NWT & NUNAVUT CHAMBER OF MINES

September 29, 2015

Species at Risk Secretariat
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, NT X1A 2L9
Email: SARA@gov.nt.ca

Attention: Species at Risk Secretariat

Please accept our thanks to Kelly Joy for providing an extension to September 30 to submit our comments. Given the formidable size of the document at 230 pages, and given the decline in companies actively exploring the NWT, we were only able to solicit comments from a few of our members. Please find them attached.

You will note from these comments that the general tone reflects our belief that the primary influencers of caribou population is climate change, increasing forest fires and the inability to fight them, and increased harvesting pressures. Our members' experience on the ground over the past 40 years would indicate that development and caribou can co-exist, to the point that caribou become so habituated to sometimes become a nuisance on some sites, and humans might be at risk.

Should you have any further questions, please don't hesitate to contact us.

Yours truly,

NWT & NUNAVUT CHAMBER OF MINES

Tom Hoefer
Executive Director

Attachments:

- Chamber of Mines Comments on the Executive Summary
- Specific Comments from Avalon Rare Metals

Chamber of Mines Comments on the Executive Summary
to the draft NWT Species at Risk Committee's
SPECIES STATUS REPORT, Barren-Ground Caribou in the NWT

Given the formidable size of the document at 230 pages, and given the decline in our industry, only a few of our members were able to review the document, and we are able to provide the following thoughts on the Executive Summary of the report. The following comments are organized as per the subheadings of the Executive Summary.

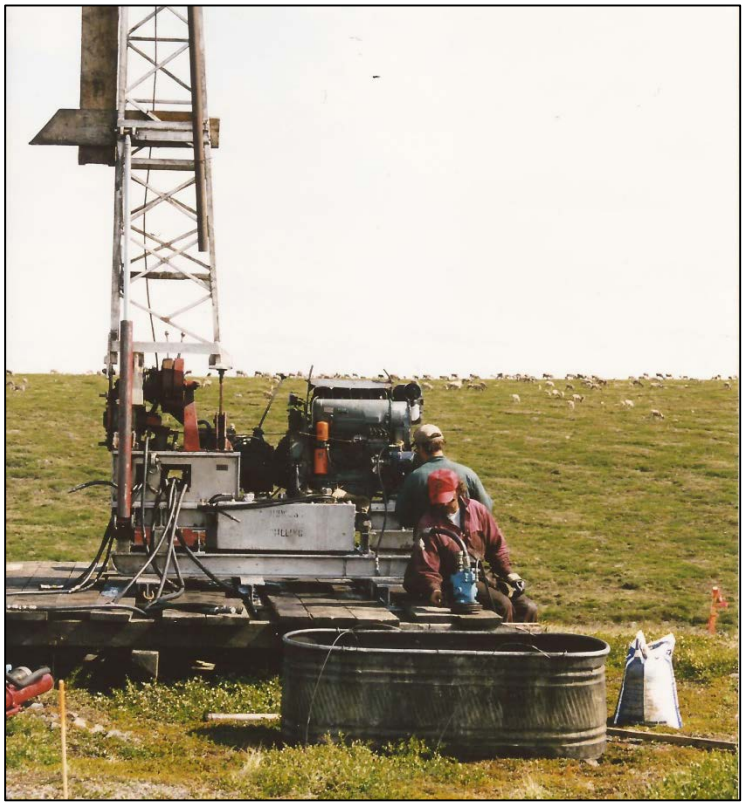
Traditional and Community Knowledge component	**Scientific Knowledge component**
Distribution	**Distribution**
"It is very clear from TK … that there is mixing and movement of herds". This is a key point that must be factored into assessing the true health of various herds. For example, caribou migration around the east end of Great Slave Lake is allowing for the amalgamation of at least two of the herds, Bathurst and Beverly. Similarly, mixing of Beverly and Ahiak caribou is not clearly understood.	The report states that barren-ground caribou only occur in Canada and are restricted to the NWT. This is misleading, and a quick internet search reveals *Rangifer tarandus groenlandicus* also occurs elsewhere, including Nunavut and Greenland. This could provide important learnings from other jurisdictions on caribou population resilience, and factors affecting it.
Habitat	**Habitat**
It would be helpful to begin to quantify habitat effects as per "Although not quantified, TK … highlighted decline in the amount of suitable habitat in the NWT." Building on this, work should be done to quantify habitat changes outside of the NWT, e.g., in Nunavut where caribou calve.	This statement is encouraging to the health of the caribou: "Based on the diversity of habitats that barren ground caribou occupy, they are considered adaptable in meeting their habitat requirements." Regarding: "The most conspicuous natural fragmentation of caribou habitat other than the large lakes and major rivers is from forest fires" also needs to speak to it creating direct habitat loss, not just fragmentation as is referenced in the following statement on mine roads affecting a degree of habitat loss. The statement: "Heavily used roads and transmission corridors can be partial barriers to movement" could create in the reader a sense of widespread fragmentation, and some sense of just how little of this there is should be mentioned.

	In addition, during environmental assessment of at least one mine, Diavik, communities stated that they did not want caribou to access the mine sites, and there were discussions of fencing, and other diverting tactics, meaning that diversion of caribou is a good thing. Yet this report creates a sense that this is bad.
Biology	**Biology**
	"… the role of predation in regulating caribou dynamics is uncertain …" Some additional work should be done to gauge how predator populations have changed since trapping and hunting of wolves and wolverine declined and the fur trade essentially decimated by the anti-fur lobby. Re: "Parasites and diseases are an important part of caribou ecology, although their role at the population level has been less studied", add "and particularly so under the influences of recent climate change."
Threats & Limiting Factors	**Threats & Limiting Factors**
Re: "The number, intensity, and duration of forest fires appear to be increasing in the NWT" add "although there is no definitive analysis of types of fires, intensity, types of habitat lost", etc. The paragraph that begins with: "Industrial resource extraction is largely considered to be one of the major factors affecting barren-ground caribou" is misleading as it suggests the entire paragraph is related to industrial development. It is not, e.g., "increase in predation" has nothing to do with industrial development. It should be pointed out that Porcupine caribou in Alaska successfully co-exist and even flourish in the vicinity of oil and gas development. There are also many examples and pictures of caribou co-existing with mining development and exploration in the NWT and Nunavut which demonstrate resource extraction and caribou can co-exist. This should not be ignored.	The recognition that "Parasites and diseases are a potential threat that may intensify under a warmer climate" should be also put under "Biology" above. The statement: "Oil and gas, exploration and mining development in barren-ground caribou habitat have increased over the past several decades" needs qualification and quantification particularly with respect to mineral exploration. In the past 8 years, for example the NWT has witnessed a significant decline of exploration. In fact, the amount of land under mineral tenure in the past 12 years peaked at only about 20% of the area of the entire NWT and by 2014 had collapsed to approximately 2%. Again, to the point, this is tenure, and one needs to be careful in judging actual activity vs tenure. We must also be cautious of reaching false conclusions, e.g., caribou biologist George Calef did research around Baker Lake in the late 1970's when it was suggested that increased exploration around Baker Lake had forced the caribou further and further away.

Road access to mines does open up more habitat to easy access by hunters, Aboriginal and non-Aboriginal. This can be controlled if there is a desire by government to do so. Industry would support the outright ban of access for hunting over and from this infrastructure. In addition, more reliable, larger and faster snow machines contribute to harvesters' abilities to access caribou herds than using traditional hunting methods. Communities themselves have mentioned this in the past, but there is no mention of this here. The statement that wolf and other predator numbers are increasing due to a decrease in hunting pressures could be strengthened with information on the reduction in pelt sales due to the strong arm influence of the anti-fur lobby.	Calef's work indicated this was not the case, and that the caribou migration route was changing more as a result of annual harvesting than from the amount of exploration. This paper has been used very frequently for only pieces to help blame industry for the demise of the caribou population but the paper needs to be taken in full context, not in excerpts to back a suggestion. The reference to "hundreds of prospecting permits, mineral claims and mineral leases on several herd ranges and calving grounds" is quite meaningless as these are all instruments of tenure, and not a direct reflection of activity on the land or effects on habitat. There is likely insignificant traffic of any sort on probably 90% of these pieces of land. The statement that: "the Bathurst herd winter and summer range contains more than 10 proposed and active mines and their associated activities (aircraft, seasonal and all-season roads)" is misleading as it could suggest a sizable amount of activity is occurring when in fact it well may not be, until a potential mine becomes a real mine. The statement: "Oil and gas exploration activities have increased in the western Arctic over the past two decades, potentially affecting the winter ranges of western herds" is a sweeping generalization that may be unfounded, particularly in examining the actual amount of oil and gas exploration, and the fact that Alaska caribou populations are thriving in an area of oil and gas production on the North Slope. This statement: "Winter and all-season roads create the potential for increased hunter harvest when caribou are found in substantial numbers near them" would be helped with a statement that indicates that government and the harvesting community could control this and industry would support outright bans of hunting along or from them. The statement that contaminants are not a threat is a good one, as it indicates that a monitoring program is proving it. You might

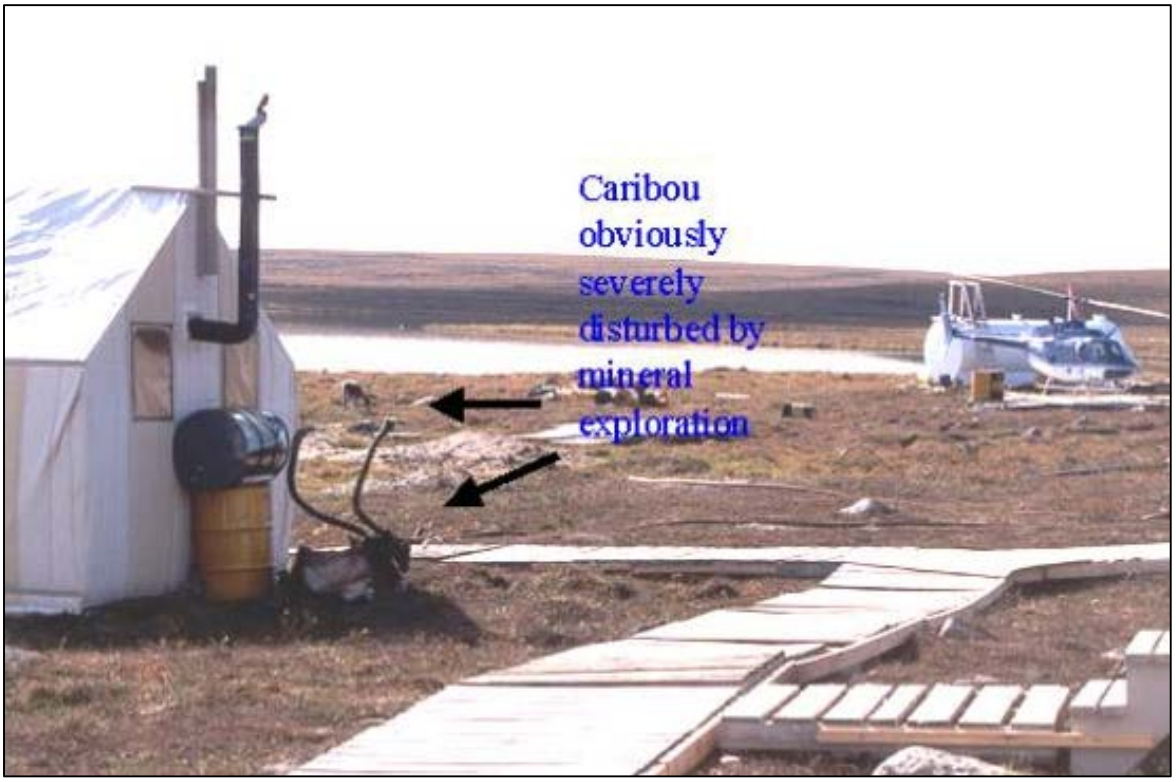
	strengthen this with a statement that land use permits, water licenses and other stringent regulatory instruments are also preventing this. There is no mention of the actual and potential effects on caribou populations of caribou migrating to other herds, e.g., Ahiak and Beverly.
Positive Influences	**Positive Influences**
While "the calving grounds of Porcupine, Bluenose-West and Beverly herds are currently protected from development…" they are still subject to Aboriginal harvesting, and this should be mentioned for in some of the national park areas there was virtually none or no resource exploration and development. This would perhaps help isolate the effects of harvesting. It is good that you have included "habituation to noise and disturbances" as a positive influencer. We have seen the evidence of this in many places in the north where caribou have become so habituated to a mine site or exploration project that they become a nuisance. This links to the request from communities to mining companies to purposefully divert caribou around their sites. From our members' many years' experience in the NWT, caribou show very little shyness towards roads, drills and the major mine sites. Caribou will walk where it is easiest and they can escape predators (both animal and human). Our exploration camps and mines show no animosity towards caribou. Conclusions that mine development and exploration programs affect caribou migration, need to more evidence since our experience doesn't support it. We have included some historical photos to demonstrate this.	

HISTORICAL PHOTOGRAPHS FROM EXPLORATION PROJECTS



Caribou calmly graze in vicinity of typical, small mineral exploration drill.

Caribou calmly graze in vicinity of exploration camp (satellite dish to left)



Caribou languishing in exploration camp, unperturbed by surrounding activity.

Caribou safely using exploration airstrip.

AVALON RARE METALS INC.

MEMORANDUM

DATE: **SEPTEMBER 15, 2015**

TO: TOM HOEFER, NWT & NUNAVUT CHAMBER OF MINES

FROM: MARK WISEMAN

CC: DON BUBAR, BILL MERCER, GARY VIVIAN

SUBJECT: **COMMENTS ON THE "STATUS OF BARREN-GROUND CARIBOU IN THE NWT" REPORT**

Avalon is pleased to offer the Chamber its comments on the Status of Barren-ground Caribou Report ("the Report"). Please find below a high level overview of key findings and concerns, prepared by myself with input from Bill Mercer and Don Bubar.

The Report summarized a considerable volume of reference data that the author has not studied given the limited available time and unless otherwise identified, has assumed it is accurate. The majority of the author's comments relate largely to the NWT and the Bathurst herd with which he is more familiar. Feel free to use this in any other formal submissions you are making to government.

Traditional Knowledge Component

There was an extensive summary of the Traditional Knowledge studies provided in the Report. In many cases, it was substantiated by the conclusions of western Scientific Knowledge. Real concern about the population numbers of some herds was clear, though there was recognition that some of the observed changes are the result of long term population fluctuations, as shown in Figure 1 below. Of interest was that one individual stated that there is no population change and that caribou are just elsewhere. While not supported by others or scientific knowledge, it did re-enforce the changing mobile nature of the herd.

Key messages include the following:

Caribou are migratory animals, and they vary in distribution from year to year and are often found in areas where "they were not seen in before". This distribution variability is substantiated by the scientific knowledge.

There was clear testimony that changing climate is a concern. While caribou are identified as a hardy species adapted to the north, it was concluded that caribou are negatively impacted by warming conditions that are causing increased snow, freezing rain and ice conditions that aggravate the ability of caribou to migrate, obtain food in winter, as well as negatively impacting the quality of food. Permafrost thawing was also considered a concern.

Some stated that caribou have increased levels of disease and/or are increasingly bothered by insect populations. Heat exhaustion was identified as a concern. This was often attributed to warm weather and climate change.

Fire was strongly identified as a concern to caribou population winter range. Fire has resulted in a major loss of habitat, food supply and migratory routes. There was discrepancy as to how long fire affects caribou, but was generally for very long time periods. It is the major factor for change to caribou distribution. Fire was considered the most immediate and imminent effect and should not be understated. Climate change was implicated in this change in that there was a perception of more and more severe fire in recent times.

Hunting pressure was identified as a concern by many and that there was a need to return to traditional hunting practices by some hunters. Wounding loss was identified as a concern, suggesting that harvest effect is underestimated.

Industrial development was identified as affecting migration due to smell and physical barriers (roads, snowbanks, traffic, etc.). Development was blamed for many of the same impacts identified as also due to climate change such as quality of food supply and availability of habitat. Dust and noise were stated as potential causes. It was also noted, however, that contamination was not identified as a present concern. Notably, lack of control on new access roads causing an increase in hunting pressure was an identified indirect effect of development. It was noted by some that caribou can adapt, avoid or become habituated to industrial areas, as well as to noise, though others disagreed.

Regrettably, some of the data was frequently inconsistent or conflicting. For example, some testimony stated that roads interfered with caribou movement, either at all times or during non-migration periods. Others stated that caribou are adaptable and that roads and pipelines are not a concern. Others stated that migratory routes have stayed the same, while others did not. Some suggested that industrial development interfered with migration.

Some stated that the meat tasted differently in recent years, while other stated that the meat is the same, despite the mines. Some state body condition is better while other say it is worse. Still others stated that the quality of meat was a function of the time of year, sex of the caribou and what the caribou are eating.

There seemed to be a strong discrepancy with traditional science regarding caribou predation. The Report suggests that wolves prefer healthy cows rather than harvesting easier prey such as calves and the sick or lame. It is stated that wolves are capable of taking down healthy animals. While this is likely true, ignoring of the sick and lame caribou as a food supply is not consistent with the scientific knowledge role of predators.

Scientific knowledge states that wolves help to remove the sick and lame from the herd, helping to reduce illness and disease and remove the weak, thus helping to keep the herd healthier. Either way, predation was generally identified as a concern to caribou populations. Man clearly attempts to only harvest healthy caribou, and many prefer cows in particular. While this too can cause deterioration in herd health by leaving the sick and taking the healthy, it was not identified in the report.

Scientific Knowledge Component

The lack of clarity and several changes in the scientific literature of something as fundamental as the number of herds in the north of Canada is both perplexing and disconcerting. The use of scientific knowledge and collar data in particular, is stated as sufficient to describe the overall and seasonal distribution of caribou, despite small numbers of collars. There is considerable information available in the literature regarding caribou physiology, nutritional needs, the quality of the range of caribou forage and other habitat requirements. It was recognized that summer forage availability can explain 59% of the variation in cow: calf ratio of the Bathurst herd, a key indicator of caribou population health. This suggests that all other factors combined contribute to only 41% to this key variable. It was recommended that more collar data would provide better and more reliable data, and it is the author's understanding that more collars will be permitted in 2015.

Scientific knowledge supported Traditional Knowledge regarding key significant factors on caribou health and population, including impacts of snow, ice, insect avoidance and fire to name a few. Climate change was identified as a potential influence on this. Fire in particular impacts on available habitat, quality of food and ability of caribou to migrate from one area to the next in the winter range. As the Report states, "Caribou use of those forests is strongly influenced by forest fires and snowfall at the landscape level".

Stress is considered a concern for caribou health due to an impact on energy use. While industrial development may be a minor source of stress, the Report suggests that caribou live in a "landscape of fear" with respect to predators. There is evidence that caribou will modify their behavior in a 14 km radius zone of influence ("ZOI") of a mine. Regrettably, nowhere in the Report has the relative significance of this short term modification in behaviour during migration been estimated. Given that at the present population size, habitat is accepted as not being limiting to caribou populations and avoidance of habitat near industry is both easy and alternative acceptable habitat is readily available. This should be emphasized in the report. However, emphasis on evaluation of stress and potential impacts of industrial development in the more sensitive calving grounds is agreed as a priority.

Stress from mine sites has been theorized to come from noise or dust, but this has not been validated by science. At the same time, it has been reported that caribou can habituate or avoid mines. Given the abundant level of habitat relative to the present herd size, it is not surprising that the caribou will leave. If habituation can occur, this too will reduce stress. ZOI in international studies can be significantly smaller, suggesting habituation is possible. This is not mentioned in the Report.

Some studies completed by the diamond mines suggested a small sub-lethal energy impact on caribou in the ZOI. Regrettably, in discussion with one of the study participants, there was a lack of QA/QC; no assessment of inter-participant measurement variability; no assessment of the accuracy of the data under the difficult study conditions; and no methodology to assess the impact of the personnel completing study on caribou behavior was completed (i.e. people studying the caribou during the study itself caused at least some of the stress). Given the difficult conditions of the study, the very small variability in energy use identified is potentially within the range of natural variability. As such, these studies may be unreliable and a peer review is recommended. It should also be noted in the report that this is a short term impact during migration.

Finally, an evaluation of why at times caribou seem quite content to forage near mine sites, as significant photographic evidence provides, needs to be understood. The experience with nuisance caribou at Lupin Mine, including caribou resting under buildings (possibly to avoid insects or predators) should also be investigated to assess the relative stress impacts. This information is missing in the Report.

Direct acute lethality to caribou at mines is extremely rare and insignificant relative to acute mortality caused by harvesting and predation. There is recognition that the ZOI represents a sub-lethal effect of mining, but little discussion or assessment of the relative changes to the much more continuous (and therefore more significant) sub-lethal effects of harvesting, predation, fire, insects and other impacts of climate change. This is a gap as these vary considerably and some may be worsening with time. While it is recognized in the literature that there are some behavioural changes in a ZOI of a mine site, despite years of scientific study and theories, there is no evidence or definitive conclusion provided as to the cause of this change or whether this change of behavior has any significant health effect on caribou health. Until this is identified, definitive action to reduce or prevent the impact is not possible.

Given the recognition by many that caribou can habituate to the presence of mine sites, it is a serious gap that the changing and relative importance of the sub-lethal effects of harvest/communities, insects, fire, predation and potentially climate change are not considered. Given the vastly larger acutely lethal effects of predation and increasingly widespread harvest that occurred until recently throughout the whole caribou range vs the very minor sub-lethal short term effects of a small portion of the range potentially impacted by mining, the relative importance of a range of factors is a significant gap in the Report and studies to date. Before a predictive energy based management model can be utilized for caribou management, as has been suggested in the Report, significant evaluation of the quality and full range of these inputs will be required.

Fire and associated habitat and migration impacts have been identified as a serious concern by both Scientific and Traditional Knowledge. The importance of this relative to mining for example, has not been identified in the Report. In 2014 alone, 14,000 square kilometres of potential caribou habitat was lost to fire. In the 1990's and 2000's, an estimated 105,000 square kilometres of potential caribou habitat have been lost. A 14 km radius ZOI is equivalent to only 0.62 thousand square kilometres or only 0.6% of the habitat lost to fire over these two decades, not including the last 5 years and ongoing loss. Even this comparison overemphasizes the impact to caribou relative to mining as the impact at a fire edge is very probably greater than the remaining impact at the edge of a 14 km ZOI.

For mines below the tree line, the impact is even smaller as the ZOI is smaller due to vegetation and topography. This relative impact must be assessed when developing caribou management strategy priorities. Predictions of fire habitat loss could exceed 50% of the available habitat in the foreseeable future. The relative significance of these factors is not clearly identified in the Report. Significant scientific information is available in the NWT on both caribou needs and preferred habitat that could be used to protect strategically important caribou habitat, including migration routes and valuable food sources. Regrettably, the Report also states that "Habitat requirements have not been detailed during and after the October rut in the NWT", and this also remains a scientific gap that requires filling.

The risks associated with predator control were not discussed. While the literature recognizes that in specific circumstances, some predator control is beneficial to protect a small and decreasing herd. However, it is also believed in scientific literature that predator control can lead to a decrease in herd health due to the failure to cull sick and weak animals. There can also be other unknown and unexpected impacts of this strategy. One potential impact identified in the report is an increase in lemming and voles that can have a significant negative impact on caribou food supply of the order of a 50-70 percent reduction in tundra plants. This can theoretically be exacerbated with the removal of predators. This impact has not been studied. Thus the use of predator control requires very careful monitoring for unanticipated impacts.

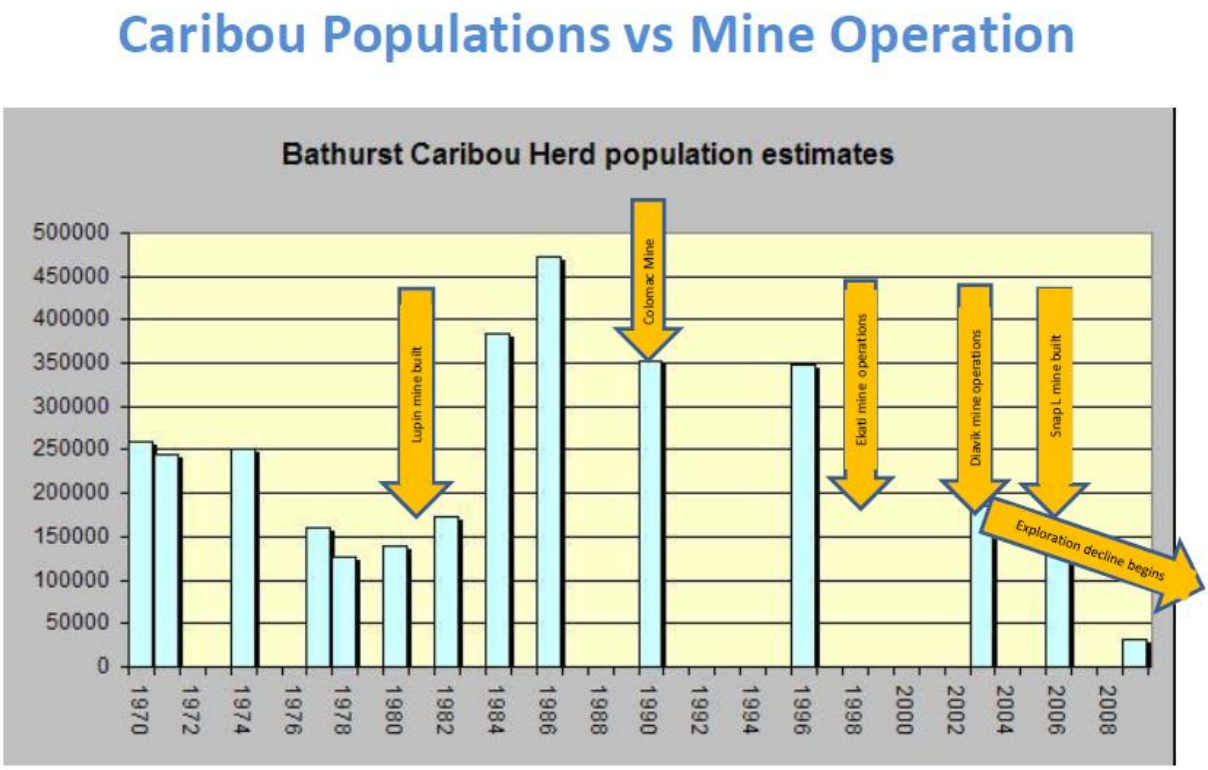
It is astounding that caribou harvest (legal and illegal to the extent that it can be monitored) was not tracked in the NWT, given that this is recognized as potentially one of the most important factors on caribou population.

Over the years, there has been an increase in the effectiveness and efficiency of hunting. This included improved access with roads, boats, trucks, improved snow machines, improved rifles and scopes, etc. and historically an increasing tourist hunting industry. Stories abound about

wastage, wounding loss, commercialization and sale of caribou and indiscriminate killing as identified in the Traditional Knowledge are a lethal impact to caribou populations that has not been measured. This is a fundamental and scientific necessity for managing populations and studying of population dynamics and is a serious gap in the data. Recent bans on hunting are a positive step, but the Report does not mention whether or not the NWT is now doing sufficient enforcement and whether or not the monitoring of the harvest/hunting ban is adequate or effective. It is recognized that this is especially serious as caribou numbers get lower as "any threats are exacerbated and recovery is slower".

The following Figure 1 identifies data that is missing from the Report and, while the evaluation complete here is at a very cursory level, compares Bathurst Caribou Herd population estimates (blue bars) vs mine operation starts (vertical arrows) and the recent period of decreasing exploration activity.

FIGURE 1



Of note is the apparent complete lack of correlation of herd populations with mine operations and exploration activity. There is also a significant amount of photographic information available that show caribou close to mines, suggesting that they can adapt or habituate to mining activity. Some of this information is either missing or conflicts with statements in the Report. At Lupin Mine, they actually rested under the buildings, possibly to avoid insects, climate or predators. However, a more detailed correlation between all forms of industrial activity and caribou population, relative to other impacts, would assist in identifying whether or not mining activity is significant.

The Institutional (governance) and planning section fails to address the economics of caribou management. It is a fact that government income and direct research funding from industrial development is necessary and fundamental for funding a significant portion of the ongoing caribou management studies and the resources necessary for the protection of caribou with such things as harvest and predator control and fire-fighting.

Recognizing that the NWT even now is not self-sustaining economically, and on the assumption that global warming will continue to exacerbate fire and winter range habitat loss in the NWT, whether or not there is any industrial activity in the north, increasing financial resources for fire management will be required. Failure of the NWT to show progress on its economic viability will not be contusive to increased debt limits that are presently needed.

Even on the additional assumption that hunting can be controlled and the risk to caribou from improved access is managed, and given the relatively minor indirect impacts of mining, increased government revenues from industrial development for fire-fighting will be required. The major source of direct and indirect jobs in the NWT comes from industry, which also has an effect of reducing hunting pressure and the need for caribou as a food supply. Significant loss of industrial employment, especially in the Aboriginal communities, will in all likelihood lead in an increase in hunting pressure and a demand to return to the traditional right to hunt that could be detrimental to caribou in the future. This is not mentioned in the Report.

Conclusion

Regrettably, while the Report provides a broad summary of the available information on the status of caribou, the Report contains important data gaps and is not balanced in its conclusions.

In summary, experts in caribou management generally agree that, at the present herd size, habitat is not limiting to caribou at their present population numbers. This is not clear in the Report. Contaminant risk, assumed to be from both industrial development and long range transport, has been concluded as low. No estimates of the present carrying capacity of the habitat, with or without the existing and proposed development, are made, but it is clear that available habitat is capable of supporting a much greater herd size. Caribou can now and into the future, easily avoid industry and the as yet undetermined, potential sub-lethal effects suggested as originating from mines. The examples of caribou contently grazing close to industrial development, as available in many photos and international literature, (and as mentioned as a potential in several places in the Report), appears to be all but ignored. The Report lacks any clear demonstrated correlation between mining activity and caribou population change.

However, Caribou cannot easily avoid the extensive and ongoing fire damage, insects or many climate related problems, and to a lesser extent, predators that occur throughout their range. The Traditional Knowledge emphasized climate change as a serious risk, but while suggested as a potential risk in several sections of the scientific knowledge section, the conclusion is that “it is premature to describe climate change as a threat”. This conclusion is not supported in the Report. If this is the Report’s final conclusion, which is in complete opposition to the Traditional Knowledge, then further effort to scientifically evaluate this risk is urgently required.

Given the massive historic and ongoing loss of potential winter habitat to fire, it is surprising that a recommendation for strategic fire management is not included in the potential positive influences section.

Yet the Report recommends severe restrictions on industrial development, when there is no estimated or proven cause/effect/benefit to these restricting development, while failing to address other known negative ongoing impacts to the caribou throughout their range. To utilize the recommended control on relatively small and geographically isolated industrial development, based in part on an unproven and un-calibrated energy model that utilizes suspect energy data, is a major concern. Rather than taking a balanced scientific approach, the report relies in part on what appears to be a politically easy conclusion to apply restrictions on development. This is also in absence of an evaluation of the potential *benefits* of industrial development to caribou (such as population monitoring and infrastructure for fighting fires) or apparent effort to address some of the other real and potentially very serious causes of caribou decline.

Given these facts to continue to utilize research and management effort, at least in the short term, to limit industrial development, is not defensible in science. Predator and harvest control to eliminate this acutely lethal effect (as well as probable, but unstudied, associated sub-lethal effects), remain critical as a strategy for control of the population decline. However, it must be carefully monitored and managed. Regrettably, recent evidence suggests that the existing harvest and predator control may not be enough.

A focused, unbiased study to identify real causes of population decline and potential remedies is urgently required. This will not be an easy or politically popular conclusion. Serious consideration of a focused fire management program to prevent serious continued loss of essential caribou winter habitat is clearly required, but has not been recommended.

While global warming is not something the NWT can control, creative thinking is required to manage the numerous serious effects of it, as global warming may be the single most important impact that requires management effort in order to save the herd in the long term. At this time, several potential significant global warming impacts, to this author's knowledge, are not being sufficiently studied or addressed. Given study resource limitations, it will require a major cultural shift within the government and scientific community (away from the impacts of industrial development) to focus on factors that have a known or potentially more significant impact on caribou populations.

While it is still worth trying to understand the causes of the ZOI so that a cause and associated control can be identified, a significantly greater effort to understand and control more significant causes of decline is required. It will be very sad if in twenty or thirty years we look back and see that this obviously biased and unscientific approach fails to solve the serious root cause problems. This will not be a popular or politically easy approach, but given that significant participation (and tax revenues) from industry will absolutely be required to protect the herd, the general discouragement of industrial development in the NWT is both naive and short sighted.

Mark Wiseman, B.Sc., MBA,
VP, Sustainability, Avalon Rare Metals Inc.