland after ice forms, and return to Victoria Island in the spring before the ice melts.

In the over 35 years of monitoring calving grounds by ENR, two herds have never used the same traditional calving grounds at the same time.

**IR Number:** 2.76

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

### **Reference**

#### **Request**

GNWT File Report #18 defines a caribou herd: “Current terminology defines a caribou herd as a group of animals which consistently calves in a specific traditional location distinct from calving areas used by other herds (Skoog 1968, Thomas 1969)”. How does ENR reconcile a “distinct” calving ground, with an “overlapping” calving ground?

#### **Response**

The references Mr. Andre quotes are from the 1960’s, and understanding of the ecology of barren-ground caribou herds, and of the location and nature of their calving grounds, has increased since that time.

As noted in responses to Information Requests 2.74, 2.75, the concept of a traditional calving ground has its limits if focused only on a geographic area and a short time interval. By this narrow definition, the Leaf River herd in Quebec would, in 2000, be a different herd from the herd that calved 400 km to the south in 1974. Yet periodic surveys have documented that this has in reality been the same herd over time, with a calving ground shifting north progressively as the herd increased and (based on Bergerud’s understanding) due in large part to changing wolf numbers.

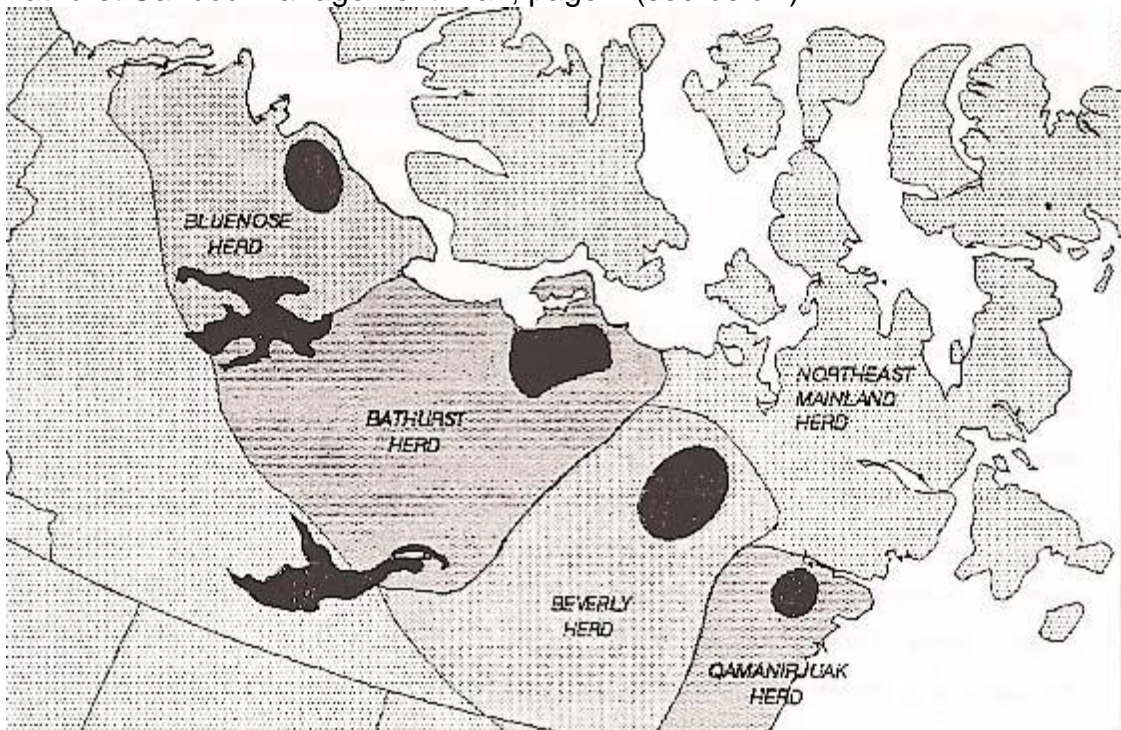
The Ahiak calving ground, has been distinct and geographically separate from the Bathurst herd’s in all years when concurrent surveys of calving grounds have been carried out. In years when no surveys are conducted, movements of radio-collared cows continue to confirm separate calving areas are used by each herd.

**IR Number:** 2.77  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Has ENR eliminated the Northeast Mainland herd, mapped out in the 1996 Bathurst Caribou Management Plan, page 4 (see below)?



**Response**

As was detailed in a report by Anne Gunn and colleagues in 2008 (ENR Manuscript Report 178), knowledge of barren-ground caribou herds in northern Canada, as in Alaska, has increased over time and studies of the movements and ecology of smaller, more remote herds has increased as time and resources have permitted.

Since 1999, the Nunavut government has monitored herds on the northeastern mainland.

Barren-ground caribou in the “Northeast Mainland Herd” have over time been shown to consist of several herds, the Wager Bay and Lorillard herds among them, and we refer the reader to a review by Gunn and Fournier (ENR

Manuscript Report 123, on calving grounds) as to the state of knowledge of these herds at that time. Nunavut government biologists have on-going radio-collar studies of caribou in this region, and will report on those findings to build on the limited knowledge of those herds as their understanding improves.

**IR Number:** 2.78  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

If ENR has virtually no bulls collared, yet is recommending the harvest of bulls in “mobile management zones”, how does ENR intend to determine what bulls from what herd are where at any given time.

### **Response**

ENR has had radio-collars on bulls in the Bluenose East, Bluenose West and Cape Bathurst herds, where collar numbers have been generally higher than on more eastern herds like the Bathurst herd. Very few bulls are found on the calving grounds in June, but in the summer and fall, bulls and cows are inter-mixed.

As shown in one of the maps in section 5.8 of the CTR, radio-collared Bluenose East bulls were mixed with radio-collared Bluenose East cows in early September 2009. This indicates that locations of cows and bulls of a particular herd during the fall hunting season are mixed.

**IR Number:** 2.79  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

### **Reference**

### **Request**

ENR states in the proposal on the Ahiak herd “This herd was never properly photo- censused.” In then says “preliminary trend analysis conducted by a statistician (John Boulanger) suggests that this herd is also declining.” You also state the Ahiak herd is down 60%. In order to calculate a percentage drop, one

needs a beginning number and an ending number. Please provide those numbers and reconcile them with the statement “this herd has never been properly photo-censused.”

### **Response**

As described in the CTR, ENR has carried out calving reconnaissance surveys over the Ahiak calving ground in 2006, 2007, 2008 and 2009. The methods have remained the same from year to year.

An analysis by statistician John Boulanger showed that the average number of caribou cows seen per 10-km segment on these 4 surveys decreased by 60% from 2006 to 2009. Details of the analysis can be found in the CTR.

**IR Number:** 2.80

**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre

**To:** Government of the Northwest Territories

### **Reference**

#### **Request**

Please explain the designation of the Bathurst Herd as the “Tłjchq Herd”, the Ahiak herd as the “Inuit” herd, and the Bluenose East Herd as the “Sahtu” herd. Is ENR implying that the Tłjchq don’t have the right to manage these other herds, which are all “wildlife in Wek’èezhii”?

### **Response**

For the development of the joint proposal by the Tłjchq Government and ENR, Tłjchq Government staff and some of the Chiefs indicated to ENR staff during the community consultation process that elders and some of the community hunters do not use the terms Bluenose East and Ahiak herd.

It was suggested by the members of the TG caribou working group to use herd names currently used by elders to identify the three herds listed above to avoid confusion. Tłjchq elders have traditionally used the name Sahtu Herd (Bluenose East), Tłjchq Herd (Bathurst) and Inuit Herd (Ahiak) hence their reference in the joint TG/ENR proposal for recovery options.

**IR Number:** 2.81  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What is ENR's specific plans for predator management, including grizzly bears?

**Response**

Appendix B, Item 7, of the joint proposal references providing incentives and training to hunters and trappers to promote further wolf hunting and trapping. No other plans are proposed.

**IR Number:** 2.82  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What is the caribou harvest numbers for 2007 and 2008?

**Response**

The information ENR has on estimated harvest of Bathurst caribou is described in the CTR. The aboriginal harvest is not as well documented as we would like, but based on reported harvest of outfitters and residents, check-station and interview information, and estimates from population models, the annual Bathurst harvest has likely been about 4000-5000 cows and 2000 bulls/year.

**IR Number:** 2.83  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What are the wolf harvest numbers for 2007 and 2008?

**Response**

Please see the answer to Information Request 2.19.

**IR Number:** 2.84  
**Source:** Qaivvik, LTD. and  
Caribou Pass Outfitters, LTD.– John Andre  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many “problem” grizzly bears have been killed in the past ten years, and what is the trendline of these numbers?

**Response**

The number of grizzly bears killed in the North Slave region due to conflict with humans has varied over the past 10 years. It has been less than 5 in recent years and as high as 15.

**NSMA Information Requests**

**IR Number:** 2.85  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many barren ground caribou existed in the Northwest Territories each year from 1921 through 1990 and how was this number determined each year?

## **Response**

Surveys by government biologists began in the 1960's and knowledge of the herds has increased over time. Most of the herds that GNWT monitors cross borders into Nunavut, Yukon and in some winters into Saskatchewan and Manitoba.

GNWT monitors and manages barren-ground caribou on a herd by herd basis, the same approach used across North America.

In general terms, numbers of barren-ground caribou fluctuate widely over time. The late 1970's were a general period of declines, the early 1980's were periods of increase, and the 2000's have been a period of declines.

Population trend on a herd-by-herd basis are provided for the period 1985 to 2009 in the CTR. Prior to the 1970's, there were very few surveys and knowledge of high and low caribou numbers comes mostly from aboriginal elders. The 1940's were a period of high numbers, based on Traditional Knowledge.

**IR Number:** 2.86

**Source:** North Slave Métis Alliance

**To:** Government of the Northwest Territories

## **Reference**

### **Request**

What information was collected about sex and age for each year, and what trends are evident?

### **Response**

For caribou herds generally, population surveys and composition surveys indicate that the largest part of the herd is females and the sex ratio is often about 50 bulls: 100 cows, although it tends to be higher (60-70 bulls: 100 cows) in increasing herds and lower in declining herds.

The Bathurst herd has had sex ratios of 31-38 bulls:100 cows in recent years. Calves generally have the highest mortality rates and by late winter calf:cow ratios are often 20-40 calves: 100 cows.

A minimum of about 30 calves:100 cows is needed for a stable herd, although this depends on cow survival rates. Information on sex ratios and calf:cow ratios for the Bathurst and neighboring herds is contained in the technical report.

**IR Number:** 2.87  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many barren ground caribou existed in the Northwest Territories and Nunavut each year from 1990 through 2009 and how was this number determined each year?

**Response**

As noted in Information Request 2.85, GNWT monitors and manages barren-ground caribou herds on a herd by herd basis.

Population estimates for every herd that GNWT monitors are in the Bathurst technical report for 1985 to 2009 (Section 3.2), and the population surveys used are described in the Bathurst technical report.

**IR Number:** 2.88  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What was the variance or margin of error for the estimated caribou populations for each year from 1921 through 2009?

**Response**

As noted earlier, we do not have population estimates from before about 1970, although we do have information about periods of high and low numbers from Aboriginal elders.

The population estimates from 1985 to 2009 are in the CTR along with confidence intervals for those surveys.

**IR Number:** 2.89  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What efforts has the Government of the Northwest Territories made each year to collaborate with other Governments and Aboriginal Peoples responsible for the management of trans-boundary barren ground caribou herds?

**Response**

Caribou management boards have been established by formal agreements for a number of trans-boundary barren-ground caribou herds. These are the Porcupine Caribou Management Board and the Beverly and Qamanirjuaq Caribou Management Board. Both boards consist of equal membership from government and Aboriginal organizations. In addition, ENR is working with Yukon and Nunavut to develop government-to-government inter-jurisdictional caribou management agreements in order to improve collaboration on planning surveys and sharing information.

ENR North Slave Region has held annual workshops to share information on the Bathurst caribou herd since 2006 with representatives from communities. Similar meetings and workshops are held in all other regions. In October 2009, ENR held workshops with representatives from communities to review 2009 survey results and discuss recovery options.

**IR Number:** 2.90  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many collars have been placed on caribou in the Northwest Territories and Nunavut in each of the past 50 years?

**Response**

GNWT has used VHF, satellite and GPS/satellite radio-collars since 1996 for all NWT herds (except the Beverly). Initially ENR attempted to have a minimum of 20 collars per herd.

In recent years GNWT has had the following numbers of radio-collars on a herd-by-herd basis: Cape Bathurst 20-30, Bluenose West 50-60, Bluenose East 40-60, Bathurst 10-20 and Ahiak 30.

**IR Number:** 2.91  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How long is a collar expected to remain on a caribou and provide useful information?

**Response**

The useful life of a radio-collar varies with the program, i.e. how long the collar is switched on (hours of every day) and how often locations are collected. Some satellite collars have lasted 5+ years, depending on the study objective, while GPS collars that send several locations daily may only last 2-3 years. All collars are fitted with a drop-off mechanism that is triggered on a specific date so that the collar does not remain on the caribou forever.

**IR Number:** 2.92  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How often does a collar fall off prematurely and how has this affected survey results?

**Response**

The technology used in radio-collars has evolved over time and when breakaway mechanisms first were developed, there were a few collars that dropped prematurely early in their intended life. This has happened less frequently in recent years. Surveys have not been affected much as some variation in collar numbers is not a problem.

Adequate collar numbers are of greatest concern in the 3 herds where post-calving surveys are carried out (Cape Bathurst, Bluenose West and Bluenose East) and for these surveys we have had adequate collar numbers in recent years.

**IR Number:** 2.93  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many times has a collared caribou calved in a different calving ground during the time period while wearing an active collar?

**Response**

This is discussed in Section 4.5 of the CTR. ENR's experience has been that 96-98% of the time, a collared cow that was on one calving ground in June will be back on the same calving ground a year later. That is, 2-4% of cows are known to switch calving grounds. In a few cases cows have switched, then switched back. Collar switches go in both directions in neighboring herds, thus the net exchange is usually close to 0.

**IR Number:** 2.94  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

In which years have all the barren ground caribou herds been surveyed at the same time?

**Response**

Carrying out population surveys on all herds monitored by GNWT in one year is not practical in terms of staff and aircraft availability. In June 2007, ENR carried out calving reconnaissance surveys on 7 calving grounds at about the same time, and on 6 of these again in 2008 (Cape Bathurst, Bluenose West, Bluenose East, Bathurst, Ahlak, Beverly, Qamanirjuaq). The 7<sup>th</sup> (Qamanirjuaq) had a population survey in 2008 carried out by Nunavut biologists, which included a reconnaissance survey.

Calving reconnaissance surveys are not population surveys but they are done systematically at 5, 10 or 20km spacing between survey lines. They allow us to map calving grounds and estimate approximate density of breeding cows on the calving grounds.

**IR Number:** 2.95  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What do we know about the changes in range of male caribou from year to year, for each year between 1921 and 2009?

**Response**

Information from radio-collared bulls in the Cape Bathurst, Bluenose West and Bluenose East herds indicates that the bulls are generally mixed with the cows for much of the year, although very few bulls are found on the calving grounds and bulls tend to segregate from cows in the winter.

**IR Number:** 2.96  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How does the current caribou population decline compare to the declines of the 1950s and the 1980s in terms of speed and duration of decline and in confidence in survey results?

**Response**

Traditional knowledge indicates that caribou numbers declined after the Second World War. There were no surveys done for barren-ground caribou from the 1950's. Most caribou herds increased in the 1980's. We have greater confidence in more recent survey results to estimate herd size because radio-collars on each herd allow us to determine where the calving or post calving areas are.

The rates of decline in the 2000's have been faster than previous declines because the caribou are more accessible and, now that herds are at low numbers, the hunter harvest has accelerated declines that started for natural reasons.

On a global scale, most migratory caribou and reindeer herds are in decline, possibly because of climate patterns.

**IR Number:** 2.97  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many commercial caribou tags have been issued in the Northwest Territories and Nunavut each year between 1921 and 2009?

**Response**

Please see the attached document entitled *Community (HTA) Commercial Tags*.

**IR Number:** 2.98  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many resident and non-resident sport hunters caribou tags have been issued each year in the NWT and Nunavut between 1921 and 2009?

**Response**

For number of non-resident tags issued, see Table 5.13 in the CTR. Information was not obtained for Nunavut tags issued.

Information on resident tags issued in the NWT was provided in an ENR response to a previous Information Request.

**IR Number:** 2.99  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How many caribou have been harvested in northern Saskatchewan and Manitoba each year between 1921 and 2009?

**Response**

Collecting harvest information for communities in Saskatchewan and Manitoba is the responsibility of those jurisdictions. There is reason to believe that hunters in northern Saskatchewan have had a substantial caribou harvest in some winters when barren-ground caribou are accessible to their communities.

GNWT initiated a cost-shared program with the Prince Albert Grand Council and Saskatchewan Environment in early 2009 to work with communities and hunters in northern Saskatchewan, in part to gain better information about caribou harvest in those communities.

**IR Number:** 2.100  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What mitigation is proposed to counteract the negative economic, cultural and health impacts to North Slave Métis if our harvest of caribou must be reduced or displaced?

**Response**

ENR will meet with North Slave Metis to discuss options.

**IR Number:** 2.101  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Documentation of all consultation that ENR has engaged in with regards to the management of barren ground caribou since 1921 to present day, broken down by Aboriginal People and stating whether or not capacity funding was provided and how much to each Aboriginal People each year.

**Response**

ENR has provided a consultation record for the joint proposal which the WRRB is currently considering.

Since this document was provided to the WRRB, ENR has continued to consult with Aboriginal Groups. Additional consultation information can be found in the attached document *North Slave Consultation Log, Addendum 1 and 2*.

For the consultation on the joint proposal, ENR has covered costs of holding meetings such as hall rental, translators and equipment rental.

**IR Number:** 2.102  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What has been the population of predators including insects each year from 1921 to present and do recent predator populations potentially account for the number of missing caribou? What is the error in the estimated predation mortality?

**Response**

Populations of insects since 1921 are unknown.

Population estimates of the various predators are also unknown since 1921 to present. However, rough estimates of barren-ground grizzly bears in the North Slave region, based on home range size observed on radio-collared bears in the 1990's, are around 700 bears.

Survey evidence suggests wolves have declined in recent years and their abundance tends to track caribou abundance (their main prey). Predation mortality is unknown and can vary greatly with prey abundance and vulnerability. However, caribou and predators have co-existed for thousands of years and are not likely the sole cause of the observed decline in caribou. Population cycles in caribou are expected but predators can also be opportunistic when other factors affect caribou and make them more vulnerable.

**IR Number:** 2.103  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Where are the remains of the missing caribou and what evidence do the remains show regarding the cause of death?

**Response**

There are known cases of localized winter die-offs where large numbers of caribou died over a short time so that predators and scavengers were unable to keep up with the carcasses.

Outside of these events, carcasses are usually disposed of within a few days by predators and scavengers. More than half of each year's calves usually die within the first year, but these deaths are distributed over wide areas and over time, and

the dead calves disappear quickly, often in a day or less, as a result of predation or scavenging.

**IR Number:** 2.104  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

What efforts have been made to quantify the aboriginal harvest and how have these efforts been funded?

**Response**

Information about all sources of hunter harvest of the Bathurst herd is in section 5.8 of the CTR.

In the last two winters, ENR in collaboration with the communities in the North Slave has operated a winter check-station on the winter road to Gameti and Wekweeti, and the diamond mines. There have also been interviews with hunters in the Tłı̄chǫ communities. These programs were funded by ENR and CIMP.

**IR Number:** 2.105  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

Does ENR intend to obtain the harvest information on indigenous Métis harvesters and if so how?

**Response**

ENR North Slave will work with the NSMA to collect caribou harvest information at the end of the winter hunting season. Harvest calendars will be distributed at the beginning of each year to assist hunters to record their harvest numbers and locations. Datasheets designed during the pilot project on caribou reporting with the Tłı̄chǫ hunters will be used during interview with hunters when visited.

**IR Number:** 2.106  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

1. In what way does ENR monitor the effects of mineral exploration and other transportation activities on the barren ground caribou?
2. How long has this monitoring been done and what knowledge has been gained?

**Response**

Assessing the cumulative effects of development on caribou that are at the same time affected by many other factors, including weather, predation, and hunting, is challenging.

ENR has had a study underway in the last 2 years to assess the effects of the diamond mines and other development on the Bathurst caribou herd. A summary of results to date is in the CTR (Section 5.10).

Caribou have shown avoidance of the active diamond mines to a distance of about 14 km. This affects 4% of the herd's summer range.

Caribou can also be affected by traffic or noise when near the mine, but generally this effect has been limited because caribou spend little time near the mine. Studies from northern Europe suggest that cumulative fragmentation of habitat by development or linear features can result in abandonment of caribou and reindeer ranges. To date it does not appear that development in the Bathurst range has had a major impact on the herd. The greatest impact to date has likely been greater access for hunters using winter roads.

**IR Number:** 2.107  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

How does ENR propose to require Indigenous Métis to report their harvest information and to whom? How will this work be funded?

**Response**

See IR response 2.105 for methods and protocols. A Métis person may be hired at the end of the winter for a few days depending of funding to interview hunters.

**IR Number:** 2.108  
**Source:** North Slave Métis Alliance  
**To:** Government of the Northwest Territories

**Reference**

**Request**

In what way does ENR propose that Indigenous Métis should be educated regarding traditional and ethical harvesting practices? How will this work be funded?

**Response**

ENR has been discussing this concern with Aboriginal partners and is planning to substantially increase the effort placed in hunter education. This will include hiring community patrolmen and involve elders to promote traditional practices and values with Aboriginal hunters.