Taking Care of Caribou

The

CAPE BATHURST, BLUENOSE-WEST, AND BLUENOSE-EAST BARREN GROUND CARIBOU HERDS MANAGEMENT PLAN

Submitted by The Bluenose Caribou Management Plan Working Group in partnership with Terriplan Consultants to:

Advisory Committee for the Cooperation on Wildlife Management

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1.0 Preamble

This Plan is called *Taking Care of Caribou*. For as long as Aboriginal people have harvested caribou, they have felt a responsibility to take care of the caribou as related in many oral history stories. Barren-ground caribou and the Aboriginal people of the North have a complex and ancient history – the abundance and health of the caribou has profoundly influenced the distribution and health of the people.

In the past, traditional harvesting practices that showed respect for caribou helped to keep a balance between harvesters and caribou. These traditional practices were a way of "managing" the caribou. However, elders recall times in the past when caribou were scarce and people searched out other species, which varied from region to region - for some regions it was moose and for others it was fish. Their knowledge indicates that caribou populations have a natural cycle of 30-60 years where herds go from high to low numbers and back again.

The basic ways of showing caribou respect through Aboriginal harvesting practices is:

- Only take what you need
- Always share with others in need
- Use all parts of the caribou

All the communities in the range of these three herds: the Cape Bathurst, the Bluenose-West, and the Bluenose-East, are being engaged for their input and knowledge. During community engagements for preparing this plan, many participants expressed concern about how historical events, modern practices, and changing cultures have affected the relationship between Aboriginal people and caribou. In the past, as now, taking care of caribou has been about managing human actions to sustain healthy caribou populations. The challenge is to create a plan that respects Aboriginal rights, provides for a fair allocation of the harvest among communities, and finds a balance between the resources we use today and the resources we leave for future generations.

"It's very hard for elders to express their feelings when they are asked about caribou. I have feelings for the caribou. We really take care of the caribou. Every time we ask for money to address these things, the people from the government who come don't understand the Dene way and how we relate to the caribou." (Délı̨nę)

"All herds are declining. We are not traditional hunters anymore. There are more hunters than before, and younger hunters. We can't say there are many caribou and we can just hunt what we please. We need to think about our future generations." (Kugluktuk)

For decades, Aboriginal people have worked hard to reach agreements and settle comprehensive land claims so they would have greater control over their land and their lives. The treaties and land claim agreements provide for certain rights. They also provide for both the ability and the responsibility to manage wildlife.

"You know we all settled our land claims so we could make decisions rather than government. We have responsibilities that government had in the past. Now we may need to make some difficult decisions, as part of the management plan." (Inuvik)

Observations by caribou harvesters and elders, and the results of scientific studies, indicate that barren-ground caribou populations in the western arctic declined in the early 2000s. The decline has been drastic in some cases and may continue. Although there is no consensus on the cause of the decline, we can all agree that caribou are an essential resource and central to the social, economic, cultural, and spiritual well-being of people. Considering what is at stake, it is urgent to have a plan to sustain these herds so we may have *caribou forever*.

The Advisory Committee for Cooperation on Wildlife Management (ACCWM), comprised of seven co-management boards and agencies, was established in 2008. The ACCWM decided, as a matter of priority, to form the Bluenose Caribou Management Plan Working Group (BCMPWG or the Working Group) to develop a plan for the three caribou herds, with strong involvement from people in the 15 communities, in six different land claim areas, that harvest these caribou.

2.0 Why Make a Plan Now

2.1 Introducing the Plan

Historically, the 'Bluenose Caribou Herd' occupied what is now the northern portion of mainland Northwest Territories (NWT) and western Nunavut. However, monitoring caribou movements using satellite collars and genetic studies revealed that there are actually three different herds with three distinct calving grounds. The Cape Bathurst, Bluenose-West, and Bluenose-East herds are the names which replace the general term 'Bluenose Caribou Herd'.

The Plan describes:

- Principles and goals for taking care of the three herds;
- Why make a plan now and the importance of working together;
- Current population estimates, population trends (increasing, decreasing, or stable) and harvesting of the three herds;
- Roles and responsibilities of the wildlife co-management boards and agencies;
- Information required to effectively manage the herds;
- How to make decisions on managing the herds and allocating harvests;
- A framework for determining what management actions should be used and when; and
- How to communicate with communities, harvesters, youth, and others.

"It hurts to see less caribou because we need them for so much. We here have caribou as food – we just take what we need. We talk among the community and discuss what's needed." (Délı̨nę)

2.2 Urgency of Working Together Now

The ACCWM was established in 2008 to "exchange information, help develop cooperation and consensus and make recommendations regarding wildlife and wildlife habitat issues that cross land claim and treaty boundaries." The ACCWM consists of the Chairpersons (or alternate appointees) of:

- Wildlife Management Advisory Council (NWT);
- Gwich'in Renewable Resources Board;
- Sahtú Renewable Resources Board;
- Wek'èezhìi Renewable Resources Board;
- Kitikmeot Regional Wildlife Board;
- Dehcho First Nation[1];
- Tuktut Nogait National Park Management Board; and
- Nunavut Wildlife Management Board.

The ACCWM decided to develop a plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds that migrate seasonally through six land claim regions. Scientific studies and harvester observations indicate that the herds declined

[1] There is an outstanding invitation for the Dehcho First Nation to join the ACCWM and they would thus become part of the WG. All information is shared with DFN and an opportunity for their feedback is provided.

drastically from the early 1990s up to 2006. Recent surveys indicate that the populations may be stabilizing at a lower population level. The cause of the steep decline in herd numbers is not known. There is a need to:

- Develop a cooperative approach to managing the herds;
- Protect the habitat in the herds' range, and
- Make decisions on the shared harvests in an open and fair manner.

As was clearly heard in the community engagements, the users expect government and the wildlife co-management boards to work together, and with the communities, to ensure that there are indeed *caribou forever*.

The ACCWM established a Working Group[2] to:

- Prepare a draft plan for the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds and their habitat for recommendation to the ACCWM;
- Recommend an approach with respect to the shared responsibility for implementing the plan; and
- Promote and strengthen communication and sharing of information among all groups interested in, or responsible for, the management of these herds and their habitat.

This draft Plan is an important step towards meeting those goals.

Some people have stopped hunting, hoping that this will help there be more caribou for grandchildren. One harvester has stopped for 6 years now. (Inuvik)

3.0 How the Plan Is Being Put Together

The Plan has been developed in close consultation with the communities that harvest from the three herds. The first round of community engagement (October and December 2009) involved 12 community meetings in four regions - Inuvialuit, Gwich'in, Sahtú, and Kitikmeot, NU. A second round begins in January 2011.

Because these herds are shared across jurisdictions and among many communities, it is very important that everyone works together. It

Use traditional knowledge: it's very important to our way of hunting (gather knowledge and then use it to develop the management plan). (Fort McPherson)

[2] See Appendix D for a list of ACCWM and BCMPWG member organizations

was emphasized that the development of a plan was in the very early stages and it was first necessary to seek the experience, input, concerns, and advice of all regions and communities. The main reasons for holding these community engagements were to:

- **Share the best available information** on the current status of the herds. This includes both scientific information and observational information from harvesters.
- **Identify the key issues and concerns** from each community's perspective, e.g. what do you think is happening to the herds? Why?
- **Discuss possible solutions:** What can we do to address these issues and concerns? How can we include this in a plan?
- **Outline the next steps** in developing a plan.

Summary reports from community engagements were prepared by the Working Group and provided to each community. Copies (e.g. *Developing a Caribou Management Plan: Summary of Phase I Consultations in the Inuvialuit Settlement Region; December 2009)* are available from Working Group representatives (see Appendix B). There will be a second round of community engagements in early 2011 using this draft of the Plan, and before the Plan is finalized.

4.0 What We Are Trying To Do With the Plan

The ultimate goal of this plan is to ensure that there are "caribou forever" - caribou for today and for future generations. The three caribou herds will be managed to:

- Conserve vital, healthy caribou herds and habitat so we can have caribou – *forever*;
- Keep the overall harvest of each herd within sustainable limits; and
- Have guidelines, or a clear way, to fairly allocate the harvest from each herd.

4.1 Important Principles to Keep in Mind

The ACCWM believes that traditional Aboriginal values and practices should be protected and promoted. This includes values such as respect for wildlife and traditional lands. It also includes the traditional harvesting practices of taking only the amount needed, using all parts of the caribou, sharing, and passing on traditional methods and beliefs to the next generation. This plan supports those values and the following principles:

- Management decisions will respect treaties and land claim agreements, and Aboriginal harvesting rights in areas both with and without a land claim agreement.
- Management decisions will reflect the wise use of the herds in a sustainable manner.
- Adequate habitat (quantity and quality) is fundamental to the welfare of the herds.
- Management decisions will be based on the best available information - both science and TEK; and will not be postponed in the absence of complete information.
- Effective management requires participation, openness and cooperation among all users and agencies responsible for the herds and their habitat. Shared use means shared responsibility.
- Harvests must be allocated in a manner which respects Aboriginal harvesting rights and the sustainable harvesting limit, if any, of each herd.
- We know that changes are occurring that will affect the caribou and their habitat, so we need to try to anticipate and minimize any impacts to the herds from these changes.

Back in the 1950-60s, you did not hear about declines in caribou because Aboriginal people were managing properly. We used community freezers which were filled with bulls from fall community hunts. People were allowed to take meat once a week from the freezer. We need to go back to the old ways of managing things. (Tulıt'a)

Young people are getting wiser now and hunting caribou without calves (because of tags). (Paulatuk)

5.0 What Caribou Are We Talking About?

The Cape Bathurst, Bluenose-West, and Bluenose-East herds occupy a large part of northern NWT and western Nunavut (Figure 5-1). Each herd has a traditional calving area that is used in June. After calving and post-calving, the herds migrate southward. The Bluenose-West

and Bluenose-East herds reach the tree line for the rut in October, while the Cape Bathurst herd winters inland on the tundra.

Population size and distribution changes over decades because of natural environmental changes and human activities. The herd ranges shown in Figure 5-2 - 5-4 are based on eight years of satellite tracking radio collared caribou cows within each herd.

From the mid 1960s to the mid 1990s, the three caribou herds were managed as a single herd – the 'Bluenose Caribou Herd' (Figure 5-1). In the mid 1990s, the information from past aerial population surveys and satellite collar data showed three different calving areas and two different rutting areas. Scientists also looked at the genetics of the animals by collecting DNA samples from the calving grounds. Results supported the idea of three separate herds within the 'Bluenose caribou herd' and that each herd occupies a different annual calving area. Since biologists define herds of barren-ground caribou by their separate calving grounds, the 'Bluenose caribou herd' was re-named as the Cape Bathurst, Bluenose-West, and Bluenose-East herds.

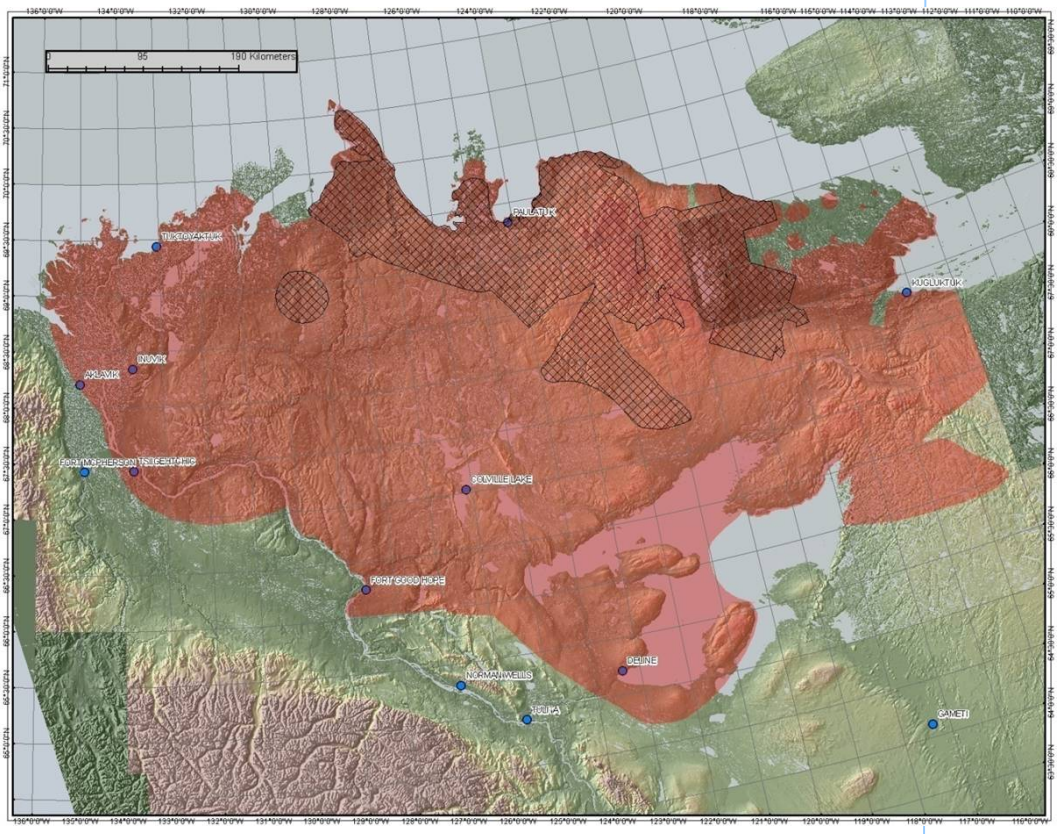

Figure 5-1 Historic 'Bluenose Caribou Herd' Range (ENR-GNWT)

Note: The cross-hatched areas signify caribou distribution during calving.

Although the three herds have distinct calving grounds, their ranges sometimes overlap. Cape Bathurst caribou calve on the Cape Bathurst Peninsula, rut east of Husky Lakes, and winter in the Tuktoyaktuk Peninsula-Husky Lakes area (Figure 5-2). Bluenose-West caribou calve west of Bluenose Lake in Tuktut Nogait National Park and adjacent areas to the west, rut in the Anderson River and Colville Lake area and winter on the Tuktoyaktuk Peninsula and south into the Sahtú Settlement Area (Figure 5-3). The Bluenose-East caribou calve east of Bluenose Lake in the headwaters of the Rae and Richardson rivers, rut northeast of Great Bear Lake, and winter north, east, and south of Great Bear Lake (Figure 5-4).

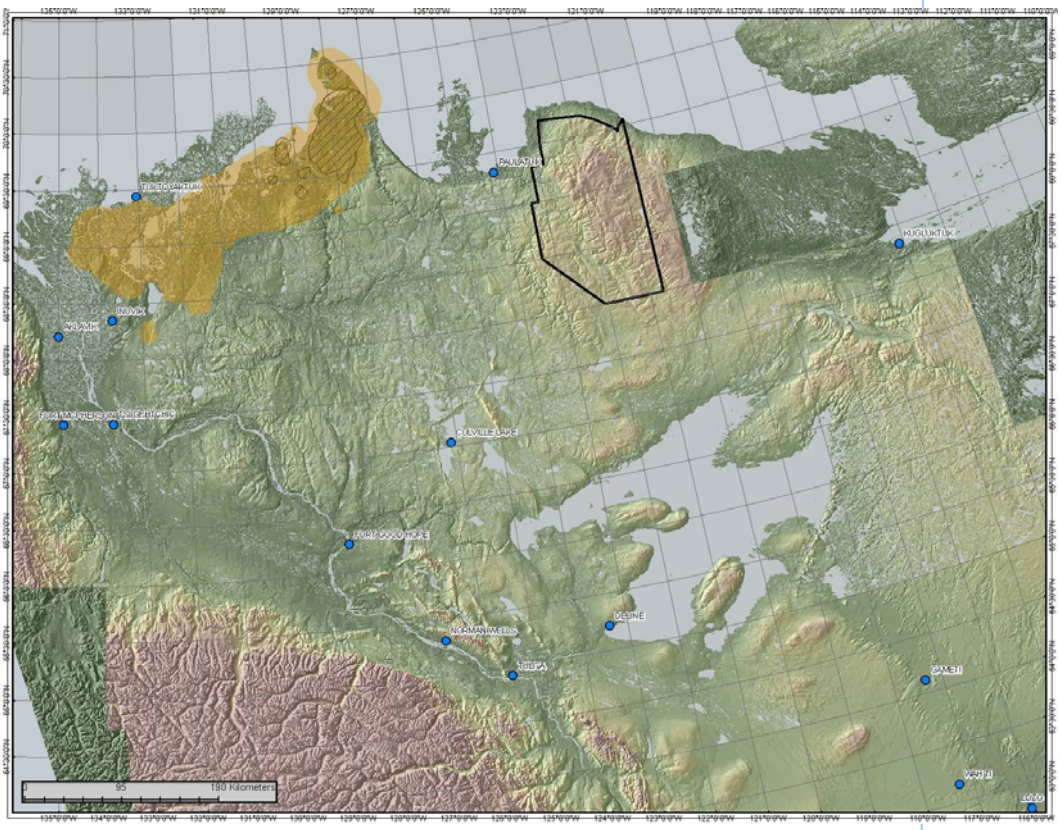

Figure 5-2 Cape Bathurst herd range in yellow. Based on collar data from 1996 to 2004 (ENR-GNWT)

Note: the dark line in Figure 2 signifies the boundary of the Tuktut Nogait National Park.

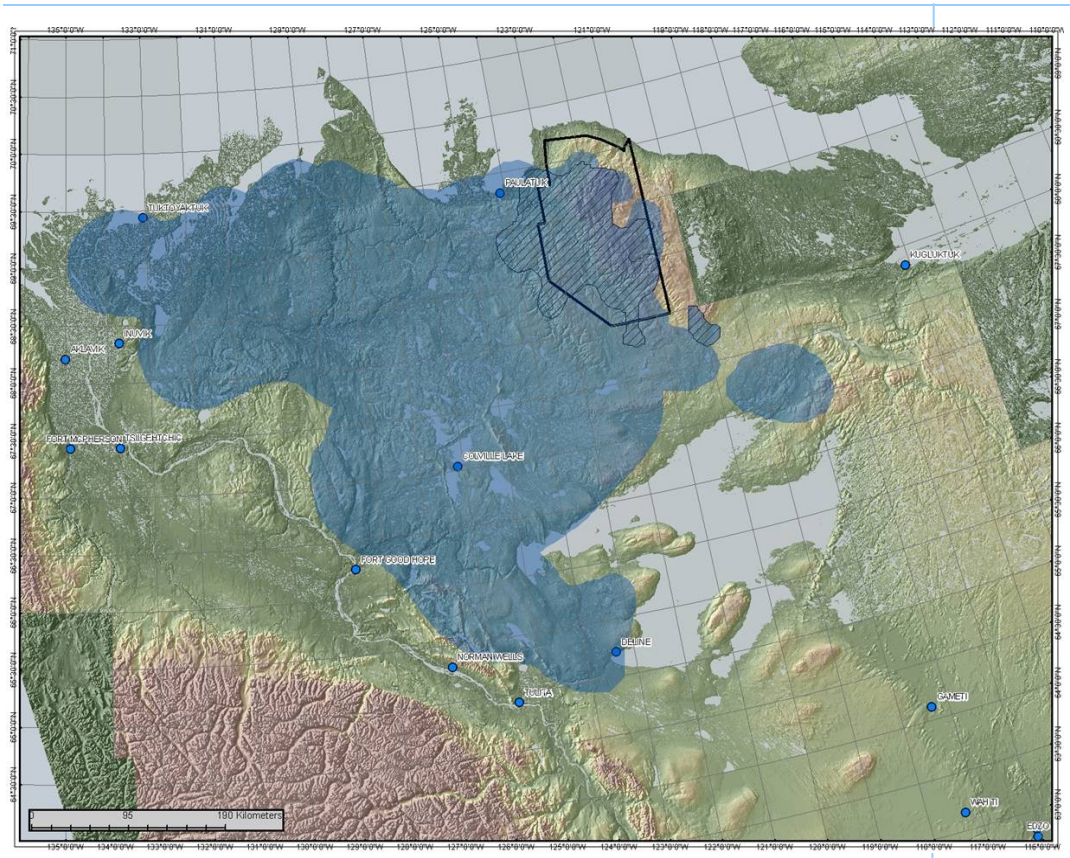

Figure 5-3 Bluenose-West herd range. Based on collar data from 1996 to 2004 (ENR-GNWT)

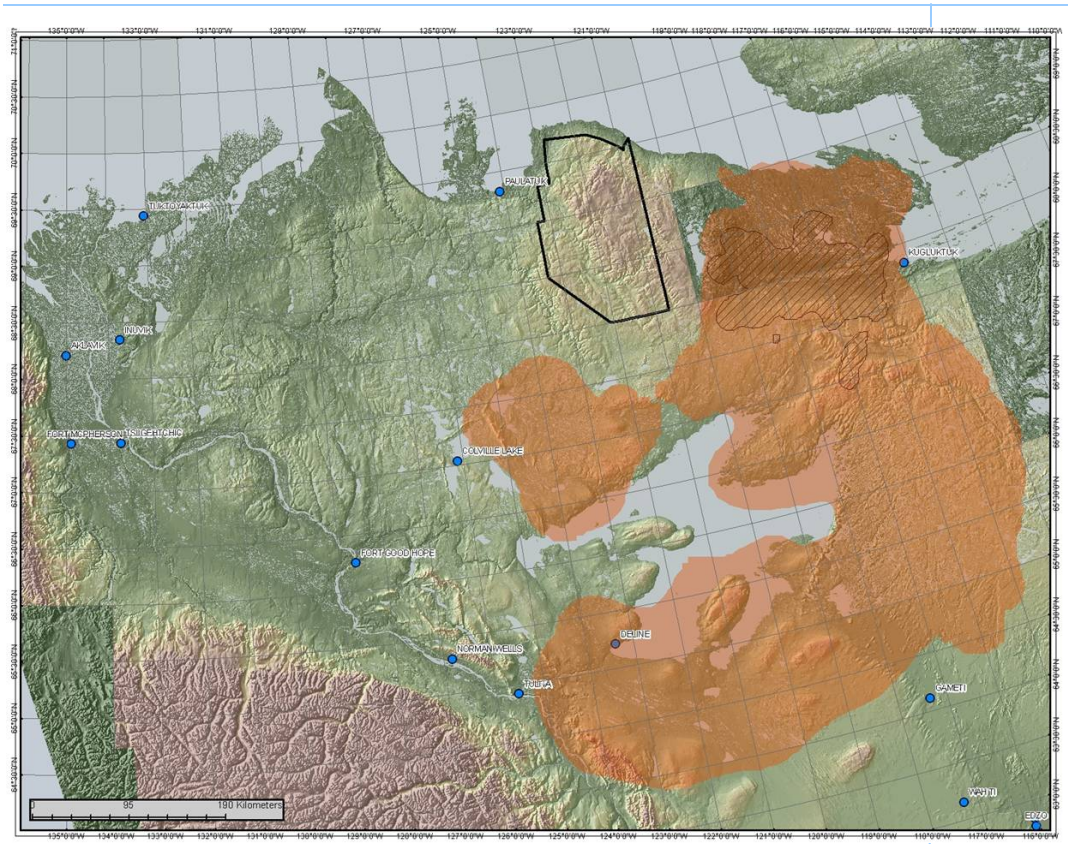

Figure 5-4 Bluenose-East herd range. Based on collar data from 1996 to 2004 (ENR-GNWT)

Seasonal overlap in herd range creates challenges in allocating appropriate harvest levels for each herd. Also, herd ranges include different land owners and wildlife management regimes; all of which requires a coordinated approach to habitat and herd management.

A previous co-management plan for the 'Bluenose caribou herd' was prepared in 2000. It also had extensive community and co-management board involvement; however, the plan was never fully endorsed and implemented. The previous plan grouped all three herds as the Bluenose herd because there was not yet consensus on distinguishing them as three separate herds and because there are many common management concerns.

The ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East herds sometimes overlap with each other. Their ranges may also overlap at times with those of other caribou herds (Figure 5-5). For

In the past, we had choices on which caribou herds to hunt, because they were close by. But nowadays, we have no choices anymore; the herds are no longer close to the Kugluktuk area. The caribou herds are further away, and the migration routes have changed. (Kugluktuk)

example, during some winters, the Bluenose-East herd overlaps with the Bathurst herd.

As the overlap between herds can change from year to year, several communities harvest from more than one herd. For example, harvesters from Aklavik generally harvest from the Porcupine caribou herd but they sometimes also harvest from the Cape Bathurst herd.

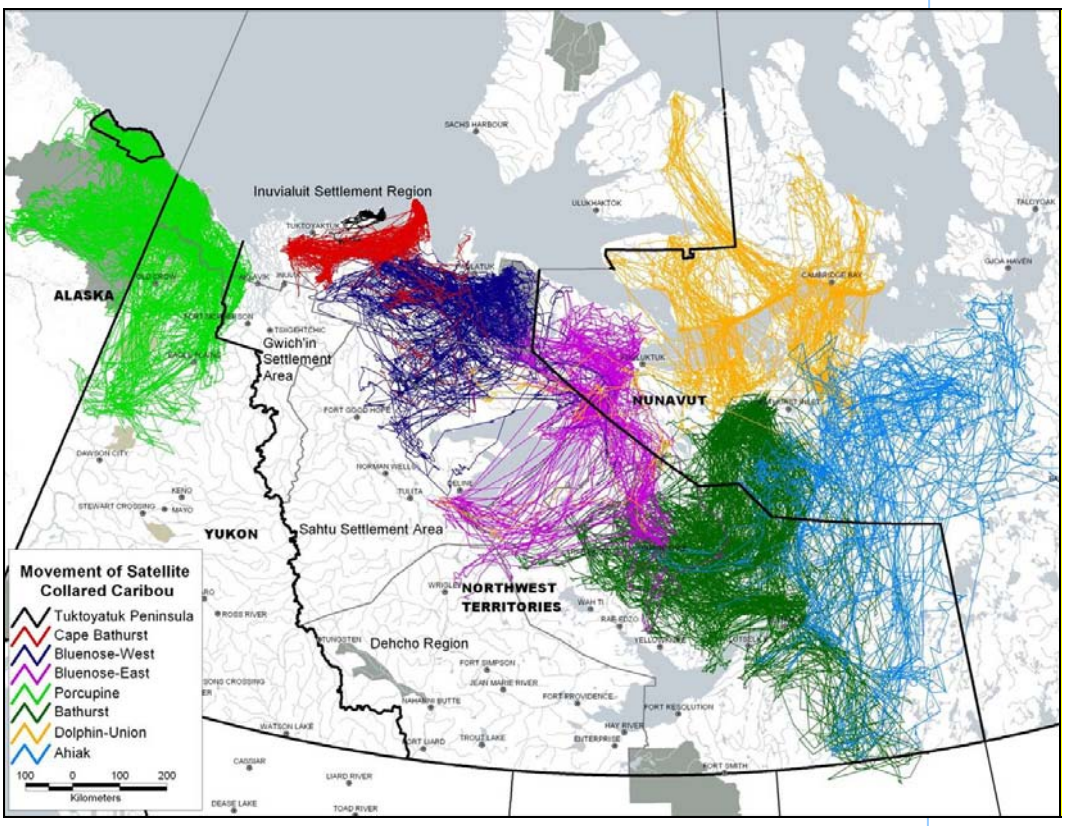

Figure 5-5 Range of Barren-Ground Caribou Herds in the Northwest Territories (ENR-GNWT)

6.0 Who Harvests These Caribou

Historically, there were subsistence, resident, non-resident (i.e., outfitted), and commercial harvests of the three herds. However, after a series of community meetings, the Wildlife Management Advisory Council-NWT (WMAC), the Gwich'in Renewable Resources Board (GRRB), and the Sahtú Renewable Resources Board (SRRB) recommended harvest restrictions to the Environment and Natural

Resources Minister. All resident, non-resident, and commercial harvesting stopped in March 2006 in the Inuvialuit Settlement Region (ISR) and October 2006 in the Gwich'in Settlement Area (GSA) and the Sahtú Settlement Area (SSA). Resident and non-resident hunting last occurred in the Tłı̨chǫ Settlement Area in 2009. The herds harvested by each community are summarized below.

The **Cape Bathurst herd** typically migrates through two settlement areas/regions and is harvested by three communities in the course of its annual cycle (Figure 5-2). The communities are Aklavik, Inuvik, and Tuktoyaktuk.

The **Bluenose-West herd** typically migrates through three settlement areas/regions and is harvested by 13 communities (Figure 5-3). The communities are Aklavik, Fort McPherson, Tsıigehtchıc, Inuvik, Tuktoyaktuk, Paulatuk, Colville Lake, Fort Good Hope, Norman Wells, Tulıt'a, Délı̨nę, Ulukhaktok[3], and Sachs Harbour.

Call all groups together…so we can work together. It need not involve a hundred people but we need to start talking. (Inuvik)

The **Bluenose-East herd** migrates through four settlement areas/regions in the Northwest Territories and into the eastern portion of the Kitikmeot Region, Nunavut. The herd is harvested by nine communities (Figure 5-4). The communities are Wrigley, Norman Wells, Tulıt'a, Délı̨nę, Whatì, Gamètì, Behchokǫ̀, Paulatuk, and Kugluktuk. This herd may also be harvested by any General Hunting Licence holder from another community who accesses the herd by winter road.

The location and movement of the herds changes over time. During the community engagement meetings, many long term harvesters described how herds once traditionally available for harvesting now migrate too far from town to access and economically harvest.

[3] Community harvesters from Ulukhaktok and Sachs Harbour are provided tags and their harvesting occurs on the mainland.

7.0 How Well Are the Herds Doing

7.1 Population Estimates and Trends over Time

All three herds declined significantly from 1992 to 2006. Population estimates in 2009 and 2010 showed the Cape Bathurst and Bluenose-West herds to be stable, but still low in relation to historic high numbers, and the Bluenose-East herd to be increasing.

When you say the herds are in decline – personally I believe it. (Fort Good Hope)

Cape Bathurst Herd

The **Cape Bathurst herd** population has declined from an estimated high of approximately 20,000 animals in 1992 to about 2,000 animals in 2005 and 2006 (Figure 7-1). The 2009 population estimate showed the herd to be stable since 2006.

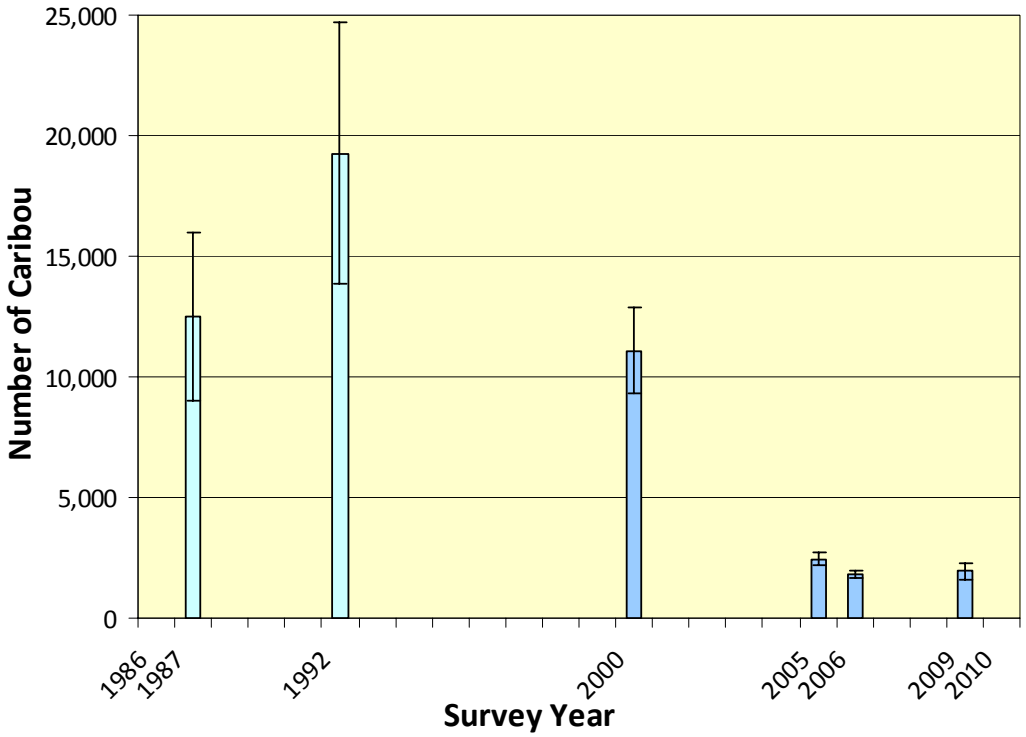

Figure 7-1 Cape Bathurst Herd Population Estimates

Bluenose-West Herd

The **Bluenose-West herd** population declined from an estimated high of over 110,000 animals in 1992 to about 18,000 animals in 2005 and

2006 (Figure 7-2). The 2009 population estimate showed the herd to be stable since 2006.

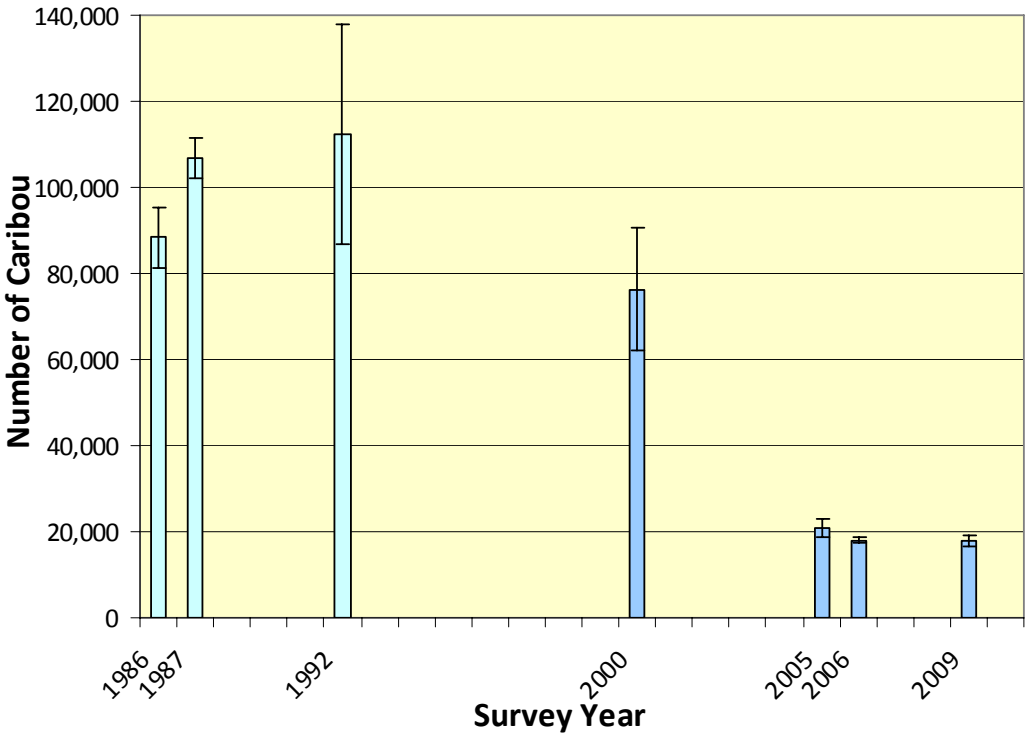

Figure 7-2 Bluenose-West Herd Population Estimates

Bluenose-East Herd

The **Bluenose-East Herd** population cycled from over 120,000 animals in 2000 to about 67,000 animals in 2006 and increased to 98,600 animals in 2010 (Figure 7-3).

Caribou have cycles like rabbit and foxes. (Norman Wells)

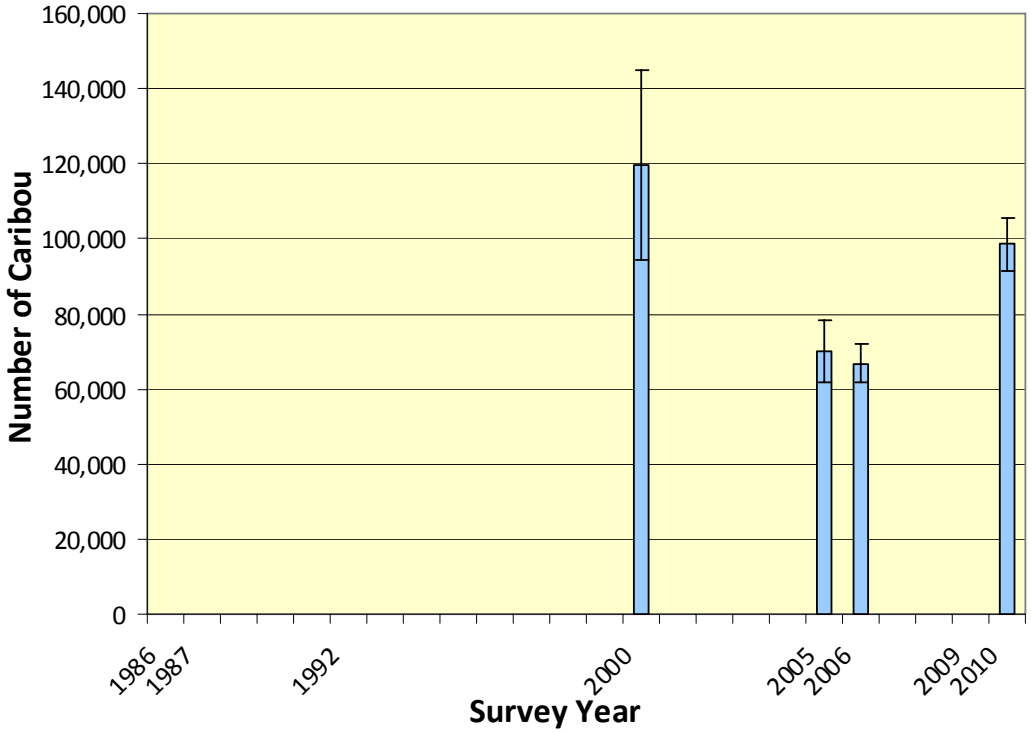

Figure 7-3 Bluenose-East Herd Population Estimates

The large changes in population levels observed in these herds are generally consistent with the trends of other barren-ground caribou populations across North America.

Changes affecting caribou: climate change, vegetation, migration routes, new animals like cougar and muskoxen. (Norman Wells)

8.0 What Is Affecting the Herds?

To make good decisions to help the caribou and their habitat, we need the best available information - both science and traditional ecological knowledge (TEK). The size of a herd and the health of its animals are influenced by several factors that usually work in combination. This is known as 'cumulative effects' and it is important to note that when the factors work in combination, their total impact may be more than when each occurs on its own.

The following list of factors, based on scientific knowledge and TEK, was developed and shared by participants during community engagements.

8.1 Environment and Climate Change

Community members have observed changes in the weather and the environment that may be having an overall negative effect on caribou movements and health. These observations are consistent with scientists' predictions of increased temperatures, more rain and snow, and more severe weather events in the North as a result of climate change.

Caribou, like all wildlife species, are exposed to disease and parasites. Parasites, such as gut worms, warble flies and bot flies, and biting insects, such as mosquitoes and black flies, harass caribou and interfere with their feeding and resting time. Rising summer temperatures can lead to an increase in insect harassment. When flies are particularly bad, the caribou spend energy trying to avoid the flies and less time feeding. In addition to parasites and insects, diseases like brucellosis can cause pregnant cows to abort their foetus or cause calf mortality.

During winter caribou dig through snow to find forage, particularly lichens. This is more difficult when snow is deep or covered with a crust of ice caused by freezing rain or periods of freezing and thawing, such as noted by harvesters during winters over the past decade. Deep or crusty snow and insect harassment can lead to a decrease in fat storage and an increase in winter starvation as caribou burn additional energy in search of food. Scientific studies link reduced spring fat in cows to reduced pregnancy rates, milk production, and calf survival. Ice crusted snow also makes caribou more vulnerable to wolf predation because wolves can travel on ice crust whereas caribou sink through. However, there are few practical options for us to mitigate the impact of these changes as they occur on a global scale.

8.2 Predators

Predators affect caribou behaviour and mortality. Effects are greater when a herd is declining. Some predators impact only calves (e.g., eagles) and some only during a relatively short period (e.g., grizzly and black bears). Wolves prey year-round on all age classes of caribou. Predator numbers decline as herds decline but usually there is a delay of one or two-years. As a result, when caribou numbers

During the fall season, and after the snow has fallen, there are times when it rains, and the snow becomes crusty and the caribou cannot get to the vegetation. Because of this, the herds tend to head south towards the tree line. This is a change that we notice more and more; it rains after it snows and the snow becomes frozen, making it harder for the caribou to get to their food. (Kugluktuk)

We have seen the caribou changing their migration routes from the 1970s. In July caribou are now up in the hills since the summers are colder now and the caribou don't have to hit the beach [inference is that there are fewer bugs bothering the caribou now]. Fall also comes later now and caribou stay longer into the fall and winter. (Paulatuk)

begin to decrease, the impact of predation becomes proportionately greater. This was reported from several of the communities during the engagements.

Caribou users have frequently requested that programs to reduce predators, particularly wolves, in their areas be revitalized. They also have requested increased monitoring of predator populations and the impact of predation on the herds.

There are more eagles and bears predating on calves and there are too many grizzlies too. (Inuvik)

Studies on moose and caribou in Alaska and the Yukon, and past experience in the NWT and Nunavut in the 1960s, have shown that focused predator control can be a tool in caribou population recovery *in some situations*. However, predator control is controversial and not always effective. When caribou numbers are down, the NWT and Nunavut management agencies provide financial incentives to harvest wolves.

8.3 Human Activities

When caribou numbers are low, human activities can alter the rate and extent of the decline, how long it takes for recovery, and even whether the herd recovers at all. Human activities such as harvesting can directly affect the population size while disturbance from aircraft, recreational activities, roads, and development can influence caribou behaviour, which in turn affects condition and health.

There are so many mining camps and exploration camps being built around the calving grounds lately. Maybe it is time to limit the exploration camps (activity). We can go to Kitikmeot Inuit Association or the organizations that permit these activities. This may be one solution. (Kugluktuk)

The range of the three herds extends over lands that are protected from development and other areas where exploration and development is either occurring or could occur. Concern about the impacts of non-renewable resource development grew in the last decade with a renewed surge in development activities, such as the proposed Mackenzie Gas Project (MGP) natural gas pipeline and associated exploration and development, the proposed Mackenzie Valley Highway extension north of Wrigley, and the Inuvik-Tuktoyaktuk all-weather road. Discovery of valuable minerals, in both the NWT and Nunavut, also led to an increase in mining activities throughout the herds' range. Land use activities are discussed more in Appendix C.

Direct impacts of development includes visual and noise disturbance. Indirect effects can include a reduction in quality and quantity of habitat, and increased access through construction of roads (which can increase caribou disturbance and hunting mortality).

The impact of development can be reduced by working closely with regulatory agencies such as land and water boards and Indian and Northern Affairs Canada (INAC). This includes recommendations to avoid low-level flights over caribou and reduced or suspended operations when wildlife monitors observe caribou near project sites.

One big change we've seen is that now that the oil and gas companies are gone, the caribou have come back closer. When the oil companies were here, there was no caribou close by. They were way up past Aubry Lake [north of Colville Lake]. (Colville Lake)

Caribou harvest has a direct impact on the number of caribou and the adult sex ratio of a herd, depending on the sex ratio of the harvest, particularly when harvest exceeds the limit that can be sustained by the herd. The impact of harvesting can also be greater than the numbers reported in harvest studies. Harvest estimates in the NWT and Nunavut have not included any estimate of 'wounding loss' – i.e. when caribou that are shot at and injured but not recovered by the harvester.

We are collectively responsible for managing the harvest of these herds. The challenge is determining a sustainable harvest level (if any) based on acceptable risk and accurately estimating the total harvest from all regions and all harvesters of a herd, including wounding loss. Harvest studies have been done in some of the regions, but formal harvest studies are not currently being done in most regions. During the community engagement sessions in developing this Plan most people supported harvest monitoring programs in each region.

9.0 Watching and Monitoring the Herds

9.1 How to Monitor the Herds

Monitoring, where information is regularly gathered to measure how the caribou are doing and changes over time, is the foundation for good caribou stewardship. The monitoring program should collect information about changes observed in the herd, and changes in ecological factors that are known to affect caribou numbers and health, such as habitat quantity and quality. An integrated monitoring program that collects information at these different levels is important for management decisions over the long term.

Important considerations for an effective monitoring program are to minimize disturbance, maximize the involvement of local people, and gather the most useful TEK and scientific information in the most cost effective way. Communities, harvesters, and wildlife management agencies need to work together to collect and share the best available information in order to make appropriate and defensible decisions to sustain caribou.

Count caribou when they are migrating at traditional water crossing sites. We need a specific management plan for each area and within these plans we need accurate harvest reporting. (Tuktoyaktuk)

The information we need to determine herd status includes:

1. Population size (i.e., estimated number of adult caribou)
2. Population trend (i.e., stable, increasing or decreasing) and the rate of change
3. Recruitment (i.e., number of calves surviving post-winter)
4. Bull-to-cow ratio (i.e., the number of bulls per 100 cows in the herd)
5. Body condition (i.e., amount of body fat)
6. Harvest levels (i.e., number and sex ratio of caribou harvested) and an estimate of wounding loss

The main information on which management actions are based is the estimate of herd size, which will be attempted for each herd at no less than 3-year intervals. There are other data and trends that we need, especially if we are unable to get a population estimate from aerial surveys for several years due to factors such as bad weather.

Other important information includes:

1. Population of predators (i.e. number of wolves, grizzly bears, wolverines and golden eagles)
2. Habitat condition (i.e. fires on winter range and quantity and quality of food)
3. Disturbance levels from human and natural causes

9.2 Main Criteria for Assessing Herd Status

9.2.1 Estimated Population Size

The main criterion to assess herd status is the estimated number of animals in a herd. The generally accepted method of counting caribou is aerial photography of the post-calving range of a herd, commonly called a census. The census estimates the total number of adult caribou in the herd. It is the key consideration when determining a sustainable harvest, if any, for a herd. Calves less than 1-year-old are not included in the estimate of population size because of the high death rate experienced over the first year of life.

Scientific evidence, the journals of missionaries and trading post managers, and TEK strongly suggest that barren-ground caribou populations have always gone through cycles 30-60 years long. Although considered 'natural cycles' in abundance, it is likely that the effects of predation and human activities are proportionately greater during the periods of lower caribou numbers.

It is important that researchers are supported by local knowledge-holders who can share their knowledge and help ensure safe and respectful operations around the herds.

9.2.2 Population Trend

In addition to the estimated number of caribou in a herd, the rate of increase or decrease (i.e., the trend) is also a key indicator of herd status. It is determined by comparing herd size estimates over many years. Even when a population estimate is not possible we can look at other data to help determine the trend, such as recruitment, adult female survival estimates, predation, and harvest. Information on the trend of caribou over the long term can generally be provided by TEK.

Population trend becomes particularly important if a herd is considered to be close to a threshold where different management actions might be implemented. For example, if the population estimate indicates a herd is above but close to the threshold where harvest would be limited AND the trend is declining, the ACCWM may recommend limiting harvest and employing other management tools to avoid a severe population decline.

9.2.3 Recruitment

Recruitment is an estimate of the number of calves that survive their first winter, as measured by the number of calves per 100 cows in spring. Since a low number of cows would make this ratio higher, the total numbers of calves and cows must be considered. Groups of caribou are located using radio-collars and local knowledge, and numbers of cows, calves, and bulls are estimated.

Typically, recruitment rates are low before the number of animals in a herd begins to decline. High recruitment rates, particularly several years in a row, may indicate an increase in a herd. Therefore, recruitment, especially when estimated annually, is a useful indicator of the population trend.

9.2.4 Bull-to-Cow Ratio

Caribou, like other members of the deer family (e.g., elk, moose and deer), have a breeding system whereby one adult male can mate with many females within the same season. The natural death rate for male caribou is generally higher than that for females, so even in non-harvested populations there are usually more cows than bulls.

Almost all cows in a caribou herd will be impregnated when the sex ratio is 20 bulls *or more* per 100 cows. It is important to monitor the adult sex ratio because *less than* 20 bulls per 100 cows[4] could affect pregnancy rates.

[4] This was observed when the sex ratio for moose in Alaska fell below 20 bulls per 100 cows.

Across North America, wildlife management often encourages the harvest of males and minimal harvest of females in caribou and other deer species. This is especially true when numbers of a population are very low or in decline. The ACCWM can recommend a voluntary or mandatory bulls-only harvest to allow more females in the herd to survive and reproduce. Monitoring the bull-to-cow ratio helps determine that there are enough bulls to impregnate cows and enough pregnant cows to maintain or increase the herd size.

9.2.5 Body Condition

The health and condition of individual caribou can provide insight into population-scale changes because caribou body condition affects productivity and survival of calves and adults. This information, which is collected by scientists and harvesters, provides supporting evidence for predicting or confirming changes to the herd size.

9.2.6 Harvest Levels

Wildlife management agencies are collectively responsible for managing the harvest of these herds. Accurate information of harvest and wounding loss lets managers know if the total harvest is within the set target. There are situations where a herd cannot sustain any harvest because of the number and/or health of the caribou. Harvesting, like predation, has more of an effect when herd numbers are low. During the community engagement sessions most harvesters supported establishing a harvest monitoring program in each region.

Every year, you have a count of how many caribou are being shot; this is very good. We should keep this sort of thing [the Harvest Study] going. (Colville Lake)

9.3 Factors that Affect Herd Status

Monitoring indicators of caribou health allows managers to detect and predict cumulative effects to the herd over a long term. This can include information such as range quality and quantity and disturbance levels that may limit access to parts of their range. This plan cannot directly mitigate the effects of weather and climate change. However, completing land use plans and regulatory actions can influence the extent of human disturbance on caribou.

Better understanding of long term cumulative effects at the ecosystem level can be obtained through long term research on habitat and impacts of human activities. Co-management agencies can continue to call for and support such long-term research and

monitoring. With improved understanding there would be an opportunity to better use regulatory management tools to limit disturbance effects on caribou. It is the collection and analysis of this information that will allow us to take management actions over the long-term that are proactive rather than reactive.

9.3.1 Predator Populations

Predator numbers can provide an indication of caribou mortality due to predation. It is normally very difficult and costly to obtain population estimates of predators, but it is possible to gain a sense of population levels and trends through observations during aerial surveys for caribou, harvest records (particularly in those regions where wolves and bears are regularly harvested) and from TEK.

9.3.2 Habitat Condition

Changes in habitat conditions (e.g. fires on winter range; available food supply; forest shelter; shifts in vegetation) can provide insight into the stresses impacting caribou and ultimately the number of animals that can be supported. Long-term protection of a herd's habitat helps to ensure that there are "caribou forever".

Habitat – need to look at – caribou manage their habitat – the caribou move to other areas and then move back to that area – we need to include more about habitat. (Tsiigehtchic)

Steps to assess habitat conditions for each herd are: quantitative assessment of habitat type and quality through satellite imagery and ground surveys; GIS exercises to map the range of each herd; estimates of habitat quality requirements; and identification of habitat indicators to monitor and assess change in habitat conditions.

9.3.3 Disturbance Levels: Human and Natural

Disturbance can cumulatively impact herd health. Indexes for threshold levels of disturbance exist for some species but not for caribou. Quantifying disturbance to caribou would require identifying and modelling the level of disturbance and the factors causing it. This could help establish how disturbance has changed over time and how it influences caribou movements and behaviour. Location and levels of disturbances could then be related to habitat availability.

9.4 Conclusions on Monitoring Herd Status

Reasonably accurate and timely information is necessary for good decision-making that helps the caribou. Realistically, information is

never perfect - so decisions must be made with the best information available at that time. It is also important to involve experienced and knowledgeable people, both wildlife managers and community harvesters, in considering all of the available information. The challenge is to establish a monitoring plan that collects and shares the information necessary for all parties (management agencies, co-management boards and communities) to make the best management decisions possible.

As one person commented during the community engagements for this plan, "Managing caribou really means managing the behaviour of people." Human behaviour is generally the focus of management actions and there is limited ability to influence other factors such as weather or fires. It is important, therefore, to monitor populations and other criteria of herd and habitat health on a regular basis, and to have a plan of action in place. This will allow for timely communication and management actions.

The detailed approach to collecting information will be described in *the Action Plan for the Cape Bathurst, Bluenose-West and Bluenose-East Barren-Ground Caribou Herds* that accompanies this plan. The Action Plan will be reviewed annually and updated on a regular basis - about every two or three years. Wildlife management agencies need to gather and communicate knowledge about changes in caribou health, herd movements, population size, habitat quality, and other influential factors to make the appropriate decisions to have "caribou forever".

10.0 How Do We Make Decisions

It's a hard issue to think about or deal with. Harvesting caribou is a tradition. I hunt for my family and people in other communities, and share my hunt. (Kugluktuk)

The purpose of a management plan is to help us make good decisions for the caribou. Those decisions will help ensure:

- healthy populations of caribou over the long-term (i.e., "caribou forever")
- enough caribou to provide harvesting opportunities for users
- caribou harvests are allocated in a transparent and fair way

10.1 Herd Numbers Fluctuate Over a Long Time Period

Understanding changes in caribou populations can be difficult. However, traditional and scientific knowledge agree that caribou herd numbers generally fluctuate in a fairly regular pattern that covers decades – this is what we call a population cycle. Elders often speak of caribou population cycles based on many generations of traditional knowledge. The causes for these cycles in caribou (and other wildlife species) are not well understood but likely are a result of factors including weather, predator populations, habitat quality and quantity, and disease and parasites. **Figure 10.1** is a generalized representation of a long-term population cycle. Our goal in managing caribou herds is to reduce the amount of fluctuation in caribou numbers and balance the needs of harvesters with the ability of caribou to sustain herd numbers.

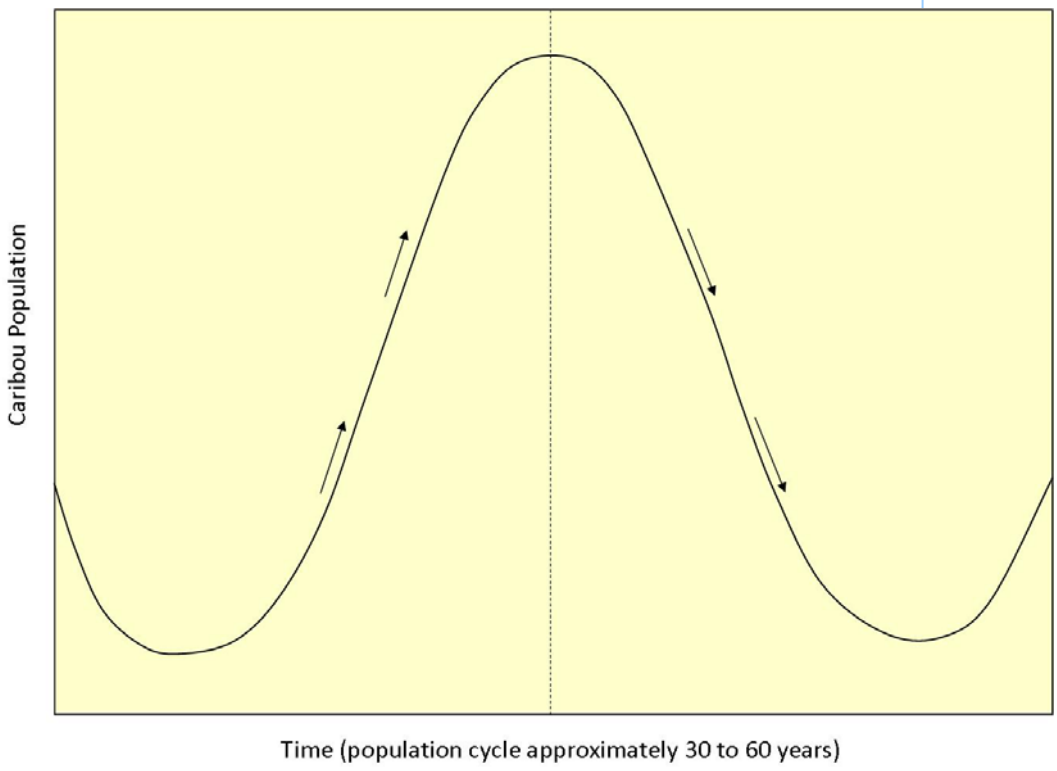

Figure 10-1 Generalized curve of caribou abundance

10.2 When Do We Take Action

The things we do to help the herds will be determined by the current herd size relative to the number of caribou that the herd range can

best support, determined by the historical high population and what science and TEK tell us is a healthy number. Decisions will also be influenced by other observations or monitoring criteria such as population trend, recruitment, bull-to-cow ratio, and body condition.

In this management plan there are four levels of herd status and associated actions. These are colour-coded green, yellow, orange, and red. The colours for herd status provide a trigger for specific management actions.

Green: the population level is high based on historically maximum numbers of caribou.

Yellow: the population level is high but below historically maximum numbers.

Orange: the population level is low and substantially below historically maximum numbers.

Red: the population level is extremely low compared to historically maximum numbers.

Management actions increase when a herd's status moves from yellow to orange, or orange to red, for example. The actions can also be relaxed when the herd's status moves from red back to orange or from orange back to yellow. The approach and a listing of some of the possible management actions are summarized below.

The common approach to determining herd status is by setting thresholds on the estimated population level relative to the historical maximum population level. Threshold will be determined through community input on what population level is considered to be healthy and desirable. Thresholds are expressed in terms of % (as an example, yellow status could signify that the population level is between 40% and 80% of the historically maximum population level). A representation of this is provided as **Figure 10-2**. At this stage of developing this management plan there are no fixed thresholds or % to signify herd status. These will be determined through community input and biological principles. The Plan will include specific

Not sure if it is a natural cycle or other reasons but I guess our job is to try to manage the best we can. (Tsiigehtchic)

thresholds for each management zone and herd. The colour zones with thresholds will be used for best management of the herds.

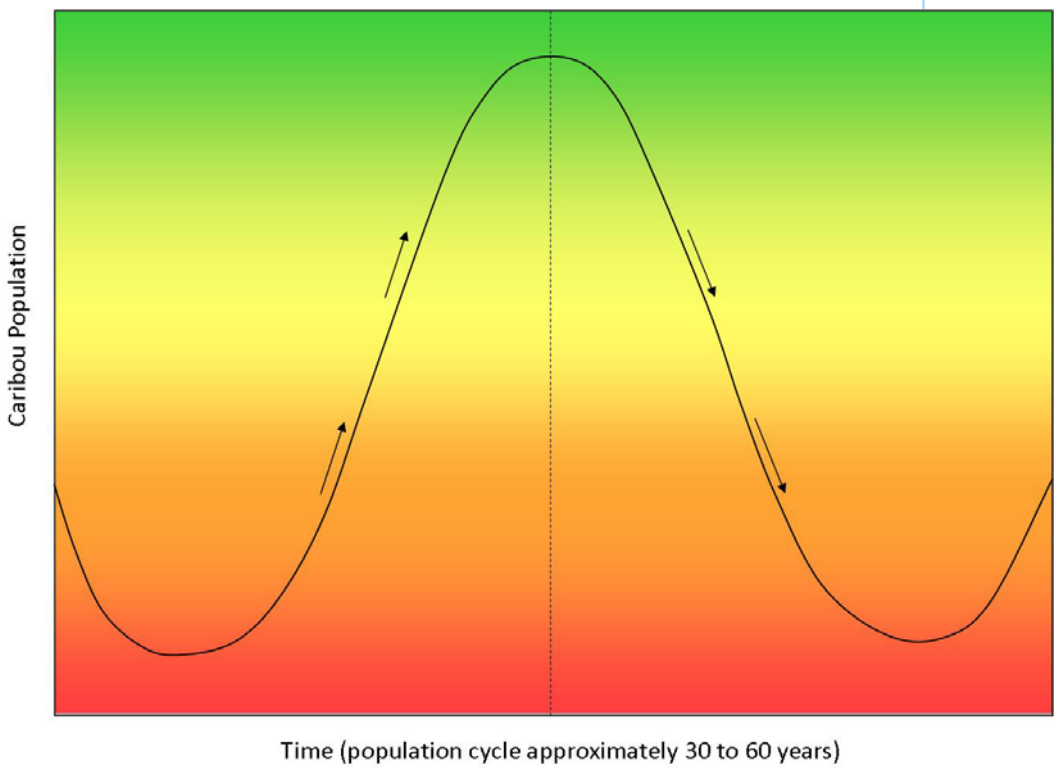

Figure 10-2 Caribou Population Colour States

10.3 Process to Make Decisions

The following is a summary of the process and schedule to be followed by the ACCWM to determine herd status and management actions.

10.3.1 ACCWM Meetings

The ACCWM will meet annually (normally in early fall); to review information and discuss appropriate management actions. Following the 2012 photo survey and those conducted every three years afterward, the ACCWM will determine herd status based on all available traditional and scientific knowledge. The Action Plan will be implemented and reviewed annually. Based on the annual monitoring information, the Action Plan and/or herd status may be revised if there is some unanticipated or extreme change between census years.

10.3.2 Action Plan

- The Action Plan will outline recommended management actions and how they will be implemented, by whom, and within what timeframe;
- Funding the implementation of the Action Plan will be discussed by the ACCWM with other management partners;
- Implementation of the Action Plan is cooperative and ongoing community input and support will help to develop and implement management actions;
- Each wildlife co-management board is responsible for reviewing and approving the Action Plan prior to its implementation;
- If a Total Allowable Harvest (TAH) is required, the allocation for each settlement region/area will be determined collaboratively among the affected co-management boards.

10.3.3 Allocation of Harvest

Harvesting caribou is fundamental to the way of life for many northern residents. Establishment of TAH and allocation of the harvest between regions and communities will be implemented only if there is a demonstrated concern with respect to caribou conservation, health or safety - which in turn may affect the health and cultural, spiritual, and socio-economic well being of northerners. The ACCWM will make recommendations, based on historical harvest levels and other factors, on how the TAH should be allocated by region.

Formal harvest studies are available for the Inuvialuit, Gwich'in, Sahtú, Tłı̨chǫ, and Nunavut settlement areas. Groups without formal harvest studies will need to find a way to determine harvest. Individual boards, in association with the ACCWM, will determine how far back to go in order to determine "historical harvest levels."

10.4 How We Use Herd Monitoring Information

To determine the herd status and appropriate actions, it is important to have up-to-date information. Whether the herd status is green, yellow, orange or red, the following monitoring will take place:

Table 10-1 Monitoring Summary

Information	How often	Local	Scientific
Estimate herd population size	Every three years	High, medium, low, critical	High (green), medium (yellow), low (orange), critical (red)
Assess population trend[5]	Annually	Observations: increasing, stable, decreasing	Increasing, stable, decreasing
Estimate recruitment	Every winter	Observations: many or few calves	Number of calves per 100 cows
Body condition/ health	Annually	Observations: good, fair, poor, abnormal	Fat indexes, pregnancy rate, parasite and disease level
Comprehensive harvest data	Annually	Harvest interview	Total and sex ratio of the harvest
Measure bull-to-cow ratio	Every 3 years	Observations: Lots/few bulls (and Bull health)	Number of bulls per 100 cows
Predator populations	Local: annually Scientific: variable	Observations: high, medium, low	Carcass collection (reproduction, health, etc.) and during aerial surveys
Habitat condition	Variable	Observations of food availability, shelter, disturbance, etc.	Track land uses and fire, monitor changes in plant productivity and habitat type (remote-sensing)

Long-term monitoring of environmental factors, including range quality and quantity, development activity and trends, and disturbances that influence caribou herds are also important in understanding changes in caribou health and abundance.

Some indicators of population status are very difficult or extremely expensive to measure. In these cases there may be some information available through long-term studies or traditional

[5] There is no single indicator for population trend. Rather it is based on monitoring activity such as population estimates, recruitment surveys, body condition, etc.

knowledge, and this information will also be considered by management agencies and harvesters.

10.6 What Management Actions Do We Take

10.6.1 Land Use Activities

The ACCWM can provide recommendations to regulators (i.e., Land Use Planning, Environmental Assessment and Land and Water Boards) to help reduce the effects of exploration and development on caribou herds. Advice can be given to avoid important caribou seasonal ranges and ways to mitigate disturbance from noise and increased access. For example, based on the recommendations of the Tuktut Nogait National Park (TNNP) Management Board and the community of Paulatuk, aircraft access to TNNP has been restricted during the calving and post-calving period to reduce potential disturbance to the Bluenose-West herd.

10.6.2 Predators

The ACCWM can recommend incentives for harvest of predators when predation is considered to be a problem for a caribou herd.

10.6.3 Harvest

The ACCWM has the authority to make recommendations with respect to harvesters, harvest levels and harvest composition (e.g., bulls vs. cows) of the following:

- Commercial harvest
- Non-resident (i.e., outfitted) harvest
- Resident (non-Aboriginal) harvest
- Aboriginal Harvest
- Voluntary bulls-only harvest
- Mandatory bulls-only harvest
- Seasonal restrictions on harvest
- Conservation and education
    - To encourage traditional harvesting practices
    - To encourage use of alternate species

10.7 Management Actions Based on Herd Status

Management actions will change based on the status of the herd. At this draft stage of Management Plan development, these examples are used for illustrative purposes only. Specific actions will be contained in the Action Plan. For each population level designated by one of four colours, there is a figure (10.3 - 10.6), and a discussion of some of the actions that the management agencies can either implement themselves or recommend to the appropriate authorities. The first population levels presented below (i.e., green and red status) are cases where decisions on the management actions are relatively straightforward. Decisions on management actions when the population is between these extremes (i.e., yellow and orange status) can be more challenging.

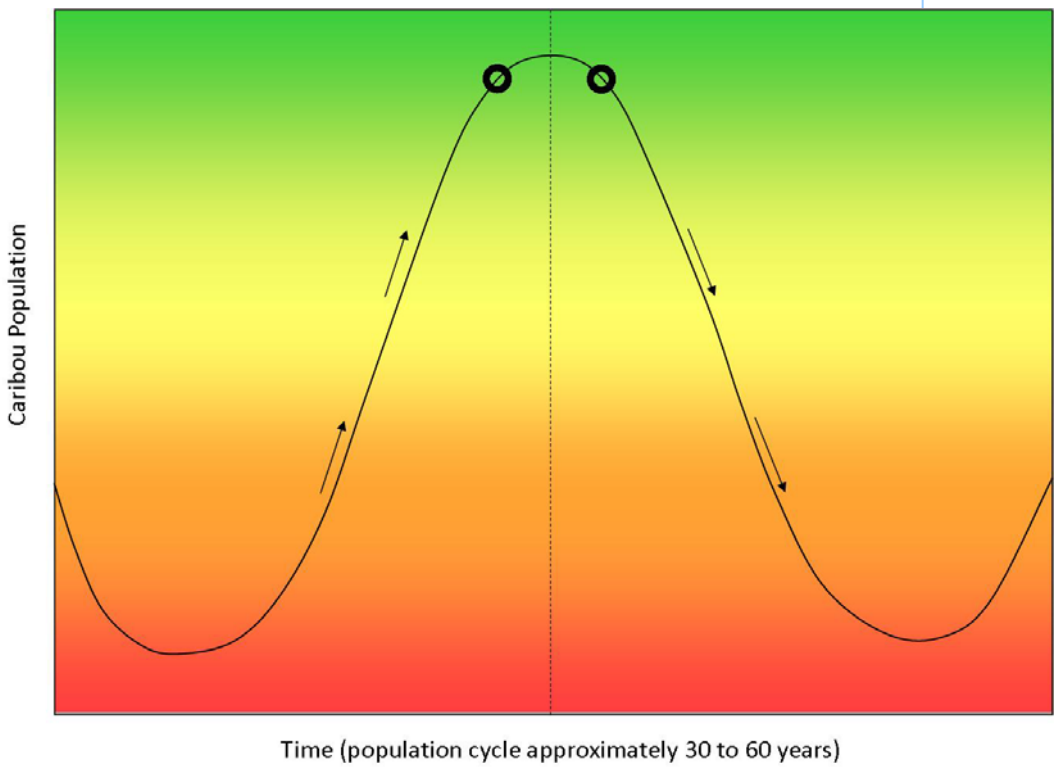

Figure 10.3 Green Zone Examples

Green: the population level is at or close to the total number of animals that the range is estimated to be able to sustain. The population level is considered healthy and little management action is required.

Management agencies:

- Allow/recommend subsistence and resident harvest (within limits). Potentially recommend non-resident (outfitter) and commercial harvests when there is a demonstrated surplus of caribou.
- Provide standard advice on mitigation of the impacts of exploration and development activities to proponents and regulators.
- Do not provide incentives for predator harvest or harvest of alternate species.
- Provide active and accessible communication and education programs for all.

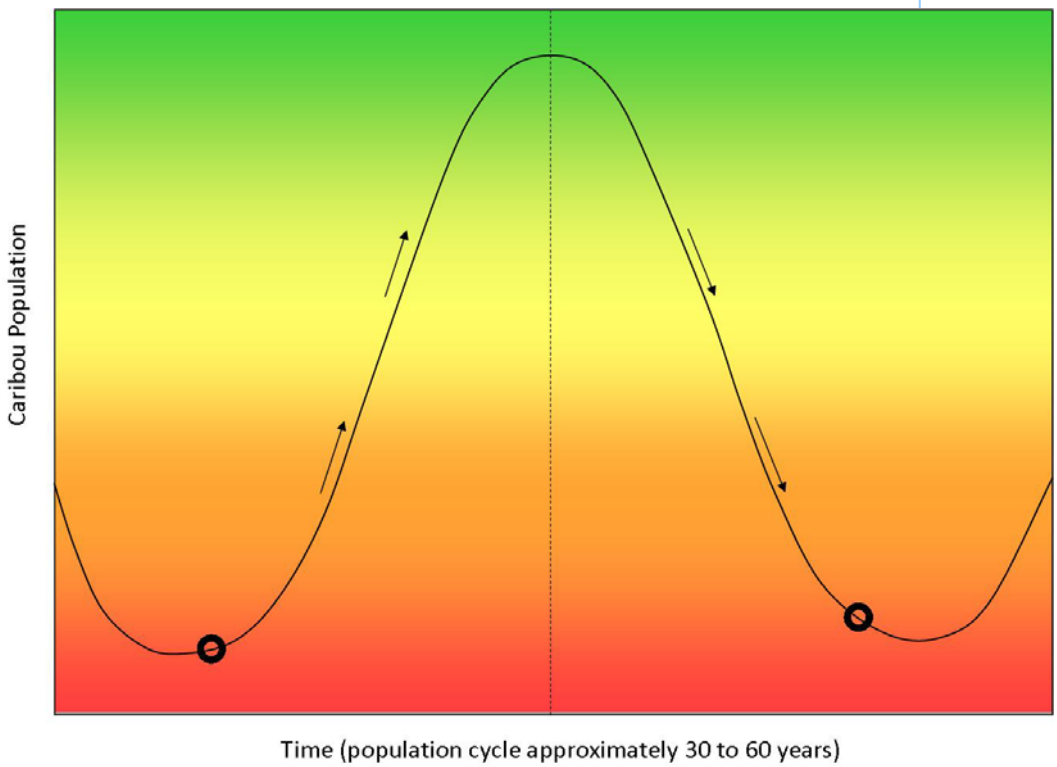

Figure 10.4 Red Zone Examples

Red: the population level is extremely low compared to the total number of caribou the range is estimated to sustain. Strong management actions are required to help the herd recover.

Management Agencies:

- Allow/recommend no commercial, outfitter, resident or subsistence harvest[6].
- Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures.
- Provide/recommend incentives for predator harvest and harvest of alternate species.
- Provide active and accessible communication and education programs for all.

The real challenges for Management Agencies and harvesters (in terms of making decisions) will be when the caribou population levels are below or well below (i.e. yellow or orange status respectively) the high and most desirable population level. Challenges will be greatest when the estimated population is not clearly within one particular colour status (e.g. on the line between yellow and orange or between orange and red). It is also at yellow and orange levels when some of the other indicators of herd status and health (e.g. trend, recruitment, bull-to-cow ratio, and body condition) become extremely important. Not all management actions listed here will necessarily be taken, depending on the conditions of the herd that year. There is no recipe or magic formula for making such decisions but this framework, and the management plan itself, will help make open and reasoned decisions.

[6] A limited harvest for ceremonial purposes may be permitted

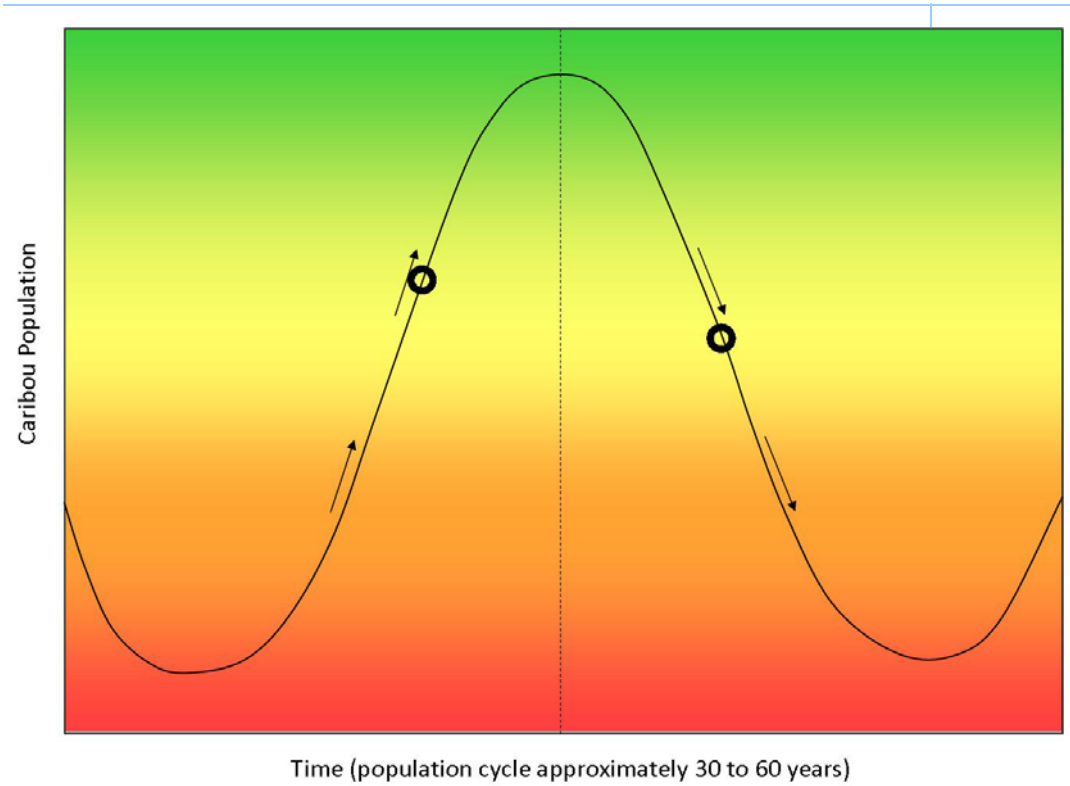

Figure 10.5 Yellow Zone Examples

Yellow: the population level is high but below the total number of caribou the range is estimated to be able to sustain. We take some management actions to help the herd move back into the green zone and prevent the herd from moving towards the orange zone. Some options for management actions include:

- Allow/recommend limits on subsistence, resident, outfitted, and commercial harvests.
- Recommend voluntary controls towards harvesting bulls-only.
- Provide standard advice on mitigation of industrial impacts to proponents and regulators.
- Provide/recommend incentives for predator harvest and harvest of alternate species.
- Provide active and accessible communication and education programs for all.

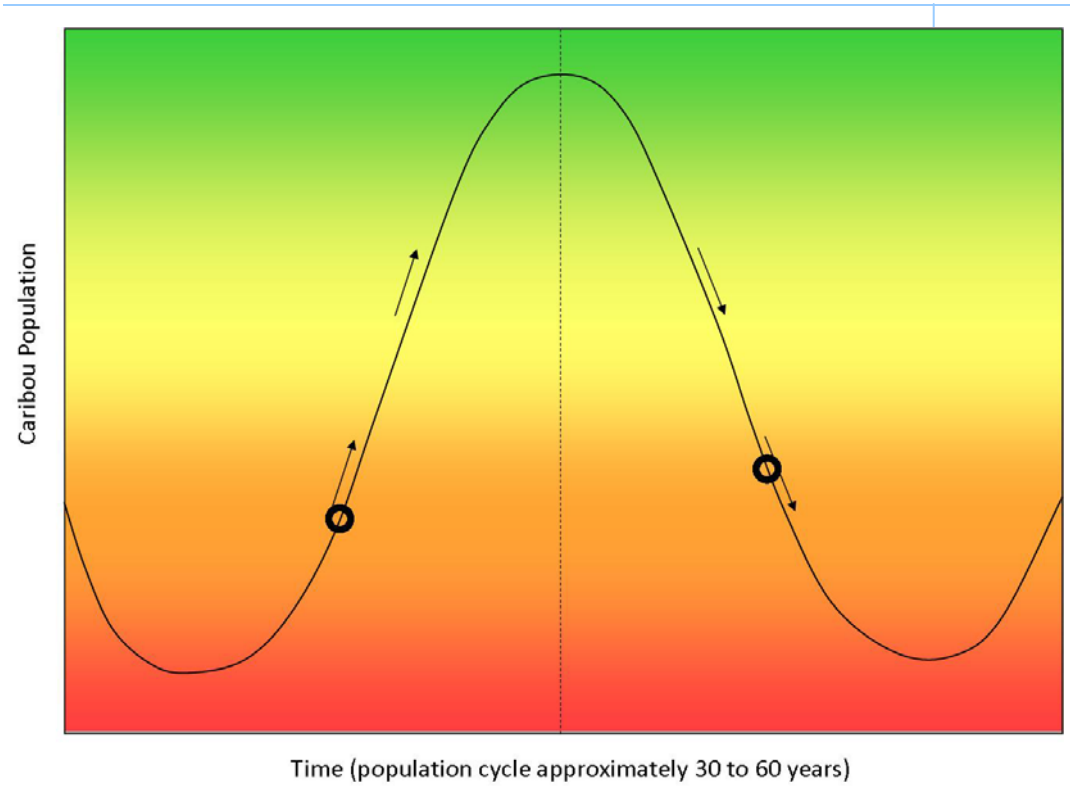

Figure 10.6 Orange Zone Examples

Orange: the population level is substantially below the total number of caribou the range is estimated to be able to sustain. Concern about the herd is high and further management actions are required to prevent the herd from further declining into the red zone. Some options for management actions include:

- Allow/recommend no commercial, outfitter or resident harvest.
- Allow/ recommend a mandatory limit on subsistence harvest based on a TAH determined by the ACCWM.
- Allow/recommend a mandatory bulls-only harvest by Aboriginal harvesters.
- Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures.
- Provide/recommend incentives for predator harvest and harvest of alternate species.
- Provide active and accessible communication and education programs for all.

11.0 How Do We Communicate

Communication is the responsibility of all parties engaged in wildlife management – including all ACCWM members and others. Knowledge is dynamic and powerful and information must flow both ways between local knowledge holders and management agencies. Various communication and education techniques, ranging from local radio to school visits, to on-the-land gatherings, will be used to capture a broad audience. They will occur on an annual basis and not just when the herds are in the Orange or Red zones, but conservation education will be particularly emphasized during these times. Details on timing and communication methods will be in the Action Plan.

Education is important – always say at meetings we have to educate our harvesters how to hunt caribou – we need to do that (Aklavik)

Good communications are important. Use radio stations. Bring translators to the meetings for elders. (Fort McPherson)

12.0 Other Information

12.1 How Do We Update The Plan?

The Plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds will first be reviewed after five years (i.e. 2016) and at ten-year intervals thereafter. Any party may request a review, at any time, through a formal request to the ACCWM.

12.2 Signatories

This page will contain the signature of the representative of each management agency.

APPENDICES

APPENDIX A

ACRONYMS AND TERMS USED IN THIS PLAN

List of Acronyms

ACCWM	Advisory Committee for Cooperation on Wildlife Management
ENR	Department of Environment and Natural Resources, GNWT
GLUPB	Gwich'in Land Use Planning Board
GN	Government of Nunavut
GNWT	Government of the Northwest Territories
GRRB	Gwich'in Renewable Resources Board
GSA	Gwich'in Settlement Area
GTC	Gwich'in Tribal Council
HTO	Hunters and Trappers' Organization
IGC	Inuvialuit Game Council
INAC	Indian and Northern Affairs Canada
ISR	Inuvialuit Settlement Region
KRWB	Kitikmeot Regional Wildlife Board
NPC	Nunavut Planning Commission
NWT	Northwest Territories
NWMB	Nunavut Wildlife Management Board
SLUPB	Sahtú Land Use Planning Board
SRRB	Sahtú Renewable Resource Board
SSA	Sahtú Settlement Area
TAH	Total Allowable Harvest
TNNPMB	Tuktut Nogait National Park Management Board
TSA	Tłı̨chǫ Settlement Area
WRRB	Wek'èezhìı Renewable Resource Board
WMAC	Wildlife Management Advisory Council (NWT)

APPENDIX B

MANDATE AND WEBSITES OF MANAGEMENT AGENCIES

The many organizations which share responsibility for managing the herds include:

Wildlife Management Advisory Council (NWT)
The Wildlife Management Advisory Council (WMAC) provides advice to the relevant Ministers, ENR and the Inuvialuit Game Council (IGC) on all significant wildlife matters in the Inuvialuit Settlement Region (ISR) including management policies, regulations and harvesting quotas.

Wildlife Management Advisory Council (NWT): www.jointsecretariat.ca

Gwich'in Renewable Resources Board
The Gwich'in Renewable Resource Board (GRRB) is considered to be the main instrument of wildlife and forestry management within the Gwich'in Settlement Area (GSA). It is responsible for establishing harvest levels, approving management plans, approving regulations proposed by government and reviewing any wildlife management matter referred to it by government. GRRB decisions are referred to the appropriate Minister who may accept, vary or set aside the decision, with reasons.

Gwich'in Renewable Resources Board: www.grrb.nt.ca

Sahtú Renewable Resources Board
The Sahtú Renewable Resource Board (SRRB) is considered to be the main instrument of wildlife and forestry management within the Sahtú Settlement Area (SSA). It is responsible for establishing harvest levels, approving management plans, approving regulations proposed by government and reviewing any wildlife management matter referred to it by government. SRRB decisions are referred to the appropriate Minister who may accept, vary or set aside the decision, with reasons.

Sahtú Renewable Resources Board: www.srrb.nt.ca

Wek'èezhìı Renewable Resources Board
The Wek'èezhìı Renewable Resource Board (WRRB) is the wildlife co-management authority for the Tłı̨chǫ Settlement Area (TSA). It is responsible for approving harvest levels, management plans, research plans, and any other wildlife management matter referred to it by government. WRRB decisions are referred to the appropriate government which may accept, vary or set aside the decision, with reasons.

Wek'èezhìı Renewable Resources Board: www.wrrb.ca

Nunavut Wildlife Management Board

The Nunavut Wildlife Management Board (NWMB) is considered to be the main instrument of wildlife management and the main regulator of access to wildlife within the Nunavut Settlement Area (NSA). It is responsible for setting the Total Allowable Harvest (TAH) and Basic Needs Level (BNL) for harvested species and approving all significant wildlife management policies and regulations. NWMB decisions are referred to the appropriate Minister who may accept, vary or set aside the decision, with reasons.

Nunavut Wildlife Management Board: www.wmb.com

Kitikmeot Regional Wildlife Board

The Kitikmeot Regional Wildlife Board (KRRB) is a Regional Wildlife Organization (RWO) under the Nunavut Land Claims Agreement (NLCA). As such, the KRRB is responsible for the allocation and enforcement of the regional BNL among the HTOs in the Region and the regulation of harvesting practices among the members of the HTOs.

Kitikmeot Regional Wildlife Board: www.niws.ca

Tuktut Nogait National Park Management Board

The Tuktut Nogait National Park Management Board (TNNPMB) is responsible, subject to the jurisdiction of the co-management boards within the ISR, for advising the Minister, or other ministers as appropriate, on all aspects of park planning, operation and management, and research.

Tuktut Nogait National Park Management Board: www.pc.gc.ca/eng/pn-np/nt/tuktutnogait

Parks Canada Agency

Parks Canada Agency protects and presents Tuktut Nogait National Park and and the Saoyú-Ædacho National Historic Site to ensure the ecological and commemorative integrity of these places for present and future generations. Tuktut Nogait National Park was established to protect and maintain the Bluenose-West caribou herd and its calving and post-calving habitat. Parks Canada Agency works cooperatively with co-management boards and the GNWT to manage and monitor the herd and its habitat in the Park and in the greater Park ecosystem.

Parks Canada: www.pc.gc.ca/eng/pn-np/nt/tuktutnogait

Government of the Northwest Territories

The Department of Environment and Natural Resources (ENR) has ultimate responsibility for the management of caribou under the GNWT *Wildlife Act.* The Minister is empowered to establish harvest seasons, quotas and other conditions that may be required for the conservation of caribou within NWT.

Environment and Natural Resources, Government of Northwest Territories: www.enr.gov.nt.ca

Government of Nunavut

The Department of Environment (DoE) has ultimate responsibility for the management of caribou under the GN *Wildlife Act.* The Minister is empowered to set harvest seasons, quotas and other conditions that may be required for the conservation of caribou within Nunavut.

Department of Environment, Government of Nunavut: www.gov.nu.ca/env

Kugluktuk Angoniatit Association Hunters and Trappers Organization

The objects of the Association are to constitute an open and accountable forum, organized in a fair and democratic way, to protect and promote the rights and interests of those Inuit in the Kugluktuk area who are involved in hunting and trapping.

Email address: kugluktukhto@qiniq.com

APPENDIX C
MAJOR LAND USE ACTIVITIES IN THE RANGE OF THE CAPE BATHURST, BLUENOSE-WEST, AND BLUENOSE-EAST CARIBOU HERDS

Hydrocarbon Exploration and Development

The proposed Mackenzie Gas Project (MGP) represents a renewed attempt to bring the natural gas from the Beaufort Delta into production. The National Energy Board (NEB) approved the project in 2010. Gas would initially come from three gas fields in the Mackenzie Delta but construction of the pipeline would likely lead to enhanced exploration and development activities throughout the Mackenzie Delta and other areas of the Mackenzie Valley, particularly the Tulıt'ɑ-Norman Wells area and the Colville Lake area. The Mackenzie Delta and surrounding area includes a significant portion of the ranges of Cape Bathurst and Bluenose-West herds, whereas all three herds occur in the Colville Lake area. Herds are not normally in the Tulıt'ɑ-Norman Wells area.

Mineral Exploration and Development

Mineral exploration and development waxes and wanes in response to the global demand. It can change quickly - as seen with the staking rush following the first discovery of diamonds in the NWT or recent interest in rare earths. The presence of base metals and diamonds has been confirmed but projects are still in the planning and surveying stage. Much of the caribou range is subject to mineral claims or prospecting permits. However, the extent of claims and permits is not a true reflection of land use as the activities are often concentrated in a small part of the overall claim area. The cumulative impact of these land use activities is unknown.

Transportation Route Development

The Bathurst Inlet Port and Road, proposed in the 1990's, was put on hold in 2008. If the development were approved, it would shorten the shipping routes to remote mines in the Tłı̨chǫ and Kitikmeot Region by creating a deep-water port and all-weather roads. Other proposed road developments include an all-season road from Tuktoyaktuk to Inuvik, and an 804 km extension of the Mackenzie Valley Highway north from Wrigley.

Land Use Plans

The IFA does not provide for a Land Use Planning Board to develop a plan for the Region. However, the WMAC (NWT) produced community conservation plans for the ISR in 2000 and will release updated plans soon. These plans reflect community concerns and expectations about the acceptable level of impacts on various landscapes.

The Gwich'in, Sahtú and Nunavut agreements provide for land use planning which is undertaken by claim-specific Institutions of Public Government (IPG). In these instances, the land use plans may declare zones in the settlement lands for various purposes. This can include restrictions on land use activities and land management agencies must respect the conditions established through the land use plans.

The Gwich'in Land Use Plan was approved by the Gwich'in Tribal Council (GTC) and the Federal Government in 2003. The plan classified the Gwich'in Settlement Area (GSA) into three zones: General Use Zones (57% of GSA), Special Management Zones (33% of GSA), and Conservation Zones which includes Heritage Conservation Zones (10% of GSA). All licenses, permits or other authorizations relating to the use of land and water must conform to the Land Use Plan. A review of the Gwich'in Land Use Plan is under way.

The Sahtú Land Use Planning Board is preparing a comprehensive land use plan for the SSA that will guide how the land and its resources will be used. It will designate three categories of land: conservations zones where no development will be permitted; special management zones where development will be permitted with conditions; and multiple use zones where development will be permitted subject to current regulatory requirements. The second draft of the plan was submitted in 2010.

The Tłı̨chǫ Agreement does not provide for formal land use planning for the settlement area but in 2010 the Tłı̨chǫ government was developing a land use plan for Tłı̨chǫ lands.

Protected Areas

Herd ranges encompass established and proposed protected areas. Tuktut Nogait National Park protects calving and post-calving habitat of the Bluenose-West herd in the ISR and SSA. Discussions of a new park in Nunavut adjacent to Tuktut Nogait are ongoing with Kugluktuk, Kitikmeot Inuit Association, and the Nunavut Planning Commission.

Edaı́́la is a prominent peninsula on the east shore of Great Bear Lake which is an important area culturally and for the Bluenose-East caribou. Edaı́́la has been proposed for formal protection by the Délı̨nę Land Corporation, and is identified as a conservation zone in the draft Sahtú Land Use Plan. Saoyú-ʔehdacho National Historic Site of Canada protects the two westernmost peninsulas on Great Bear Lake. The land is co-managed by the Edaı́́la Cooperative Management Board and Parks Canada.

Ezǫdzìtì is an area protected through the Tłı̨chǫ Final Agreement for its historical and cultural importance. The area, which encompasses approximately 1,374 km^2 of settlement land, is protected from non-renewable resource development.

APPENDIX D
ADVISORY COMMITTEE FOR COOPERATION ON WILDLIFE MANAGEMENT (ACCWM) AND BLUENOSE CARIBOU MANAGEMENT PLAN WORKING GROUP (BCMPWG) MEMBERSHIP

The ACCWM consists of the Chairpersons (and/or their alternates) of:

- Wildlife Management Advisory Council (NWT);
- Gwich'in Renewable Resources Board;
- Sahtú Renewable Resources Board;
- Wek'èezhìı Renewable Resources Board;
- Kitikmeot Regional Wildlife Board;
- Kugluktuk Hunters and Trappers Association;
- Dehcho First Nation[7];
- Tuktut Nogait National Park Management Board; and
- Nunavut Wildlife Management Board.

The BCMPWG consists of representative of:

- Wildlife Management Advisory Council (NWT);
- Gwich'in Renewable Resources Board;
- Sahtú Renewable Resources Board;
- Wek'èezhìı Renewable Resources Board;
- Kitikmeot Regional Wildlife Board;
- Kugluktuk Hunters and Trappers Association;
- Dehcho First Nation;
- Tuktut Nogait National Park Management Board;
- Tłı̨chǫ Government;
- Environment and Natural Resources, GNWT;
- Department of the Environment, GN; and
- Parks Canada.

[7] There is an outstanding invitation for the Dehcho First Nation to join the ACCWM and they would thus become part of the Working Group. All information is shared with DFN and an opportunity for their feedback is provided.